City of Greenwood Village

Agenda – Final
City Council

6060 South Quebec Street
Greenwood Village, CO
80111

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Monday, August 17, 2026 | **6:00 PM** | **Council Chambers**

Regular Meeting - 6:00 PM

1. Call To Order

2. Roll Call

3. Pledge Of Allegiance (Barnacle)

4. Approval Of Minutes (Mezger)

A. August 3, 2026 (2026-194)

5. Public Comment

Limited to 3 minutes per person, 15 minutes total time. If City Council meetings are to be conducted via remote participation, public comment is limited to written comments emailed to cityclerk@greenwoodvillage.com by 5:00 p.m. the day of the meeting.

6. Public Hearings

A. Grace Chapel, 8500 E Orchard Road To Repurpose Existing Building And Parking Lot For A Place Of Worship And Event Center (2026-181)

i. Case No. PZ-26-00017; Special Use Permit; Grace Chapel (Barnacle) (2026-182)

ii. Case No. PZ-26-00026; Site Development Plan; Grace Chapel (Johnston) (2026-183)

7. Reports Of Officers/Boards/Committees

A. CITY COUNCIL

B. MAYOR

C. STAFF

D. CITY MANAGER

8. Communications

9. Adjournment

City of Greenwood Village

Minutes – Final
City Council

6060 South Quebec Street
Greenwood Village, CO
80111

Hearing-impaired apparatus available
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Monday, August 3, 2026	7:00 PM	Council Chambers

REGULAR MEETING - 7:00 PM

1. CALL TO ORDER

The City Council of the City of Greenwood Village met in a regular session in the Council Chambers at Greenwood Village City Hall, 6060 South Quebec Street, Greenwood Village, County of Arapahoe, State of Colorado, at 7:20 PM, following a Study Session in which Council was provided an update regarding the SPIN micromobility program and expressed support for moving forward with next steps to consider program expansion.

2. ROLL CALL

Present: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
Absent: *0 - None*
Presiding: *1 - George E. Lantz*

3. PLEDGE OF ALLEGIANCE (NELSON)

Councilmember Nelson led the Pledge of Allegiance.

4. APPROVAL OF MINUTES (SCHNEIDERMAN)

A. July 6, 2026 (2026-138)

A motion was made by Councilmember Bob Doyle, seconded by Councilmember Jay Schneiderman; to approve the July 6, 2026 minutes, as submitted. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

5. PUBLIC COMMENT

Limited to 3 minutes per person, 15 minutes total time. If City Council meetings are to be conducted via remote participation, public comment is limited to written comments emailed to cityclerk@greenwoodvillage.com by 5:00 p.m. the day of the meeting.

Ms. Becca Breen, Cherry Creek Village North (CCVN) resident, asked for police officers to be stationed in CCVN to alleviate concerns regarding school traffic for the Cherry Creek campus.

6. CONSENT (DOYLE)

All matters listed under consent are to be considered routine and will be enacted by one motion and vote. The titles will not be read aloud. There will be no separate discussion of these items unless a Councilmember so requests.

A motion was made by Councilmember Jay Schneiderman, seconded by Mayor Pro Tem Libby Barnacle; to adopt the consent agenda. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

A. Resolution 25-26: A Resolution Reappointing Jean Greos to the Greenwood Village Parks, Trails, and Recreation Commission and Establishing an Expiration Date of Her Term (2026-217)

This resolution was passed.

B. Resolution 26-26: A Resolution Reappointing David Banks to the Greenwood Village Parks, Trails, and Recreation Commission and Establishing an Expiration Date of His Term (2026-218)

This resolution was passed.

C. Resolution 27-26: A Resolution Reappointing Tina Suszynski to the Greenwood Village Arts and Humanities Council and Establishing an Expiration Date of Her Term (2026-219)

This resolution was passed.

7. PUBLIC HEARINGS

A. Greenwood Village Open Space at the Arapahoe Station, 8880 E Caley Ave - Allowance of Recreational Use in the Mixed Commercial Zoning District, Removal of a Parking Lot, and the Establishment of a New Plat (2026-66)

A quasi-judicial public hearing was held at 7:27 PM regarding Case Nos. PZ-26-00002, a Site Development Plan Amendment, PZ-26-00004, a Special Use Permit, and PZ-00005, a Final Plat for 8880 E Caley Ave. Mayor Lantz presided with eight Councilmembers present.

Interim City Attorney Kathie Guckenberger stated a notice of the date, time, and place of the hearing was published on the City's website, for which she offered into evidence Exhibit A, an affidavit of publication from the City Clerk. Notice was also posted on the property for which she offered into evidence Exhibit B, a certificate of posting. Notice of the date, time, and place of this hearing was also sent by mail to property owners as outlined in the Municipal Code per this type of application at least 15 days prior to this hearing. She offered into evidence Exhibit C, which was an affidavit of mailing. She noted these items complied with the Greenwood Village Municipal Code, and it was her opinion the Council had jurisdiction to proceed with the public hearing.

Mayor Lantz accepted Exhibits A, B, and C into evidence and made them part of the hearing record.

Staff Presentation:
Mr. Brandon Nehl, Planner I, provided a brief review of the application and noted the proposal would significantly reduce on-site parking, increase open space, and include the construction of four pickleball courts. He noted approval for a Site Development Plan (SDP) and Special Use Permit (SUP) was required as the proposal would modify the approved site design and change the use of the property. He stated the Final Plat would eliminate the existing lot and tract and would create a single lot for the recreation use. He noted public comments were received requesting a noise study.

Planner Nehl stated the subject property was located at the intersection of S Willow Dr and E Caley Ave, was adjacent to the Arapahoe Station RTD transit area, was in the Village Center Station Planning Subarea of the Interstate Corridor Planning Area, and was zoned Mixed Commercial (MC). He noted the property received approval for a Westin Hotel in 2014 that was not constructed and that the current use was a parking lot that serves the RTD station and bus transit area. He stated the proposed project was included in an annual recommendation to City Council for Capital Improvement Projects (CIP) from the Greenwood Village Parks, Trails, and Recreation (PTR) Commission. He stated the Planning and Zoning Commission unanimously recommended approval of the SDP and conditional approval of the SUP with the condition that a site-specific noise study was conducted.

Planner Nehl reviewed the existing and proposed site plans and noted a reduction in parking and an increase in open space and landscaping. He noted the proximity to I-25 and the location of the underutilized parking garage. He noted many of the items outlined in the Land Development Code (LDC) were not applicable to the proposed pickleball courts, as sports courts were not considered buildings. He noted the reduction in parking and stated the parking garage was open to the public. He noted parking spaces were not required for the proposed sports court but were included.

Planner Nehl noted a noise study was conducted by Wave Engineering and found that ambient noise levels in the area exceeded the noise limitations outlined in the Colorado State Statutes of 55 decibels (dba) in the daytime and 50dba at night. He stated the noise generated by the pickleball courts would be masked by I-25 to the west, commercial buildings to the north and south, and the parking garage to the east. He noted recommendations were provided in the sound study, which included the installation of a mass-loaded vinyl barrier, incorporation of sound-absorbing panels, and encouraging the use of quieter equipment.

Planner Nehl reviewed the proposed Final Plat and noted the existing plat was one lot and one tract for the development of a Westin Hotel. He stated the hotel was never constructed. He noted that the proposed plat would be one lot, and if approved, the property would be known as the Greenwood Village Open Space at Arapahoe Station.

Planner Nehl reviewed the SUP approval criteria and noted recreation uses were allowed as a special use in the MC zone district. He noted the proposed use of the property would increase open space, improve landscape features, and improve accessibility to public transportation.

Planner Nehl reviewed the SDP approval criteria and noted the proposed development meets all applicable criteria. He stated the proposed SDP was consistent with the Comprehensive Plan and the project was compatible with surrounding land uses and would serve the office and residential communities as access to the existing parking garage was maintained. Staff found potential noise

impacts had been adequately mitigated due to the proximity to I-25.

Planner Nehl noted the Final Plat was in conformance with Chapter 16 of the LDC and all review criteria had been met. He stated staff recommended approval of the project as all review criteria had been met.

Applicant Presentation:
Park, Trails, and Recreation Director Suzanne Moore provided background information on the subject property and noted the land was acquired by the City in 2002 in exchange for funding the parking garage construction. She noted the City sold the property to a developer for a high-end hotel in 2015, and the City re-acquired the land in 2019 when the developer failed to construct the hotel. She noted 2.4 acres of the 3.57-acre property was a parking lot that was intended to be temporary. She noted the parking lot was due for repaving at an estimated cost of $1.2 million.

Director Moore noted the existing parking lot had 287 parking spaces and 8 RTD accessible spaces. She stated the parking garage on site had 820 parking spaces and that 77 were in use when she drove through the garage midweek. She noted the garage was free for 24 hours for vehicles registered in the RTD district and $2 per day after the first 24 hours. She noted the cost was $4 per day for vehicles not registered in the district.

Director Moore stated the RTD facilities, including the pedestrian bridge across I-25 and the bus terminal would continue to be supported regardless of the outcome of the proposed project.

Director Moore noted pickleball was in high demand and that there were two pickleball-designated courts at Westlands Park and two tennis and pickleball courts at Hoffman and Orchard Hills Parks. She noted there was little space to add amenities in the City as the existing parks are fully developed, and that pickleball courts were difficult to locate due to noise concerns. She stated the location was favorable due to the distance to residential properties. She stated the PTR Commission proposed the pickleball courts to City Council as part of the 2025 CIP.

Director Moore reviewed the proposed plan and noted the parking lot would be removed, four pickleball courts would be installed, and 36 parking spaces and four accessible spaces would be added. She stated an RTD drop-off and accessible spots would be included, as well as seating, shade, landscaping, and a drinking fountain. She explained open space would be retained for future opportunities and that native grasses and trees would be installed.

Director Moore noted a Neighborhood Input Meeting (NIM) was held in November 2025 and that 12 people were in attendance. She noted all in attendance were in support of the project, and that there were questions regarding a restroom and lighting. She stated no additional lighting would be installed and that only the parking lot would have lighting. She stated the park would be open from dawn to dusk. She noted emailed comments were received after the NIM regarding noise and that a noise study from the City of Centennial was provided to those residents. She explained per the study, noise abatement was required if a residential property was closer than 350 feet and noise-sensitive areas should be reviewed by an acoustical engineer from 500-600 feet. She noted Sundance Valley was 1000 feet from the pickleball courts and Caley townhomes were 600 feet from the pickleball courts. She noted the Yosemite St flyover and the parking garage were between the courts and the townhomes.

Director Moore noted per the condition of the Planning and Zoning Commission approval, a site-

specific pickleball noise study was conducted by Wave Engineering. She noted pickleball was considered a periodic, impulsive, or shrill noise, and that the noise allowance was 55dba before being considered a public nuisance. She noted the closest commercial property was 300 feet from the proposed pickleball courts. She noted the study anticipated 58dba at the closest corner of the Sundance Valley neighborhood and stated the noise wall surrounding the neighborhood was not considered in the study. She noted the ambient noise at the same corner was 65dba.

Director Moore stated a likely noise mitigation option was a mass-loaded vinyl curtain that could be added to the perimeter fencing of the courts. She noted the vinyl could be added to the chain link fence and would reduce the noise by 10-12dba. She noted no noise complaints had been received for the pickleball courts at Westlands Park. She stated the courts were constructed in 2020, that windscreens were installed 3-4 years later, and that no complaints had been received regarding the windscreens. She noted additional trees could be added for screening.

Council Questions/Responses:
Mayor Pro Tem Barnacle asked how much the windscreen would cost. Director Moore noted the cost for installing vinyl curtains on the north and east fences would be approximately $30,000.

Mayor Pro Tem Barnacle asked for additional clarification regarding the windscreens. Director Moore noted windscreens were somewhat see-through, but the vinyl curtains were more solid. She noted the vinyl would be installed on the two sides without protection from a building or embankment.

Councilmember Wiesner asked for clarification regarding graffiti in the area. Director Moore noted there was not much graffiti in the area. She noted the curtains did not have to be installed initially and could be installed later as mitigation if the noise was an issue.

Councilmember Doyle asked for clarification regarding water. Director Moore noted two taps would be purchased, one for irrigation and one for the drinking fountain.

Councilmember Doyle asked if the taps could be repurposed for a restroom. Director Moore stated the domestic tap could be repurposed.

Councilmember Johnston asked if the vinyl curtains were included in the proposal. Director Moore stated they would have to be added.

Public Comment:
Suzanna Morrow, Sundance Valley resident, noted her home was approximately 1100 feet from the proposed pickleball courts. She stated she would like the Council to make noise mitigation a condition of approval and asked that the City design and budget for the noise mitigation during the hearing. She asked that a noise study be conducted after the courts were constructed and further noise abatement be provided if the noise levels exceed the state regulations. She noted her husband has a PTSD disability and that the noise would impact him greatly.

Steve Emerson, Bramante neighborhood resident, noted he worked in the office building across Yosemite St. from the subject property. He noted he was in support of the project as the parking lot was in bad shape and that the bus transit was an unwelcome element. He noted the highway would mask the pickleball noise.

Jenny Sullivan, Bramante neighborhood resident, noted she was the manager for Colorado Athletic

Club and that she understood the noise concerns. She noted she experienced no noise issues at Colorado Athletic Club while it was open. She noted she does not currently feel safe in the area and that she would feel more comfortable with the pickleball courts.

Bette Todd, Greenwood Village Resident, noted she was in favor of the proposal. She noted she was concerned that people who traverse the area would conduct nighttime activities that were screened from public view. She noted the courts could be locked at night.

Director Moore noted the park would be open from dawn to dusk and would be patrolled by the police department. She noted the south and west fences would be unscreened and the courts would be visible from the parking lot.

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Ann Nelson; to close the public hearing. The motion was carried by unanimous voice vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

ii. PZ-26-00004; Special Use Permit; Greenwood Village Open Space at the Arapahoe Station (Barnacle) (2026-68)

Councilmember Wieser noted he was in favor of the project as proposed and that he was not opposed to installing the screen on the two corners.

Mayor Pro Tem Barnacle noted the sound mitigation could be considered during CIP discussions.

Councilmember Johnston noted she was in favor of the project and was sensitive to the potential noise issues.

Councilmember Doyle asked for clarification regarding the noise study. Director Moore noted per the noise study, the sound would be three decibels higher than the nuisance consideration. She noted that the study noted ambient noise should be considered, but that it did not mention how ambient noise would impact the results.

Mayor Lantz noted the Planning and Zoning Commission was a recommending body and that Council could make their own decision. He noted noise mitigation did not need to be a condition of approval and that it could be added at a later date.

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Donna Johnston; to approve PZ-26-00004; Special Use Permit at 8880 E Caley Ave, Greenwood Village Open Space at Arapahoe Station as outlined in the staff report. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

i. PZ-26-00002; Site Development Plan Amendment; Greenwood Village Open Space at Arapahoe Station (Johnston) (2026-67)

A motion was made by Councilmember Donna Johnston, seconded by Mayor Pro Tem Libby Barnacle; to approve PZ-26-00004; Site Development Plan Amendment at 8880 E Caley Ave, Greenwood Village Open Space at Arapahoe Station as outlined in the staff report. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

iii. PZ-26-00005; Minor Subdivision - Final Plat; Greenwood Village Open Space at Arapahoe Station (Johnston) (2026-69)

Planning Manager Derek Stertz explained the different applications require a vote from City Council. He noted the SUP was to allow for the recreation use, the SDP was for the site configuration, and the Final Plat was for the approval of the plat. He noted the Resolution was for the partial release of the water easement.

A motion was made by Councilmember Donna Johnston, seconded by Mayor Pro Tem Libby Barnacle; to approve PZ-26-00005; Minor Subdivision - Final Plat at 8880 E Caley Ave, Greenwood Village Open Space at Arapahoe Station as outlined in the staff report. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

iv. Resolution No. 28-26: A Resolution Accepting a Partial Release of Easement and Authorizing the Mayor to Execute an Affidavit Associated Therewith (Barnacle) (2026-70)

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Donna Johnston; to approve Resolution No. 28-26: A Resolution Accepting a Partial Release of Easement and Authorizing the Mayor to Execute an Affidavit Associated Therewith. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

8. ORDINANCES AND RESOLUTIONS

A. Ordinance No. 08-26: An Emergency Ordinance Establishing A Parking Permit District For The Village On The Lake Neighborhood (Stahl) (2026-230)

Interim City Attorney Guckenberger explained emergency ordinances were allowed by the City's charter and in municipal law. She noted an emergency ordinance allowed city councils to enact

provisions on a short-term basis to address urgent matters that would affect the health, safety, and welfare of the public. She noted emergency ordinances expire automatically on the 180th day per the City charter and that they could be made more permanent by a separate action.

Police Chief Dave Oliver noted the majority of the on-campus parking for the Cherry Creek School District (CCSD) was unavailable due to ongoing construction. He noted there were established parking districts in the southern half of CCVN and the Cherry Creek South neighborhoods. He noted Village on the Lake was across the street from the CCSD campus and that it was reasonable to assume students looking for parking would use the neighborhood. He reviewed potential issues if students were to park in the neighborhood including inexperienced drivers who may not be respectful of traffic laws and neighborhood parking, increased pedestrian traffic, restricted access for emergency vehicles, littering, noise issues including car stereos, and pollution.

Mayor Lantz verified with Interim City Attorney Guckenberger that the ordinance could be rescinded at any time, with no specific requirements.

Councilmember Mezger asked for clarification regarding the process of establishing the parking district. Interim City Attorney Guckenberger noted the ordinance would go into immediate effect and could be immediately rescinded. City Manager John Jackson noted temporary parking permits would be issued to the homes in the affected neighborhoods. He noted the code enforcement officers would handle enforcement and education. Chief Oliver noted there was an existing process for issuing permanent parking passes. He noted police records staff would stay late to accommodate parking pass issuance, and temporary parking passes would be mailed to affected residents. He noted the timing did not allow for the regular ordinance process as the school year would begin in the next few weeks.

Councilmember Nelson asked for clarification regarding parking for service providers, such as landscapers. Chief Oliver noted service vehicles were generally well marked, and the officers would knock on the door of the residence prior to issuing a ticket.

Councilmember Johnston asked if the cost of establishing the parking district would be tracked. Chief Oliver noted the two code officers under the police department would partner with the code enforcement officers under Community Development for education and enforcement.

Councilmember Mezger asked for clarification regarding signage. She noted there has been opposition to signage in front of every house and that since public input was bypassed, there may be resistance from homeowners. She stated CCSD had been encouraging students to ride the bus and that she did not believe the situation was enough for an emergency ordinance.

Councilmember Stahl asked for clarification regarding signage. Public Works Engineering Manager Justin Williams noted the signs would state parking would be by permit only from 8:00 AM to 4:00 PM, Monday through Friday, when school was in session. He noted the signs would be placed every 150 to 300 feet on the roadways. Interim City Attorney Guckenberger noted the City would be able to communicate more effectively with signage in the neighborhoods as opposed to signage at the entrances only.

Councilmember Stahl asked if there would be an alternative to coming to City Hall for a parking permit and if the homeowner association (HOA) boards could issue visitor passes. He noted the opportunity for public input would have been appreciated. City Manager Jackson acknowledged the

burden the process would put on the residents. He noted an electronic process, or a process in which staff would go to the neighborhoods to hand out permits, could be considered.

Councilmember Stahl asked for clarification regarding the resale of parking permits. City Manager Jackson noted there were ways to mitigate parking issues.

Councilmember Doyle asked if the issue would be resolved in 180 days. Mayor Lantz noted Council would have a discussion at a later date to see if the program should continue. Mayor Pro Tem Barnacle noted the existing CCVN parking district was created due to the construction of Village Greens Park.

Councilmember Wiesner expressed his disdain with the CCSD regarding the construction project and their lack of communication. He noted their lack of working with their neighbors would limit his willingness to work with them.

A motion was made by Councilmember Thomas Stahl, seconded by Mayor Pro Tem Libby Barnacle; to adopt Ordinance No. 08-26: An Emergency Ordinance Establishing a Parking Permit District for the Village on the Lake Neighborhood. He waived reading in full and moved to publish, in full, on the City's website. The motion was carried by majority roll call vote.

Yes: *7 - Libby Barnacle, Jay Schneiderman, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*

No: *1 - Katrin Mezger*

Recused: *0 - None*

B. Ordinance No. 09-26: An Emergency Ordinance Establishing A Parking Permit District For A Portion Of The Cherry Creek Village North Neighborhood (Barnacle) (2026-231)

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Ann Nelson; to adopt Ordinance No. 09-26: An Emergency Ordinance Establishing a Parking Permit District for a Portion of the Cherry Creek Village North Neighborhood. She waived reading in full and moved to publish, in full, on the City's website. The motion was carried by majority roll call vote.

Yes: *7 - Libby Barnacle, Jay Schneiderman, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*

No: *1 - Katrin Mezger*

Recused: *0 - None*

9. NEW BUSINESS

A. Motion to Authorize the Mayor to Sign an Intergovernmental Agreement with Cherry Creek School District for School Resource Officers (Mezger) (2026-125)

Chief Oliver explained the intergovernmental agreement (IGA) would provide school resource officers (SRO) to Greenwood Village CCSD campuses. He noted the agreement renewed annually and had been in place for at least eight years. He noted per the IGA, CCSD would provide half the cost for the program, including salary, benefits, vehicle usage, equipment, and training. He noted there was no change from previous years.

Mayor Lantz noted CCSD paid for half the program during the school term. Chief Oliver noted the

cost was calculated across the 173-day school year.

Councilmember Wiesner asked for the cost of the program. Chief Oliver noted the cost was just under $500,000.

Councilmember Wiesner asked if the City provided any subsidized security for non-CCSD schools in Greenwood Village. Chief Oliver noted the City did not and that Aspen Academy had hired private security. He noted Aspen Academy previously hired Greenwood Village officers for security.

Councilmember Wiesner asked for clarification regarding the length of time Greenwood Village Police had been providing SROs. City Manager Jackson noted the agreement had been in place for at least 10 years and prior to the agreement CCSD did not pay anything.

Councilmember Nelson asked why other schools did not have similar agreements. Mayor Lantz noted Aspen Academy was a private institution. City Manager Jackson noted a full-time SRO was not the solution for Aspen Academy, per discussions between Aspen Academy and the City. He noted there was a substation at Aspen Academy and that officers were on campus and interacted with students. He noted the City of Littleton provides SROs for Littleton High School.

A motion was made by Councilmember Katrin Mezger, seconded by Councilmember Thomas Stahl; to authorize the Mayor to Sign an Intergovernmental Agreement with Cherry Creek School District for School Resource Officers. The motion was carried by majority roll call vote.

Yes: *6 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Donna Johnston, Thomas Stahl, Bob Doyle*
No: *2 - Paul Wiesner, Ann Nelson*
Recused: *0 - None*

B. Motion To Authorize The Mayor To Execute An Intergovernmental Agreement With Arapahoe County For Carson Park Pavilion Construction Grant Funding (Doyle) (2026-220)

Director Moore noted the IGA formalized an agreement with Arapahoe County Open Spaces to provide a grant for $600,000 for the pavilion at Carson Park.

A motion was made by Councilmember Bob Doyle, seconded by Councilmember Jay Schneiderman; to authorize the Mayor to Execute an Intergovernmental Agreement with Arapahoe County for Carson Park Pavilion Construction Grant Funding. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

C. Motion To Authorize The Mayor To Execute An Intergovernmental Agreement With Arapahoe County For The Arapahoe Station Pickleball Courts Grant Funding (Johnston) (2026-221)

Director Moore noted the grant would provide a third of the funding for the pickleball project in the amount of $600,000 from Arapahoe County Open Spaces. She noted SPIMD would cover another

third of the project and the City would fund the remainder.

A motion was made by Councilmember Donna Johnston, seconded by Mayor Pro Tem Libby Barnacle; to Authorize the Mayor to Execute an Intergovernmental Agreement with Arapahoe County for the Arapahoe Station Pickleball Courts Grant Funding. The motion was carried by unanimous roll call vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

10. REPORTS OF OFFICERS/BOARDS/COMMITTEES

A. CITY COUNCIL

Councilmember Nelson praised Director Moore for her ability to find funding for projects.

Councilmember Stahl commended Director Moore for Greenwood Village Days. Director Moore noted Parks staff worked a very long day to make the event happen.

Councilmember Johnston praised Public Works for the paving project in Sundance Hills.

B. MAYOR

There were no reports from the Mayor.

C. STAFF

There were no reports from staff.

D. CITY MANAGER

There were no reports from the City Manager.

11. COMMUNICATIONS

There were no communications.

12. Executive Session

A. Motion to Hold an Executive Session to Receive Legal Advice on Specific Legal Questions, Pursuant to C.R.S. §24-6-402(4)(b) and to Determine Positions Relative to Matters that may be Subject to Negotiations, Develop a Strategy for Negotiations, and Instruct Negotiators, Pursuant to C.R.S. §24-6-402(4)(e), Regarding *Bharucha et al. v. City of Greenwood Village et al., C*ase No. 1:24-cv-02135

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Donna Johnston; to Hold an Executive Session to Receive Legal Advice on Specific Legal Questions, Pursuant to C.R.S. §24-6-402(4)(b) and to Determine Positions Relative to Matters that May be Subject to Negotiations, Develop a Strategy for Negotiations, and Instruct Negotiators, Pursuant to C.R.S. §24-6-402(4)(e), regarding Bharucha et al. v. City of Greenwood Village et al., Case No. 1:24-cv-02135. The motion was carried by unanimous voice vote

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*

No: *0 - None*
Recused: *0 - None*

City Council convened into Executive Session at 9:02 PM.

City Council reconvened into the regular meeting at 10:02 PM.

A motion was made by Mayor Pro Tem Libby Barnacle, seconded by Councilmember Ann Nelson; to adjourn from Executive Session. The motion was carried by unanimous voice vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

13. ADJOURNMENT

A motion was made by Councilmember Paul Wiesner, seconded by Councilmember Donna Johnston; to adjourn. The motion was carried by unanimous voice vote.

Yes: *8 - Libby Barnacle, Jay Schneiderman, Katrin Mezger, Paul Wiesner, Donna Johnston, Thomas Stahl, Bob Doyle, Ann Nelson*
No: *0 - None*
Recused: *0 - None*

There being no further business, the meeting was adjourned at 10:02 PM.

George E. Lantz
Mayor

Attest:

Susan M. Ortiz, MMC
City Clerk

Outlook

Comments on the Proposed Pickleball Courts

From Setsu Kawada [redacted]
Date Sat 6/27/2026 4:22 PM
To Planning Staff <planningstaff@greenwoodvillage.com>

> **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear City Officials,

I am writing to express my opposition to the proposed plan to build pickleball courts by converting part of the station parking lot.

My concerns are as follows:

First, The proposed location is immediately adjacent to the highway, where traffic noise and poor air quality create an environment that is not suitable for healthy outdoor recreation.

Second, the station parking lot is not only used by commuters but also serves as parking for visitors attending outdoor concerts held nearby. Reducing the number of parking spaces would make the area less convenient for many people and could create parking shortages during events. I do not believe that replacing valuable parking space with sports courts is the best use of this public property.

Third, while pickleball is currently very popular, dedicating valuable public space to a single sport may appear to favor one group of residents over others. Public facilities should serve the broader community and remain flexible enough to meet changing recreational needs.

Instead, I would like to suggest two alternative options:

1. Consider building the pickleball courts in Village Green Park, where there is more space and a much better environment for outdoor recreation.

2. Alternatively, the City could modify the existing tennis courts so they can also accommodate pickleball. This would be a more cost-effective and flexible solution. If interest in pickleball declines in the future, the courts could easily continue to serve their original purpose.

I appreciate the City's efforts to improve recreational opportunities for residents. However, I respectfully ask you to reconsider the proposed location and explore alternatives that better serve the entire community.

Thank you for considering my comments.

Sincerely,

Setsu Kawada
Greenwood Village, CO 80111

Outlook

Written Comment on Case No. PZ-26-00002 and No. PZ-26-00004 (Proposed Pickleball Courts)

From Suzanna M. [redacted]
Date Tue 7/7/2026 3:01 PM
To Planning Staff <planningstaff@greenwoodvillage.com>

> **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Members of the Planning and Zoning Commission:

My name is Suzanna Morrow and I reside at [redacted] Greenwood Village, in the Sundance Valley neighborhood. My home is approximately 1,100 feet from the proposed pickleball courts.

I am not opposed to pickleball or to recreation in Greenwood Village, but I am concerned that no site-specific, certified acoustic engineering study has been performed for the proposed site.

Sec. 16-2-50(e) and Section 16-2-70(e) require the Commission to consider, among other things, whether the proposed site and special use "is compatible with surrounding land uses" and "adequately mitigates any adverse impacts it causes, including without limitation adverse impacts on ... noise [and] property values." I do not believe there is a basis to make the noise finding because no site-specific analysis of this location has been completed.

When I asked the Parks, Trails and Recreation Department in November 2025 whether a sound study had been done for this site, I was told it had not. The Department instead emailed me a copy of a July 2023 report (attached) prepared by Spendiarian & Willis Acoustics & Noise Control LLC for the City of Centennial.

I have reviewed the report and it is a general methodology and best practices guide, not a noise impact assessment of the proposed site. Section 5.7.1 of the report (Noise Impact Assessments) states that a noise impact assessment should be prepared by a qualified acoustical engineer, and that where an assessment relies on measurements taken at a different location, differences in propagation paths that may affect the noise impact must be accounted for. No such site-specific assessment has been prepared for this location, so the very document the Department relies on calls for work that has not been done.

The Centennial report also highlights several considerations regarding the proposed site:

First, on the adjacent Interstate 25 (I-25): the report (section 9.4.2 Roadways) concludes that roadways, including even busy highways, generally do not mask pickleball noise, because traffic noise lacks sufficient energy in the 1,000 Hz octave band. It cites a neighborhood park (Glenhaven Park, California) located next to an interstate as an example of how placing pickleball courts in neighborhoods located

close to main arteries will not prevent noise issues due to the sound from the roadway.

Second, on the surrounding structures: the report (section 7.4 Reflective Surfaces) explains that reflective surfaces near courts, including building facades, can redirect sound in undesirable directions and can add as much as 3 decibels to the level reaching a receiver. This proposed site is ringed by two five-story concrete parking structures and the ten-story Spectrum office building. These are the kinds of surfaces the report describes and those structures cannot be assumed to shield nearby homes; they may instead redirect sound toward them.

I recognize that the report finds complaints uncommon beyond roughly 500 to 600 feet at typical sites, as sites will usually have topographical features that hinder sound propagation and/or structures that block or scatter sound. But it also identifies reflective surfaces and reflective ground (the parking lot that will be surrounding the proposed courts) as conditions that extend the distance at which impacts occur and that call for a detailed, site-specific propagation study. This proposed site has both reflective surfaces and reflective ground.

Accordingly, I respectfully request that the Commission:

1. Continue these cases until the applicant provides a site-specific noise impact assessment of this location, prepared by a qualified acoustical engineer using the methodology described in the report the applicant itself cited (ISO 9613 and ANSI S12.62 as the basic methodology); and

2. If the Commission nonetheless proceeds, condition any approval on a written noise abatement plan consistent with that report, including sound barriers meeting the report's performance requirements, court orientation that directs play away from residential areas, enforceable equipment and hours-of-operation limits, and post-construction noise monitoring with a defined remediation trigger requiring additional mitigation or reduced play if measured levels at nearby homes exceed an agreed threshold.

Thank you for considering my comment and including it in the record.

Respectfully,
Suzanna Morrow
[redacted], Greenwood Village

From: [redacted]
To: City Clerk
Subject: Pickleball Courts
Date: Friday, July 24, 2026 4:57:33 PM

> **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I live in Sundance Valley, near the proposed pickleball courts at the RTD parking lot on Caley Ave.
I'm asking the City Council to require an independent, site-specific sound study, completed and made public, before construction is approved.
Thank you

Sam & Manizheh Sharif
[redacted]

From: [redacted]
To: City Clerk
Subject: Sound Study for RTD Parking lot
Date: Thursday, July 23, 2026 1:34:16 PM
Importance: High

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello. I live in Sundance Valley, near the proposed pickelball courts at the RTD parking lot on Caley Ave. I am very concerned about the potential noise from the courts as I am the one house closest to Yosemite which has the potential to be the most impacted by the sound. I am asking the City Council to require an independent, site-specific sound study to be completed and made public before construction is approved. Also, to my knowledge, the Sundance Valley HOA did not approve anything as related to the construction of the pickelball courts. Please let me know if you have any questions. Thank you, Peter

Peter Schaub
[redacted]
Greenwood Village, CO 80111

From: [redacted]
To: City Clerk
Subject: Sound Study for RTD Parking lot
Date: Thursday, July 23, 2026 1:39:27 PM

> **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello. I live in Sundance Valley with Peter Schaub, near the proposed pickelball courts at the RTD parking lot on Caley Ave. I am also very concerned about the potential noise from the courts as I am the one house closest to Yosemite which has the potential to be the most impacted by the sound. I am asking the City Council to require an independent, site-specific sound study to be completed and made public before construction is approved. Also, to my knowledge, the Sundance Valley HOA did not approve anything as related to the construction of the pickelball courts. Please let me know if you have any questions. Thank you, Deborah

Deborah Schaub
[redacted]
Greenwood Village, CO 80111

From: [redacted]
To: City Clerk
Subject: Public Comment on Proposed Pickleball Courts
Date: Wednesday, July 22, 2026 9:57:35 AM

> **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I live in Sundance Valley, near the proposed pickleball courts at the RTD parking lot on Caley Ave.
I am asking the City Council to require an independent, site-specific sound study, completed and made public, before construction is approved.
Anna Harshell
[redacted]
Greenwood Village, CO 80111

From: [redacted]
To: City Clerk
Subject: Public Comment for the Record — Case Nos. PZ-26-00002, PZ-26-00004, PZ-26-00005 (Proposed Pickleball Courts)
Date: Thursday, July 16, 2026 8:14:13 AM
Attachments: Centennial-Pickleball-Noise-Assessment.pdf

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear City Clerk,

I am submitting the written comment below as public comment on Case Nos. PZ-26-00002, PZ-26-00004, and PZ-26-00005 (Site Development Plan, Special Use Permit, and Final Plat for proposed pickleball courts), which the Planning and Zoning Commission recommended for approval with condition at its July 7 hearing.

I respectfully request that this comment be entered into the official record for these cases and distributed to the Mayor and City Council in advance of their consideration of the application. A copy of the acoustic report referenced in my comment is attached.

I would be grateful if you can confirm receipt of this email.

Thank you for your assistance.

Suzanna Morrow
[redacted] Greenwood Village, CO 80111
[redacted]

--- Public comment follows ---

Dear Council Members,

My name is Suzanna Morrow, and I live at [redacted] in the Sundance Valley neighborhood, approximately 1,100 feet from the pickleball courts proposed in Case Nos. PZ-26-00002, PZ-26-00004, and PZ-26-00005. As a resident and voter in Greenwood Village, I am writing before your consideration of this application.

In short, I am asking the Council to ensure a site-specific, independent acoustic study is completed before the pickleball courts are built, not after.

We chose Greenwood Village, and Sundance Valley in particular, for its schools, green space, and quiet sense of community. After 20 years of service, my husband retired from the U.S. Army having completed 14 combat deployments throughout the Middle East and Africa, spanning more than seven years cumulatively. During those deployments, the sudden, sharp, repetitive sound of gunfire was constant, and it remains one of the most difficult sounds for him to be near today. The Department of Veterans Affairs has rated him 100% disabled due to severe, recurring, combat-related PTSD. The Centennial pickleball report that the applicant cited classifies pickleball's impulsive "pop" in the same category as small-arms gunfire (pg. 12). That unpredictable, gunfire-like sound is exactly what can trigger the startle response and hypervigilance associated with combat-related PTSD. For our household, the serenity of this neighborhood is a significant part of how my husband lives with his service-connected injury on a daily basis.

To be clear, I am not opposed to pickleball or to recreation in Greenwood Village. My concern is narrow, and it is one the Planning and Zoning Commission agreed with: no site-specific, independent acoustic study has been done for the proposed location. I attended the public hearing on July 7, and the Commission recommended approval on the condition that such a study be completed. I am grateful they recognized the gap, and I am now writing to ask you to make that condition meaningful.

A condition to "complete a site-specific sound study" does not specify when such a study should occur or what it controls. A study done after the courts are built cannot change anything, because the courts would already exist. I respectfully ask that you strengthen the condition in three ways:

1. Require that the study be completed and reviewed before final approval and before construction, so the results can actually inform whether and how the courts are built.

2. Because the applicant is a City department, please have the study performed by an independent acoustical engineer so the analysis is objective.

3. Please require that the study measure the noise using the impulsive-sound method that the applicant's Centennial pickleball report recommends, and set a clear noise limit at the

nearest homes. Commit, in advance, that if the study predicts noise exceeding the established limit, the City will install the required mitigation measures, and that if the limit still cannot be met, the project will not proceed as currently designed.

The surroundings at the proposed site are unlike other pickleball court locations within Greenwood Village. The proposed site borders Interstate 25, two five-story concrete parking structures, the ten-story Spectrum office building, and surrounding parking lots. The Centennial pickleball report that the applicant relied upon states that busy highways generally do not mask pickleball noise, and that large reflective surfaces like the ones surrounding the proposed site can redirect sound rather than block it. Only a site-specific study can tell City planners and residents what will actually happen at the proposed location.

I strongly believe that completing the study before construction begins is the fiscally responsible choice. The same report warns that inadequate noise planning leads to complaints, strained relations, legal action, costly retrofits, and in some cases, demolition costs. Getting it right before construction protects both the residents in the vicinity and the City's budget.

Thank you for your work on behalf of our community, and for considering my concerns. I plan to attend the August 3 City Council hearing, and I am glad to answer any questions.

Respectfully,
Suzanna Morrow
[redacted] Greenwood Village

Spendiarian & Willis Acoustics & Noise Control LLC
The Form and Function of Sound
(520) 623-6003 AcousticalNoise.com 4335 N Alvernon Way, Tucson, AZ 85718

Pickleball Noise Impact Assessment and Abatement Planning

Prepared for

City of Centennial
13133 E. Arapahoe Road
Centennial, Colorado 80112

Project Manager
Neil Marciniak

Lance Willis, PhD
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R. 0, July 11, 2023

Executive Summary

As pickleball grows in popularity across North America it has become necessary to define more accurate methods of assessing the noise impact of the sport on the surrounding community and plan effective strategies for integrating it into various recreational venues. The purpose of this document is to provide descriptions of measurement protocols appropriate for assessing short duration impulsive sound such as pickleball and paddle impacts, definitions of terms and acoustical metrics, and guidance for acoustical planning of new pickleball courts. Basic methodologies and best practices for community noise assessment, environmental acoustics measurements, and noise regulation documents are described.

The main concern for neighbors living close to pickleball courts is the popping sound produced by the paddle when it strikes the ball. This sound is narrowband, imparting a sensation of pitch, and very short in duration. For the latter reason, measurement techniques that involve averaging the sound pressure over time tend to underestimate the noise impact of the impulsive sound produced by the paddles. For this type of sound, the noise assessment methodology described in ANSI S12.9 Part 4 for the highly impulsive classification of sound, based on adjusted sound exposure level, is recommended as the most accurate means of assessing the community response to pickleball paddle impacts.

Planning open air pickleball courts begins with selecting an appropriate site that has sufficient setbacks to ensure an effective noise abatement plan will be possible. Most of the work of reducing sound levels at the neighbors is done by noise barriers in the form of sound walls or mass-loaded vinyl (MLV) fence covers. These are, however, limited in the amount of noise reduction they can provide making setbacks a critical component for success of the overall noise abatement plan. In order for a noise barrier to provide acoustical shielding it must be able to block the line of sight from the players on the pickleball courts to the surrounding noise sensitive areas including upper level windows and raised decks. These geometrical considerations, which will include topography as well as the neighboring structures themselves, may affect the minimum setbacks needed in a particular application.

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1. Introduction

1.1 Pickleball and Pickleball Sound

Pickleball is popular and rapidly growing paddle sport in the United States and Canada. It is played with a hard plastic ball similar to a wiffle ball. A pickleball court is 44 feet long and 20 feet wide compared to a tennis court at 78 feet long and 36 feet wide. A tennis court can be converted into four pickleball courts.



Figure 1.1. Pickleball Game

As the sport has grown so have concerns from those living near pickleball courts over noise. The impact of the pickleball on the paddle causes a sharp popping sound that can be heard hundreds

of feet from the courts. Unfortunately, poor siting and inadequate noise impact assessment and abatement at many locations have made open air pickleball courts controversial additions in many neighborhood settings. This document will provide guidance on noise impact assessment in general, how to accurately measure the sound produced by pickleball courts, site selection, and effective mitigation treatments.

1.2 Properties of Sound

Sound, for the purposes of the this document, is a small pressure disturbance in the atmosphere producing the sensation of hearing. It may be produced by the vibration of a surface or by the pulsation of an airstream such as a rotating fan blade or the human vocal cords. Sound propagates through the atmosphere as a compression wave with a speed that increases with the temperature of the air. The characteristics of a particular sound are described in terms of amplitude (loudness), frequency (pitch), and the change of amplitude and frequency with time (impulsiveness, modulation, onset rate, or rise time).

Noise is unwanted sound. This may be a subjective assessment or it may imply effects on health, well being, and speech communication. Community noise impact is assessed in terms of both annoyance and public safety.

1.3 Annoyance

The subjective aspect of noise is known as “annoyance.” Annoyance describes the quality of a sound that is perceived as objectionable. It differs from loudness, the perceived amplitude of a sound. Annoyance is often influenced by nonacoustic factors such as habituation or sensitization to the sound, involvement in activities that require concentration, attitudes towards sound sources and their operators, and the perceived necessity of the noise intrusions. For these reasons, reports of annoyance will have varying degrees of response bias.

Annoyance as a basis for determining acceptable noise levels can be traced to a paper by T. J. Schultz [Schultz, 1978] and the work of other researchers in the 1960's and 1970's. Schultz aggregated a group of social surveys regarding transportation noise in different cities and found that the results could be explained using a noise dosage relationship. This method has since been adopted by federal agencies tasked with regulating and evaluating road, rail, and air transportation noise.

Early research into the community impact of noise focused mainly on road traffic noise. As a result, other sound sources studied later were compared to traffic noise impact studies to determine their level noise impact. It was found that the sound pressure levels of sound sources having special characteristics such as impulsiveness and tonality did not correlate well with community questionnaires when directly compared to traffic sound pressure levels. The annoyance of these sources was often higher than the traffic noise for the same sound pressure level.

For this reason, the sound pressure levels of sound sources having these special characteristics are given an adjustment to compensate for the difference in noise impact. Part 4 of the ANSI S12.9 standard gives adjustments and measurement methodologies for a variety of sound

classifications and is used as the basis for the sound pressure level adjustments in this document.

1.4 Physiological Effects of Sound

While it is well known that high amplitude acoustical pressures can cause hearing impairment as well as other types injury to the body, lower amplitude sound can also have adverse long term physiological effects.

The World Health Organization recognizes that low level noise exposure has measurable health effects:

> Sound/noise is a psychosocial stressor that activates the sympathetic and endocrine system. Acute noise effects do not only occur at high sound levels in occupational settings, but also at relatively low environmental sound levels when, more importantly, intended activities such as concentration, relaxation or sleep are disturbed. [WHO, *Night Noise Guidelines,* p. 61]

The sympathetic nervous system is part of the autonomic nervous system and is involved in the body's fight or flight arousal response. Chronic activation of the sympathetic system leads to stress, fatigue, and anxiety.

In addition to nervous system activation, sleep disturbance from noise can involve difficulty in falling asleep as well as awakenings that occur during sleep. Frequent awakenings lead to sleep fragmentation. This disrupts the normal stages of sleep and may lead to further neurocognitive manifestations not limited to daytime tiredness, loss of concentration, morning confusion, irritability, anxiety, and depression. [WHO, *Night Noise Guidelines,* p. 48, 26]

Environmental noise also has implications for the cardiovascular system, metabolism, and homeostasis, the ability of the body to regulate itself.

> The auditory system is continuously analyzing acoustic information, which is filtered and interpreted by different cortical and subcortical brain structures. The limbic system, including the hippocampus and the amygdala, plays an important role in the emotional processing pathways. It has a close connection to the hypothalamus that controls the autonomic nervous system and the hormonal balance of the body. Laboratory studies found changes in blood flow, [blood pressure] and heart rate in reaction to noise stimuli as well as increases in the release of stress hormones... Acoustic stimulation may act as an unspecific stressor that arouses the autonomic nervous system and the endocrine system... The arousal of the sympathetic and endocrine system is associated with changes in the physiological functions and the metabolism of the organism, including [blood pressure], cardiac output, blood lipids (cholesterol, triglycerides, free fatty acids, phosphatides), carbohydrates (glucose), electrolytes (magnesium, calcium), blood clotting factors (thrombocyte, aggregation, blood viscosity, leukocyte count) and others. In the long term, functional changes and dysregulation may occur, thus increasing the risk of manifest diseases. [WHO, *Night Noise Guidelines,* p. 62-63]

The effects of stress can take many forms as seen above. Low level noise exposure that disturbs

sleep and concentration are known to produce a range of diagnosable illnesses and disorders.

1.5 Long Term and Short Term Community Impact

Community response to noise is different for short term and long term exposures. Short term impact refers to sounds that occur occasionally for a limited period of time, usually on an irregular basis, that are not part of the normal activities on a property. These types of sounds are generally addressed in the municipal code.

Zoning or land use regulations focus on long term community noise impact. These sounds occur regularly over a period of time measured in weeks, months, or years and are usually part of the normal activities on a property. In most cases, however, this would not include construction activities as these are temporary and not a normal part of the usage of the site.

Municipal code noise regulations and land use code noise regulations serve different purposes, but compliment each other to protect the community from excessive noise under differing circumstances. The land use code governs long term community noise exposure and is directed mainly to developers and commercial property owners. A municipal code applies to short term noise sources that generally do not operate on a regular basis. The table below shows a comparison of how these two codes work separately and together to provide a more complete community noise policy.

Table 1.1. Application of Short and Long Term Noise Regulation

	Municipal Code	Land Use Code
Assessment Type:	Short term noise impact	Long term noise impact
Directed Toward:	Residents, public gatherings, noise control officers, police officers	Developers, architects, acoustical engineers, planning & development dept., noise control officers
Purpose:	• Set threshold for offenses • Define penalties	• Guidance for site planning • Standards for noise abatement • Long term noise assessment
Main Area of Law:	Criminal	Civil
Findings:	• Made by officer on scene • Immediate determination of required action	• Assessment of all sound sources affecting surrounding properties by acoustical engineer • Analysis presented in detailed report
Expected Outcomes:	• Immediate action • Possible cease and desist order, citation, or arrest	• Comprehensive plan to bring the site into compliance • Installation of noise abatement treatments

2. Definitions

A-weighted sound level

A measurement of a sound level obtained using “A” frequency weighting. This weighting curve approximates the frequency response of human hearing for low to moderate sound pressure levels. The frequency weighting characteristics of the A-weighting filter are defined in ANSI S1.42 and ANSI S1.4.

Background sound

Sound from all existing sources near and far that may interfere with a sound pressure level measurement, not to include the sound source being evaluated.

Decibel (dB)

Ten times the logarithm to the base ten of the ratio of two quantities that are proportional to power. Quantities denoted as a “level” are decibel quantities, e.g. sound pressure level.

Ensemble sound

Sound from all normal existing sources near and far at a given location, including the sound source being evaluated. The union of all sound sources observable at the point of assessment.

Equivalent-continuous sound pressure level

The sound pressure level of a steady, continuous sound having the same sound energy as the time varying sound measured. Ten times the logarithm to the base ten of the time average over the period of a measurement of the square of the ratio of the sound pressure to the reference sound pressure of 20 micropascals expressed in decibels (dB).

Fast exponential time weighting

A lowpass filter for the purpose of averaging or smoothing a signal having a time constant of 0.125 seconds applied to the square of the sound pressure as specified in ANSI S1.4-1983.

Highly impulsive sound

Impulsive sound having very rapid onset rate or rise time typically resulting from impact processes or small arms gunfire including, but not limited to: metal hammering, wood hammering, drop hammering, pile driving, drop forging, pneumatic hammering, pickleball paddle and ball impacts, pavement breaking, metal impacts during rail-yard shunting operation, and riveting. ISO 1996 differentiates highly impulsive sound from regular impulsive sound by its noted level of intrusiveness.

Impulsive sound

Sound that is characterized by brief excursions of sound pressure, typically less than one second, whose peak pressure noticeably exceeds the background sound pressure.

Insertion loss (IL)

For a sound attenuator, noise barrier, or other noise abatement treatment, the decrease in sound level at a point of observation when the noise abatement treatment is inserted between the sound source and point of observation.

Noise

Any sound which annoys or disturbs humans or which causes or tends to cause an adverse effect on humans, domesticated animals, or livestock.

Noise abatement plan

A detailed plan demonstrating the mitigation measures to be taken in order to meet the requirements of this noise regulation. The noise abatement plan should describe the construction and locations of abatement treatments with the expected sound pressure levels at the receiving properties.

Noise impact assessment

An analysis performed by a qualified acoustical engineer which determines the potential noise impacts of a proposed use.

Peak sound pressure

The largest absolute value of the instantaneous sound pressure in pascals (Pa) in a stated frequency band during a specified time interval.

Regular impulsive sound

Impulsive sound that is not highly impulsive sound. This includes speech and music.

Sound exposure level (SEL)

Sound exposure level is a descriptor for characterizing the sound from individual acoustical events. The sound exposure is the time integral of the square of the sound pressure over a time interval equal to or greater than an acoustical event having units of pascal squared seconds. The sound exposure level is ten times the logarithm to the base ten of the ratio of the sound exposure to the product of the square of the reference sound pressure of 20 micropascals and the reference time of one second expressed in decibels (dB).

Sound level meter (SLM)

An instrument used to measure sound pressure levels meeting the Type 1 standards for accuracy in ANSI S1.4-1983. Integrating sound level meters shall comply with ANSI S1.43-1997 Type 1. If octave band or fractional octave band filters are used, they shall comply with ANSI S1.11-2004 Class 1.

Sound pressure

A disturbance or perturbation of the atmospheric pressure with respect to the mean barometric pressure producing the sensation of hearing or vibration measured in units of pascal (Pa).

Sound pressure level (SPL)

20 times the logarithm to the base 10 of the ratio of the sound pressure to the reference sound pressure of 20 micropascals (μPa) expressed in decibels (dB).

Tonal sound

Sound having one or more single frequency oscillations (pure tones) or that is confined to a narrow band of frequencies meeting the criteria for tonal prominence. See ANSI S12.9 Part 4 Annex C or ANSI S1.13 Annex A.

3. Noise Regulation Best Practices

3.1 Purpose

A community is made up of individuals, families, businesses, government, land owners, tenants, and other groups conducting activities for their livelihoods and enjoyment. The purpose of noise regulation is to find a balance between the legitimate activities of one group and the need for peace and quiet of another and to provide a clear process for resolving disputes when they arise. Zoning noise regulations provide design goals for developers in planning a site for a specific activity and serve as criteria for assessing the community noise impact of existing sites. Clear guidance with regard to acceptable sound pressure levels is essential for ensuring new projects conform to community standards and for evaluating the compliance of existing land uses.

Noise regulations should set clear and enforceable limits on community noise exposure that accurately reflect the community response to a variety of common sound sources. Overly strict regulations lead to arbitrary and selective enforcement while overly simplistic sound pressure level limits lead to the impact of certain classifications of sound being underestimated or ignored completely.

A well provisioned noise regulation will therefore provide a comprehensive and accurate methodology for assessing the most common classifications of sound that impact a community. This ensures that community noise impact will be evaluated in a way that is representative of the experience of living and working in the community and also protects property owners from unreasonable demands for mitigation. Most importantly the noise regulations should provide a definitive means for bringing noise disputes to resolution.

Key goals of noise regulation include:

- Provide quantitative design targets for noise abatement
- Provide protections for neighbors for all classifications of sound
- Protect property owners from drawn out noise disputes

Benefits of good noise regulation:

- Defined design requirements for developers
- Easier to get financing for projects due to lower risk and uncertainty
- Enforceable standards for compliance
- No cutting corners for contractor at risk

3.2 Measurement Procedures

Noise regulation generally takes the form of specifying maximum allowable A-weighted sound pressure levels at a given location. It is important that the locations specified for assessment and compliance be accessible such as at a property boundary.

Property boundary regulations protect the receiving property in its entirety against noise intrusions from adjacent sites. They also do not require entering private property in order to conduct acoustical testing. Performing acoustical measurements on the offending site creates bias due to the closer proximity to the sound source. Creating a noise abatement plan for new developments using noise assessment locations on the receiving property or inside a structure makes ensuring compliance more complicated. This will be discussed further in Section 3.3.

3.3 Common Ordinance Noise Descriptors

Noise ordinances often do not have objective limits on sound pressure level, but instead use subjective criteria to evaluate noise impact. This leads to a great deal of difficulty in resolving noise disputes since neither side can agree on what the terms mean.

One common term is “audible” or “plainly audible.” The problem with this criterion is that neighbors will always be audible at certain times depending on meteorological conditions, time of day, etc. This places everyone in violation of the noise code leading to arbitrary and selective enforcement. The threshold of audibility depends on the background noise level at a specific location and time. It is therefore unpredictable for site planning purposes and unrepeatable. There is also no practical way to monitor without setting up a surveillance style recording system and reviewing the playback to identify the source in question.

Another common ordinance criterion is “excessive, unnecessary or offensive noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area.” This regulation puts the arbiter in the position of deciding who is a reasonable person and what constitutes normal sensitivity. It turns an engineering problem of assessing noise impact based on decades on scientific field studies into a personal problem with no clear guidance on consistent application or how to reach resolution.

The Maricopa County, Arizona Code, section P-23, prohibits sounds that can be “heard from within closed residential structures.” This code is unenforceable because it is untestable. First, it requires access to a private home or place of business. The home or business must then be searched to verify that all doors and windows are closed. For a developer it is impossible to plan for or ensure compliance with such an ordinance because it is dependent on the construction of the receiving structures.

The subjective criteria described above may be difficult to enforce due to vagueness. Under the vagueness doctrine a statute may be void if it leads to arbitrary enforcement, does not provide fair notice of what is and is not punishable, or does not detail the procedures followed by officers or judges of the law.

3.4 Reducing Vagueness

The first step in reducing vagueness in noise regulation is to adopt a comprehensive, objective standard that addresses the most common sources of noise complaints, particularly impulsive and tonal sounds. There should be separate criteria for short and long term noise impacts. The zoning or land use code should focus on long term impacts while the municipal code addresses short term nuisance noise. The standards should not be overly restrictive such that common, everyday activities cause violations leading to arbitrary enforcement.

Sounds that are subjectively negative and disturbing for contextual reasons may require enumeration and specific restrictions in addition to sound pressure level limits. This may involve use limitation to certain times of day, complete prohibition, or other policies as deemed appropriate to the situation. A 5 to 10 dB adjustment for the enumerated sound sources may also be an effective means to address their greater noise impact.

3.5 Current Standards in Noise Regulation

3.5.1 European Union Directive 2002/49

The current, most up to date noise regulations with regard to scientific research have been enacted through European Union Directive 2002/49. This directive implements the noise assessment methodology in International Organization for Standardization standard ISO 1996. The American adaptation of ISO 1996 is ANSI S12.9 Part 4. These standards provide a comprehensive, objective method to assess the community noise impact of the most common sources of noise complaints including broadband continuous, impulsive, and tonal sounds.

In addition to the assessment methodology, ANSI S12.9 Part 5 provides guidance for acceptable day-night levels for a variety of land uses. In practice, setting sound pressure level limits for residential, commercial, and industrial zoning areas is usually sufficient.

4. Classification of Environmental Sound

The impact of noise on a community is not always simply determined by the amplitude of the sound. Sounds that vary rapidly with time or have certain frequency characteristics can have an additional impact. This chapter discusses the classification of sounds with special characteristics and how they relate to community noise response.

4.1 Amplitude Characteristics

4.1.1 Sound Pressure

The most fundamental characteristic of sound is its pressure amplitude measured in units of Pascals (Pa). Due to the extremely wide sensitivity range of human hearing, sound pressure is normally presented on a logarithmic scale known as the decibel scale and denoted by the symbol, dB.

It is important to note that the decibel is a scale or unit of level, not a unit of measure. A decibel quantity must therefore have a reference value to define it. Any acoustic quantity described as a "level" is by definition on a decibel scale. The sound pressure level (SPL) is the sound pressure in Pascals normalized to the standard acoustical reference pressure of $20 \cdot 10^{-6}$ Pascals as follows,

$$SPL = 20\log_{10}\left(\frac{p}{20\cdot 10^{-6}}\right)$$

where p is the sound pressure in Pascals and SPL is the sound pressure level in dB.

Figure 4.1 shows some typical sound pressure levels of common sound sources. Sound pressure levels in the blue range are very quiet and usually found only in special environments such as anechoic test chambers or remote forest areas. The green range is typical of quiet environments. For outdoor sound, most daytime noise regulations begin to apply in the yellow range at starting 55 dBA. The U.S Department of Housing and Urban Development will require a noise abatement before funding residential projects above 65 dBA. Above 75 dBA they will require a stringent approval process. At 90 dBA in the workplace, OSHA will require a hearing protection program for workers.

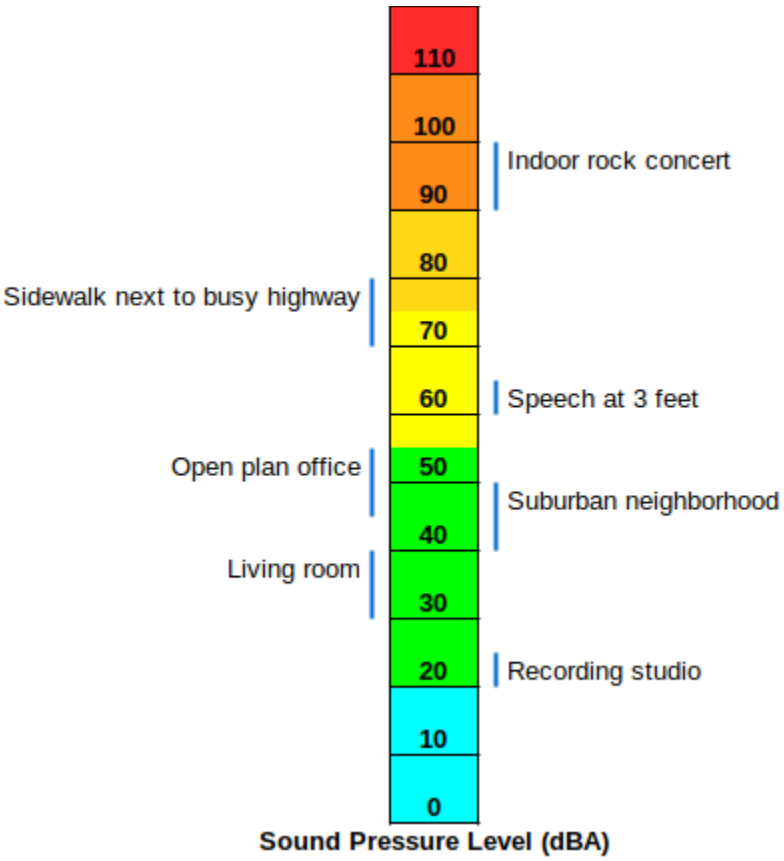


Figure 4.1. Sound Pressure Levels of Some Common Sources

4.1.2 Broadband Continuous Sound

A sound pressure level reading that does not change rapidly with time, does not contain tones, and covers a wide frequency range is said to be broadband with respect to frequency and continuous with respect to time. Broadband continuous sounds are characterized primarily by their sound pressure level. Common examples are fans, well pumps, and traffic noise.

Broadband continuous sounds are the simplest to quantify and are used as a point of comparison for other types of sound. That is, they provide a stable and relatively neutral basis for comparing tonal, impulsive, and other special sound classifications. The sound pressure level limits set in most noise regulations apply to this type of sound. Other sound classifications are adjusted so that their impact can be compared to a broadband continuous sound pressure level. This greatly simplifies noise regulations; however, it requires methodologies to be defined to accurately normalize sounds with special characteristics on the basis of community response to those characteristics.

4.2 Spectral Characteristics

The spectrum of an acoustic wave refers to its frequency content. The frequency range that a sound occupies may cover a wide band of frequencies, only a very narrow band, or even a single frequency in the case of a tone. Frequency is measured in units of Hertz (Hz) which are equivalent to one cycle per second.

4.2.1 Broadband

As described above, broadband means that the sound covers a broad spectrum of frequencies. This type of sound is in general the most neutral in terms of subjective sound quality. A broadband source with emphasis on the frequencies above 1,000 Hz may, however, be characterized as sharp or shrill.

4.2.2 Narrowband

Sounds occupying only a narrow portion of the auditory spectrum are said to be narrowband. Narrowband can be regarded as having a bandwidth less than 1/3 of an octave. This type of sound is sometimes encountered in impact processes where the impact excites a structural resonance, but the duration of the sound is very short due to damping in the structure. Narrowband sounds will require a sound pressure level adjustment due to their spectral characteristics in relation to broadband continuous sounds if they have tonal prominence (see Section 5.5.1 Assessing Tonal Sounds).

4.2.3 Tonal

Sounds containing pure tonal frequencies are usually produced by rotating machinery, but can also be electrically amplified signals such as those created by a backup alarm. Human hearing is sensitive to tones. Sounds having tonal prominence will require an adjustment in order to be compared to broadband continuous levels (see Section 5.5.1 Assessing Tonal Sounds).

4.2.4 Infrasound and Ultrasound

The nominal range of human hearing is 20 Hz to 20,000 Hz. Sounds outside this range are referred to as infrasound if below 20 Hz and ultrasound if above 20,000 Hz. Objectionable infrasound can sometimes be generated by wind turbines or industrial sound sources.

4.3 Temporal Characteristics

The way sound changes with time can have a significant influence on the noise impact. Accounting for these characteristics is important for accurately predicting community response.

4.3.1 Stationary or Continuous

Sound that changes slowly in amplitude with time is known as continuous or in statistical terms, stationary. In practice, sounds that do not meet the criteria for impulsive, rapid onset, or modulated are considered continuous and do not require any sound pressure level adjustment for

their temporal characteristics.

4.3.2 Impulsive

Impulsive sound is characterized by brief excursions of sound pressure whose peak pressure noticeably exceeds the continuous sound pressure. The duration of a single impulsive event is usually less than one second.

Impulsive sounds often create annoyance because they are similar to sounds that contain important information about our environment such as a sound outside the house or a door closing. We are sensitive to these types of sounds because they alert us to events occurring nearby that we may need to respond to. Continuous false alarms make it difficult to relax, concentrate, or sleep soundly without disturbance.

Many researchers have found that impulsive sound requires a level adjustment to properly account for the special characteristics and sensitivity to this class of sound [Buchta, Smoorenburg, Vos] and that listeners are able to differentiate between loudness and annoyance for sounds with temporal variance [Dittrich].

Impulsive sound is considered to have three subcategories: regular impulsive, highly impulsive, and high energy impulsive. Each of these categories has a different sound pressure level adjustment.

Highly Impulsive

Highly impulsive sound is characterized by a sudden onset and high degree of intrusiveness. This is common for impact processes and small arms fire. Highly impulsive sound in general has a duration too short to be accurately measured using maximum fast exponential time weighting. Impulses with a regular repetition rate greater than 20 Hertz may be perceived as tonal rather than impulsive and require a tonal level adjustment.

Research has indicated that highly impulsive sound should receive a 12 to 13 dB adjustment [Buchta, Smoorenburg]. ANSI S12.9 Part 4 and ISO 1996 Part 1 recommend a 12 dB adjustment.

High Energy Impulsive

High energy impulsive sound is usually produced by explosive sources where the equivalent mass of dynamite exceeds 25 grams. Common sources are blasting or artillery fire. Sonic booms not produced by small arms fire are also included in this subcategory. High energy impulsive sound differs from highly impulsive sound mainly in the amount of low frequency energy produced.

Regular Impulsive

Impulsive sound not categorized as high energy or highly impulsive is categorized as regular impulsive. ANSI S12.9 Part 4 and ISO 1996 Part 1 recommend a 5 dB adjustment for regular impulsive sound.

Modulated

Another type of transient sound is characterized by amplitude modulation. These sounds consist of a continuous series of impulsive events such as speech or music. Human hearing is most sensitive to amplitude modulation at a rate of about 4 Hz [Zwicker & Fastl, p. 177, 247-8]. This, not surprisingly, is the rate at which talkers typically produce syllables when speaking. Sounds having amplitude modulation near this rate may cause higher annoyance than continuous sounds at the same sound pressure level and should be treated as regular impulsive. When a large number of conversations is occurring at once such that the words of individual speakers cannot be understood, the noise impact may be more similar to a broadband continuous sound source.

4.3.3 Time of Occurrence

Sounds that occur at certain times may become more objectionable. The community noise impact of sounds that occur at night is higher than in the daytime. Community noise impact is also higher during times when people are normally at home than when they are normally away at work.

4.4 Ensemble and Background Sound Pressure Levels

Noise complaints usually involve a specific sound source. In any outdoor environment the source of interest will be among many background sources. Since it is in general not possible to remove the background sources, acoustical measurements must be performed in the presence of all active sound sources. “Ensemble sound pressure level” will refer to the sound produced by all sources at a given location including the source of interest. “Background sound pressure level” will refer to the sound present with the source of interest deactivated.

5. Measurement and Assessment of Environmental Sound

5.1 Quantification of Sound

5.1.1 Sound Pressure

The measurement of sound in regard to noise regulation focuses on the sound pressure level (SPL) as described in Section 4.1.1. The human ear is a pressure sensor; therefore, the SPL most directly relates to the community response to noise. The human sensation of hearing does not, however, work in the same way that a microphone does. Spectral and temporal characteristics of a sound source can have a significant effect on the community response to that source. Signal processing must be applied to the measured sound pressure in order to adjust the measurement to the actual sensitivities of human hearing.

5.1.2 Frequency Weighting

The first step in accurately representing the perceived loudness of sound is to simulate the frequency response of the human ear. Human hearing has lower sensitivity to sounds below 250 Hz and above 8,000 Hz as seen in Figure 5.1 [ISO 226]. Hearing sensitivity as a function of frequency is, however, also a function of amplitude. Different frequency weighting filters must therefore be used for different amplitude ranges. Figure 5.2 illustrates the A and C frequency weighting curves [ANSI S1.4] that simulate the equal loudness contours of human hearing with respect a 1,000 Hz tone at sound pressure levels of 40 and 100 dB respectively. Noise regulations generally specify the A-weighted sound pressure level since this curve most closely matches the target noise level goal for broadband sound sources.

A-weighted sound pressure levels are commonly expressed as dBA, dB(A), or L_A.

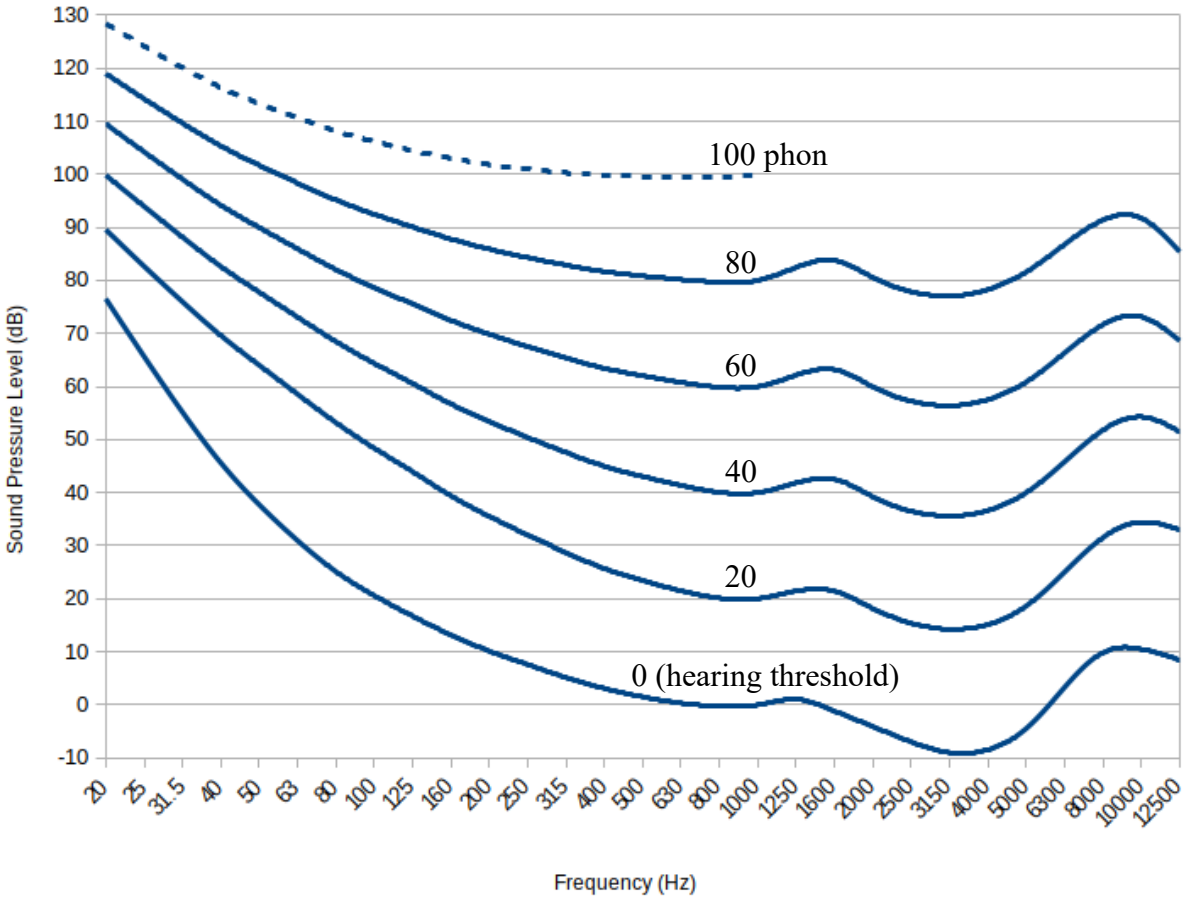


Figure 5.1. ISO 226 Equal Loudness Contours

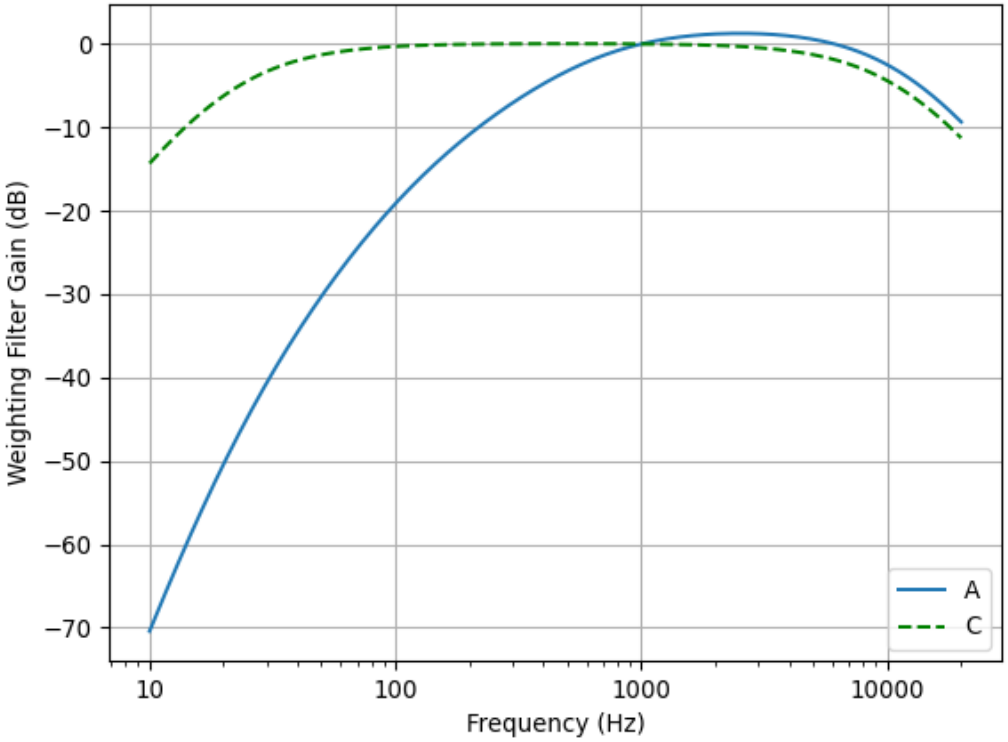


Figure 5.2. ANSI S1.4-2014 Frequency Weighting Curves

5.1.3 Equivalent-continuous Sound Pressure Level

The equivalent-continuous sound pressure level is the principal acoustical quantity measured for long term noise impact assessment. This is a root-mean-squared average of the sound pressure over a period of time expressed as a sound pressure level. Equivalent sound pressure levels may represent the average level over a period of minutes, an hour, or some other interval.

The A-weighted equivalent sound pressure level is represented as LA_{eq}. The equivalent-continuous sound pressure level does not use exponential time weighting (see below).

5.1.4 Day Night Level

A variation of the A-weighted equivalent sound pressure level is the day night level (DNL or L_{dn}). This metric incorporates the increased sensitivity to noise at night by adding a 10 dBA adjustment to sound occurring between 10:00 pm and 7:00 am. DNL is the most common metric used for transportation noise and is often applied to other broadband continuous sound sources.

5.1.5 Percentiles

To gain more insight into the noise environment during a long term measurement, some statistical quantities may be employed. The quantities LA_{10} and LA_{90} represent the A-weighted sound pressure level exceeded during 10% and 90% of the time of the measurement. LA_{90} is often used as an indication of the minimum background noise level without the presence of single noise events. LA_{10} indicates the highest sustained levels.

5.1.6 Sound Exposure Level

The sound exposure level (SEL) is used to quantify single noise events. It is particularly useful when the duration of an impulsive sound is too short to be accurately measured with an equivalent-continuous or exponential time weighted sound pressure level measurement. The equivalent-continuous level represents the mean squared average sound pressure. It does not account for instantaneous peak pressures. Impulses with short durations tend to get averaged out although the peak pressure may be significant. This can sometimes lead to the mistaken conclusion that the impulse has no greater noise impact than the background noise.

The sound exposure level also allows single noise events to be extracted from the measurement so that adjustments for special characteristics can be applied to more accurately represent the community response.

5.1.7 Peak Sound Pressure Level

For impulsive sounds with rapid onset, the instantaneous peak sound pressure level may be important. This metric may be used to supplement the sound exposure level for highly impulsive noise events that do not occur frequently enough to accumulate a substantial amount of sound energy, but nevertheless do present a significant noise impact due to their high peak pressure levels.

It should be noted that peak sound pressure level alone does not necessarily differentiate between intrusive highly impulsive and regular impulsive sounds. Different impulsive sound sources with the same peak sound pressure may have different noise impacts. Noise impact assessment of impulsive sound is often multidimensional involving onset rate, frequency range, and impulse duration.

5.2 Acoustical Instrumentation

5.2.1 The Sound Level Meter

In the regulation of community noise, a sound level meter (SLM) meeting prescribed standards for accuracy and conformity is used. The meter consists of a microphone and a signal processing unit that performs frequency weighting (usually A and C) and time weighting functions. The sound pressure level is displayed on the meter. An SLM that can log sound pressure levels and compute an equivalent-continuous level is called an integrating SLM. Modern SLMs incorporate digital signal processing capable of logging many acoustical metrics at the same time and can save simultaneous calibrated audio recordings for source confirmation and further analysis.

Most professional acousticians use, and many noise regulations require, a meter meeting the ANSI S1.4 Type 1 standard. This is the highest accuracy used for field work. Type 2 meters meet a lower standard of accuracy and are allowed by OSHA and some municipal codes.

5.2.2 Exponential Time Weighting

When taking sound pressure level measurements in the field, the reading on the meter can fluctuate rapidly for some sound sources. Exponential time weighting is a method of stabilizing the reading by applying a smoothing filter to the sound pressure envelop. Professional sound level meters will typically have three exponential time weighting settings: fast, slow, and impulse. The slow setting has time constant of 1 second. The fast setting time constant is 0.125 seconds (1/8 of a second). For most measurements the fast setting is preferred with the exception of impulsive sounds with a rapid onset rate.

Impulse time weighting uses a 0.035 second time constant on the rise of the sound pressure envelop with a peak hold having a 1.5 second time constant on the decay. The purpose of this setting is to allow a faster response on the rise of the signal to reduce the attenuation of the maximum pressure of the impulse, but have a slow decay to hold the reading on the meter display so it can be read and recorded. This time weighting is, however, still much slower than the impulse produced by typical highly impulsive sound source such as a pickleball paddle impact.

5.2.3 Integrating Sound Level Meters

Integrating SLMs integrate the sound pressure over the time period of a measurement in order to calculate the equivalent-continuous sound pressure level (LAeq). An integrating meter is required for noise regulations that specify metrics based on equivalent-continuous sound pressure level such as the day night level (DNL) or hourly sound pressure level.

5.2.4 Frequency Band Analysis

Some sound level meters include filters for obtaining octave band and fractional octave band sound pressure levels. Frequency band data is needed for designing sound walls and other noise abatement treatments. Unweighted octave band sound pressure levels may also be used to assess low frequency sound in regard to acoustically induced vibration caused by air handling units or subwoofers.

5.2.5 Calibration

The calibration of the sound level meter should be recertified by a qualified, independent metrology laboratory at intervals recommended by the manufacturer of the meter, usually one year. The sound level meter shall be used as provided in the manufacturer’s instructions.

It is standard practice when carrying out sound pressure level measurements to place a calibration device recommended by the meter manufacturer over the microphone before and after testing to verify that the sensitivity of the microphone has not changed and that the equipment has not been damaged prior to or during testing. The field calibrator should also be sent to a

qualified metrology laboratory to have the calibration certified at intervals specified by the equipment manufacturer. This period is usually one year.

5.3 Calculation Methods

5.3.1 Decibel Addition

When working with multiple sound sources, it may be necessary to understand how each individual source contributes to the total sound pressure level. Decibel levels do not add arithmetically, but must be combined logarithmically. Figure 5.3 shows a chart for adding two levels. First, calculate the difference in the levels. Next, find the level difference on the horizontal axis of Figure 5.3 and find the corresponding level addition of the vertical axis. Add this number to the highest of the two levels. For example, to add two levels, 50 and 56 dB, together, find the difference, 6 dB, on the chart. The addition is 1 dB. Therefore, the decibel sum of 50 and 56 dB is 57 dB. If the level difference is greater than 10 dB, the contribution of the lower level source is negligible.

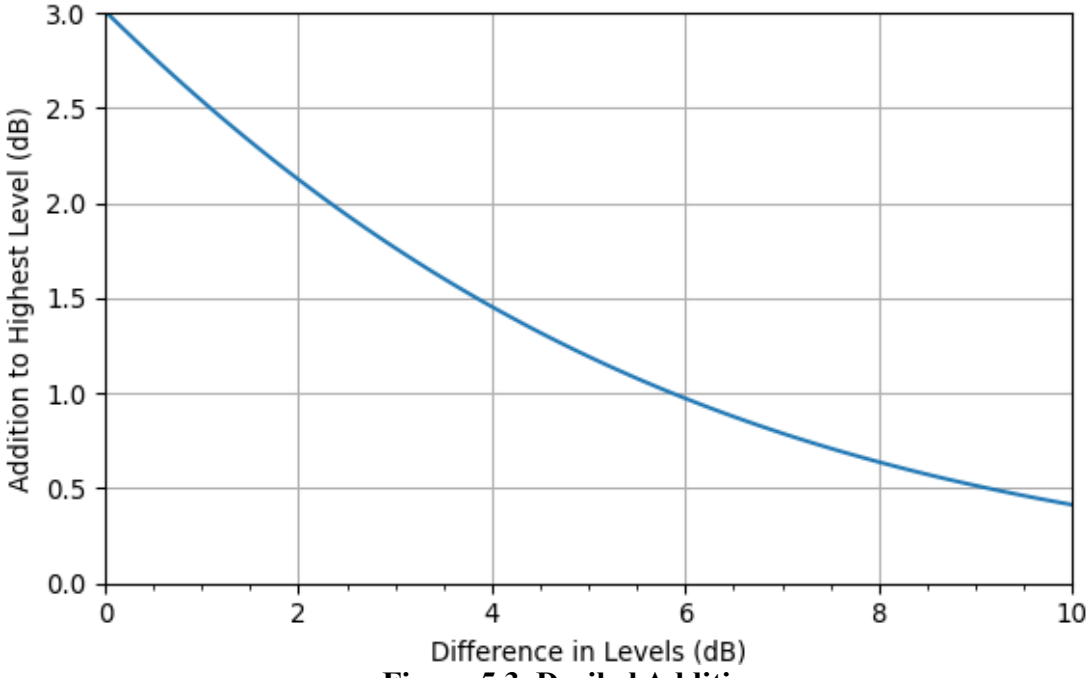


Figure 5.3. Decibel Addition

Equation 5.1 gives the direct calculation for the decibel sum, L_S, of levels, L_1 and L_2.

$$L_S = 10\log_{10}\left(10^{0.1L_1} + 10^{0.1L_2}\right) \quad (5.1.1)$$

5.3.2 Background Noise Correction

When assessing a noise issue it is common to measure the sound source of interest in the presence of other background sources. If the background noise level is within 10 dB of the ensemble noise level (see Section 4.4) a background noise correction should be applied to avoid overestimating the sound pressure level produced by the source of interest.

The corrected source level, L_{Source}, is found by the decibel subtraction of the background noise level, L_{bgn}, from the ensemble level, L_{ens}.

$$L_{Source} = 10\log_{10}\left(10^{0.1L_{ens}} - 10^{0.1\,L_{bgn}}\right) \quad (5.2)$$

The background corrected sound pressure level of the source can also be found using Figure 5.4. Subtract the background sound pressure level from the ensemble level. Find this level difference on the horizontal axis of the figure and locate the corresponding decibel value on the vertical axis. Subtract this number from the ensemble sound pressure level to get the background corrected level of the source.

If the ensemble sound pressure level is within 3 dB of the background noise level, the source of interest is producing less sound pressure than the background sources and cannot be accurately assessed. When the conditions on the site prevent the background sound pressure level from being measured it should be noted in the measurement report.

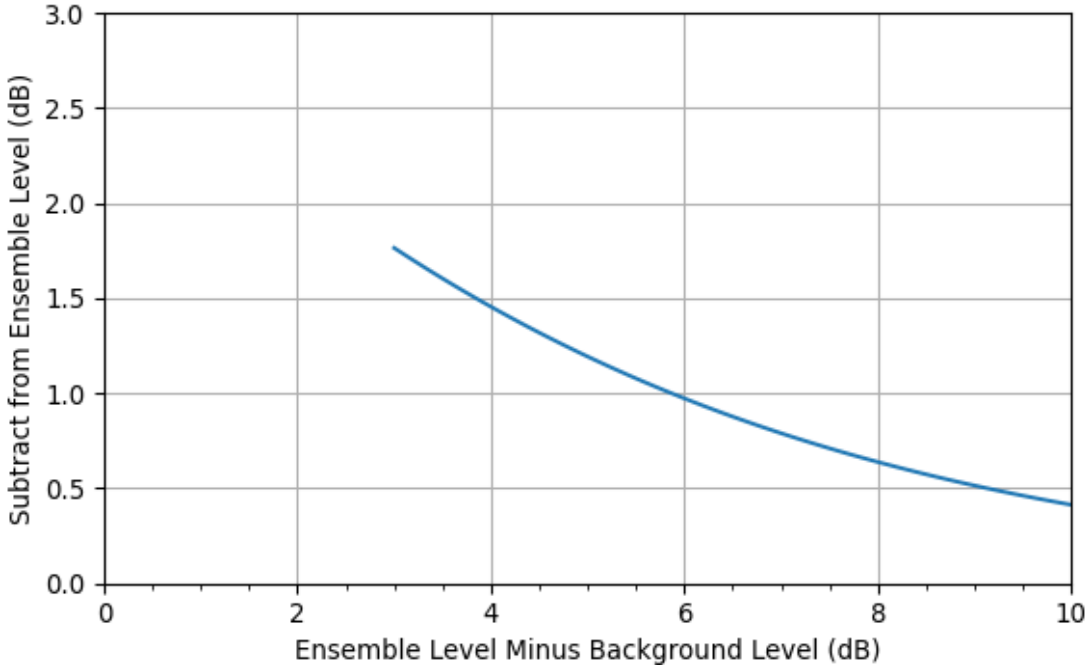


Figure 5.4. Background Noise Correction

Example:

An exhaust fan located on the exterior wall of a warehouse building runs continuously. A sound pressure level measurement taken at the nearest residential property line with the fan running reads 64 dBA. The fan is then shut off and the measurement repeated. The sound pressure level now reads 58 dBA due to a nearby roadway.

Subtracting the background noise level (58 dBA) from the ensemble level (64 dBA), which includes the fan and all other sound sources in the area, gives a difference of 6 dBA. From Figure 5.4, a 6 dB level difference on the horizontal axis corresponds to 1.0 dB on the vertical axis. Subtracting this number from the ensemble sound pressure level gives a result of 63 dBA for the sound pressure level of the exhaust fan by itself.

5.4 Measurement Procedures

5.4.1 Field Calibration

The calibration of the sound level meter shall be recorded before and after each series of measurements using a field calibrator or method recommended by the manufacturer of the meter.

5.4.2 Measurement Conditions

To the extent practical, all sound sources contributing to the ensemble sound pressure level at the point of measurement should be identified.

Measurements should not be performed when wind speeds exceed 10 knots (11 miles per hour, 5 meters per second), the SLM may become wet, or temperatures are outside the tolerance range of the SLM as specified by the manufacturer. A properly fitted windscreen shall be attached to the microphone.

Unless necessary, hourly or shorter duration measurements at distances greater than 100 feet (30 meters) should be performed on sunny days in order to avoid acoustic shadow zones formed by thermal inversions caused by ground heating. When the sun heats the ground, the relatively warm layer of air near the ground can cause sound to refract upward creating a complete or partial shadow. Measurements taken in the shadow zone can underestimate the sound pressure levels present at other times of the day.

5.4.3 Measurement Locations

The preferred noise assessment location is at the property line of the receiving property at the point most impacted by the sound source in question. More than one measurement location may be necessary for multiple sound sources or some noise sensitive areas.

In some situations the area most affected by the sound source of interest may be inside the boundaries of the receiving property. This is sometimes for the case, for example, if there is a wall blocking sound at the property line. Measuring the sound directly behind the wall may not be representative of the sound levels farther from the wall inside the receiving property or at the upper floors of a building located on the property.

5.4.4 Sound Level Meter Placement

The microphone of the sound level meter should be placed at a minimum height of 45 inches (1.1 meters) above ground level and a minimum distance of 12 feet (3.6 meters) from any other reflecting surface. The microphone should not be placed closer than 12 feet (3.6 meters) from any sound source.

Other microphone placements may be used as necessary to assess a specific noise sensitive area, but their acoustical characteristics must be specified.

5.4.5 One Hour Equivalent-continuous Sound Pressure Level Measurements

One hour equivalent-continuous sound pressure level measurements shall be conducted using an integrating sound level meter. For sound sources that do not change in level over time, a shorter measurement period may be used provided the sound pressure level measured is typical of the source in question, but not less than 2 minutes. If a sound source has a regular operating cycle, the time period of the operating cycle, including both time on and time off, may be used for the measurement.

5.5 Adjusted Sound Pressure Levels

Sound sources that have special characteristics including impulsiveness and tonality have been found to have a noise impact greater than that indicated by the equivalent-continuous level. To account for this a set of adjustments to the equivalent-continuous sound pressure level have been defined based on the recommendations of ANSI S12.9 Part 4. These adjustments apply to equivalent-continuous sound pressure level measurement such as one hour A-weighted sound pressure levels (LAeq) and octave band equivalent-continuous sound pressure levels.

5.5.1 Assessing Tonal Sounds

Sounds having tonal prominence receive a 5 dB adjustment. Tonal prominence is determined according to ANSI S12.9 Part 4 Annex C by comparing adjacent unweighted one-third octave band equivalent-continuous sound pressure levels to the one-third octave band containing the tonal frequency. If the adjacent band level differences are greater than 15 dB for the 25 to 125 Hz bands, 8 db for the 160 to 400 Hz bands, or 5 dB for the 500 to 10,000 Hz bands, the tone has prominence and a tonal adjustment shall be applied to the one-third octave band containing the tonal component.

Tonal prominence may also be determined using the narrowband methods in ANSI S1.13-2005 Annex A. This method may be necessary for tones that are close to the separation between two one-third octave bands resulting in bleed over into both bands.

5.5.2 Assessing Impulsive Sounds

Two categories of impulsive sound are addressed in this document: regular impulsive and highly impulsive.

Regular impulsive sound includes speech and music. It receives a 5 dB adjustment.

Highly impulsive sounds receive a 12 dB adjustment. Highly impulsive sounds occurring at a rate greater than 20 per second are usually not perceived as distinct impulses and no impulse adjustment shall apply; however, if the repetitions are regular in time a tonal sound adjustment may be necessary.

Equivalent-continuous sound pressure level alone is not sufficient to assess sounds characterized by impulsiveness. Highly impulsive and sporadic single events may produce a relatively small amount of energy compared to the background noise level. This does not necessarily mean they will not have a significant impact. Equivalent-continuous levels are often insensitive to short duration events even though the impulses may be clearly noticeable. In these instances the sound exposure method may be necessary to assess these events (see Section 5.5.3).

5.5.3 Applying Adjustments Using Sound Exposure Level

Impulsive sounds are usually spread out in time whereas background noise is continuous. The background noise will therefore often contribute more to an energy averaging metric like the equivalent-continuous sound pressure level than the impulses even though an observer on the site may report the impulses as the primary sound source due to their high peak sound pressures. In

cases like this a windowing method such the sound exposure must be used to separate the impulses from the background noise so that adjustments can be appropriately applied to the part of the ensemble sound containing the impulses.

One common use for the sound exposure level (SEL) is the comparison of two discrete sound events; however, in the context of applying adjustments to impulsive sound the SEL will be used to overcome the influence of the background noise by separating out the individual impulse events from the rest of the measurement data. The SEL of a single event, SEL_{event}, can be found from the background noise corrected equivalent-continuous sound pressure level over just the time of the event, $L_{eq,event}$,

$$SEL_{event} = L_{eq,event} + 10\log_{10}(T_{event}/T_0) \quad (5.3)$$

where T_{event} is the duration of the event in seconds and T_0 is the reference time of 1 second. T_{event} should be inclusive of the entire event. In situations where the background noise level fluctuates it may be necessary to find the background noise level in the immediate vicinity of each impulse event in order to do the corrections.

The appropriate regular or highly impulsive adjustment can now be added directly to the SEL of the event. This process can be repeated for each impulse to obtain a set of SELs.

In order to compare the resulting sound exposures to the level limits in the regulations, the SELs must be converted to an equivalent-continuous level over the time period of the original measurement. The adjusted equivalent-continuous level of the impulses during the time of the measurement, $L_{eq,adj}$, is therefore the decibel sum of each event's background corrected sound exposure level, $SEL_{event,i}$, and its adjustment, K_i, minus the measurement time, T, in decibels.

$$L_{eq,adj} = \sum_i 10^{(0.1(SEL_{event,i}+K_i))} - 10\log_{10}(T/T_0) \quad (5.4)$$

An alternative form of Eq. 5.4 is useful in when the mean SEL and the number of events over a period of time are known for an impulsive sound source.

$$L_{eq,adj} = SEL_{src} + K_{impulse} + 10\log_{10}(N) - 10\log_{10}(T/T_0) \quad (5.5)$$

Here $L_{eq,adj}$ is equal to the sum of the sound exposure level for one event occurrence, SEL_{src}, the adjustment for the type of impulse, $K_{impulse}$, the number of occurrences, N, in decibels, and total time period over which the impulses occur, T, in decibels.

$L_{eq,adj}$ can now be combined with the other adjusted sound source levels in the project using Eq.

5.1 to obtain the total adjusted equivalent-continuous sound pressure level. This level can then compared to the level limits in the noise regulations.

For more information on sound exposure level see ANSI S12.9 Part 4 and Harris, Chapter 12.

5.5.4 Time of Day Adjustments

For noise impact assessment, the day is typically divided into three segments: day, evening, and night. For residential land uses, each of these time periods will have different noise sensitivities. During the daytime, usually defined as 7:00 am to 7:00 pm, many people are at work or busy with other activities away from home. In the evening, 7:00 pm to 10:00 pm, people tend to be at home and are more aware of noise in the area. Nighttime is the most noise sensitive time as people are sleeping. Weekends also have a higher noise sensitivity similar to evenings when people tend to be at home, but not sleeping.

For residential land uses, time of day adjustments include a 5 dB adjustment for the evening and a 10 dB adjustment for the nighttime hours. Weekend daytime hours also receive a 5 dB adjustment similar to evening hours.

5.6 Measurement Reports

After a set of field measurements have been completed, a report of the findings should be issued containing the following information:

1. Make, model, and serial number of each piece of measuring equipment
2. Date and location of the most recent laboratory calibrations
3. Site plan showing measurement locations
4. Statement of on-site calibration verification before and after each series of measurements
5. Name of the engineer conducting the tests

For each measurement location the following information should be noted:

1. Date and time of the measurement
2. Acoustical metrics measured
3. Time and frequency weighting used
4. Microphone location and height
5. Windscreen used
6. Description of the test location including the type of ground and any reflecting surfaces near the SLM or sound source being investigated
7. Primary and secondary sound sources contributing to the measurement

8. Background noise level if investigating a specific sound source
9. Weather conditions: temperature, humidity, wind speed and direction, cloud cover, and sun exposure
10. Photo image showing the sound level meter and intervening ground between the meter and the sound source of interest

5.7 Noise Impact Assessments

5.7.1 Purpose and Methods

A noise impact assessment provides a determination of the likely effects of introducing a new activity on the surrounding area. For new developments or modifications of existing developments involving on site activities that are likely to have a noise impact on the surrounding area, a noise impact assessment should be prepared by a qualified acoustical engineer. ISO 9613 and ANSI S12.62 provide a basic methodology for predictive acoustical site assessment; however, other methodologies may be used as appropriate for the area, conditions, and sound sources being evaluated. A noise impact assessment may be based on measurements of similar sound sources at a different location; however, differences in propagation paths that may affect the noise impact must be accounted for.

5.7.2 Present and Future Noise Exposure

With many sound sources, the noise impact may increase over time, e.g. roadways and other modes of transportation whose usage can be expected to increase in the future. In preparing noise impact assessments for proposed developments, future usage patterns should be included in the analysis.

5.8 Existing Noise Regulations

Best practices and current standards for noise assessment have been covered in Chapter 3. These criteria will be used here to evaluate noise regulations that apply within the City of Centennial.

5.8.1 City of Centennial Municipal Code, Chapter 10, Article 12

The City of Centennial does not currently have a land use noise regulation. Noise violations are defined in the Municipal Code. Two sections of the Code relate to noise assessment.

> **Sec. 10-12-10. - Legislative declaration.**
>
> It is hereby declared that protection and preservation of the home is of the highest importance; that unnecessary and excessive noise is a significant source of environmental pollution that threatens the public health, welfare, tranquility and good order of the community; and that the prohibitions and other protections set forth in this Article are enacted to secure and promote public peace, welfare, comfort and health.

Sec. 10-12-20. - General prohibition.

It shall be unlawful for any person to make, continue or cause to be made or continued any excessive or unusually loud noise which:

(1) Disturbs, annoys or endangers the peace, repose, comfort, safety or health of others; or

(2) Endangers or injures personal or real property.

These Code sections do not prescribe an objective measure of excessive noise, but state that "protection and preservation of the home is of the highest importance." Section 10-12-20(1) prohibits sound that "disturbs, annoys or endangers the peace, repose, comfort, safety or health of others." No guidance is given for compliance with the Code; however, ANSI S12.9 Part 4 is a standard for assessing annoyance in a community setting caused by noise and would be in alignment, as an objective assessment methodology, with the criteria in Section 10-12-20(1).

5.8.2 Colorado Revised Statues 25-12-101

The Colorado Revised Statues seeks to provide statewide minimum standards for noise levels.

25-12-101. Legislative declaration

The general assembly finds and declares that noise is a major source of environmental pollution which represents a threat to the serenity and quality of life in the state of Colorado. Excess noise often has an adverse physiological and psychological effect on human beings, thus contributing to an economic loss to the community. Accordingly, it is the policy of the general assembly to establish statewide standards for noise level limits for various time periods and areas. Noise in excess of the limits provided in this article constitutes a public nuisance.

C.R.S. 25-12-103(1) provides some objective maximum limits on permissible sound pressure levels. For residential land uses, the daytime limit is 55 dBA. Evening hours are not defined; however, nighttime hours are from 7:00 pm to 7:00 am. This includes hours that would normally be considered evening. The nighttime sound pressure level limit is 50 dBA which is more typical of a 5 dBA evening penalty than the more customary 10 dBA nighttime level limit reduction.

Acoustical measurements are to be made 25 feet inside the receiving property boundary. This is problematic for a number of reasons. First, it requires entering private property in order to assess the sound level. This makes assessment, monitoring, and enforcement more difficult. It also does not protect the entire receiving property. This can be especially impactful for residents on small lots or rental properties where the back patio may be within this distance.

While C.R.S. 25-12-103(3) does include provisions for impulsive sound,

Periodic, impulsive, or shrill noises shall be considered a public nuisance when such noises are at a sound level of five db(A) less than those listed in subsection (1) of this section.

with a 5 dBA reduction in the allowable sound pressure level, this approach is overly simplistic

and will underestimate the noise impact of highly impulsive sounds.

Overall, the noise assessment procedure in C.R.S. 25-12 appears to be a compromise between simplicity of noise assessment and completeness. While adequate for many sound sources, it will underestimate the noise impact some classifications of sound that include highly impulsive sound and sounds that occur during regular nighttime hours of 10:pm to 7:00 am when most residents are sleeping. The choice of noise assessment location 25 feet inside the receiving property increases the difficulty of monitoring and decreases the level of protection afforded to home owners for the use of their outdoor spaces.

6. Characteristics of Pickleball Sound

Spendiarian & Willis has prepared many noise assessments and abatement plans for pickleball courts. This chapter summarizes some of the knowledge gained over the years of working with this sound source.

The main concern in regard to noise from the pickleball courts is the sound produced by the impact of the hard plastic ball on the paddles. This sound is characterized by a sudden onset and brief duration, thus classifying it as impulsive sound. The spectral content of the paddle impact is narrowband with a center frequency typically between 1,000 and 2,000 Hertz. This is near the most sensitive frequency range of human hearing.

6.1 Comparison of Pickleball to Other Activities

There is a common misconception that pickleball is acoustically equivalent to tennis, volleyball, or many of the other activities typically found at outdoor recreation centers and parks. Numerous news articles covering disputes over pickleball noise, many of which originate when existing tennis courts are converted to pickleball, demonstrate that this is not the case:

- Cutler, Amy, "Rise of pickleball pitting neighbor against neighbor, leading to lawsuits," Arizona's Family, Phoenix, Arizona. February 13, 2023. <https://www.azfamily.com/2023/02/13/rise-pickleball-pitting-neighbor-against-neighbor-leading-lawsuits/>
- Arden, Amanda, "Lake Oswego shuts down city pickleball courts indefinitely due to noise complaints." KION 6 News, Portland, Oregon. January 23, 2023. <https://www.koin.com/local/lake-oswego-shuts-down-city-pickleball-courts-indefinitely-due-to-noise-complaints/>
- Columbo, Mike, "Pickleball plan pits Kirkwood residents against neighboring country club." Fox 2 Now, Saint Louis, Missouri. January 26, 2023. <https://fox2now.com/news/contact-2/pickleball-plan-pits-kirkwood-residents-against-neighboring-country-club/>
- Sheets, Connor, "Pickleball noise is fueling neighborhood drama from coast to coast." Los Angeles Times, Los Angeles, California. March 3, 2022. <https://www.latimes.com/california/story/2022-03-03/pickleball-noise-fueling-neighborhood-drama>
- Adler, Erin, "Apple Valley neighbors in a pickle over pickleball noise." Star Tribune, Minneapolis, Minnesota. March 27, 2019. <http://www.startribune.com/apple-valley-neighbors-in-a-pickle-over-pickleball-noise/507726242/>
- Bartel, Mario, "Pickleball banished from Port Moody court after neighbours complain of

rising stress, anxiety." The Tri-City News, Coquitlam, British Columbia, Canada. April 24, 2021. <https://www.tricitynews.com/local-sports/these-games-are-loud-port-moody-pickleball-neighbours-revolt-against-rising-stress-anxiety-3662369>

- City of Lakewood, "Green Mountain Courts Closure." <https://www.lakewoodtogether.org/pickleball/news_feed/green-mountain-courts-update>
- Higgins, Sean, "No vote on residential pickleball until city adopts new land management code." KPCW News, Park City, Utah. January 27, 2022. <https://www.kpcw.org/park-city/2022-01-27/no-vote-on-residential-pickleball-until-city-adopts-new-land-management-code>
- Maryniak, Paul, "Pickleball lights plan puts two HOAs at loggerheads." Ahwatukee Foothills News, Tempe, Arizona. November 29, 2017. <https://www.ahwatukee.com/news/article_9056a946-d48e-11e7-9838-8b69fb2d50b2.html>
- Bottemiller, Kitty, "Too loud! Pickleball noise upsets neighbors." Green Valley News, Green Valley, Arizona. August 28, 2013. <https://www.gvnews.com/news/local/too-loud-pickleball-noise-upsets-neighbors/article_542c2aac-0f91-11e3-acdc-0019bb2963f4.html>
- Clay, Joanna, "Woman sues Newport Beach over pickleball noise at park near her home." Orange County Register, California. April 7, 2016. <https://www.ocregister.com/2016/04/07/woman-sues-newport-beach-over-pickleball-noise-at-park-near-her-home/>
- Wheatley, Mike, "Noisy pickleball courts cause upset with homeowners." Realty Biz News. March 15, 2022. <https://realtybiznews.com/noisy-pickleball-courts-cause-upset-with-homeowners/98768719/#:~:text=In one lawsuit in Newport Beach%2C Calif.%2C a,are causing them less enjoyment of their home.>
- Lazaruk, Susan, "Pickleballers face off with residents over noise in Metro Vancouver." Vancouver Sun, Toronto, Ontario, Canada. February 2, 2022. <https://vancouversun.com/news/local-news/pickleballers-face-off-with-residents-over-noise-in-metro-vancouver>
- Shanes, Alexis, "Village in a pickle: How Ridgewood plans to tone down the pickleball court noise." northjersey.com, California. January 16, 2020. <https://www.northjersey.com/story/news/bergen/ridgewood/2020/01/16/ridgewood-nj-pickleball-noise-reduction-measures/4480463002/>
- Monterey Herald Staff, "Pickleball noise controversy goes before city leaders Pacific Grove neighbors object to game at nearby tennis courts." The Mercury News, California. September 19, 2019. <https://www.mercurynews.com/2019/09/19/pickleball-noise-controversy-goes-before-city-leaders/>
- Fraser, Patrick and Rodriguez, Ambar, "What to do about constant pickleball noise?" WSVN 7 News Miami, Miami, Florida. March 27, 2019. <https://wsvn.com/news/help-me-howard/what-to-do-about-constant-pickleball-noise/>

- Sutphin, Daniel, “Nixing the noise: Sound fence construction underway at Gilchrist pickleball courts.” Port Charlotte Sun, Charlotte Harbor, Florida. May 20, 2019. <https://www.yoursun.com/charlotte/news/nixing-the-noise-sound-fence-construction-underway-at-gilchrist-pickleball/article_79a764de-7b1c-11e9-b4d4-6bcaa919f3f3.html>
- Corrigan, James, “York residents complain noise from pickleball club is hurting quality of life.” WMTW News 8, Portland, Maine. November 16, 2021. <https://www.wmtw.com/article/york-residents-complain-noise-from-pickleball-club-is-hurting-quality-of-life/38271921>

It should be clear from the above list of references that pickleball constitutes a significant change in the acoustic environment of the area surrounding the courts in comparison to tennis and must be planned for accordingly. In particular, the impulsive sound produced by the impact of the hard plastic ball on the paddle can cause significant noise impact for those living near the courts.

6.2 Effects of Impulsive Sound

Persistent impulsive sounds create annoyance because they are similar to sounds that contain important information about our environment such as footsteps, a door opening, a tap at the window, or speech. We are sensitive to these types of sounds because they alert us to events occurring nearby that we may need to respond to. Continuous false alarms such as the popping sound created by pickleball paddle impacts make it difficult to relax, concentrate, or sleep soundly without disturbance as each time a pop is heard it draws the attention, creating distraction.

6.3 Acoustical Characteristics

The sound produced by the impact between a pickleball and paddle is characterized by a rapid onset and brief duration, typically on the order of 2 to 10 milliseconds (0.002 to 0.010 seconds) for the direct path sound. This classifies it as impulsive sound. Figure 6.1 shows a time trace of a pickleball paddle impact measured near Phoenix, Arizona. The main part of the direct sound impulse can be seen to be less than two milliseconds followed by a rapid decay and some later reverberant arrivals.

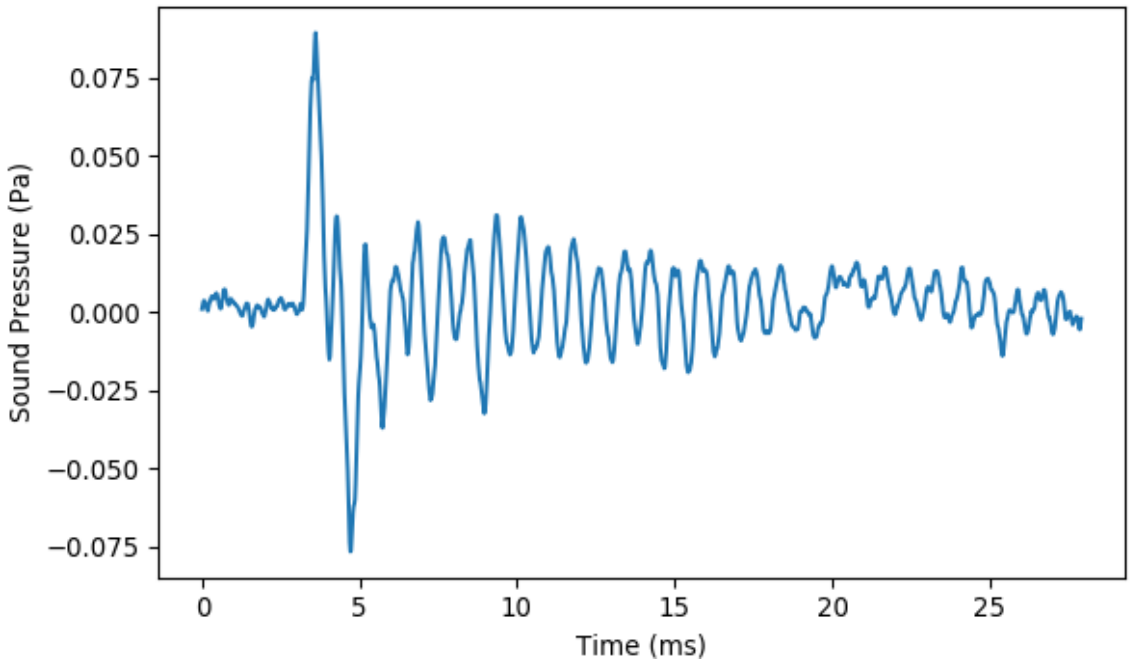


Figure 6.1. Pickleball Paddle and Ball Impact Sound Pressure Trace
1 millisecond (ms) = 0.001 seconds.

The spectral content of the paddle impact is narrowband with a center frequency typically near 1,000 Hz (see Figure 6.2). Although it does not meet most guidelines for tonal prominence such as Annex C of ANSI S12.9 Part 4 or ANSI S1.13, it does impart a vague sensation of pitch similar to a wood block percussion musical instrument. The radiation pattern of the paddle is more or less a dipole, i.e. the sound from the front and back of the paddle is of opposite polarity and cancels itself in the plane of the paddle. Therefore, orienting the courts so that the direction of play faces away from noise sensitive areas can provide some attenuation.

The sound power spectrum of the pickleball and paddle impact has two basic shapes depending on how the ball is hit. Figure 6.2 and Figure 6.3 show the power spectra of a 'sharp' hit and a 'dull' hit. The curves are not calibrated for absolute level, but can be compared relatively.

The sharp hit spectrum shows a narrowband signature. The frequency of the peak typically varies between 1,000 and 2,000 Hz. The energy in the dull hit is more spread out, but still peaks between 1,000 and 2,000 Hz.

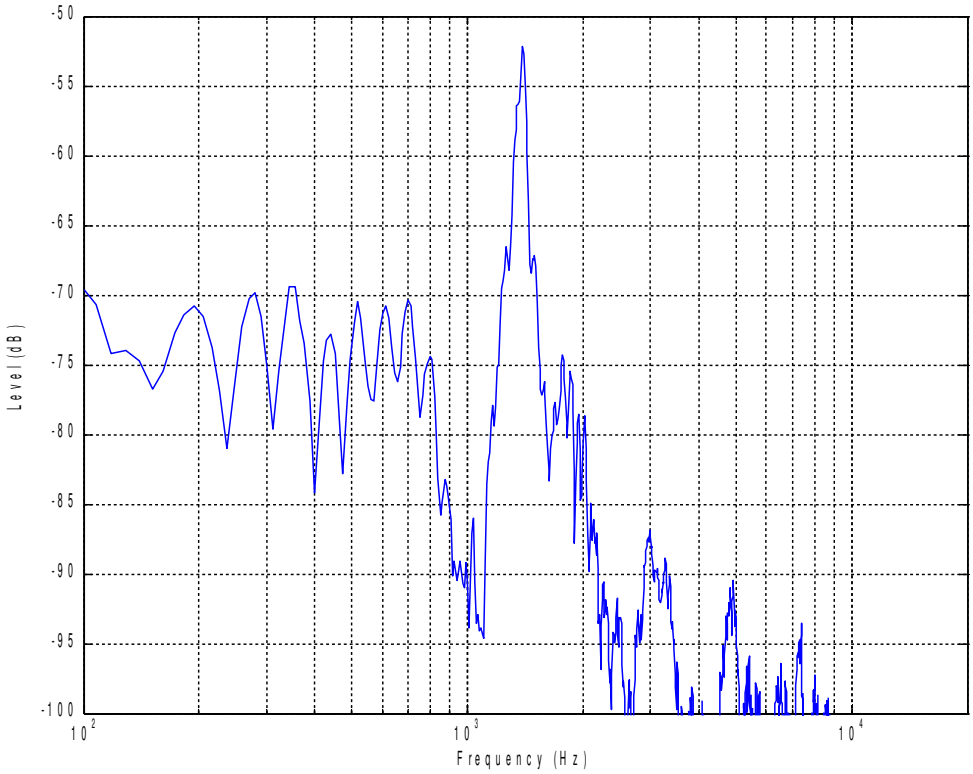


Figure 6.2. Spectral Response of a Sharp Hit

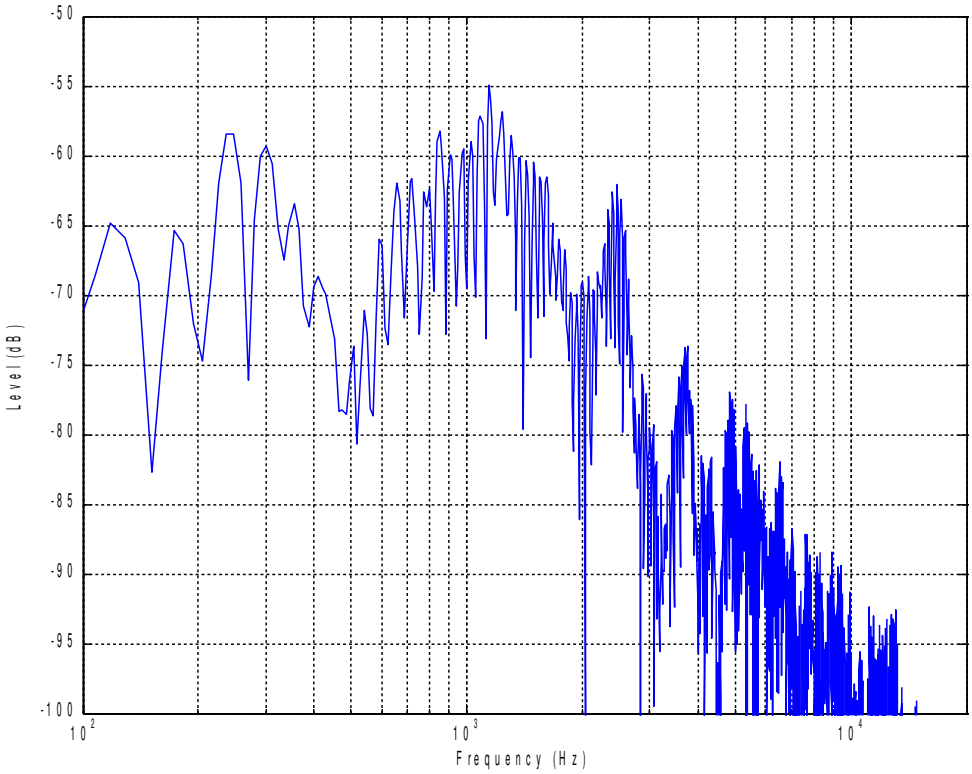


Figure 6.3. Spectral Response of a Dull Hit

A sound wall design will require effective attenuation in the 1,000 Hz octave band and above. In most applications, any material having a sound transmission class meeting STC 20 can be used to construct a sound wall or fence for pickleball provided best practices for sound barrier construction are followed.

6.4 Directivity of Pickleball Courts

The impulsive sound of the paddle impacts is radiated mainly by the large, flat paddle surface. Since both faces of the paddle are connected internally by a honeycomb structure and move together in vibration, one side of the paddle will produce a positive sound pressure while the other produces a negative sound pressure similar to a loudspeaker diaphragm that is not mounted in a cabinet. The result is that these two pressure waves having opposite polarity will cancel in the plane of the paddle where the path length from each face is the same to all receiver locations. This is known as a dipole or figure eight radiation pattern.

The positions of the paddles relative to the court change with each hit; however, the object of the game is to hit the ball to the opposite half of the court. Therefore, the dipole axis of each paddle impact will be in the general direction of play and not completely random. Measurements of

several pickleball facilities have shown that this results in a null depth of 4 to 5 dB. Figure 6.4 compares a typical pickleball court directivity pattern to a mathematical dipole where 0º and 180º are in the direction of play and the null is on the 90º and 270º bearings. Several decibels of attenuation can often be obtained simply by optimizing the orientation of the courts with respect to noise sensitive areas.

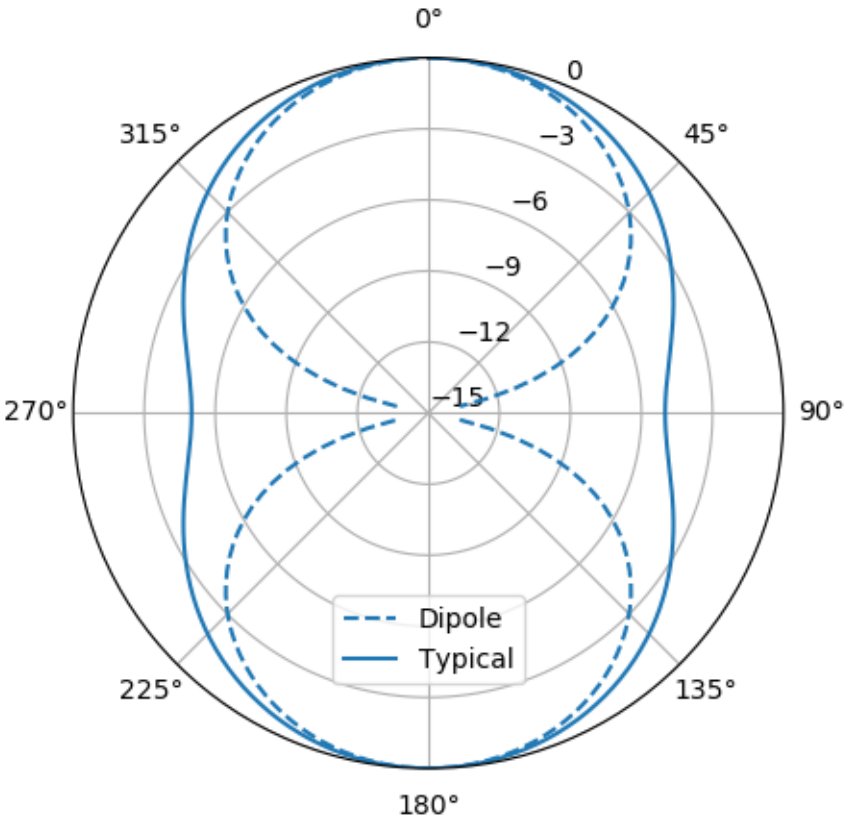


Figure 6.4. Typical Pickleball Court Directivity in Decibels

6.5 Noise Impact of Speech

In addition to the paddle impacts, speech is also a sound source on pickleball courts. While there are standards for speech sound power levels at various degrees of vocal effort such as ANSI S3.5, sound from speech emitted from pickleball courts can vary greatly with who is playing on the courts at a given time and be difficult to predict. In practice, noise abatement treatments sufficient to mitigate the paddle impacts should also be sufficient for speech from the courts as the paddle impacts typically have a greater noise impact.

Most noise objections regarding speech on pickleball courts are related to the content of the speech rather than the loudness. While the sound level of the speech can be reduced through abatement treatments, it cannot be made inaudible in most situations. A noise impact of this type must be addressed through court usage policy.

For tournament play, the overall speech pattern becomes more predictable. There are more sound sources that will approach a statistical average such as that described in ANSI S3.5. A total sound power level for the bleachers or spectator area can be calculated based on seating capacity or through direct measurement during a tournament.

7. Influence of Environmental Factors

7.1 Number and Arrangement of Pickleball Courts

Pickleball courts are usually placed on a rectangular concrete pad approximately 30 by 60 feet. This is one quarter the size of a typical tennis court pad such that a tennis court can be converted into four pickleball courts. An important factor influencing the amount of sound reaching neighboring properties will be the number of pickleball courts. A doubling of the number of courts will result in a doubling of the number of sound sources and therefore the sound power emitted. This corresponds to a 3 dB increase in sound power level. Pickleball courts are, however, not a single sound source, but a distribution of many sound sources spread over the area of the courts. For this reason, sound radiated from pickleball courts will not follow the inverse square law unless the distance from the center of the courts to the point of observation is large compared to the dimensions of the court or group of courts.

Figure 7.1 shows the ANSI S12.9 adjusted sound pressure level contours (see Section 8.3.3) at a height of 5 feet above grade for four courts, indicated by the red box, at the center of the main group of pickleball courts. For reference, the two groups of eight courts together have a width east to west of 136 feet and a length north to south of 268 feet. The oblong shape of the contours is not a result of the rectangular layout of the courts, but the directivity of the individual courts themselves (see Section 6.4).

The 55 dBA contour extends about 480 feet from the courts in the direction of play and 260 feet laterally. Figure 7.2 expands the number of pickleball courts to eight arranged in pairs end to end. The 55 dBA contour extends about 630 feet from the courts in the direction of play and 350 feet laterally. Figure 7.3 rearranges the eight courts into two rows side by side. The 55 dBA contour extends about 685 feet from the courts in the direction of play and 340 feet laterally. Doubling the number of courts causes the 55 dBA contour to move out 30% to 40% of the distance from the courts pad (red boxes) depending on how the courts are arranged.

The hypothetical examples above were created on level ground with a mixed ground type outside of the concrete pads for the courts (ISO 9613 ground factor, G = 0.5). In practice, noise complaints about pickleball courts at distances greater than 500 to 600 feet are rare. Real pickleball sites will usually have topographical features that hinder sound propagation at farther distances as well as structures that block or scatter sound. Pickleball courts across water may be an exception with the possibility of complaints occurring at distances approaching 800 to 1,000 feet.

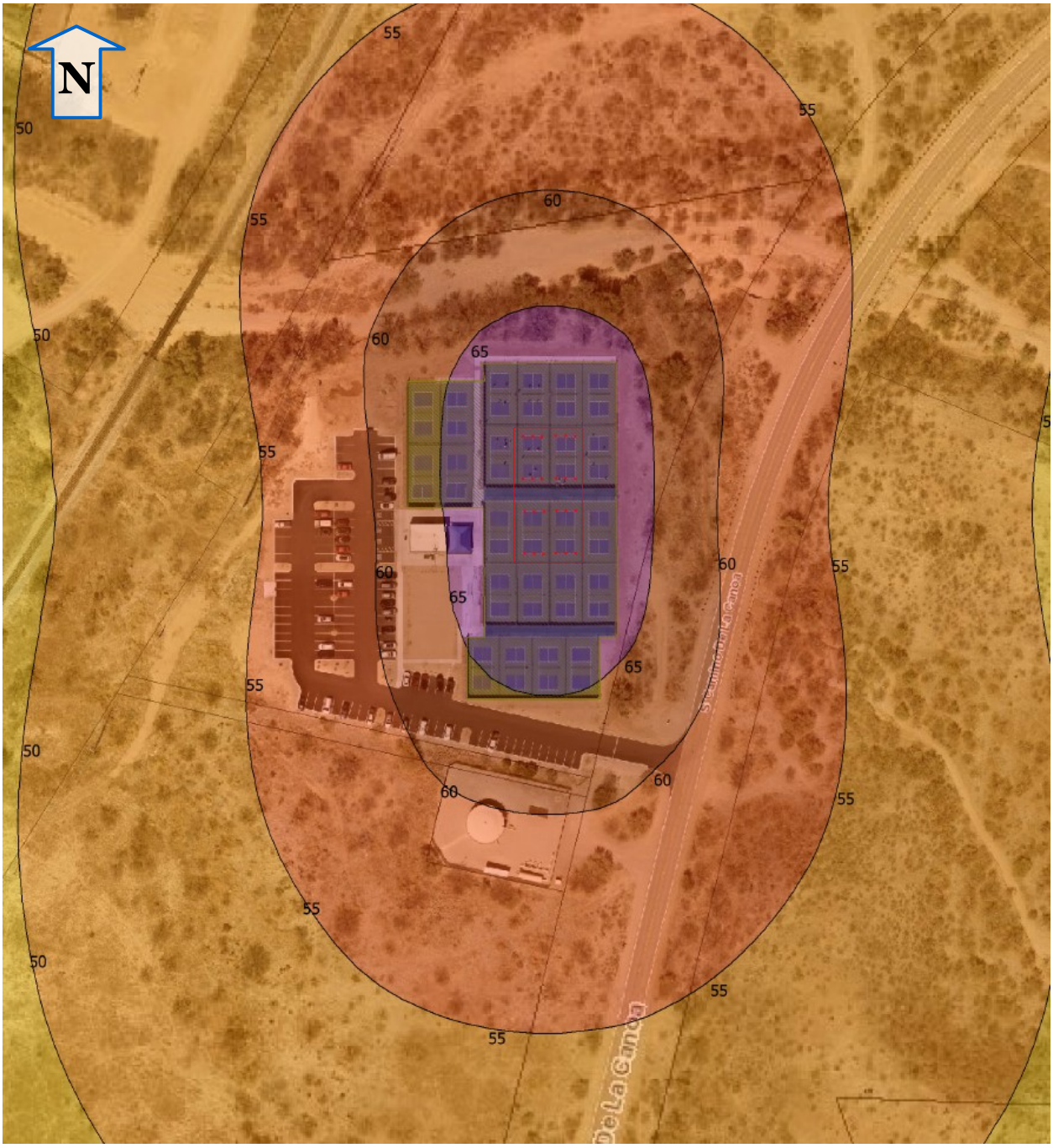


Figure 7.1. Adjusted Sound Pressure Level from Four Pickleball Courts

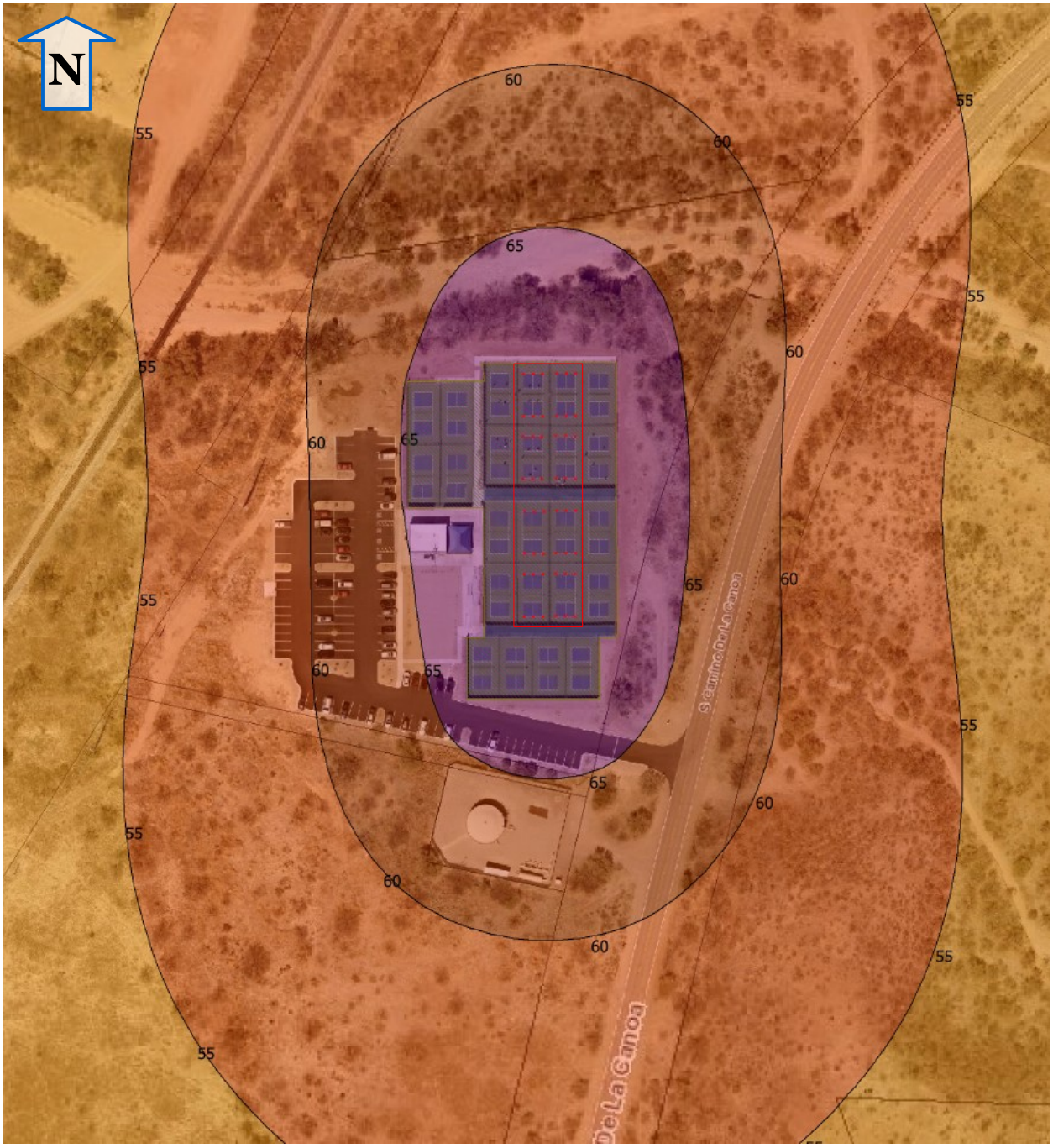


Figure 7.2. Adjusted Sound Pressure Level from Eight Pickleball Courts Aligned Longitudinally

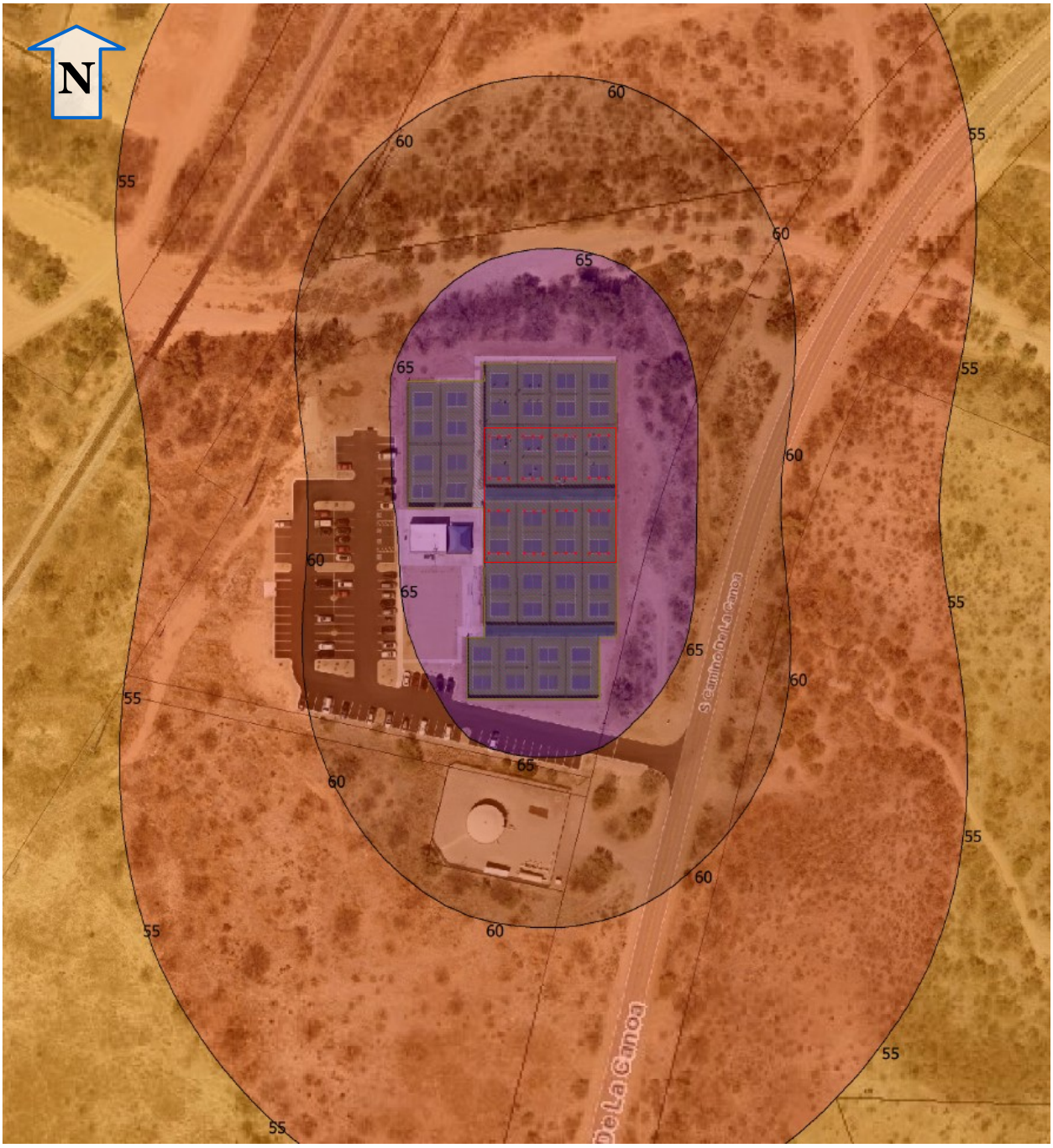


Figure 7.3. Adjusted Sound Pressure Level from Eight Pickleball Courts Aligned Laterally

7.2 Topography

7.2.1 Sight Lines

In order for a noise barrier to be effective, it must block the line of sight from the sound source to the point of observation. Homes sitting at an elevation higher than the proposed pickleball courts can be difficult to shield, particularly if they have more than one floor, balconies, or raised decks. Attention must be given to sight lines to determine whether a sound wall system can be a practical solution as a noise abatement treatment.

7.2.2 Noise Sensitive Locations Above Ground Level

In addition to elevation differences between the pickleball courts and surrounding properties, multistory housing can also result in sight line issues that lead to poor shielding. Figure 7.4 shows a mitigation example with four active pickleball courts in the southwest corner of the complex and a two story building to the south. A 10 foot sound wall (red line) has been placed along the south and west sides of the courts. The sound pressure level contours are at an elevation of 5 feet above grade. The 55 dBA contour does not reach the building.

In Figure 7.5, the elevation of the sound pressure level contours has been raised to 15 feet above grade, about the height of a second floor bedroom window or a person standing on a second floor balcony or raised deck. The 55 dBA contour can now be seen to contact the building. This shows the importance of checking all floors of nearby structures to ensure that acoustical design targets are being met.

It is important to note that, since the observation point on the second floor can overlook the sound wall, some paddle impacts will not be shielded. Although the partial shielding of the majority of the sound source locations is enough to lower the adjusted sound pressure level close to the target level of 55 dBA, peak sound pressures may not decrease as much as the adjusted level since some individual paddle impacts will not be shielded and may still have a significant noise impact.

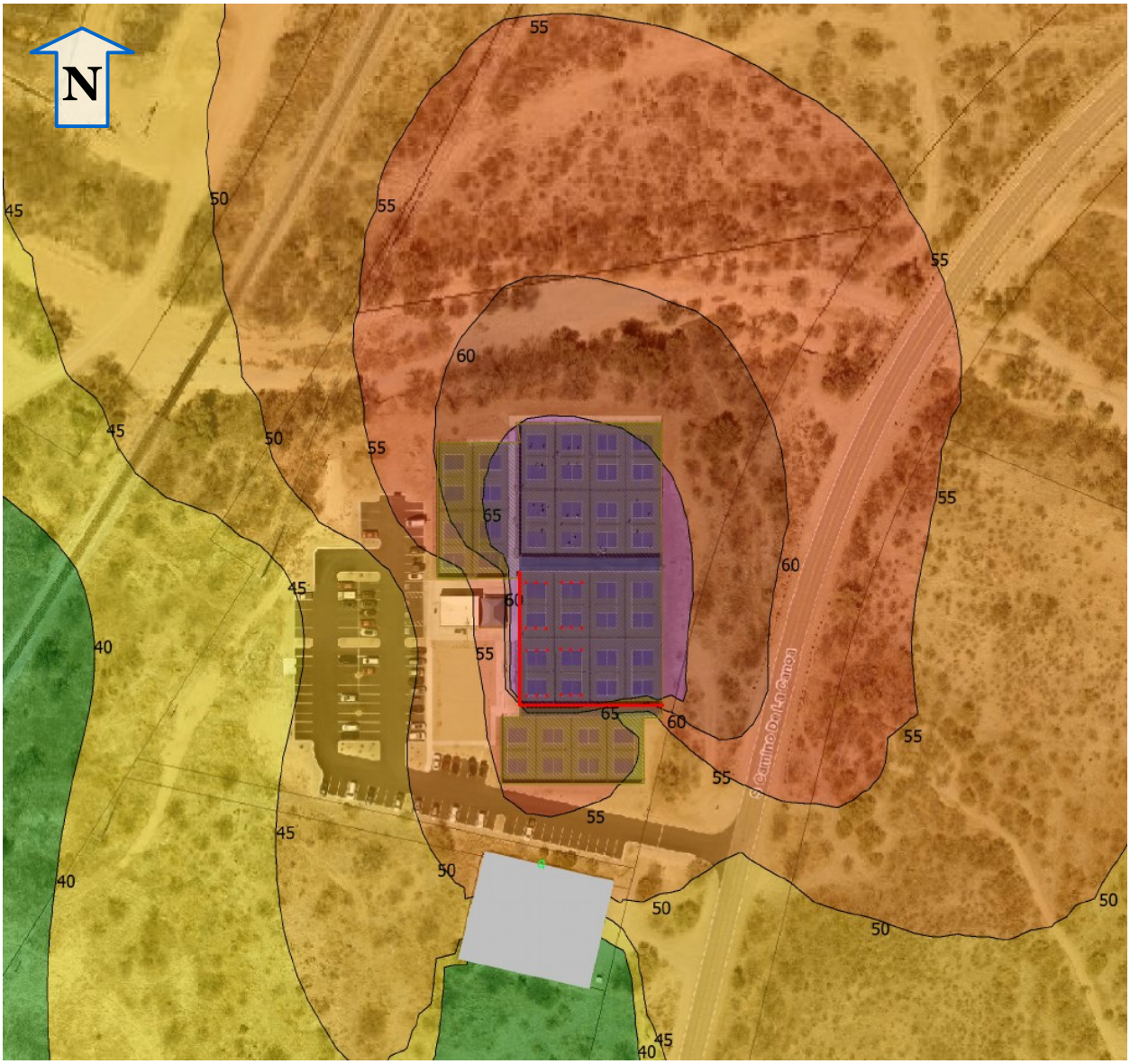


Figure 7.4. Adjusted Sound Pressure Level Contours, Four Courts, 10 Foot Wall, 5 Foot Elevation

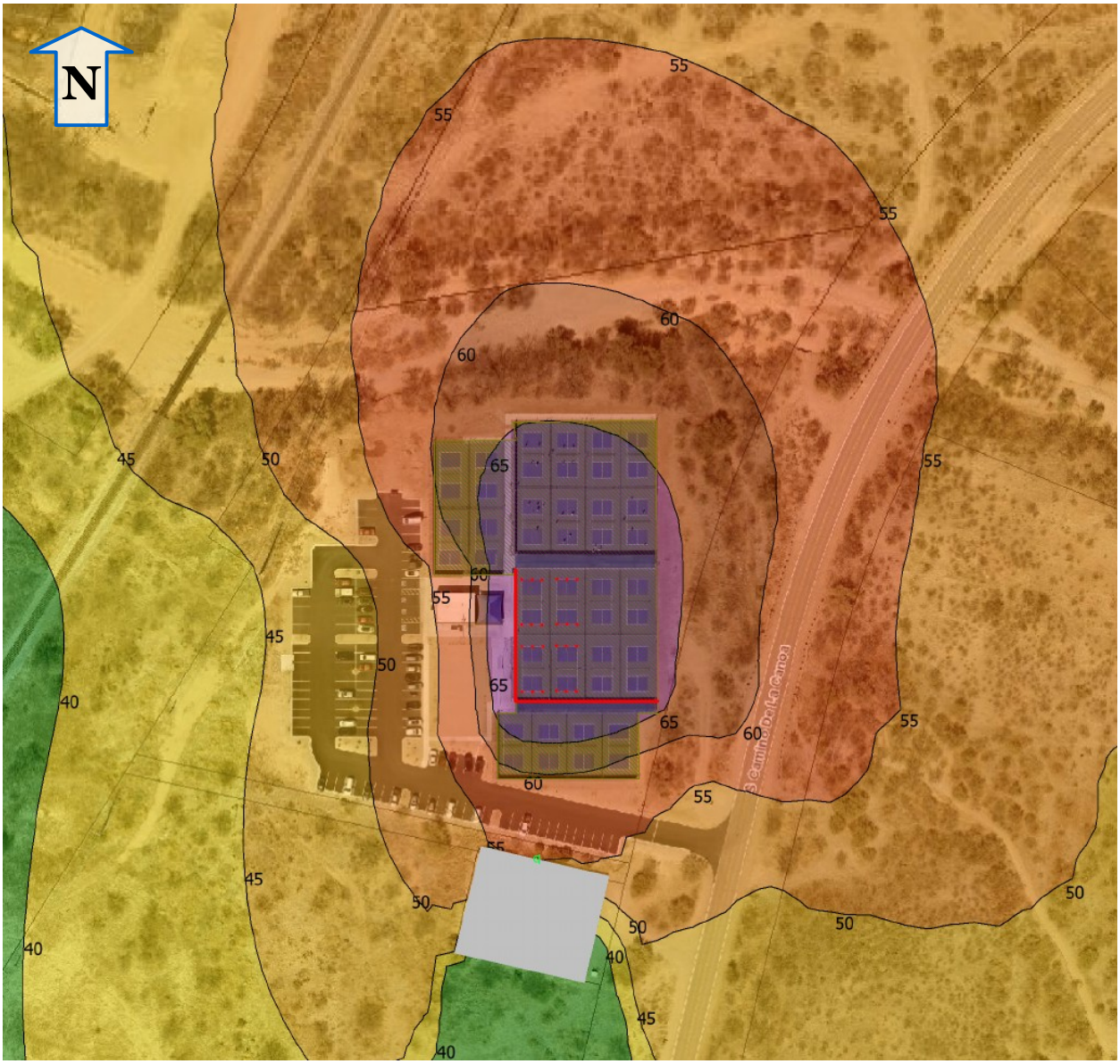


Figure 7.5. Adjusted Sound Pressure Level Contours, Four Courts, 10 Foot Wall, 15 Foot Elevation

7.3 Ground

7.3.1 Attenuation

Some amount of attenuation can occur for sound passing over porous ground. This will mostly include friable soil with vegetation growing on it. Hard surfaces like concrete and asphalt are reflective. Painted concrete surfaces like sports courts are very reflective.

This should be considered when placing a noise barrier on a particular ground type. The barrier will block the ground wave and remove the ground effect. This will affect the performance of the noise barrier. Blocking the ground wave over hard ground will enhance the insertion loss, the difference in before and after sound levels, of the barrier while blocking the ground wave over absorbing ground may cause the insertion loss of the barrier to be less than expected.

7.3.2 Refraction

Refraction caused by temperature gradients over certain ground can effectively cause sound to travel farther. Refraction is the bending of the path sound travels towards regions of lower sound speed, e.g. cooler air. This can be the result of temperature stratification of the atmosphere or wind. In low lying places where cool air tends to collect in the evenings or over irrigated ground where evaporative cooling can occur such as a golf course, a temperature lapse condition can develop with warm air above and cool air below. This will result in sound arcing down toward the ground. Refraction caused by a temperature lapse condition can result in sound arcing over obstacles on the ground that would normally impede its propagation thereby making it louder at farther distances.

7.3.3 Valleys

Parks located at the bottom of a valley can pose a particular challenge as they tend to experience temperature stratification conditions regularly. Further, the sides of the valley may trap sound and send it echoing back to locations on the opposite side. Valleys often require a detailed propagation study to understand how sound moves through the area at different times of the day.

7.3.4 Water

Bodies of water such as a pond or lake are a special type of ground that is highly reflective. It also tends to form a layer of cool air near its surface causing refraction effects similar to those described above. Sound propagation over water can be difficult to predict as its surface changes with wind and weather conditions. In calm conditions sound carries long distances over the surface of water. If a significant portion of the ground between a sound source and receiving property is water a detailed propagation study may be needed to determine the ground attenuation.

7.4 Reflective Surfaces

Surfaces that reflect sound that are close to the pickleball courts can redirect sound in undesirable directions. These surfaces can be building facades, retaining walls, or even noise barriers. Mass-loaded vinyl (MLV) fence covers are particularly reflective and may not be appropriate in some applications. Unpainted masonry walls retain some porosity and will absorb a small small of sound, but should be considered reflective for the purposes of outdoor sound propagation.

Reflected sound from a single surface may increase the total sound pressure level as much as 3 dB over the level of the sound coming directly from the source. (Due to the short duration of the impulse produced by a paddle impact and its short wavelength it is difficult to get the reflected

sound to sum coherently with the direct sound) The positions of noise barriers must be planned strategically to prevent sound from going in unwanted directions and creating a new noise issue.

Parallel reflective surfaces can severely degrade the performance of a noise barrier. See Section 9.2.3 for more information on this design issue.

8. Noise Assessment Procedures for Pickleball Sound

8.1 Inaccuracies of Simple Averaging Techniques

8.1.1 Equivalent-continuous Sound Pressure Level

The equivalent-continuous level (Leq) is a type of average sound pressure level over the entire period of a measurement. It represents a sound pressure level that has the same total energy as a measured sound pressure level that may vary over the time of the measurement.

While the equivalent-continuous sound pressure level includes all acoustical events and background noise that occur during the time of a measurement, including short impulsive events such as pickleball paddle impacts, it only gives an indication of the average level. It is not strongly influenced by peak sound pressure levels. For example, four pickleball courts may produce 50 to 60 paddle impacts each minute. That is one impact about every second. Equivalent-continuous averaging will therefore spread the energy of each paddle impact over a period of about one second. The result is that the paddle impacts will usually be indistinguishable from the background noise due to their very short duration. This, however, will not be what is reported by observers near the courts.

The main issue with using equivalent-continuous sound pressure level with pickleball is that it cannot be used to assess impulsive sound. This is the primary concern of neighbors living close to pickleball courts. A different metric that can account for the noise impact of the paddle impacts must be found.

8.1.2 Exponential Time Weighting

Sound level meters will typically have two smoothing filters called fast and slow time weighting having time constants of 0.125 and 1.0 second respectively. These are first order lowpass filters applied to the square of the sound pressure and are known as exponential time weighting. Some meters will also have an impulse peak hold filter with a 35 millisecond time constant on the rise of the sound pressure level and a slow 1.5 second decay to assist in reading the maximum level.

Fast exponential time weighting is often recommended for assessing impulsive sound. For highly impulsive sounds having short durations this metric does not work well. When the averaging time of the time weighting is longer than the duration of the impulse, the impulse is in the stopband of the lowpass filter. In other words, the time weighting is filtering out the impulsive sound source being measured. That is the purpose of a smoothing filter.

Figure 8.1 demonstrates the filter response to a burst of sound just long enough to achieve a reasonably accurate reading within 0.5 dB of the true sound pressure level. The red curve represents the envelop of a burst of sound 0.277 seconds in duration. This is the time required for

the output of the fast exponential time averaging filter (blue curve) to rise to within 0.5 dB of the actual sound pressure level of the sound burst. When the sound burst ends, the output of the exponential time averaging filter begins to decay. The peak value in the output of the fast exponential time averaging filter, after being converted to sound pressure level, is known as the Lmax level.

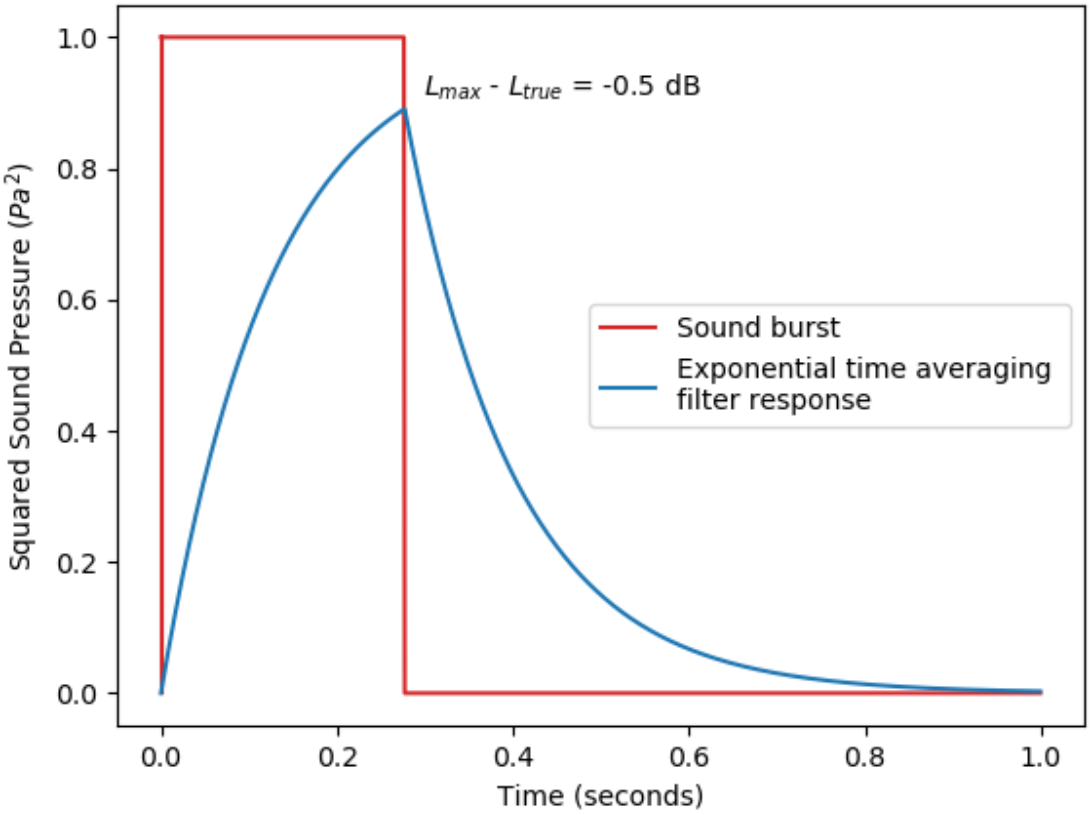


Figure 8.1. Fast Time Averaging Filter Response to a 0.277 Second Sound Burst

Figure 8.1 shows the behavior of the fast exponential time averaging filter and Lmax when used properly. Figure 8.2 illustrates how the fast exponential time averaging filter responds to a typical pickleball paddle impact. Note that the time scale has been reduced for clarity. At the end of the 0.002 second impulse, the fast exponential time averaging filter has only had time to rise to a level that is 18 dB below the true sound pressure level of the impulse. The pickleball paddle impulse is so much shorter than the time constant of the averaging filter that the exponential

curvature of the filter response is not even visible. It is clear that fast exponential time weighting, much less slow exponential time weighting, cannot be used to assess the noise impact of pickleball paddle impacts.

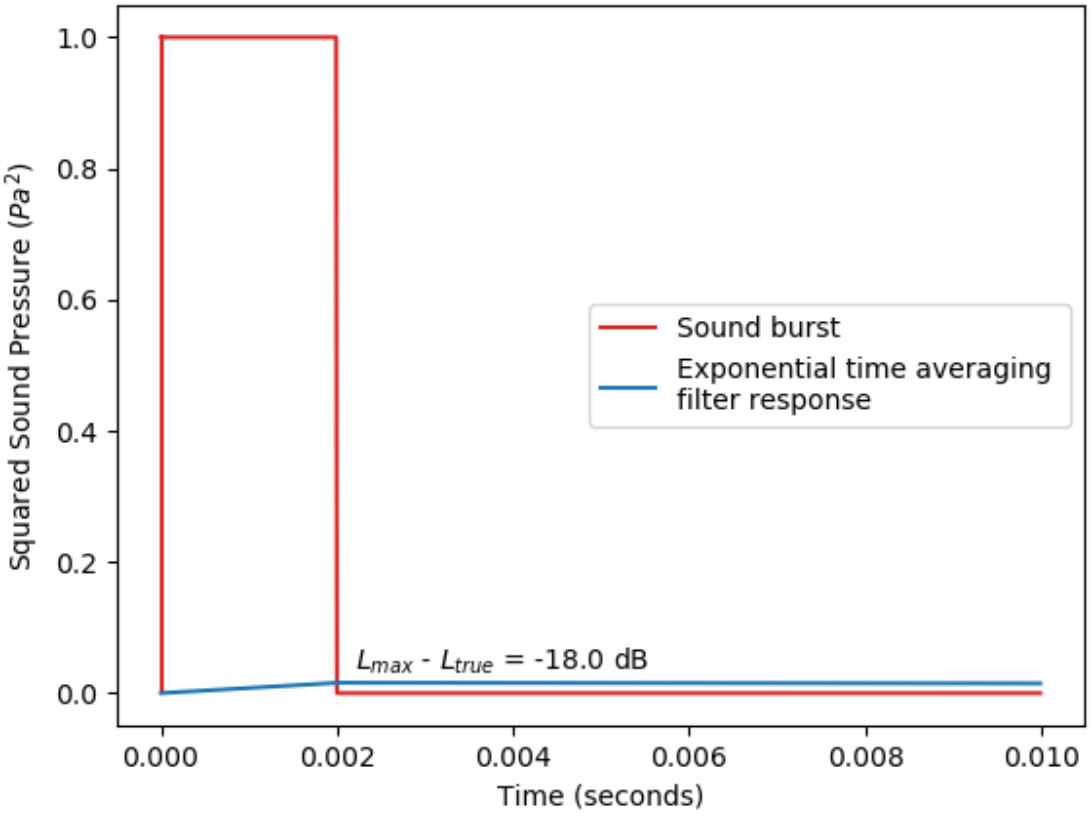


Figure 8.2. Fast Time Averaging Filter Response to a Typical Pickleball Paddle Impact

8.1.3 Percentile Sound Pressure Levels

Another common method of analyzing sound pressure level over time is to rank the levels by the percentage of time that a given level is exceeded. Percentile sound pressure level is described in Section 5.1.5. For impulsive sound, percentile levels suffer from the issues of both equivalent-continuous and exponential time weighted levels.

The majority of the energy in pickleball paddle impacts constitutes a very small percentage of the total measurement time. Even very low percentile levels like LA_{01}, the sound pressure level

exceeded 1% of the time, are little influenced. Further, percentile levels are usually calculated from the fast exponential time weighted level, a metric that already strongly attenuates the short duration impulses of the paddle impacts. Like the previous averaging methods, percentile sound pressure levels do not distinguish paddle impacts well from background noise and correlate poorly with the community response to this type of sound source.

8.2 Best Practices for Assessment of Impulsive Sound

Assessment of impulsive sound is multi-dimensional. In addition to loudness, other characteristics like onset rate, duration, and frequency range need to be considered as well to gauge the true noise impact. Due to the short duration of paddle impacts, averaging sound pressure level metrics such as equivalent-continuous level (LAeq), maximum fast exponential time weighted level (LAmax), and impulse time weighting (LAI) fail to accurately represent the perceived loudness and annoyance of the paddle impacts and impact processes in general. To get a better correlation with the actual response of the surrounding community to this type of sound metrics with a shorter time scale are needed.

The paddle impact sound pressure level is better represented by a combination of peak sound pressure level and sound exposure level (SEL). Using the sound exposure level involves windowing the measured sound pressure in time to include only the paddle impact and reflections from nearby surfaces as seen in Figure 6.1. The equivalent-continuous sound pressure level of the windowed impact is then normalized to the length of the window giving a representation of the energy in the impact alone. Appropriate adjustments for impulsive sounds can then be applied to the impacts as described next.

Most acoustical standards for sound pressure levels with regard to compatible land use provide adjustment factors for different types of sound, e.g. impulsive, tonal, time of day, etc. Each of these categories of sound produces different levels of community impact and annoyance due to their temporal or spectral characteristics in comparison to a broadband sound that does not vary in level or frequency content with time. The purpose of the adjustment factors is to normalize these types of sound to a neutral broadband sound pressure level so that they can be reasonably compared to a defined sound pressure level limit.

ANSI S12.9 Part 4 and ISO 1996 Part 1 give criteria for assigning adjustment factors to a variety of sound classifications. Sounds produced by impact processes are typically classified as ‘highly impulsive’ due to their high onset rates and intrusiveness and assigned a 12 dB adjustment. Experience has shown that pickleball paddle impacts should be adjusted as highly impulsive sounds in order to set appropriate performance goals for abatement treatments. Inadequate abatement treatment may lead to ongoing complaints, strained relations with neighbors, legal action, the need for continued involvement on the part of authorities, retrofitting, and possibly demolition costs to improve the abatement later.

8.3 Measurement Procedures for Highly Impulsive Sound

8.3.1 Measuring the Paddle Impacts

General procedures for conducting and reporting acoustical measurements have been covered in Chapter 5. For pickleball, the sound level meter should be set up to record continuous audio. This will be needed for assessing the impulses produced by the paddle impacts. The audio should be written to an uncompressed file format such as WAV with the following properties.

- Encoding: linear PCM WAV file format or other suitable lossless audio file format
- Sampling rate: 48 kHz (minimum)
- Resolution: 24 bit (minimum)

Audio recordings of the field calibration tone should be made as well and the Leq noted for future reference.

Logged data should be sampled at no more than one second intervals and include for each log interval,

- Peak sound pressure levels
  - LApk (A-weighted peak level)
  - LZpk (unweighted peak level)
- For speech assessment
  - LAmax (maximum A-weighted fast exponential time weighted level)
- For background level
  - LAeq (A-weighted equivalent-continuous level)
  - LAF (A-weighted fast exponential time weighted level)
  - LAS (A-weighted slow exponential time weighted level)

8.3.2 Measuring Background Levels

Background noise level measurements should be made without pickleball activity at each measurement location. In practice it has been found that background levels should be performed either before or after the pickleball courts are in use so as not to disrupt the rhythm of play by starting and stopping or otherwise interfering with the use of the courts. For noise monitoring situations where the sound level meter is left to run all day it may be necessary to find a time in the recorded data where the pickleball courts were not being used in order to assess the background noise level at different times of day.

8.3.3 Data Analysis

Analysis of the measured data is performed on the sound exposure levels of the individual, A-weighted paddle impacts. A minimum of 30 paddle impacts should be obtained at each test location.

Sound Exposure Level

Some analysis and reporting software packages that work with a particular sound level meter may be able to do sound exposure analysis; however, they must be able to work on time scales less than one second. While the main part of the acoustical energy occurs within about a 10 millisecond window, later reflection and reverberation must also be included in the sound exposure window. The sound exposure should include all of the initial impulse and reverberant decay tail. See Sections 5.1.6 and 5.5.3 for more information on calculating sound exposure level.

Background Noise Correction

A background correction should be applied to each paddle impact. Since these are short impulses, only a small sample of the background noise immediately before, or if necessary after, the paddle impact is needed. This is will give a more accurate correction in areas of high activity where the background noise level is fluctuating between paddle impacts. The procedure for background noise correction is explained in Section 5.3.2. It should be carried out on the equivalent-continuous level of the individual paddle impact, not on the sound exposure level directly. The background corrected equivalent-continuous level of the paddle impact is then converted to a sound exposure level for further analysis.

Adjusted Sound Pressure Level

There are two adjustments that will normally apply to pickleball paddle impacts, highly impulsive and day of week. The highly impulsive adjustment is 12 dB.

Noise assessment should be performed for the most impactful use case. A 5 dB adjust is therefore applied to account for the additional noise sensitivity during times when neighbors tend to be at home such as weekends and evenings.

This brings the total adjustment to 17 dB. The adjustment can be applied directly to the calculated sound exposure levels.

Now that the sound exposure levels have been adjusted, the adjusted sound pressure level can be calculated. This procedure is explained in Section 5.5.3. The adjusted sound pressure level can now be compared to applicable maximum permitted sound levels.

8.4 Noise Assessment of Spectator Speech

For larger crowds of people such as found at a tournament, ANSI S3.5 provides standard speech power levels for different vocal efforts. The loud vocal effort may be most appropriate for most events.

Sound pressure level measurements of spectators at a tournament would be a better estimate where possible. Differences in the number of spectators present during the measurement and the number expected at the proposed venue should be taken into account.

8.5 Site Simulation

An ISO 9613 or other suitable outdoor sound propagation standard can be used to calculate sound pressure levels at neighboring properties. Other more detailed environmental noise simulation methods exist and are also acceptable; however, ISO 9613 is simple and widely used with reasonable accuracy in most situations. There are many software packages available that implement this standard propagation model such as SoundPlan and iNoise.

8.5.1 Modeling Distributed Sound Sources

Figure 8.3 shows the dimensions of a pickleball court. Most paddle impacts occur between the baseline and no volley zone on each half of the court; however, serves are required to be made from behind the baseline.

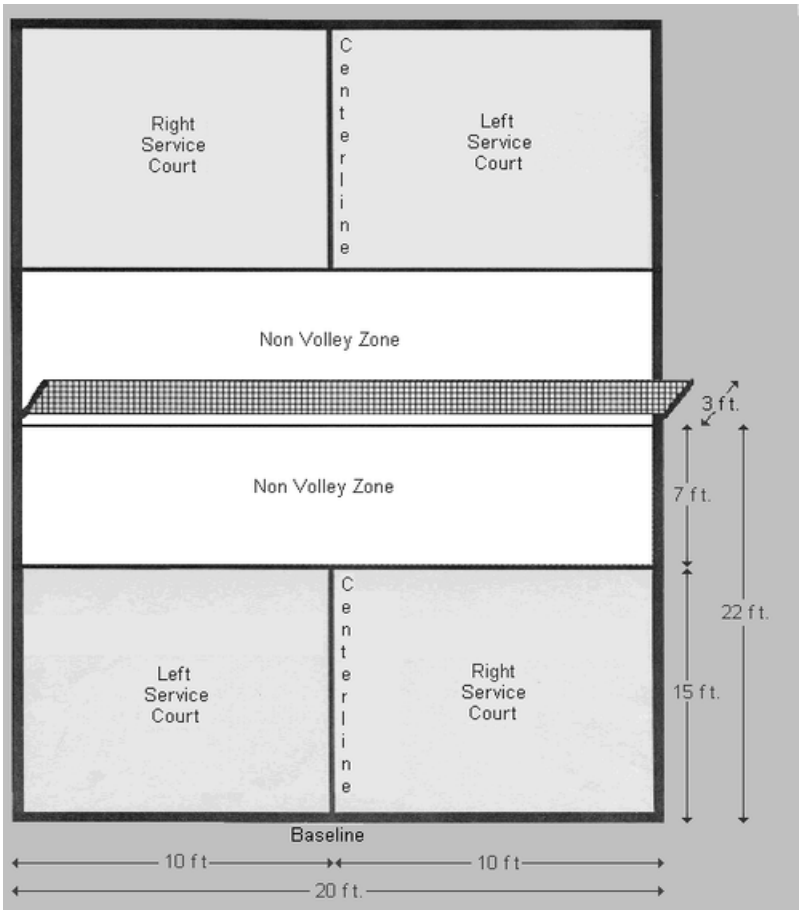


Figure 8.3. Pickleball Court Dimensions

Sound radiated from pickleball courts will not follow the inverse square law until the distance to the point of observation is large compared to the dimensions of the court or group of courts. The inverse square law states that sound radiated from a point source will decrease in level at a rate of 6 dB for every doubling in distance. As seen in Figure 8.4, this does not hold true for distributions of sound sources at close range. The figure compares two sound sources at the opposite baselines of a pickleball court to a single source approximation located at the center of the court. The vertical dashed green lines represent the edges of the concrete pad. The lower graph is the difference between the two curves in the graph above. The point of observation must be almost three court lengths before the level difference is within 0.5 dB.

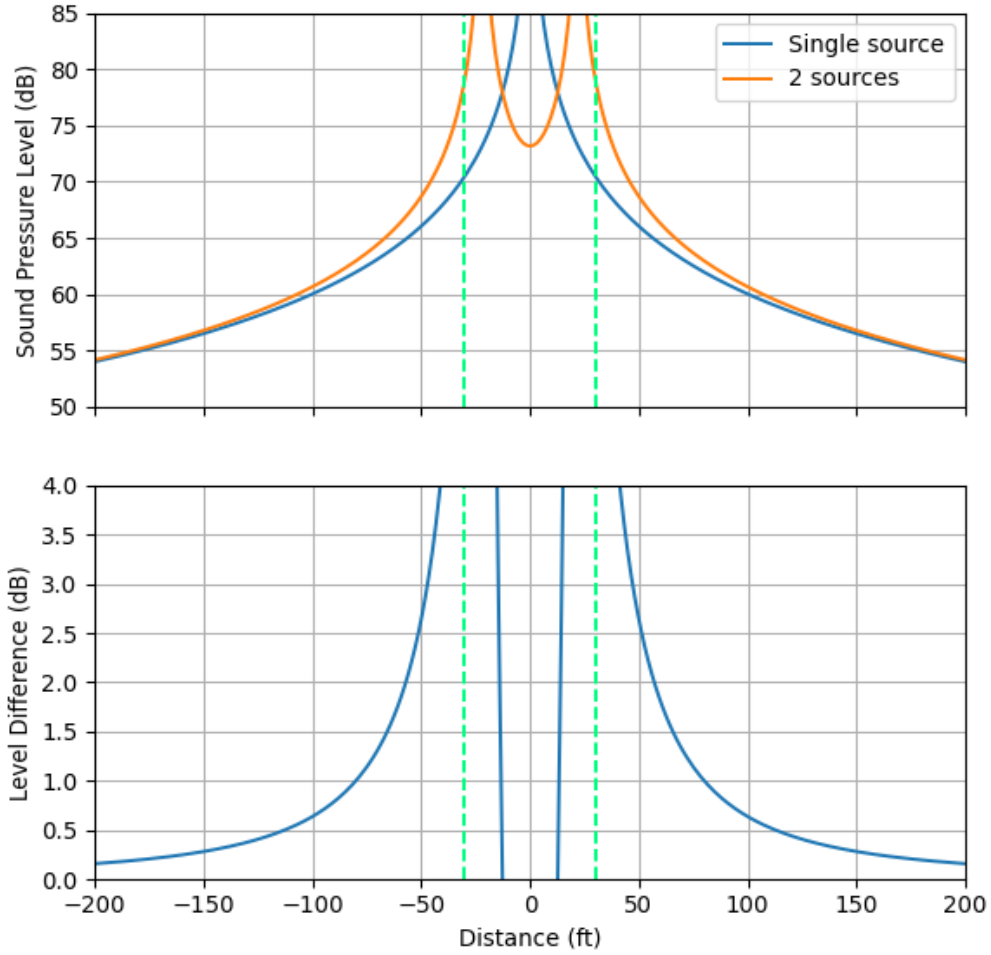


Figure 8.4. Sound Pressure Level at Distance from Court Center for One and Two Sources

For this reason, it is recommended to use multiple sound sources on each pickleball court when constructing an acoustical model of the courts. A vertical area source, i.e. a distribution of sound sources on a vertical plane located at the baseline at each end of each court extending the width of the baseline and from the playing surface to a height of 8 feet, is recommended. This arrangement is chosen for simplicity and to better ensure that the extents of noise barriers are not underestimated in the noise abatement planning stage.

8.5.2 Pickleball Court Directivity

As described in Section 6.4, pickleball courts have a directivity pattern that is bidirectional. Measurements at numerous pickleball courts have shown that the directivity pattern can be

approximated as shown in Table 8.1 or by using Eq. 8.1 where θ is the angle of the receiver with respect to the direction of play and D is the attenuation in decibels from the directivity.

$$D = 20\log_{10}\left(\sqrt{\left(\cos^2(\theta) + 10^{(-5.5/10)}\sin^2(\theta)\right)}\right) \quad (8.1)$$

Angle (deg)	Attenuation (dB)
0	0.0
10	-0.1
20	-0.4
30	-0.8
40	-1.4
50	-2.2
60	-3.1
70	-4.0
80	-4.7
90	-5.0
100	-4.7
110	-4.0
120	-3.1
130	-2.2
140	-1.4
150	-0.8
160	-0.4
170	-0.1
180	0.0

Table 8.1. Pickleball Court Directivity Pattern

9. Noise Abatement Methods

When a noise impact assessment indicates that activities planned for a site exceed the limits set in the noise regulations, a noise abatement plan to bring the site into compliance should be prepared by a qualified acoustical engineer.

9.1 Setbacks

A noise abatement plan begins with sufficient setback to noise sensitive areas to make abatement treatments effective. Any given noise abatement treatment will produce a limited amount insert loss or attenuation. A noise abatement plan for a site generally consists of a number of different treatments that work together to achieve an acceptable sound level in the surrounding area. Any deficit in the amount noise reduction achievable through mitigation treatments must be made up for in setback. In short, the setback is what makes the rest of the noise abatement plan possible.

One approach to setbacks is to simply prescribe a minimum setback with regard to all residential land uses. This has been done recently by Park City, Utah. Under their new pickleball code amendment [Park City], proposed pickleball courts within 600 feet of residential properties must have a noise abatement plan prepared. Pickleball courts within 150 feet of residential properties are not permitted.

This approach has the advantage of being easy to understand and apply; however, there are some situations where it may not be possible to create an effective noise abatement plan at 150 feet due to elevation differences or multi-story housing that make sufficient shielding by a sound wall impractical or impossible. In some special cases it may be possible to mitigate pickleball courts closer than 150 feet. Thus a 150 foot setback requirement would be overly restrictive in these applications.

Pickleball courts within 100 feet of residential land uses have proven to be problematic resulting in lawsuits, strict limitations on usage, and court closures. Courts within 150 feet of residential land uses require careful noise abatement planning using modern methods of noise assessment for highly impulsive sound such as ANSI S12.9 Part 4 described in previous chapters and strict adherence to design specifications.

9.2 Noise Barriers

9.2.1 Performance Requirements

Sound walls and fence covers are the main noise abatement treatments utilized for pickleball noise control. Sound walls are a more permanent and aesthetic solution while fence covers have lower material and installation costs. Both types of barriers can have reflective or sound absorbing surfaces.

There are a variety of materials and products available that are acceptable for pickleball mitigation. It is important that they meet a few minimum requirements.

Sound must not be able to penetrate though the barrier material. For pickleball, this means the barrier material must have a minimum sound transmission class (STC) of 20. This is not difficult to achieve with many solid materials that can include many options from mass-loaded vinyl (MLV) fence covers to masonry walls. Materials such as wind screens attached to court fencing and vegetation in the form of a hedges provide a level of visual privacy, but should not be considered noise abatement treatments.

In order to maintain the integrity of the barrier transmission loss, penetrations in the barrier surfaces cannot exceed 1% of the surface area. There can be no gaps between the bottom of the barrier and the ground or between barrier sections. Fence covers must be installed with the manufacturer's recommended amount of panel overlap.

9.2.2 Fence Cover Safety Notice

IMPORTANT

Standard chain link court fencing may not be rated for wind loading with a solid material attached. This can pose a danger of fence collapse in high winds. Many fence manufacturers produce reinforcement kits to stabilize fencing for this type of loading. It is important to consult with the fence manufacturer or a structural engineer prior to attaching MLV, sound blankets, or anything other solid material to an existing open link fence.

9.2.3 Parallel Surfaces

A common problem encountered when designing a noise barrier system for pickleball courts is the need to shield homes on opposite sides of the courts. Arranging reflective noise barriers so that they have parallel faces creates a situation where the sound is trapped between the interior surfaces and cannot dissipate. It has nowhere to go but over the noise barrier. This will significantly degrade its acoustical performance. If this layout cannot be avoided by changing the relative positions of the two walls, sound absorption will be needed on the interior surfaces to control acoustical energy buildup.

Figure 9.1 shows a performance comparison of several surface materials on opposite sides of two pickleball courts arranged end to end. Carsonite is a sound wall system with integrated sound absorption. It is commonly used for noise mitigation along roadways and absorbs well at 1,000 Hz, the critical frequency for pickleball paddle impacts. AudioSeal is an outdoor sound absorbing blanket material that can be attached to a fence. It does not absorb as well as the Carsonite at higher frequencies, but still performs adequately. The MLV curve is notably higher than the AudioSeal and Carsonite curves due to its high reflectivity at 1,000 Hz.

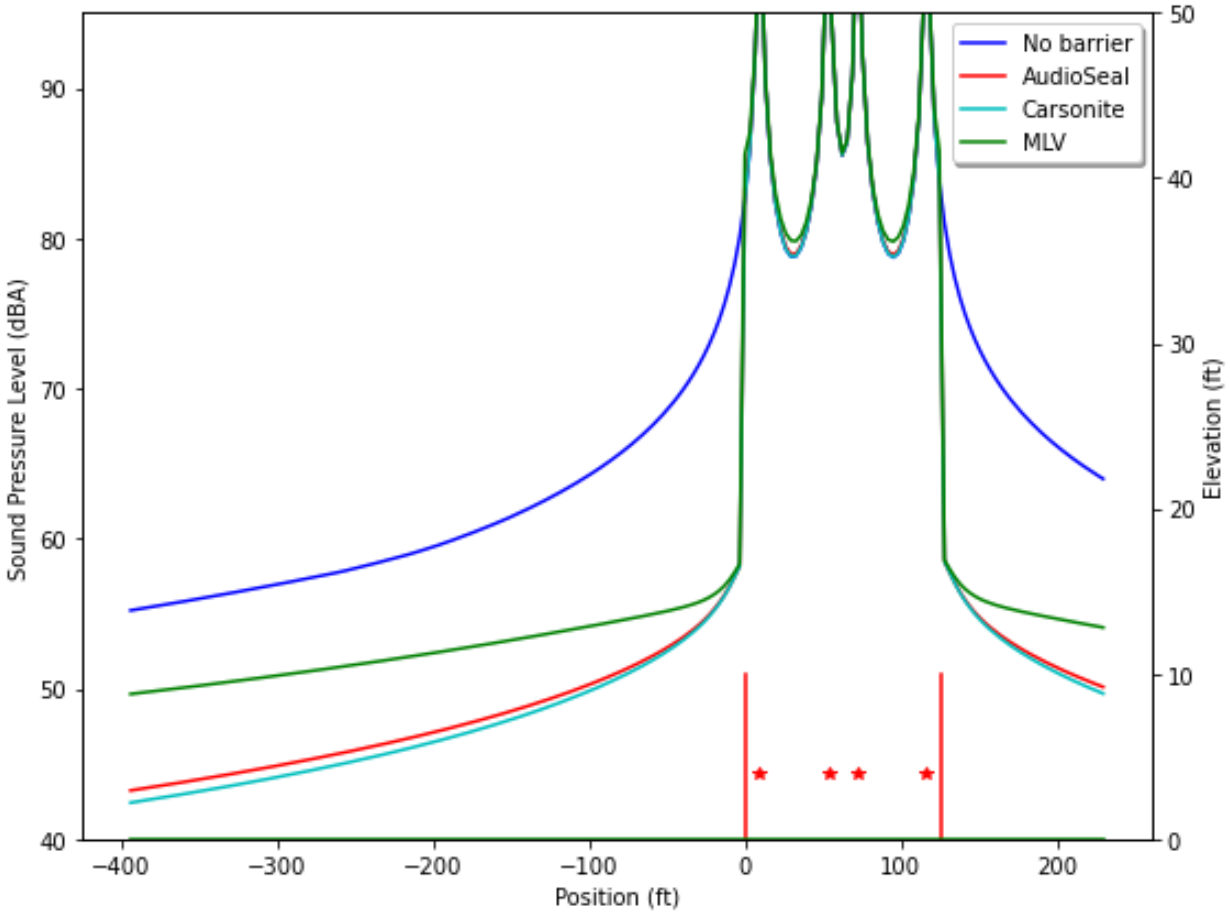


Figure 9.1. Performance Comparison of Interior Parallel Surfaces of Noise Barriers

It should also be noted that the slopes of the AudioSeal and Carsonite curves are almost identical to the slope of the curve for no noise barrier. The MLV curve has a notably shallower slope that trends toward the no barrier use case at distances farther from the noise barrier. This is the result of the large number of high amplitude image sources produced by reflective interior surfaces of the MLV.

> Note: The ISO 9613 standard contains provisions for only one reflection. Acoustical simulation software implementing this standard will not calculate the case of parallel walls accurately. The above figure was created using multiple image sources and 40th order reflections for the MLV surfaces in order to get convergence on a solution.

9.2.4 Lowering Pickleball Courts

One approach to free standing sound walls is to lower the elevation of the pickleball courts by excavating the soil at the location of the courts and using it to create a berm next to the courts. While this can have some acoustical benefits in some situations, it is more of a cost saving design choice. By constructing the sound wall on top of the berm, a lower wall height will be

required and the wall will be less expensive to build.

9.2.5 Ventilation and Air Flow

In summer, pickleball courts, like any outdoor sport played on a hard court, can become hot. Sound walls and fence covers will impede the air flow over the courts and make the courts feel even warmer. It may be possible to alleviate this to a degree by using overlapping wall sections that allow some breeze to pass through. This usually requires an overlap of at least four times the width of the gap between the wall sections. Sound absorbing material may also be needed in the gap to control flutter reflections that allow sound from the pickleball courts to work its way through the overlap. There must be no line of sight to players on the courts possible through the gap. If necessary, add a wall extension to shield the outside opening of the overlap. This wall layout can also be used as a passageway for ingress and egress.

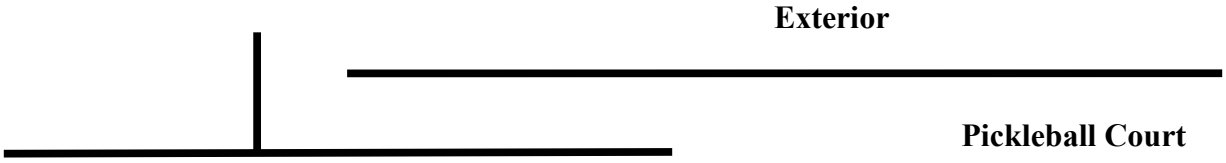


Figure 9.2. Sound Wall Overlap

9.3 Court Orientation

From the examples of pickleball court directivity in Section 7.1, it is apparent that the orientation of pickleball courts can be used as a noise mitigation measure. By turning the courts so that a noise sensitive area is to the side of the courts, sound levels in that direction can be reduced 3 to 5 dBA.

This may not be an ideal solution in some situations. It is preferable to have the direction of play roughly north-south to reduce glare from the sun during play. It is, however, worth the effort to take advantage of this characteristic of pickleball paddle radiation when it will not interfere with the use of the courts.

9.4 Sound Masking

9.4.1 Masking Requirements

Masking of a sound source refers to changing the threshold of hearing by introducing another

sound source such that the first sound source can no longer be heard. This is difficult to achieve with impulsive sounds because of their high peak sound pressure levels. Since impulsive sound is by nature intermittent and of limited duration, a masking source would have to operate continuously at a high amplitude in order to mask the impulse. This will often create a new noise issue.

Pickleball paddle impacts produce sound mostly in the 1,000 Hz octave band. The masking source must therefore also product sufficient sound in the 1,000 Hz octave band to cover the sound of the paddle impacts.

9.4.2 Roadways

Roadways are a broadband, continuous sound source. In general, even busy highways are not able to mask pickleball courts due to the high peak sound pressures of the paddle impacts. Traffic noise tends to be mostly low to mid frequency sound and does not have sufficient energy in the 1,000 Hz octave band to effectively mask pickleball.

It appears to be a common perception that placing pickleball courts in neighborhoods located close to main arteries or interstates will prevent noise issues due to the sound from the roadway. In practice, this has not proven to be the case as seen at Glenhaven Park in La Cañada Flintridge, California [La Cañada Flintridge]. This neighborhood park is located adjacent to Interstate 210 on the north side of Los Angeles.

9.4.3 Fountains

There is some evidence that water fountains can be beneficial under certain conditions. As discussed above, a masking source must produce sufficient sound in the 1,000 Hz octave band and operate at all times in order to mask pickleball. Water falling on water can produce significant sound in the 1,000 Hz octave band.

Fountains located close to a noise sensitive area such as a back patio that is several hundred feet from pickleball courts may produce partial masking of paddle impacts from the courts. It may be possible to reduce this distance with a sound wall system at the pickleball courts.

For noise sensitive areas close to pickleball courts this is not likely to be an effective noise abatement treatment. Larger noise sensitive areas or larger numbers of homes will require multiple fountains in order to keep the distance from the fountains to the individual homes relatively small compared to the distance to the pickleball courts.

9.5 Full Enclosure of Pickleball Courts

For outdoor pickleball courts that cannot be mitigated because of insufficient available setback, topography, elevation features of the surrounding structures, or some other reason, the only remaining noise abatement option may be a full enclosure to contain the sound. Any penetrations in the building shell will need to be analyzed for sound leakage including doors, windows, ventilation, exhaust fans, etc. Vestibule doors may be necessary in some applications where ingress and egress face noise sensitive areas.

Indoor courts with bay doors opening away from noise sensitive areas can also work in some instances. In this use case, a room analysis of the reverberant field will need to be done and the amount of sound power exiting through the bay doors calculated from the direct and reverberant sound fields. Buildings can be much higher than free standing wall and provide a better performing noise barrier.

9.6 Noise Control Policy

9.6.1 Hours of Operation

Limiting the hours of operation of the pickleball courts to certain times of the day or days of the week can sometimes be an effective noise control strategy. These arrangements are often negotiated with neighbors.

9.6.2 Restrict Players Allowed to Use Courts

In some cases, restricting court usage to, for example, club members and their accompanied guests can increase accountability for how the courts are used. While this may also reduce the amount of players that use the courts, noise abatement planning should assume the courts will be used at full capacity.

9.6.3 Speech

A pickleball court properly mitigated for paddle impacts will generally not have noise issues related to the loudness of speech on the courts. Noise issues with speech are for the most part related to content rather than sound level. If this is the case, a prohibit on swearing and other offensive speech may be necessary.

9.6.4 Restrictions on Equipment

Quieter Equipment

In practice, the enforcement of the use of specific types of pickleball equipment, paddles and balls, has proven to be difficult to manage for home owners associations, country clubs, parks, and most other types of pickleball facility. In order for this to be considered a noise abatement measure, there must be a clear policy in place and personnel dedicated to monitoring activity on the courts to ensure unsanctioned equipment is not in use.

Paddles

There has been an effort in the pickleball paddle industry to move to quieter designs and most players are already using this “green list” equipment as it is referred to. Measurements by Spendiarian & Willis at a number of pickleball facilities have found that the mean sound exposure level of paddle impacts, when normalized to distance and ground type, is very consistent. This indicates that, in aggregate, most players are either using essentially the same equipment or that there is not a significant acoustical difference in the equipment used. During

testing where the make and model of the paddles in use have been recorded, it has been found that most players were using green list paddles. At the present time green list paddles should not be considered a noise control measure since most players are already using this equipment anyway.

Foam Balls

Measurements by Spendiarian & Willis comparing foam pickleballs to common regulation balls has shown that the foam balls can be 8 to 9 dB quieter than regulation balls. While the use of foam balls is an effective noise abatement measure, it is undesirable for pickleball players as the foam balls play very differently from the regulation balls and cannot be used in tournaments or to train for them.

10. Site Planning Considerations for Pickleball

10.1 When a Noise Impact Assessment Is Needed

Courts located within 350 feet of residential properties in most cases require noise abatement. Pickleball court sites within 500 to 600 feet of noise sensitive areas should be reviewed by a qualified acoustical engineer in the site selection phase of the project. In the case that the ground between the pickleball courts and receiving property is water this distance may extend 800 to 1,000 feet in some cases. Courts located within 150 feet of homes require careful and often extensive noise abatement design to avoid complaints. Placing open air pickleball courts within 100 feet of residential properties is not recommended.

10.2 Site Selection

10.2.1 Available Setbacks

The most important factor to consider in selecting a site for pickleball courts is the distance to adjacent residential land uses. While a noise barrier such as a sound wall or mass-loaded vinyl fence cover can be effective in reducing noise impact, it can only provide a limited amount of insertion loss, usually between 8 and 12 dB depending on the ground it is installed on, flanking paths, reflecting surfaces, and other factors. The rest of the noise reduction required to meet acceptable sound levels must mostly be gained through distance. It is important to ensure that there is enough buffer so that noise abatement installed can be adequately effective. Other site conditions that may increase the setback required are discussed in the following subsections.

10.2.2 Proximity to Multi-story Residential Structures

In order for a noise barrier to be effective it must be able to block the line of sight from the sound source to the receiving land use. Pickleball paddle impacts can occur from near the elevation of the playing surface to a height of about 8 feet above it. Multi-story housing located close to the proposed pickleball courts may not be adequately shielded a wall system. This can affect upper level windows, balconies, raised decks, other amenities located above ground level. These need to be included in the noise impact assessment of the proposed pickleball courts.

10.2.3 Topography

Similar to housing with floors above ground level, homes sitting at an elevation higher than the proposed pickleball courts can also be difficult to shield with a noise barrier.

In addition, refraction caused by temperature gradients over certain ground can effectively cause sound to travel farther. Refraction is the bending of the path sound travels towards regions of

lower sound speed, e.g cooler air. This can be the result of temperature stratification of the atmosphere or wind. In low lying places where cool air tends to collect in the evenings or over irrigated ground where evaporative cooling can occur such as a golf course, a temperature lapse condition can develop with warm air above and cool air below. This will result in sound arcing down toward the ground. Refraction caused by a temperature lapse condition can result in sound arcing over obstacles on the ground that would normally impede its propagation thereby making it louder at farther distances.

Parks located at the bottom of a valley can pose a particular challenge as they tend to experience these conditions regularly. Further, the sides of the valley may trap sound and send it echoing back to locations on the opposite side. Valleys often require a detailed propagation study to understand how sound moves through the area at different times of the day.

10.3 Tournaments

The main difference in sound from pickleball courts during tournaments will be spectators. The noise assessment and abatement planning should include a speech analysis based on the number and location of spectators. This has been described in Section 8.4.

If a PA system is to be used for announcements, limits on the system gain should be established to ensure sound levels reaching the surrounding properties remain acceptable. Noise monitoring may also be employed at the property boundaries. This involves placing one or more microphones near noise sensitive areas so that the sound system operator can monitor sound levels in real time and make any necessary adjustments.

11. Conclusions

11.1 Best Practices in Noise Assessment and Regulation

Basic methodologies and best practices for community noise assessment, environmental acoustics measurements, and noise regulation documents have been discussed. The group of ANSI standards in S12.9 represents the current best practices in community noise assessment. The measurement methodology and sound classifications in Part 4 of the standard (harmonized with International Organization for Standardization standard ISO 1996) have been implemented under European Union Directive 2002/49 and in a number of Asian countries. ANSI S12.9 Parts 4 and 5 have been used as the basis for the recommendations in this document.

11.2 Characteristics of Pickleball Sound

The most notable sounds from pickleball courts are the popping sound produced when a pickleball contacts a paddle and speech. It is the popping sound of the paddle impacts that produces the greatest number of noise complaints. This sound has been classified as highly impulsive for the purpose of noise assessment under ANSI S12.9 Part 4.

11.3 Noise Impact Assessment of Pickleball

It has been shown that averaging techniques such as equivalent-continuous and maximum fast exponential time weighted sound pressure levels (LAeq and LAmax) are not well suited for assessment of short duration impulsive sound like that produced by the impact of a pickleball on a paddle. These metrics can be expected to substantially underestimate the community response to this type of sound. Measurement procedures based on the adjusted sound exposure level according to ANSI S12.9 Part 4 have been described as a more accurate methodology for noise impact assessment of pickleball.

11.4 Noise Abatement Planning

Setbacks are an important first step in mitigating pickleball courts. A noise abatement plan usually consists of a number of treatments that each contribute a certain amount of noise reduction. Any difference between the total noise reduction of the abatement treatments and that required to meet target sound levels must be made for with setbacks.

Topography and multistory structures near the courts will also influence the amount of setback required. In order for a noise barrier to be effective it must block the line of sight from the sound source to the point of observation. Upper level bedroom windows and decks that are able to overlook the noise barrier will not be shielded and will likely experience a greater noise impact than at ground level.

Testing at numerous pickleball courts has found that the sound radiated from the paddles is directional. More sound goes in the direction of play than to the sides of the court. This characteristic can be used as a noise abatement measure by orienting pickleball courts so that the direction of play is not directed toward noise sensitive areas.

Sound masking in the form of water fountains has been found to be somewhat helpful in certain situations. This is mainly where the masking sound source is much closer to the noise sensitive area than the pickleball courts and the noise sensitive area is not too close to the pickleball courts. Roadways have not been found to be effective masking sources for pickleball.

In most cases, the noise abatement installed for the paddle impacts will be sufficient for speech from the courts as well. Noise complaints about speech on pickleball courts are most often related to content rather than sound level. This is best addressed through policy.

11.5 Site Planning

Site review and feasibility analysis for pickleball begins by looking at available setbacks and sight lines. This will determine what noise abatement treatments may be needed and whether they can be effective on a particular site. Topography and the presence of nearby multistory housing are also important considerations that may affect required setbacks. The noise impact assessment of impulsive sound is a complex task that should be done using modern standards and best practices by an acoustical engineer with experience in psychological acoustics and signal analysis.

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Susan Ortiz

From: Kevin Engoian [redacted]
Sent: Tuesday, July 21, 2026 8:21 PM
To: City Clerk
Subject: Public Comment on Proposed Pickleball Courts

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good evening,

I live in Sundance Valley, near the proposed pickleball courts at the RTD parking lot on Caley Ave.

I'm asking the City Council to require an independent, site-specific sound study, completed and made public, before construction is approved.

Thank you,

Kevin Engoian
[redacted] Greenwood Village, CO 80111

Susan Ortiz

From: Anna Harshell [redacted]
Sent: Wednesday, July 22, 2026 9:57 AM
To: City Clerk
Subject: Public Comment on Proposed Pickleball Courts

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I live in Sundance Valley, near the proposed pickleball courts at the RTD parking lot on Caley Ave.

I am asking the City Council to require an independent, site-specific sound study, completed and made public, before construction is approved.

Anna Harshell
[redacted]
Greenwood Village, CO 80111

CITY OF GREENWOOD VILLAGE COLORADO

Staff Report

6060 South Quebec Street
Greenwood Village, CO
80111

Case No. PZ-26-00017/26

City Council | August 17, 2026

Subject Property Address:

8500 E. Orchard Road

Project Size / Zoning:
4.812 Acres / Mixed Commercial

Comprehensive Plan Planning Area:
Interstate Corridor Planning Area

Applicant:
Doug Spuler
1001 17th Street - Suite PL100,
Denver, CO 80202

Property Owner:

8500 E. Orchard Road, RLLP

Request:

A Special Use Permit and Site Development Plan to allow Grace Chapel to establish a place of worship use with an auditorium containing 1,000 seats in the existing building.

Staff Recommendation:
Approval

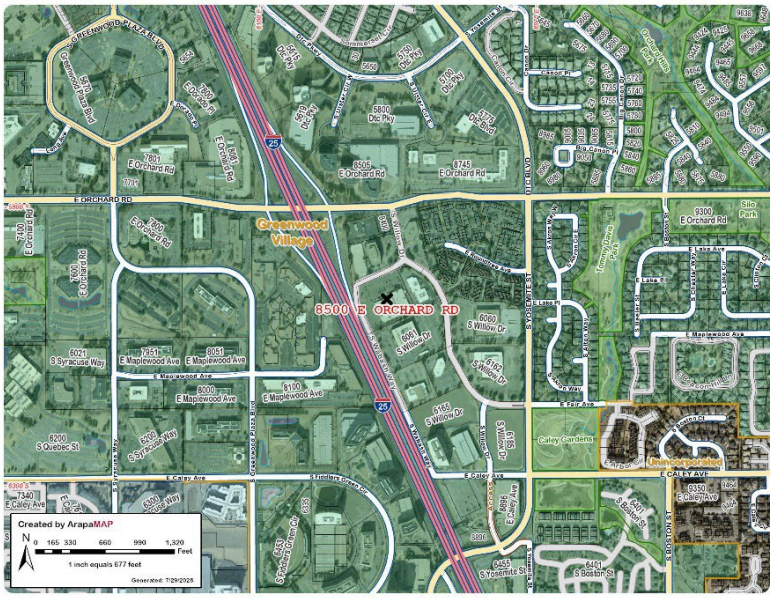
P & Z Commission (4-0) Recommendation for approval on the SUP and SDP

Attachments:
1. Zoning Map, Aerial, and Site Photos
2. Letter of Description and Justification and Application
3. Proposed SDP/SUP
4. Comp Plan – Interstate Corridor
5. The 1987 Annexation Master Development Plan (MDP)
6. Traffic Impact Study
7. Drainage Conformance Letter
8. NIM Summary
9. P & Z Commission Draft - August 4, 2026_DRAFT

Public Notice & Comments – As of 8/12/2026

No. Sent	Comments Received	Support	Oppose
1207	N/A	N/A	N/A

Public Notice was provided as required by the Land Development Code (LDC, Section 16-2-270). The affidavits of mailing and posting will be presented at the August 17, 2026 hearing.



Executive Summary

The Applicant requests approval of a Special Use Permit (SUP) and Site Development Plan (SDP) to establish a religious assembly (place of worship) use at 8500 E. Orchard Road (the Subject Property). The proposal is to repurpose the existing two-story, 59,818 square foot building located on the Subject Property along with significant site improvements including a reconfigured parking area, increased open space and landscape areas, a fenced outdoor play area, new site and building lighting, a new trash enclosure, and exterior building renovations. The proposed SUP/SDP plan set includes the required elements outlined in the Land Development Code (LDC).

Background

- The zoning of the property is Mixed Commercial (MC), and the Subject Property is located in the Interstate Corridor Planning Area of the City's Comprehensive Plan. Adjacent properties to the north, south, and east are also zoned MC. Adjacent uses include Interstate 25, office, and research and development.
- The lot comprising the Subject Property was annexed in 1987. It is a part of the Sub-Area 2, specifically, Sub-Area 2-6 of the Master Development Plan (MDP, Attachment 5).
- The 1987 MDP was adopted by City Council in 1987 during the annexation hearing for the properties included in the MDP. The MDP's design standards are intended to supplement the City of Greenwood Village's codes, ordinances, and other development standards.
- A neighborhood input meeting (NIM) was held on January 27, 2026. The meeting was presentation style with questions (by attendees) and answers (from the Applicant) at the end and was attended by several members of the public. A summary of the questions asked and answers discussed at the NIM can be found in Attachment 8 to this staff report.
- The LDC states that an SDP is required for a property for which an SUP is proposed.
- On August 4, 2026 the Planning and Zoning Commission unanimously recommended approval for both the SUP and the SDP.

Applicant Request

Site Development Plan & Special Use Permit

A Special Use Permit (SUP) and Site Development Plan (SDP) request to establish place of worship use at the Subject Property:

- Proposed land use: place of worship for Grace Chapel within the existing 59,818 sf., two-story building; auditorium sized to allow up to 1,000 seats.
- Building modifications limited to renovation of the existing building: repainting (including refinishing and repainting the existing wood façade), a new storefront and entry, new rooftop mechanical screening, terracotta tile and corrugated steel roof deck accents, and relocated/replaced building-mounted lighting. No increase in building NFA or height is proposed.
- Parking area reconfiguration reducing total paved area: 306 existing standard spaces reduced to 250 standard spaces, and accessible spaces increased from 4 to 7.
- Site open space increased from 10.9% (22,914 sf.) to 20.0% (42,003 sf.), with new landscape areas, an approximately 4,100 sf. fenced play turf area enclosed by a 42-inch steel fence, publicly accessible sidewalks and plaza areas, a new CMU trash enclosure with decorative metal gates, bike racks, and ADA-compliant site connections and handrails.
- New full cut-off LED site lighting (4000K) with 25-foot parking lot poles, building wall packs, and recessed soffit fixtures, with photometric compliance documented on the plan set.

Analysis

Comprehensive Plan

The Subject Property is located in the Interstate Corridor Planning Area of the City's Comprehensive Plan. The Corridor Planning Area Vision calls for a mix of low- to mid-density office, institutional and civic uses supported by retail and restaurant amenities, with high standards in site planning,

architecture, landscaping, lighting, and signage amidst an open space, park-like setting. Staff finds that a place of worship use is an institutional/civic use consistent with the mix of uses outlined in the Corridor's vision, and that repurposing an existing building for this use maintains the existing development intensity, consistent with Land Use Policy 1e (existing development intensity levels are generally appropriate).

The Land Use goals for the planning area include maintaining the open space, park-like character of the Village, planning development to preserve scenic views and vistas when development occurs. The proposal almost doubles on-site open space, reduces impervious parking and drive aisle area, and makes no change to building height or massing, thereby preserving existing view planes (Policies 3c and 3h).

Compatibility of Surrounding Land Uses

The Subject Property is bounded by S. Wabash Way and the Interstate 25 corridor to the north and west and by developed commercial and office properties within Sub-Area 2-6 to the east and south. A place of worship use is a low-intensity institutional use whose activity peaks occur outside the surrounding employment district's business hours. The proposed exterior renovations, mechanical screening, trash enclosure, landscape improvements, and full cut-off lighting further limit any off-site impacts. Staff finds the proposed use and design compatible with the surrounding commercial context and the residential neighborhoods in the broader area.

Building Architecture and Site Modifications

The existing building is proposed to be repurposed, with modifications that are cosmetic and functional in nature: the building will be repainted (with the existing wood façade refinished and repainted), a new storefront and entry will be installed, and new rooftop mechanical screens (12 to 14 feet in height) will be constructed to screen rooftop equipment, consistent with LDC Section 16-21-90. The color and material board identifies terracotta tiles, corrugated steel roof decking, painted finishes, storefront glazing, and a new CMU trash enclosure with a tex-coat finish to match the building and white-painted decorative metal gates, consistent with LDC Sections 16-21-40 and 16-21-140.

Landscaping

The proposed landscape plan is a significant improvement over the existing condition of the site. Twenty-one (21) new trees are proposed across five species (Kentucky Coffeetree, Tannenbaum Mugo Pine, Heritage Oak, Ivory Silk Japanese Tree Lilac, and Accolade Elm), with a maximum single-species share of 24%, meeting the LDC Section 16-21-260 species diversity requirement. Proposed tree sizes (3-inch caliper minimum canopy trees, 2-inch caliper ornamental trees, and 8-to-10-foot evergreen trees) meet LDC minimum planting sizes. More than 300 new five-gallon shrubs are proposed, together with approximately 19,200 sf. of rock mulch and 4,100 sf. of new sod, and approximately 11,300 sf. of existing turf, existing shrub masses, and 44 existing trees (5 conifer, 39 deciduous) are retained. Seventeen (17) existing trees and shrub groupings in poor or conflicting locations are to be removed and are mitigated by the new plantings. Evergreen shrub plantings soften the exterior of the new trash enclosure per LDC Section 16-21-250.

Lighting

The photometric plan and details propose full cut-off LED fixtures throughout the site at a 4000 Kelvin color temperature, within the LDC Section 16-21-130 maximum of 4,000 Kelvin for commercial areas. Parking lot pole fixtures are mounted at 25 feet, the LDC maximum for commercial parking lots not adjacent to residential uses. The lighting summary table documents average parking area illumination of approximately 2.0 foot-candles with a maximum of 5.1 foot-candles, within the LDC recommended

range of 2–10 foot-candles for parking areas, and a uniformity ratio of 3.3, within the 4:1 maximum. Light levels at five feet beyond the property lines do not exceed 0.2 foot-candle (excluding spill onto adjacent public roadways).

Access and Parking

The Subject Property is accessed from the existing drive accesses along S. Wabash Way. Per LDC Section 16-21-530, a place of worship requires one parking space per four seats in the sanctuary; the proposed auditorium of up to 1,000 seats therefore requires 250 spaces. The proposal provides 250 standard spaces and 7 accessible spaces; 7 accessible spaces meets the LDC requirement for parking areas of 201–300 total spaces. Bike racks are provided per the plan set details. The parking lot reconfiguration reduces total pavement while providing internal pedestrian connections, ADA-compliant routes, and handrails to the building entries.

Traffic Impacts

A Traffic Impact Study (TIS, Attachment 6) was prepared by Kimley-Horn to evaluate the transportation impacts associated with the proposed redevelopment of the Grace Chapel site at 8500 E. Orchard Road. The study evaluated existing conditions, projected traffic associated with the proposed development, and future roadway operations under both a 2030 buildout scenario and a 2050 planning horizon. Nine nearby intersections, including the Orchard Road/I-25 interchange, Orchard Road/Yosemite Street, Orchard Road/Willow Drive, other nearby signalized intersections, and adjacent local street intersections, were analyzed.

- The proposed development consists of a new church facility that will replace the existing Boot Barn. The initial facility is planned for approximately 750 seats, with an ultimate capacity of 1,000 seats. The study evaluated weekday operations as well as Sunday church traffic to reflect the unique operational characteristics of the proposed land use.
- Based on Institute of Transportation Engineers (ITE) Trip Generation, the project is anticipated to generate approximately 900 average weekday daily trips, including approximately 70 trips during the weekday AM peak hour and 100 trips during the weekday PM peak hour. The site is calculated to generate 540 trips during the Sunday peak hour.
- Operational analyses indicate that the surrounding roadway network will continue to operate at acceptable levels of service with the addition of project traffic. While the study identifies several operational improvements throughout the study horizon, including future signal timing adjustments at Orchard Road & Willow Drive and Caley Avenue & Yosemite Street, these improvements are primarily associated with projected regional traffic growth rather than traffic generated by the proposed development. The study further concluded that project traffic will have only minimal impacts at the Orchard Road/I-25 interchange and is not expected to substantially affect intersection operations or vehicle queuing.
- The TIS also evaluated pedestrian and bicycle facilities, vehicle queue lengths, and site access operations. Existing access points along Wabash Way are expected to adequately accommodate projected traffic associated with the proposed development.

Public Works Staff completed a review of the Traffic Impact Study dated January 2026 and generally concurs with the methodology, assumptions, and conclusions presented. Staff finds that the proposed development can be accommodated by the existing and planned transportation network and does not require transportation mitigation beyond improvements already identified as part of the City's long-range transportation planning efforts.

Drainage

The Applicant prepared a drainage conformance letter for the proposed development (Attachment 7). The Community Development Engineer has reviewed the conformance letter for the development and finds that the proposed drainage design meets the requirements of the Drainage Criteria Manual.

The development is classified as a Tier 1 development with a proposed disturbance area less than 1 acre and a net decrease in impervious area of 36,100 sf. The existing drainage patterns on the site will be generally maintained. Flows from the site will be conveyed as surface flows to the northeast and collected in existing storm sewer within S Willow Dr. Tier 1 development does not require water quality or flood attenuation to be provided; however, the property falls within subbasin G-14 of the DTC Master Drainage plan, and the proposed improvements comply with the assumptions for the property in that report given the reduction in impervious areas. The proposed development satisfies the requirements of the Greenwood Village Drainage Criteria Manual.

Review Criteria

In considering an application for an SDP and SUP, City Council shall consider the following criteria as outlined in LDC Section 16-2-50(e) and Section 16-2-70(e). The approval criteria and Staff's findings are presented in the tables below. Sec. 16-2-70(f) States that City Council shall determine whether the SUP shall be transferable to other owners and shall make such determination on a condition of approval.

SUP Review Criteria Table:

SUP Criteria	Finding	Considerations
1. Whether the proposed use is expressly allowed as a special use in the zone district	Yes	Places of worship are a use permitted in the Mixed Commercial (MC) zone district in accordance with a Special Use Permit (SUP).
2. Whether the proposed use is compatible with surrounding land uses	Yes	The proposed place of worship use within the existing building is compatible with the surrounding commercial and office context, with peak activity occurring outside the employment district's business hours. Renovated façades, screened rooftop equipment, an enclosed and landscaped trash area, and full cut-off lighting limit off-site impacts. Same Criteria as the SDP (#2)
3. Whether the proposed use adequately mitigates any adverse impacts it causes, including, without limitation, adverse impacts on traffic, view corridors, noise, property values, and the provision of public services	Yes	Traffic peaks for the proposed use are counter to weekday commuter peaks, and parking meets the LDC ratio for the proposed seating capacity. There are no changes to the building height or massing, so view corridors are unaffected. Assembly activity is contained within the building, and the outdoor play area is internal to the site. Property values should be positively impacted by the renovation of the building and the substantial improvement of the site landscaping and open space. Same Criteria as the SDP (#3)

4. Whether the proposed use is properly designed with regard to landscaping, open space, parking, setbacks and building elevations	Yes	Staff finds that the proposal provides significantly improved landscaping and open space (20.0% of the site), parking meeting the LDC ratio for the proposed seating capacity with the required accessible spaces, building setbacks far exceeding minimums on all sides, and renovated building elevations with screened rooftop equipment, consistent with the site and design standards of LDC Article 21.

SDP Review Criteria Table:

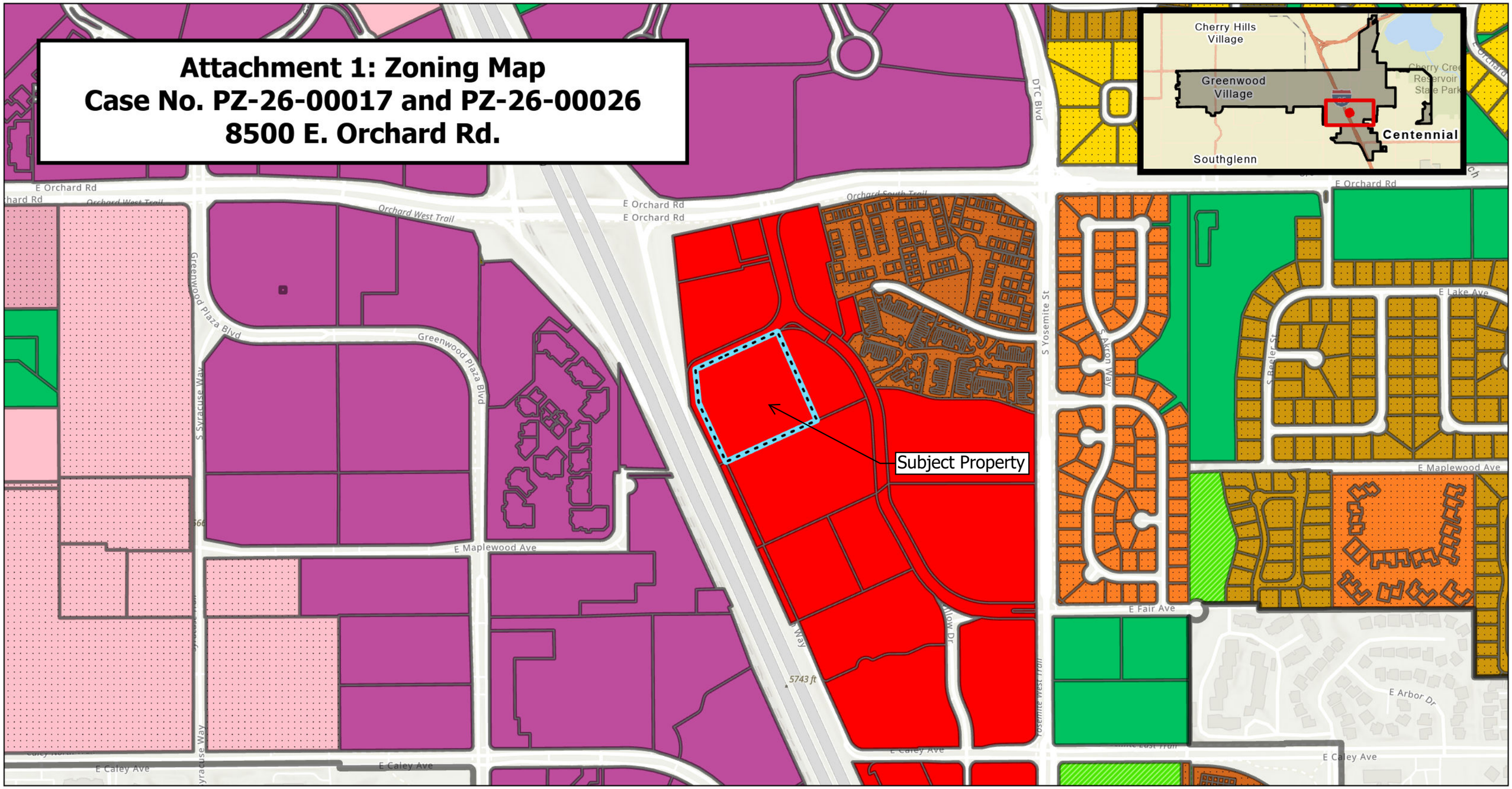
SDP Criteria	Finding	Considerations
1. Whether the development is in conformance with the Comprehensive Plan	Yes	Staff finds that the request to repurpose the existing building for a place of worship is consistent with the Interstate Corridor Planning Area vision of a mix of low- to mid-density office, institutional and civic uses. The proposal maintains existing development intensity, nearly doubles on-site open space, reduces impervious coverage, and preserves existing view planes with no change to building height, consistent with the Corridor's land use, transportation, and image/identity goals and policies.
2. Whether the development is compatible with surrounding land uses	Yes	The proposed place of worship use within the existing building is compatible with the surrounding commercial and office context, with peak activity occurring outside the employment district's business hours. Renovated façades, screened rooftop equipment, an enclosed and landscaped trash area, and full cut-off lighting limit off-site impacts.
3. Whether the development adequately mitigates any adverse impacts it causes, including, without limitation, adverse impacts on traffic, view corridors, noise, property values, and the provision of public services	Yes	Traffic peaks for the proposed use are counter to weekday commuter peaks, and parking meets the LDC ratio for the proposed seating capacity. There is no change to building height or massing, so view corridors are unaffected. Assembly activity is contained within the building, and the outdoor play area is internal to the site. Property values should be positively impacted by the renovation of the building and the substantial improvement of site landscaping and open space.

4. Whether the development is in conformance with the development criteria, restrictions and standards set forth in the MDP	Yes	The Subject Property is within Sub-Area 2-6 of the 1987 Annexation Master Land Use Plan. The proposal complies with the applicable MDP standards, including the 95-foot height plane (34-foot building), 40% maximum building coverage (28% proposed), maximum parking/drive aisle coverage, minimum lot frontage, and all building setbacks.
5. Whether the development is in conformance with the general development objectives set forth in the commercial site and design standards in Section 16-21-20 of the LDC:	See below	See below
Minimize adverse impacts on adjacent uses	Yes	The proposal reuses an existing building with reduced pavement, screened equipment and trash areas, and code-compliant lighting; activity peaks occur outside surrounding business hours.
Minimize disruption to the existing terrain, vegetation or other natural site features	Yes	The existing building and general site grading are retained, 44 existing trees and existing shrub masses are preserved and protected, and only trees in poor condition or conflicting locations are removed and mitigated.

Improve pedestrian, bicycle, and vehicular circulation within and across the site	Yes	The reconfigured parking lot improves internal circulation and provides ADA-compliant routes and handrails to building entries and bike racks are provided.
Minimize adverse impacts on views to the mountains and to Cherry Creek Reservoir	Yes	There is no increase in building height (34 feet, well below the 95-foot MDP height plane) and no change to building massing.
Reduce the visual impact of parking areas, screened storage areas and similar accessory areas and structures	Yes	Total parking and drive aisle coverage is reduced and the new CMU trash enclosure matches the building and is softened with evergreen plantings
Design buildings that are attractive and compatible with surrounding development in terms of forms, colors, materials, and texture	Yes	The renovation refreshes the existing architecture with repainted finishes, refinished wood façade elements, new storefront glazing, terracotta tile and corrugated steel roof accents.

Provide exterior lighting that meets the functional and security needs of the proposed land use without adversely affecting streets, adjacent properties or the community	Yes	All proposed fixtures are full cut-off 4000K LED; parking lot illumination and uniformity are within LDC recommended levels; light levels do not exceed 0.2 foot-candle at five feet beyond the property lines.
Provide for more identifiable and functional open space and landscaping	Yes	On-site open space nearly doubles to 20.0% (42,003 sf.), including new landscape areas, publicly accessible sidewalks and plaza areas, and a fenced play turf area, with 21 new trees and more than 300 new shrubs.

Attachment 1: Zoning Map
Case No. PZ-26-00017 and PZ-26-00026
8500 E. Orchard Rd.



Legend

- Subject Property

Zoning Type

- B-1 (Business Professional)
- B-1 PUD (Business Professional PUD)
- B-2 (Neighborhood Business)
- B-2 PUD (Neighborhood Business PUD)
- B-3 (Community Business)
- B-3 PUD (Community Business PUD)
- B-4 (Service Business)
- B-4 PUD (Service Business PUD)
- R-.05 PUD (Residential 0.05 PUD)
- R-.1 PUD (Residential 0.1 PUD)
- R-.25 (Residential 0.25)
- R-.25 PUD (Residential 0.25 PUD)
- R-.5 PUD (Residential 0.5 PUD)
- R-.75 PUD (Residential 0.75 PUD)
- R-1.0 (Residential 1.0)
- R-1.0 PUD (Residential 1.0 PUD)
- R-1.5 PUD (Residential 1.5 PUD)
- R-2.0 (Residential 2.0)
- R-2.0 PUD (Residential 2.0 PUD)
- R-2.5 (Residential 2.5)
- R-2.5 PUD (Residential 2.5 PUD)
- A (Agricultural)
- L-I (Light Industrial)
- M-C (Mixed Commercial)
- O-1 (Open Space)
- O-2 (Open Space)
- T.C. (Town Center)
- T.C. PUD (Town Center PUD)
- Parcel Boundary
- Subject Property

GREENWOOD VILLAGE
COMMUNITY DEVELOPMENT

8500 E Orchard Rd.
Greenwood Village, CO
80111

N

0 500 1,000 Feet

Disclaimer: Greenwood Village makes no warranty as to the accuracy of this map and assumes no responsibility or liability to any user. This map is not a legal document. It is intended to serve as a graphical representation only.

Aerial Image of Subject Property




Site Photo of the Subject Property (Looking South)
BOOT BARN
WESTERN & WORK WEAR

Site Photo of the Subject Property (Looking East)




Site Photo of the Subject Property (Looking Northwest)


Site Photo of the Subject Property (Looking Southwest)

Planning & Development Permit Application

Wednesday, February 11, 2026
City of Greenwood Village
Community Development
6060 South Quebec Street
Greenwood Village, CO 80111
Office: (303) 486-5783
comdev@greenwoodvillage.com

New Permit Application

Project Number	PZ-26-00017
Project Address	8500 E. Orchard Road, Greenwood Village 80111
Project Name	Grace Chapel
Project Type	Development
Project Description	Special Use Permit
Owner Name	8500 E. Orchard Road, RLLP
Owner Contact Name	
Owner Address	
Owner Phone	[redacted]
Owner Email	[redacted]
Architect Business Name	
Architect Contact Name	
Architect Address	,
Architect Phone	
Architect Email	
Applicant Role	
Applicant Name	Beck - Doug Spuler
Applicant Phone Number	[redacted]
Applicant Email Address	[redacted]
Submit Date	2/11/2026 6:25:38AM

All Application Questions and Answers

Application Question	Answer
Pre-App #	PA-25-00028
Project Description	Reposition an existing building and parking lot for a public building use - namely a church, Grace Chapel.

SUP / SDP: NARRATIVE – LETTER OF DESRIPTION AND JUSTIFICATION
February 12, 2026

INTRO:

I.

We are pleased to submit this Narrative as part of our SUP/SDP submittal for the site at 8500 E. Orchard in Greenwood Village. We are proposing to reposition this existing building and parking lot for a public building use – namely Grace Chapel – with the spirit of their mission being deeply community-facing. Nearly every part of the proposed space would be used to serve the broader public — not just for religious gatherings, but also for practical, inclusive purposes throughout the week. We have attached our initial design concept to help illustrate these uses.

Use list within the approximately 58,000 SF existing building include:

- **"Worship center" (~14,000 SF)** will be used for Sunday services, but also designed to accommodate community events like weddings, concerts, and public meetings. We hope to make this a premier site in Greenwood Village for weddings.

- **Commons area (~8,000 SF)** would be active daily as a coffee shop, informal gathering space, and open co-working environment.

- **Counseling offices (estimated ~5,000 SF)** continuing the work the church has done for the past six years — offering professional counseling services free of charge to anyone in need, regardless of background or belief.

- **Kids' classroom areas (~10,000 SF)** will be used for weekend programming.

- **Meeting and breakout rooms (~8,000 SF)** will be available for community organizations, homeschool co-ops, nonprofit partners, and civic meetings — and regularly utilized by others, not just church members.

- **Back of house areas (~10,000+ SF)** additional circulation, restrooms, storage, and mechanical spaces including other support uses.

From a purely numerical standpoint, less than 25% of the facility's weekly use would be considered "exclusive to religious worship." In reality, we see no space being used *solely and exclusively* for religious activity — every square foot is designed for both sacred and civic use.

The site is bounded by I-25 to the west, Wabash to the north and Willow to the east (4.8-acres; 210k SF). Regarding the site and exterior of the building, we propose some exterior upgrades to the existing building (addition of glass at the west façade, etc.) and look forward to working with Greenwood Village staff (& DTC ACC) as this scope is undefined at this early. Related to the site, we do believe that the current access points and general site circulation flow will be conducive to the new proposed use. As the attached updated ALTA survey indicates, the site currently contains 303

parking stalls, and we believe this to be adequate based on our understanding of parking requirements: 1 space for every 4 seats in the worship center / “sanctuary” (e.g. 250 parking stalls required based on proposed 1000-seat capacity). Finally, we plan to bring all signage into conformance with the current code.

SUMMARY:

We believe this approach aligns well with Greenwood Village’s intent.
We look forward to working closely with Greenwood Village to help revitalize this special building and place within the City.

Proposed by: The Applicant

Doug Spuler, Managing Principal
Beck Architecture, LLC

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

LEGAL DESCRIPTION

LOT 1, BLOCK 1, WESTERN LEISURE, FILING NO. ONE, COUNTY OF ARAPAHOE, STATE OF COLORADO.

BASIS OF BEARINGS

BEARINGS SHOWN HEREON ARE BASED UPON THE EAST LINE OF LOT 1, BLOCK 1, WESTERN LEISURE, FILING NO. ONE, WHICH BEARS S24°28'05"E BETWEEN THE MONUMENTS SHOWN HEREON.

BENCHMARK

ARAPAHOE COUNTY BENCH MARK "UAP1 10"

LOCATED AT THE SOUTHWEST CORNER OF ARAPAHOE ROAD AND SOUTH XANTHIA STREET, AT THE SOUTHWEST CORNER OF DRIVEWAY

ELEVATION = 5768.33 FEET (NAVD 1988)

JURISDICTION CONTACT LIST

JURISDICTION
CITY OF GREENWOOD VILLAGE
6060 S QUEBEC STREET
GREENWOOD VILLAGE, CO 80111
TEL: 303-486-5783
CONTACT: GRADY TIMMERMAN, AICP

VESTING NOTE

THIS PLAN CONSTITUTES A SITE SPECIFIC DEVELOPMENT PLAN PURSUANT TO THE GREENWOOD VILLAGE MUNICIPAL CODE AND C.R.S., SECTION 24-68-101, AND ESTABLISHES VESTED PROPERTY RIGHTS, FOR THREE (3) YEARS FROM ITS EFFECTIVE DATE, TO UNDERTAKE AND COMPLETE THE DEVELOPMENT AND USE OF THE PROPERTY IN ACCORDANCE WITH THIS PLAN.

PROJECT CONTACT LIST

OWNER
8500 E ORCHARD ROAD RLLP
1888 SHERMAN ST, SUITE 500
DENVER, CO 80203
TEL: 303-255-4700
CONTACT: BRADLEY P BROOKS

DEVELOPER
GRACE CHAPEL
8505 S. VALLEY HIGHWAY
ENGLEWOOD, CO 80012
TEL: 303-378-2173
CONTACT: JOSH WEIDMANN

LIGHTING DESIGNER
KIMLEY-HORN & ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, SUITE 300
GREENWOOD VILLAGE CO 80111
PHONE: 720-527-5777
CONTACT: DUSTIN COLWELL, P.E.

ARCHITECT
BECK ARCHITECTURE, LLC
1001 17TH STREET, SUITE PL100
DENVER, CO 80202
TEL: 720-215-3238
CONTACT: DOUG SPULER, AIA, LEED AP

LANDSCAPE ARCHITECT
KIMLEY-HORN & ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, SUITE 300
GREENWOOD VILLAGE CO 80111
PHONE: 206-238-2310
CONTACT: ELIZA LOPER, PLA

CIVIL ENGINEER
KIMLEY-HORN & ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, SUITE 300
GREENWOOD VILLAGE CO 80111
PHONE: 303-228-2332
CONTACT: COY WILLIAMS, P.E.

TRANSFERABILITY NOTE



VICINITY MAP
1" = 500'

DEVELOPMENT STANDARDS TABLE	REQUIRED	EXISTING	PROPOSED
MINIMUM OPEN SPACE COVERAGE - **GREENWOOD VILLAGE** (PERCENT AND SQUARE FEET)	20% (41,921 SF)	10.9% (22,914 SF)	20.0% (42,003 SF)
MINIMUM OPEN SPACE COVERAGE - **DTC ACC** (PERCENT AND SQUARE FEET)	30% (62,881 SF)	10.9% (22,914 SF)	22.2% (46,623 SF)
MAXIMUM BUILDING GROUND COVERAGE (PERCENT AND SQUARE FEET)	40% (83,841 SF)	29% (60,178 SF)	28% (59,818 SF)
MAXIMUM BUILDING HEIGHT (PER MDP HEIGHT PLANE)	95'	34'	34'
MAXIMUM NET FLOOR AREA (NFA)	N/A	59,818 SF	59,818 SF
MAXIMUM PARKING/DRIVE AISLE COVERAGE (PERCENT AND SQUARE FEET)	PARKING: 40% (83,841 SF)	PARKING: 25% (53,133 SF) DRIVE AISLE: 30% (63,472 SF)	PARKING: 22% (46,515 SF) DRIVE AISLE: 27% (56,321 SF)
MINIMUM LOT FRONTAGE	100'	454'	454'
PRINCIPLE BUILDING FRONT SETBACK ROW (FROM STREET CURB FACE, S WABASH WAY)(NORTH)	25'	196.5'	196.5'
PRINCIPLE BUILDING SIDE SETBACK - INTERIOR (EAST)	15'	40.7'	40.7'
PRINCIPLE BUILDING SIDE SETBACK - CORNER LOT (WEST)	25'	138.7'	138.7'
PRINCIPLE BUILDING REAR SETBACK (SOUTH)	25'	41.6'	41.6
STANDARD PARKING SPACES (TO ALLOW FOR 1000 SEATS IN AUDITORIUM)	250	306	250
ACCESSIBLE PARKING SPACES	7	4	7

NOTES

1. AREA CALCULATIONS BASED ON TOTAL SITE AREA
2. MAXIMUM HEIGHT PROPOSED IS MEASURED FROM THE HIGHEST POINT OF FINISHED GRADE ADJACENT TO THE FOUNDATION TO THE HIGHEST POINT OF THE BUILDING

SITE DATA	
EXISTING ZONING	MIXED COMMERCIAL (MC)
GOVERNING MASTER DEVELOPMENT PLAN	1987 ANNEXATION MASTER PLAN
SITE AREA (SF/AC)	209,610 SF/4.812 AC
PROPOSED LAND USE	RELIGIOUS ASSEMBLY
TOTAL NUMBER OF LOTS	1
TOTAL NUMBER OF BUILDINGS	1
NUMBER OF STORIES FOR BUILDING	2
NET FLOOR AREA FOR BUILDING	59,818 SF
TOTAL NUMBER OF TRACTS	0
BUILDING CONSTRUCTION TYPE	TYPE VB
ALLOWED USES	PUBLIC BUILDINGS AND FACILITIES OTHER THAN GENERAL OFFICE, PUBLIC UTILITIES, RECREATION FACILITIES (SPECIAL USE)

NOTES

NO LAND WITHIN THE PROPERTY BOUNDARY IS TO BE DEDICATED TO PUBLIC USE

SHEET INDEX	
Sheet Number	Sheet Title
1	COVER SHEET
2	EXISTING CONDITIONS
3	SITE PLAN
4	SITE PLAN DETAILS
5	EMERGENCY ACCESS PLAN
6	EXISTING LANDSCAPE INVENTORY
7	LANDSCAPE PLANS
8	OPEN SPACE PLAN
9	LANDSCAPE NOTES
10	TREE MITIGATION NOTES
11	LANDSCAPE DETAILS
12	PHOTOMETRIC PLAN
13	PHOTOMETRIC DETAILS
14	BUILDING ELEVATIONS
15	BUILDING ELEVATIONS
16	HEIGHT CALCULATIONS
17	ROOF PLAN
18	COLOR AND MATERIAL BOARD
19	COLOR RENDERINGS
20	COLOR RENDERINGS
21	COLOR RENDERINGS

CERTIFICATE OF OWNERSHIP

8500 E ORCHARD RD RLLP
1888 N SHERMAN ST STE 500
DENVER, CO 80203

EXECUTED THIS _____ DAY OF _____, 20___,

BY: _____

AS: _____

STATE OF COLORADO
COUNTY OF _____

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME

THIS _____ DAY OF _____, 20___,

BY: _____

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____,

_____

CITY COUNCIL CERTIFICATE

APPROVED BY THE CITY COUNCIL OF THE CITY OF GREENWOOD VILLAGE.

WITNESS MY HAND AND THE CORPORATE SEAL OF THE CITY OF GREENWOOD VILLAGE THIS _____ DAY OF _____, 20___.

_____
ATTEST: CITY CLERK

_____
MAYOR

CLERK AND RECORDER'S CERTIFICATE

THIS SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE CLERK AND RECORDER OF ARAPAHOE COUNTY
AT _____ _____.M. ON THE _____ DAY OF _____, 20___,
IN BOOK _____, PAGE _____, MAP _____, RECEPTION _____,
COUNTY CLERK AND RECORDER

BY: _____

PLANNING & ZONING COMMISSION CERTIFICATE

THIS PLAN WAS RECOMMENDED FOR APPROVAL BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF GREENWOOD VILLAGE, STATE OF COLORADO, THIS _____ DAY OF _____, 20___,

_____
CHAIR

Know what's **below.** **Call** before you dig.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2026 KIMLEY-HORN AND ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, Suite 300
GREENWOOD VILLAGE, CO 80111 (303) 228-2300

DESIGNED BY: CMW
DRAWN BY: SPD
CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
COVER SHEET

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION
Kimley»Horn
Kimley-Horn and Associates, Inc.

PROJECT NO.
096328011

DRAWING NAME
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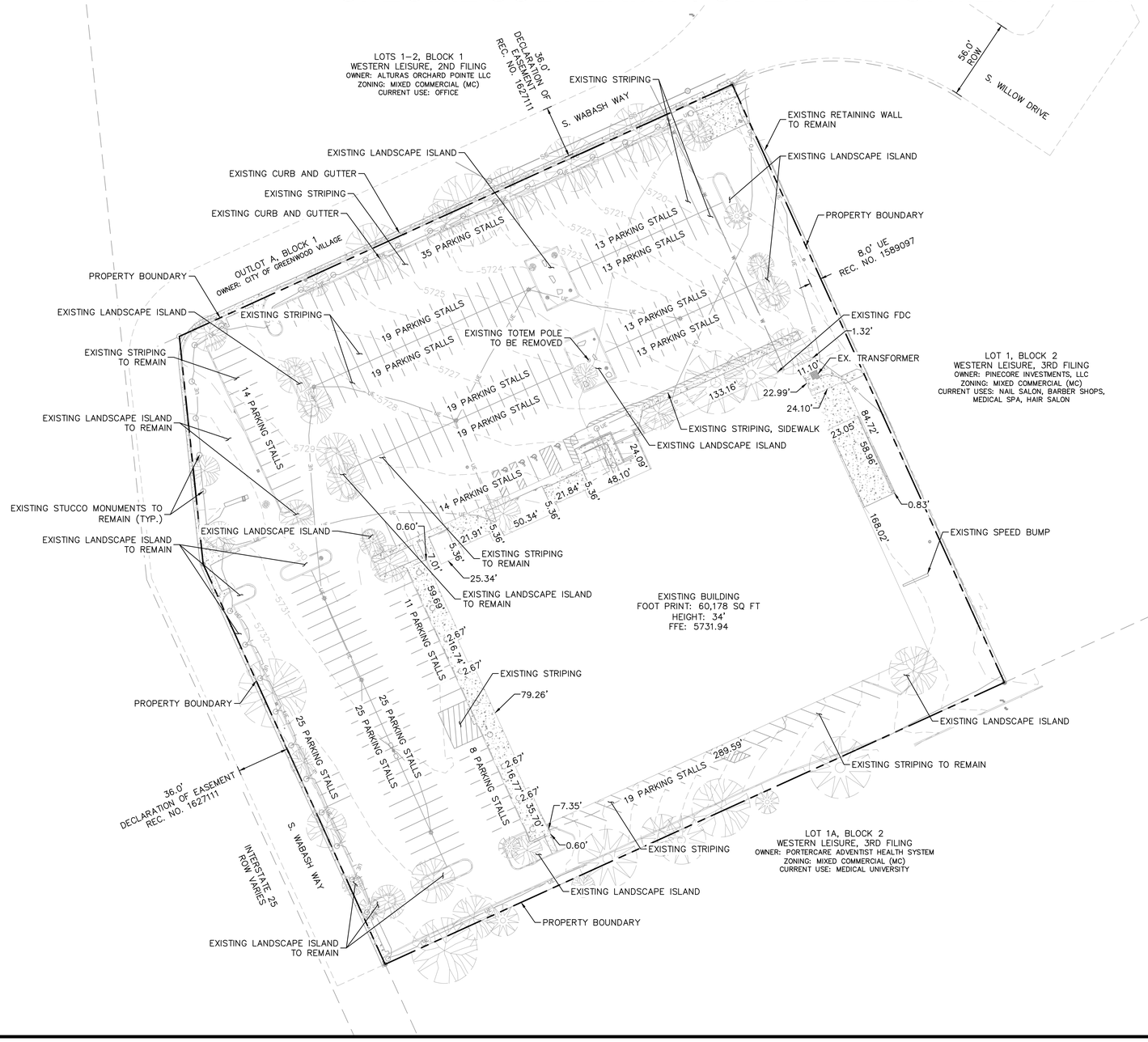
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A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



LEGEND

- PROPERTY BOUNDARY
- EXISTING CURB AND GUTTER
- UE — EXISTING UNDERGROUND ELECTRIC
- UT — EXISTING UNDERGROUND TELEPHONE
- FO — EXISTING FIBER OPTIC
- W — EXISTING WATER PIPE
- SS — EXISTING SANITARY SEWER PIPE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING LIGHT POLE
- EXISTING CONCRETE
- EXISTING STRIPING

NO.	REVISION	BY	DATE	APPR.

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DESIGNED BY: CMW
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CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
EXISTING CONDITIONS

PROJECT NO.
096328011

DRAWING NAME
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NORTH

GRAPHIC SCALE IN FEET
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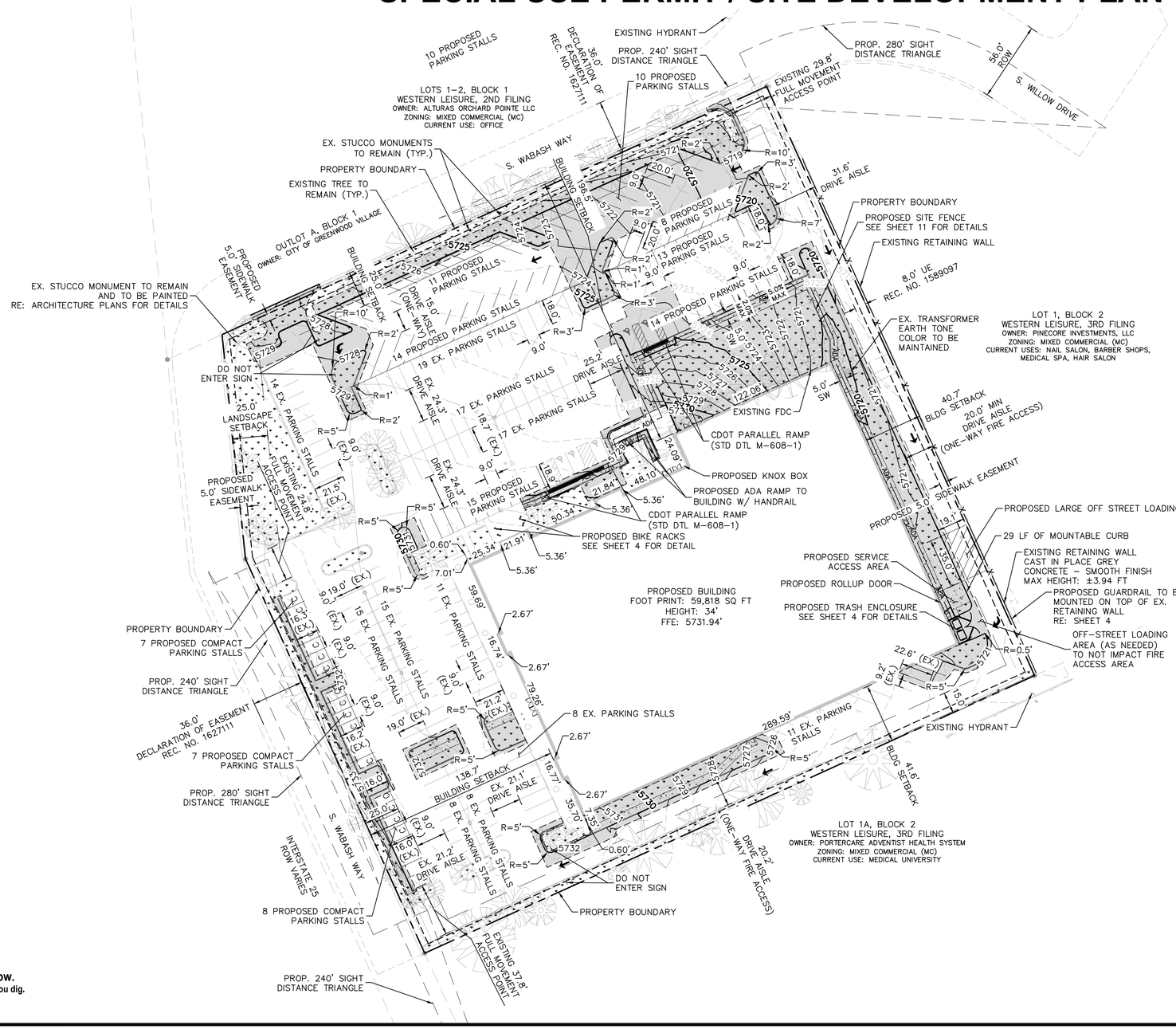
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SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



LEGEND

- PROPERTY BOUNDARY
- ADA — ADA ACCESSIBLE ROUTE
- PROPOSED SETBACK
- EXISTING EASEMENT
- SIGHT DISTANCE TRIANGLE
- PROPOSED LANDSCAPING REFER TO SHEET 6 FOR DETAILS
- X — PROPOSED SITE FENCE
- PROPOSED GRADING LIMITS PROJECT CONSTRUCTION LIMITS FOR MS4 PERMIT
- 5719 — PROPOSED CONTOURS
- 5721 — EXISTING CONTOURS
- C — PROPOSED COMPACT STALL PAVEMENT STRIPING

SITE PLAN NOTES

1. THE FEMA FIRM FLOOD MAP FOR THIS LOCATION IS 08005C457K, EFFECTIVE ON 12/17/2010. THE FLOOD MAP DOES NOT SHOW A 100-YR FLOODPLAIN BOUNDARY WITHIN THE PROPERTY.
2. ALL LINEWORK SHOWN IN GREY ARE EXISTING IMPROVEMENTS TO REMAIN. ALL LINEWORK IN BLACK ARE PROPOSED IMPROVEMENTS AS PART OF THE PROJECT.

PROPOSED GRADING LIMITS

THE PROJECT LIMITS OF CONSTRUCTION AS DEFINED BY THE GREENWOOD VILLAGE MS4 PERMIT INCLUDE ALL AREAS THAT WILL BE STRIPPED TO SUBGRADE INCLUDING FULL DEPTH ASPHALT/CONCRETE REMOVAL AND REPLACEMENT, CURB AND GUTTER INSTALLATION, SIDEWALK INSTALLATION, ADA GRADING LIMITS, ETC.

PROJECT CONSTRUCTION LIMITS:
- 42,136 SF
- 0.97 ACRES

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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DESIGNED BY: CMW
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CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
SITE PLAN

PROJECT NO. 096328011

DRAWING NAME 096328011_SP.DWG

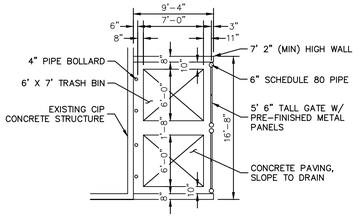
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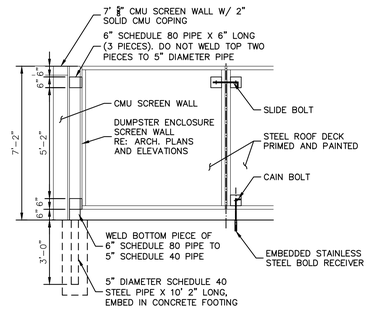
8500 E ORCHARD RD

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CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

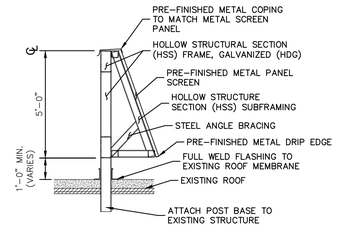
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



TRASH GATE DETAIL

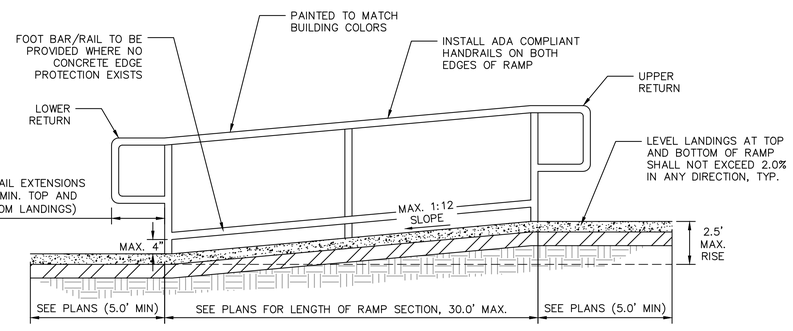


DUMPSTER ENCLOSURE DETAIL



ROOF SCREEN DETAIL

NOTES:
1. ALL STEEL TO BE HOT-DIPPED GALVANIZED
2. ALL PREFINISHED METAL SHEET TO MATCH PREFINISHED METAL PANEL

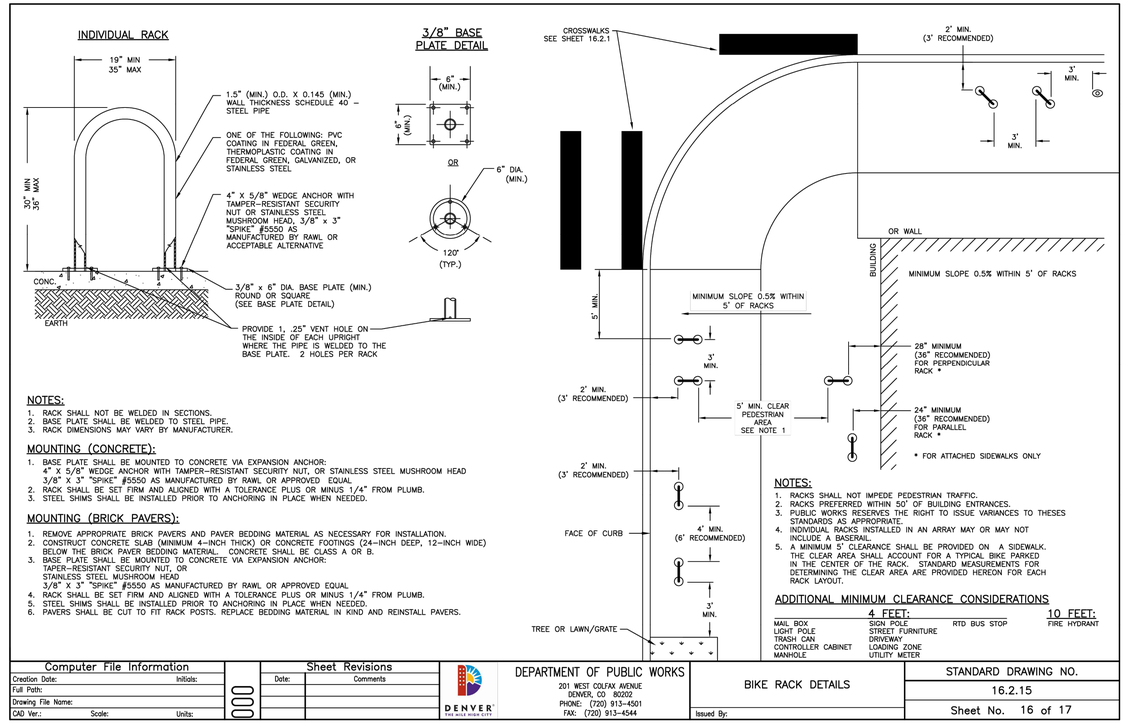


NOTES:
1. HANDRAILS SHALL HAVE A MINIMUM CLEAR WIDTH OF 36" BETWEEN EDGE OF RAILS.
2. TOP OF RAIL OF HANDRAILS SHALL BE A MINIMUM OF 34" AND A MAXIMUM OF 38" ABOVE SURFACE OF RAMP.
3. IF CONCRETE EDGE PROTECTION (2" HIGH MINIMUM) IS NOT PROVIDED, A FOOT BAR/RAIL MUST BE PROVIDED. THE FOOT BAR/RAIL SHALL BE AT AN ELEVATION NO GREATER THAN 4" FROM THE FINISH GROUND SURFACE.

MI-HR

MISCELLANEOUS IMPROVEMENTS - ADA COMPLIANT HANDRAILS

GUARDRAIL DETAIL



NOTES:
1. RACK SHALL NOT BE WELDED IN SECTIONS.
2. BASE PLATE SHALL BE WELDED TO STEEL PIPE.
3. RACK DIMENSIONS MAY VARY BY MANUFACTURER.

MOUNTING (CONCRETE):
1. BASE PLATE SHALL BE MOUNTED TO CONCRETE VIA EXPANSION ANCHOR: 4" x 5/8" WEDGE ANCHOR WITH TAMPER-RESISTANT SECURITY NUT, OR STAINLESS STEEL MUSHROOM HEAD 3/8" X 3" "SPIKE" #5550 AS MANUFACTURED BY RAWL OR APPROVED EQUAL
2. RACK SHALL BE SET FIRM AND ALIGNED WITH A TOLERANCE PLUS OR MINUS 1/4" FROM PLUMB.
3. STEEL SHIMS SHALL BE INSTALLED PRIOR TO ANCHORING IN PLACE WHEN NEEDED.

MOUNTING (BRICK PAVERS):
1. REMOVE APPROPRIATE BRICK PAVERS AND PAVER BEDDING MATERIAL AS NECESSARY FOR INSTALLATION.
2. CONSTRUCT CONCRETE SLAB (MINIMUM 4-INCH THICK) OR CONCRETE FOOTINGS (24-INCH DEEP, 12-INCH WIDE) BELOW THE BRICK PAVER BEDDING MATERIAL. CONCRETE SHALL BE CLASS A OR B.
3. BASE PLATE SHALL BE MOUNTED TO CONCRETE VIA EXPANSION ANCHOR: TAPER-RESISTANT SECURITY NUT, OR STAINLESS STEEL MUSHROOM HEAD 3/8" X 3" "SPIKE" #5550 AS MANUFACTURED BY RAWL OR APPROVED EQUAL
4. RACK SHALL BE SET FIRM AND ALIGNED WITH A TOLERANCE PLUS OR MINUS 1/4" FROM PLUMB.
5. STEEL SHIMS SHALL BE INSTALLED PRIOR TO ANCHORING IN PLACE WHEN NEEDED.
6. PAVERS SHALL BE CUT TO FIT RACK POSTS. REPLACE BEDDING MATERIAL IN KIND AND REINSTALL PAVERS.

NOTES:
1. RACKS SHALL NOT IMPEDE PEDESTRIAN TRAFFIC.
2. RACKS PREFERRED WITHIN 50' OF BUILDING ENTRANCES.
3. PUBLIC WORKS RESERVES THE RIGHT TO ISSUE VARIANCES TO THESES STANDARDS AS APPROPRIATE.
4. INDIVIDUAL RACKS INSTALLED IN AN ARRAY MAY OR MAY NOT INCLUDE A BASERAIL.
5. A MINIMUM 5' CLEARANCE SHALL BE PROVIDED ON A SIDEWALK. THE CLEAR AREA SHALL ACCOUNT FOR A TYPICAL BIKE PARKED IN THE CENTER OF THE RACK. STANDARD MEASUREMENTS FOR DETERMINING THE CLEAR AREA ARE PROVIDED HEREON FOR EACH RACK LAYOUT.

ADDITIONAL MINIMUM CLEARANCE CONSIDERATIONS

4 FEET:		10 FEET:
MAIL BOX	SIGN POLE	RTD BUS STOP
LIGHT POLE	STREET FURNITURE	FIRE HYDRANT
TRASH CAN	DRIVEWAY	
CONTROLLER CABINET	LOADING ZONE	
MANHOLE	UTILITY METER	

Computer File Information		Sheet Revisions		
Creation Date:	Initials:	Date:	Comments	
Full Path:				
Drawing File Name:				
CAD Ver.:	Scale: Units:			

DENVER THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS
201 WEST COLFAX AVENUE
DENVER, CO 80202
PHONE: (720) 913-4501
FAX: (720) 913-4544

BIKE RACK DETAILS

Issued By:

STANDARD DRAWING NO.
16.2.15
Sheet No. 16 of 17

BIKE RACK DETAIL

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NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

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8500 E ORCHARD RD
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SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
SITE PLAN DETAILS

PROJECT NO.
096328011

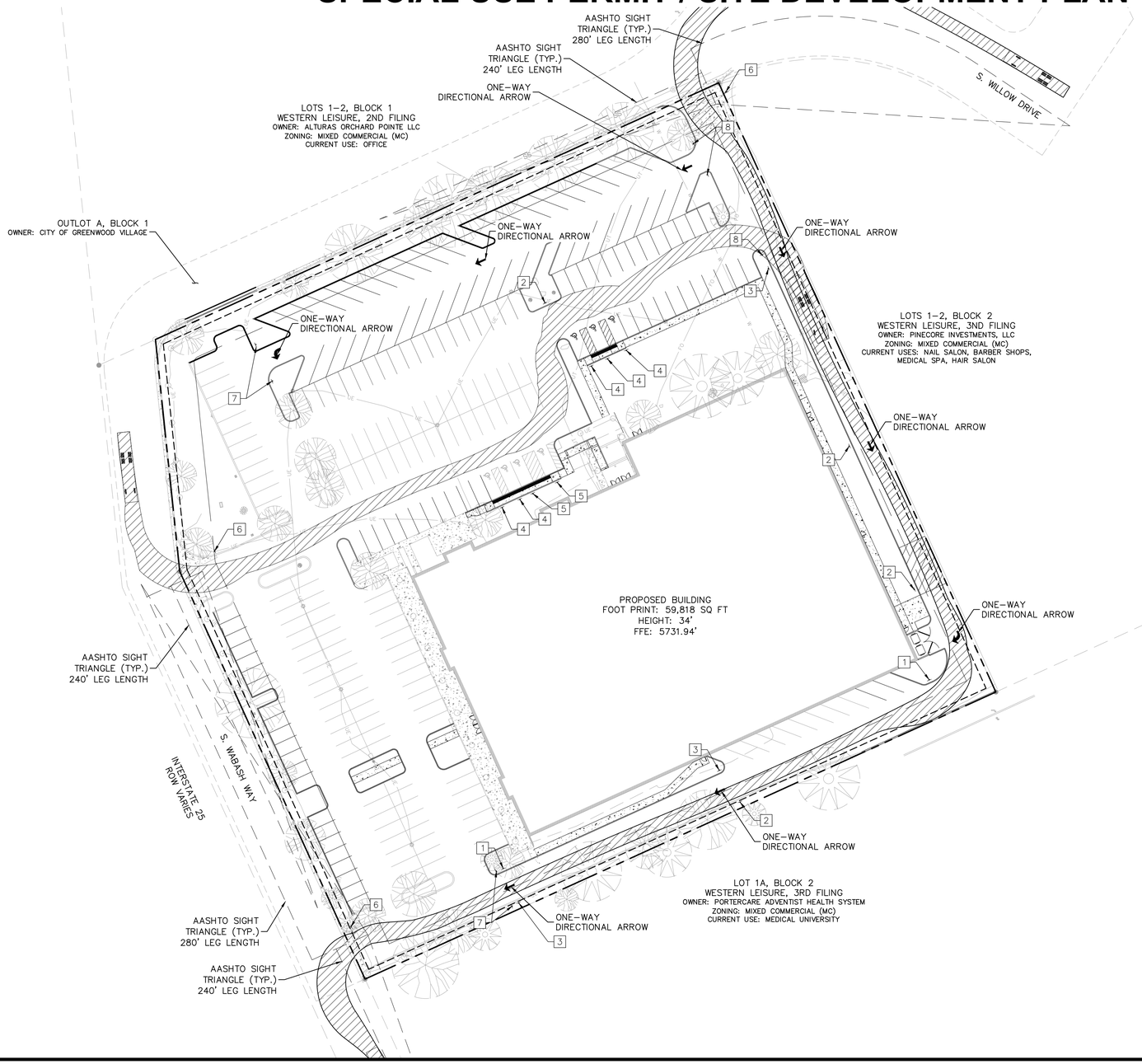
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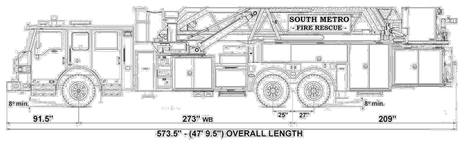
4

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN





VEHICLE SPECIFICATIONS

LENGTH: 47' 9.5"
WIDTH: 8' 5" – (10' 1" MIRROR TO MIRROR)
HEIGHT: 10' 9"
WHEELBASE: 273 IN.
DESIGN LOAD: 80,000 POUNDS
INSIDE CRAMP ANGLE: 40°
AXLE TRACK: 83"
WHEEL OFFSET: 5.3"
TREAD WIDTH: 13.5"

TURNING RADII
INSIDE TURN: 26' 1"
CURB TO CURB: 41' 11"
WALL TO WALL: 46' 8"

EMERGENCY ACCESS NOTES

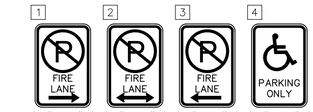
THE MINIMUM FIRE LANE CLEAR WIDTH IS 20.2', MAXIMUM GRADE 6%, ASPHALT SURFACE MATERIAL,

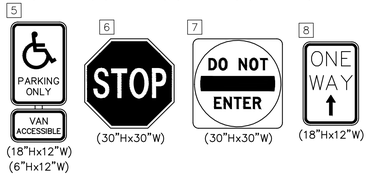
LEGEND

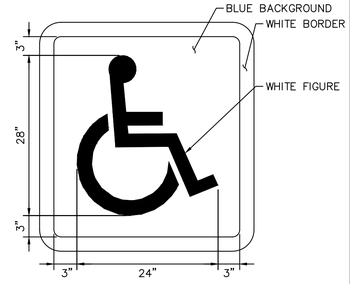
EMERGENCY ACCESS

TRAFFIC SIGN LEGEND

ALL SIGNS ARE TO BE POST MOUNTED WITH A MINIMUM OF 7 FEET HEIGHT CLEARANCE BETWEEN TOP OF CURB AND BOTTOM OF SIGN. FIRE LANE SIGNS SHALL BE RED LETTERING ON A WHITE BACKGROUND. ADA PARKING SIGN WILL BE A WHITE SIGN WITH A GREEN BORDER WORDS IN GREEN ON TWO LINES ABOVE A BLUE SYMBOL. THE STOP SIGN WILL HAVE WHITE TEXT AND BORDER ON A RED BACKGROUND.







ADA PAVEMENT
PARKING SYMBOL
SCALE: N.T.S



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6200 SOUTH SYRACUSE WAY, Suite 300
GREENWOOD VILLAGE, CO 80111 (303) 228-2300

DESIGNED BY: CMW
DRAWN BY: SPD
CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
EMERGENCY ACCESS PLAN

PROJECT NO.
096328011

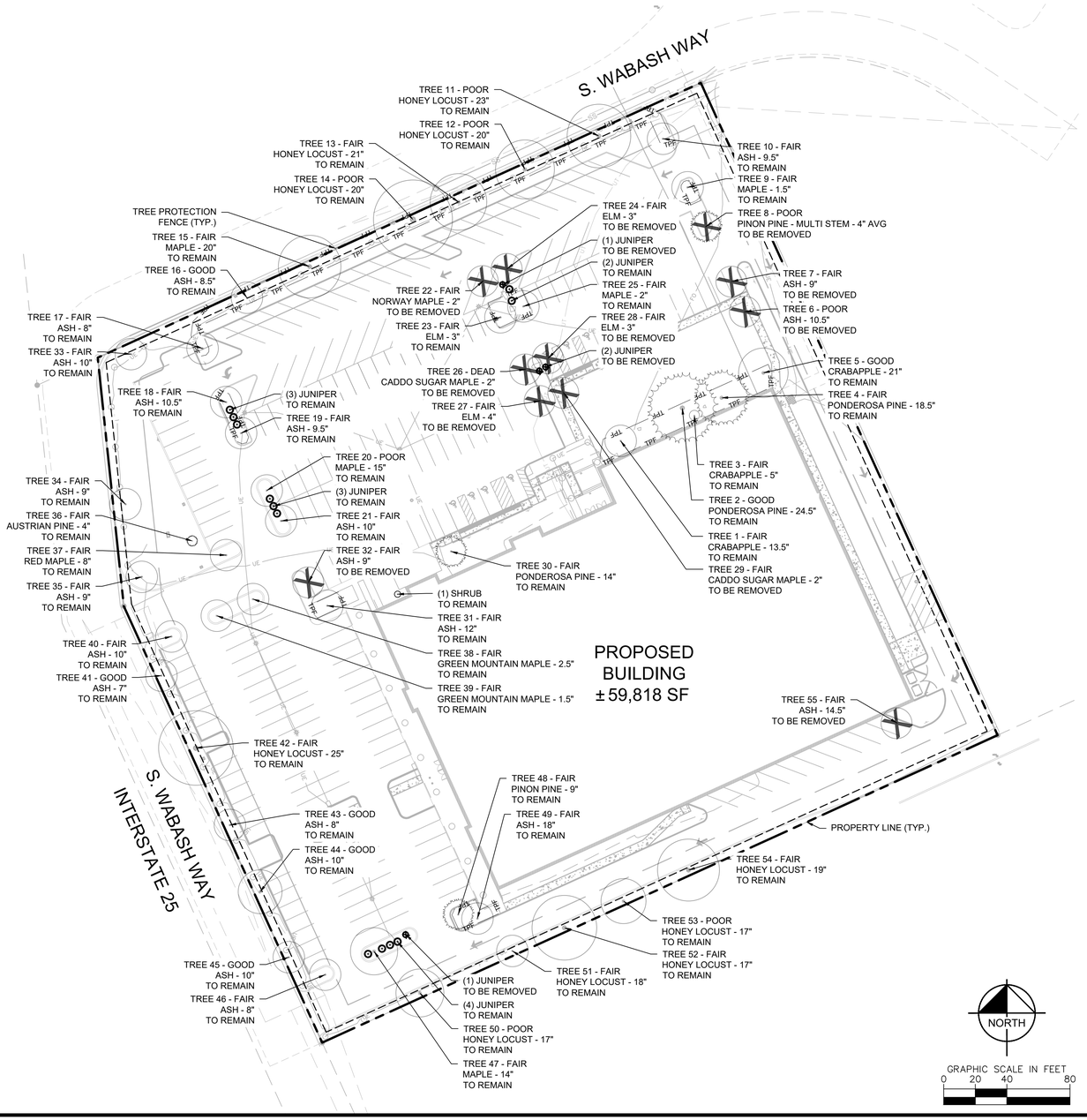
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096328011_EA.DWG

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8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME
EXISTING TREES TO REMAIN				
	XC	5	EXISTING CONIFER TREE	TO REMAIN
	XCR	1	EXISTING CONIFER TREE	TO BE REMOVED
	XDR	10	EXISTING DECIDUOUS TREE	TO BE REMOVED
	XD	39	EXISTING DECIDUOUS TREE	TO REMAIN
EXISTING SHRUBS				
	XDS	1	EXISTING DECIDUOUS SHRUB	TO REMAIN
	XJR	4	EXISTING LOW-GROW JUNIPER	TO BE REMOVED
	XJ	12	EXISTING LOW-GROW JUNIPER	TO REMAIN

TREE NO.	SCIENTIFIC NAME	COMMON NAME	DBH	CONDITION	STATUS	NOTES
1	*MALUS SP.*	CRABAPPLE	13.5"	FAIR	PROTECT	
2	*PINUS PONDEROSA*	PONDEROSA PINE	24.5"	GOOD	PROTECT	
3	*MALUS SP.*	CRABAPPLE	5"	FAIR	PROTECT	UNUSUAL GROWTH HABIT
4	*PINUS PONDEROSA*	PONDEROSA PINE	18.5"	FAIR	PROTECT	MINOR CROWN DIEBACK
5	*MALUS SP.*	CRABAPPLE	21"	GOOD	PROTECT	
6	*FRAXINUS SP.*	ASH	10.5"	POOR	REMOVE	INJURY ON TRUNK
7	*FRAXINUS SP.*	ASH	9"	FAIR	REMOVE	
8	*PINUS EDULIS*	PINON PINE	4"	POOR	REMOVE	MULTIPLE STEMS
9	*ACER SP.*	MAPLE	1.5"	FAIR	PROTECT	NEWLY PLANTED
10	*FRAXINUS SP.*	ASH	9.5"	FAIR	PROTECT	
11	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	23"	POOR	PROTECT	MAJOR CROWN DIEBACK
12	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	20"	POOR	PROTECT	MAJOR CROWN DIEBACK
13	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	21"	FAIR	PROTECT	MODERATE CROWN DIEBACK
14	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	20"	POOR	PROTECT	MAJOR CROWN DIEBACK
15	*ACER SP.*	MAPLE	20"	FAIR	PROTECT	
16	*FRAXINUS SP.*	ASH	8.5"	GOOD	PROTECT	
17	*FRAXINUS SP.*	ASH	8"	FAIR	PROTECT	
18	*FRAXINUS SP.*	ASH	10.5"	FAIR	PROTECT	
19	FRAXINUS SP.	ASH	9.5"	FAIR	PROTECT	
20	*ACER SP.*	MAPLE	15"	POOR	PROTECT	MAJOR CROWN DIEBACK
21	*FRAXINUS SP.*	ASH	10"	FAIR	PROTECT	
22	*ACER PLATANOIDES*	NORWAY MAPLE	2"	FAIR	REMOVE	NEWLY PLANTED
23	*ULMUS SP.*	ELM	3"	FAIR	PROTECT	NEEDS PRUNING
24	*ULMUS SP.*	ELM	3"	FAIR	REMOVE	NEEDS PRUNING
25	*ACER SP.*	MAPLE	2"	FAIR	PROTECT	NEWLY PLANTED
26	*ACER SACCHARUM 'CADDO'*	CADDO SUGAR MAPLE	2"	DEAD	REMOVE	NEWLY PLANTED
27	*ULMUS SP.*	ELM	4"	FAIR	REMOVE	NEEDS PRUNING
28	*ULMUS SP.*	ELM	3"	FAIR	REMOVE	NEEDS PRUNING
29	*ACER SACCHARUM 'CADDO'*	CADDO SUGAR MAPLE	2"	FAIR	REMOVE	NEWLY PLANTED
30	*PINUS PONDEROSA*	PONDEROSA PINE	14"	FAIR	PROTECT	
31	*FRAXINUS SP.*	ASH	12"	FAIR	PROTECT	
32	*FRAXINUS SP.*	ASH	9"	FAIR	REMOVE	
33	*FRAXINUS SP.*	ASH	10"	FAIR	PROTECT	
34	*FRAXINUS SP.*	ASH	9"	GOOD	PROTECT	
35	*FRAXINUS SP.*	ASH	9"	GOOD	PROTECT	
36	*PINUS NIGRA*	AUSTRIAN PINE	4"	FAIR	PROTECT	
37	ACER RUBRA	RED MAPLE	8"	FAIR	PROTECT	
38	*ACER SACCHARUM 'GREEN MOUNTAIN'*	GREEN MOUNTAIN MAPLE	2.5"	FAIR	PROTECT	NEWLY PLANTED
39	*ACER SACCHARUM 'GREEN MOUNTAIN'*	GREEN MOUNTAIN MAPLE	1.5"	FAIR	PROTECT	NEWLY PLANTED
40	*FRAXINUS SP.*	ASH	10"	FAIR	PROTECT	
41	*FRAXINUS SP.*	ASH	7"	GOOD	PROTECT	
42	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	25"	FAIR	PROTECT	MODERATE CROWN DIEBACK
43	*FRAXINUS SP.*	ASH	8"	GOOD	PROTECT	
44	*FRAXINUS SP.*	ASH	10"	GOOD	PROTECT	
45	*FRAXINUS SP.*	ASH	10"	GOOD	PROTECT	
46	*FRAXINUS SP.*	ASH	10"	FAIR	PROTECT	
47	*ACER SP.*	MAPLE	14"	FAIR	PROTECT	
48	*PINUS EDULIS*	PINON PINE	9"	FAIR	PROTECT	INJURY ON TRUNK
49	*FRAXINUS SP.*	ASH	18"	FAIR	PROTECT	
50	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	17"	POOR	PROTECT	MAJOR CROWN DIEBACK
51	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	18"	FAIR	PROTECT	MINOR CROWN DIEBACK
52	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	17"	FAIR	PROTECT	MODERATE CROWN DIEBACK
53	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	17"	POOR	PROTECT	MAJOR CROWN DIEBACK
54	*GLEDITSIA TRIACANTHOS INERMIS*	THORNLESS HONEYLOCUST	19"	FAIR	PROTECT	MINOR CROWN DIEBACK
55	*FRAXINUS SP.*	ASH	14.5"	FAIR	REMOVE	MINOR CROWN DIEBACK

NOTES:
1) ANY SITE DEMOLITION AND CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SIDEWALKS AND CURBS, WITHIN THE DRIPLINE OF EXISTING TREES TO REMAIN SHALL BE DONE BY HAND AND WITH HAND TOOLS ONLY TO PROTECT ROOTS.
2) ALL TREES TO BE PROTECTED IN PLACE SHALL BE PRUNED TO REMOVE DEAD LIMBS TO ENCOURAGE NEW GROWTH. LANDSCAPE AREAS AROUND THE BASE OF THE TREE TO BE AERATED.
3) ALL TREES TO BE PROTECTED IN PLACE WITH POOR OR FAIR CONDITION TO RECEIVE TRIPLE 20 (20-20-20 NPK) FERTILIZER TO PROMOTE GROWTH AND ROOT DEVELOPMENT.

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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DESIGNED BY: CMW
DRAWN BY: SPD
CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
EXISTING LANDSCAPE INVENTORY

PROJECT NO.
096328011

DRAWING NAME
096328011_LS.dwg

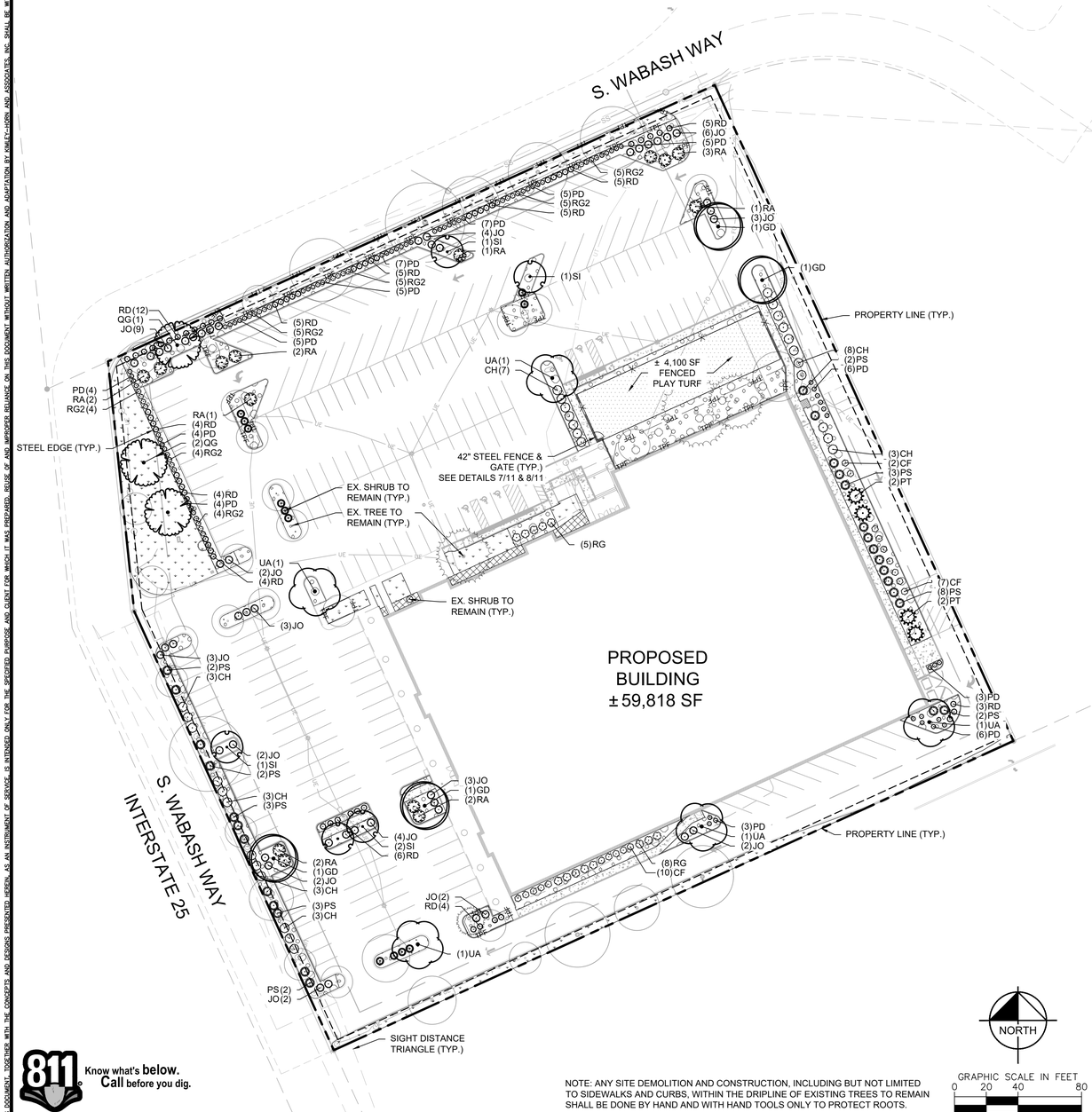
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TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



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PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	PLANTING SIZE	MATURE SIZE	DIVERSITY
TREES									
	GD	4	GYMNOCLADUS DIOICUS 'ESPRESSO-JFS'	ESPRESSO™ KENTUCKY COFFEETREE	B & B	3" CAL MIN	12' - 14' HT MIN	40' H x 40' W	19%
	PT	4	PINUS MUGO 'TANNENBAUM'	TANNENBAUM MUGO PINE	B & B		8' - 10' HT. MIN.	15' H x 8' W	19%
	QG	3	QUERCUS X MACDANIELII 'CLEMONS'	HERITAGE® OAK	B & B	3" CAL MIN	12' - 14' HT MIN	50' H x 40' W	14%
	SI	5	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	B & B	2" CAL MIN	10' - 12' HT. MIN.	25' H x 20' W	24%
	UA	5	ULMUS X 'MORTON'	ACCOLADE™ ELM	B & B	3" CAL MIN	12' - 14' HT MIN	35' H x 25' W	24%
EXISTING TREES TO REMAIN									
	XC	5	EXISTING CONIFER TREE	TO REMAIN	-				
	XD	39	EXISTING DECIDUOUS TREE	TO REMAIN	-				

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	PLANTING SIZE	MATURE SIZE
SHRUBS								
	CF	19	CORNUS SERICEA 'FARROW'	ARCTIC FIRE® RED TWIG DOGWOOD	5 GAL	SEE PLAN	24" FULL	4' H x 4' W
	CH	30	COTONEASTER HORIZONTALIS	ROCKSPRAY COTONEASTER	5 GAL	SEE PLAN	24" FULL	3' H x 6' W
	JO	47	JUNIPERUS X MEDIA 'OLD GOLD'	OLD GOLD JUNIPER	5 GAL	SEE PLAN	24" FULL	4' H x 5' W
	PD	64	PICEA PUNGENS 'ROUNDABOUT'	ROUNDABOUT COLORADO SPRUCE	5 GAL	SEE PLAN	24" FULL	3' H x 3' W
	PS	27	PINUS MUGO 'SLOWMOUND'	SLOWMOUND MUGO PINE	5 GAL	SEE PLAN	24" FULL	4' H x 6' W
	RA	14	RHUS TRILOBATA 'AUTUMN AMBER'	AUTUMN AMBER SUMAC	5 GAL	SEE PLAN	24" SPRD. MIN.	1.5' H x 8' W
	RG2	32	RIBES ALPINUM 'GREEN MOUND'	GREEN MOUND ALPINE CURRANT	5 GAL	SEE PLAN	24" FULL	3' H x 3' W
	RG	13	RIBES AUREUM	GOLDEN CURRANT	5 GAL	SEE PLAN	24" FULL	5' H x 5' W
	RD	62	ROSA X 'RADTKOPINK'	PINK DOUBLE KNOCK OUT® ROSE	5 GAL	SEE PLAN	24" FULL	3.5' H x 3.5' W
EXISTING SHRUBS								
	XDS	1	EXISTING DECIDUOUS SHRUB	TO REMAIN	-			
	XJ	12	EXISTING LOW-GROW JUNIPER	TO REMAIN	-			

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACING
GROUND COVERS							
	RM	19,205 SF	ROCK MULCH	TO MATCH EXISTING	-		
	SOD	4,136 SF	RTF WATER SAVER SOD	FESCUE AND KENTUCKY BLUEGRASS MIX	SOD		
EXISTING GROUNDCOVER TO REMAIN							
	XR	1,777 SF	EXISTING ROCK MULCH	TO REMAIN	-		
	XT	11,331 SF	EXISTING TURF	TO REMAIN	-		
	XW	551 SF	EXISTING WOOD MULCH	TO REMAIN	-		

CITY OF GREENWOOD VILLAGE LANDSCAPE REQUIREMENTS

SEC. 16-21-220 - REQUIRED LANDSCAPE OPEN SPACE

PROPERTY AREA (SF)	GWV OPEN SPACE AREA (SF) REQUIRED (20%)	GWV OPEN SPACE AREA (SF) PROVIDED	DTC ACC OPEN SPACE (SF) REQUIRED (30%)	DTC ACC OPEN SPACE (SF) PROVIDED*
209,603	41,921	42,054	62,881	46,674 (22%) VARIANCE GRANTED 3/12/26 BY DTC ACC

NOTES
* DTC ACC ALLOWS PARKING LOT LANDSCAPE TO BE COUNTED TOWARDS OPEN SPACE

SEC. 16-21-240 - PARKING LOT LANDSCAPE

NO. PARKING SPACES	PARKING AREA (SF) PROVIDED	INTERIOR LANDSCAPE (SF) REQUIRED (10%)	INTERIOR LANDSCAPE (SF) PROVIDED	NO. ISLANDS PROVIDED	NO. TREES REQ./PROV.	PARKING LOT SCREEN PROVIDED
250	46,722	4,672	4,705	17 SINGLE 7 DOUBLE	31/31	3' TALL SHRUBS AROUND 70% OF BOUNDARY

SEC. 16-21-250 - BUFFERING AND SCREENING

PROPERTY BOUNDARY	BUFFERING TECHNIQUE
EAST	INTEGRATING PLANTS INTO ARCHITECTURAL THEME
SOUTH	INTEGRATING PLANTS INTO ARCHITECTURAL THEME

SEC. 16-21-260-C-2 STREET TREE REQUIREMENTS

ADJACENT STREET NAME	LENGTH (LF)	NO. TREES / LF REQUIRED	NO. TREES REQUIRED	NO. TREES PROVIDED
SOUTH WABASH WAY (WEST SIDE)	380	1 TREE / 40 LF	10	10*
SOUTH WABASH WAY (NORTH SIDE)	301	1 TREE / 40 LF	8	8**

NOTES:
* 7 EXISTING TREES COUNT TOWARD REQUIREMENT
** 7 EXISTING TREES COUNT TOWARD REQUIREMENT

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DRAWN BY: SPD
CHECKED BY: CMW
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8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
LANDSCAPE PLANS

PROJECT NO.
096328011

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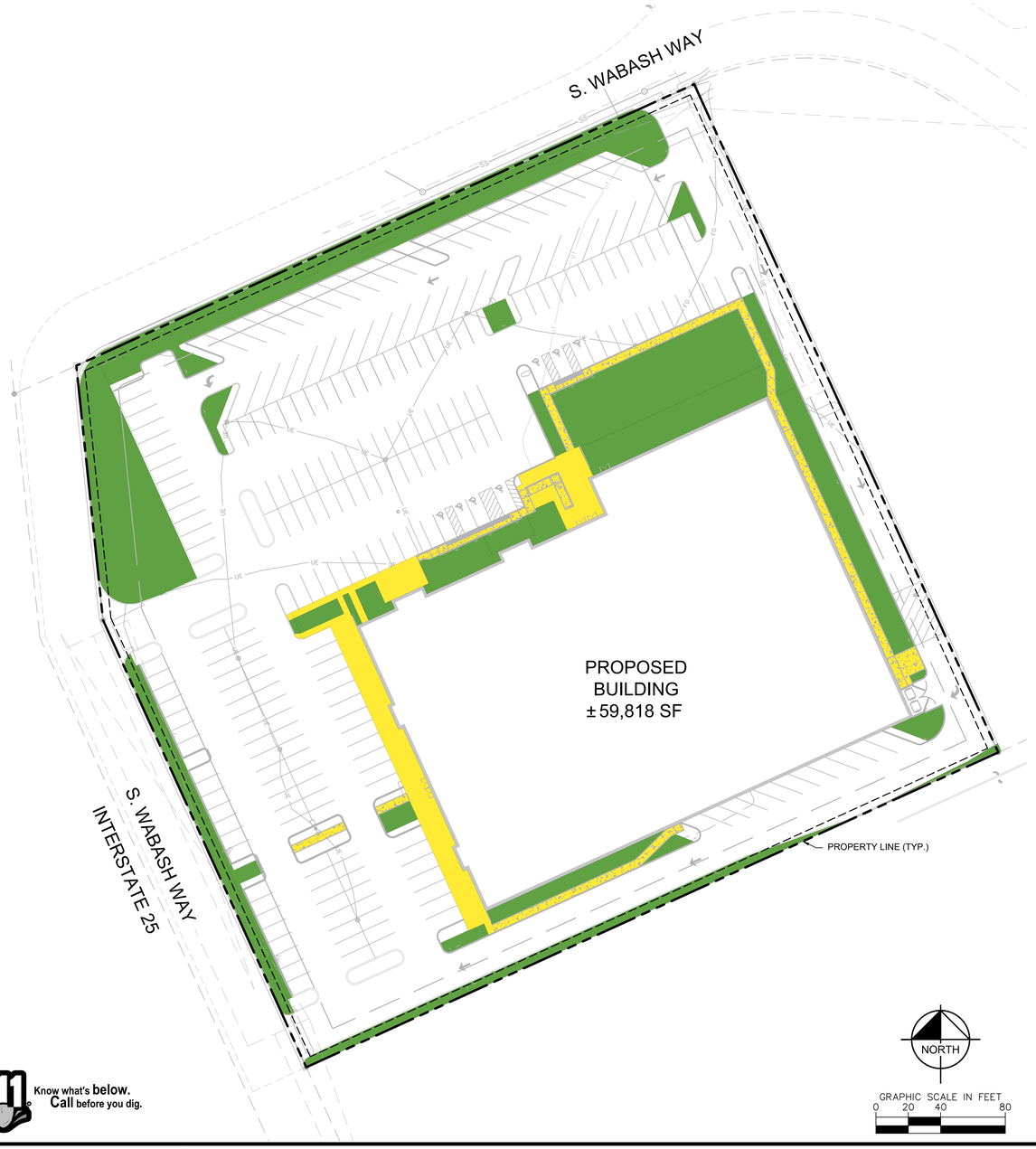
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SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



LEGEND

OPEN SPACE LANDSCAPE AREA

PUBLICLY ACCESSIBLE SIDEWALKS AND PLAZA
COUNTS TOWARD OPEN SPACE REQUIREMENT

GREEN WOOD VILLAGE OPEN SPACE CALCULATIONS		
PROPERTY AREA (SF)	OPEN SPACE AREA (SF) REQUIRED (20%)	OPEN SPACE AREA (SF) PROVIDED
209,603	41,921	42,054

DTC ACC OPEN SPACE CALCULATIONS		
PROPERTY AREA (SF)	OPEN SPACE AREA (SF) REQUIRED (30%)	OPEN SPACE AREA (SF) PROVIDED*
209,603	62,881	46,674 (22%)**

NOTES:
*DTC ACC ALLOWS PARKING LOT LANDSCAPE TO BE COUNTED TOWARDS OPEN SPACE
**VARIANCE GRANTED 3/12/26 BY DTC ACC

PARKING COVERAGE				
PROPERTY AREA (SF)	PARKING AREA (SF) REQUIRED (40% MAX.)	PARKING AREA (SF) PROVIDED	LANDSCAPE AREA (SF) REQUIRED	LANDSCAPE AREA (SF) PROVIDED
209,603	83,841	46,722 (22%)	4,672	4,705

BUILDING COVERAGE		
PROPERTY AREA (SF)	BUILDING COVERAGE (SF) REQUIRED (40% MAX.)	BUILDING COVERAGE (SF) PROVIDED
209,603	83,841	59,818

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8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
OPEN SPACE PLAN

PROJECT NO. 096328011

DRAWING NAME 096328011_LS.dwg

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A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

GENERAL LANDSCAPE SPECIFICATIONS

A. SCOPE OF WORK

1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.
2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

1. ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL NECESSARY BEST MANAGEMENT PRACTICES (BMP) DEVICES ACCORDING TO ALL REGULATORY AGENCY'S STANDARDS THROUGH THE DURATION OF ALL CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MAINTENANCE OF TRAFFIC (MOT) THAT MAY BE REQUIRED FOR THE PROJECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR; REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UNDERGROUND FACILITIES DURING CONSTRUCTION, THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

C. PROTECTION OF EXISTING PLANT MATERIALS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETC., THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF FOUR HUNDRED DOLLARS ($400) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.
2. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE.

D. MATERIALS

1. GENERAL

   MATERIAL SAMPLES LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER. UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATERIAL	SAMPLE SIZE
MULCH	ONE (1) CUBIC FOOT
TOPSOIL MIX	ONE (1) CUBIC FOOT
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NURSERY)

2. PLANT MATERIALS
   a. FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT SCHEDULE SHOWN ON DRAWINGS AND COMPLYING WITH ANSI Z60.1 AND THE COLORADO NURSERY ACT; AND WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
   b. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE.
   c. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE PROJECT LANDSCAPE ARCHITECT. ANY ROW TREES MUST BE APPROVED BY OFFICE OF THE CITY FORESTER.
   d. PROVIDE PLANTS OF SIZES, GRADES, AND BALL OR CONTAINER SIZES COMPLYING WITH ANSI Z60.1 AND COLORADO NURSERY ACT FOR TYPES AND FORM OF PLANTS REQUIRED. PLANTS OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO PROJECT LANDSCAPE ARCHITECT WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.
   e. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.
   f. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK"); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN ¾ INCH (19 MM) IN DIAMETER; OR WITH STEM GIRDLING ROOTS WILL BE REJECTED.
   g. FURNISH TREES AND SHRUBS WITH ROOTS BALLS MEASURED FROM TOP OF ROOT BALL, WHICH SHALL BEGIN AT ROOT FLARE ACCORDING TO ANSI Z60.1 AND COLORADO NURSERY ACT. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.
   h. LABEL AT LEAST ONE PLANT OF EACH VARIETY, SIZE, AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF COMMON NAME AND FULL SCIENTIFIC NAME, INCLUDING GENUS AND SPECIES. INCLUDE NOMENCLATURE FOR HYBRID, VARIETY, OR CULTIVAR, IF APPLICABLE FOR THE PLANT AS SHOWN ON DRAWINGS.
   i. IF FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF PLANTS IS SHOWN ON DRAWINGS, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND NUMBER THE LABELS TO ASSURE SYMMETRY IN PLANTING.

E. SOIL MIXTURE

1. CONTRACTOR SHALL TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:
2. SOIL MIXTURE SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. CONTRACTOR TO SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.
   a. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT OPENINGS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER, HAVE A PH BETWEEN 5.5 AND 8.0, AND SOLUBLE SALTS LESS THAN 3.0 MMHOS/CM. SUBMIT SOIL SAMPLE AND PH TESTING RESULTS FOR APPROVAL.
   b. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.
3. TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE - AT WHICH POINT THE CONTRACTOR SHALL CONTACT THE PROJECT LANDSCAPE ARCHITECT TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

F. WATER

1. WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC... IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

   * WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

G. FERTILIZER

1. CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED.

   * FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

811 Know what's below. Call before you dig.

H. MULCH

1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES. CLEAR MULCH FROM EACH PLANT'S CROWN (BASE) OR AS SHOWN IN PLANTING DETAILS. UNLESS OTHERWISE NOTED ON PLANS, MULCH SHALL BE DOUBLE SHREDDED HARDWOOD MULCH DARK BROWN FINES BY MOUNTAIN HIGH SAVATREE OR APPROVED EQUAL. DYED MULCH IS NOT ACCEPTABLE. SUBMIT SAMPLES TO PROJECT LANDSCAPE ARCHITECT FOR APPROVAL. MULCH SHALL BE PROVIDED OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE RING (6' MINIMUM) PLANTED UNDER THIS CONTRACT, AS WELL AS FOR ANY EXISTING LANDSCAPE AREAS AS SHOWN ON PLANS.

I. DIGGING AND HANDLING

1. ALL TREES SPECIFIED SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE APPROVED BY PROJECT LANDSCAPE ARCHITECT.
2. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO THE SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.
3. B&B, AND FIELD GROWN (FG) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS SHALL NOT BE HANDLED BY STEMS.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.
3. ROOT BOUND PLANTS ARE NOT ACCEPTABLE AND WILL BE REJECTED.

K. MATERIALS LIST

1. QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE PLANS SHALL GOVERN. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

L. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN DISTURBED DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH.
3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

M. PLANTING PROCEDURES

1. THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. ALL MORTAR, CEMENT, BUILDING MATERIALS, AND TOXIC MATERIAL SHALL BE COMPLETELY REMOVED FROM PLANTING AREAS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS IN PLANTING AREAS WHICH WILL ADVERSELY AFFECT THE PLANT GROWTH, THE CONTRACTOR SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.
2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL COLORADO (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROOK AND LIMEROOK SUB-BASE FROM ALL PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROOK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE POOR DRAINAGE CONDITION PLANTING DETAIL.
4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS SPECIFIED HEREIN. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.
5. COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY INSPECTED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ONSITE SHALL NOT REMAIN UNPLANTED OR APPROPRIATELY HEALED IN FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE SHALL BE EXERCISED.
6. WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE PLANTING WITH IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION APPURTENANCES AND PLANTS.
7. ALL PLANTING OPENINGS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH ANSI Z60.1-2014 AMERICAN STANDARD FOR NURSERY STOCK.
8. TEST ALL TREE OPENINGS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL.
9. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMEN.
10. PRIOR TO EXCAVATION OF TREE OPENINGS, AN AREA EQUAL TO TWO TIMES THE DIAMETER OF THE ROOT BALL SHALL BE ROTO-TILLED TO A DEPTH EQUAL TO THE DEPTH OF THE ROOT BALL.
11. EXCAVATION OF TREE OPENINGS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.
12. IN CONTINUOUS SHRUB AND GROUND COVER BEDS, THE ROTO-TILLED PERIMETER SHOULD EXTEND TO A DISTANCE OF ONE FOOT BEYOND THE DIAMETER OF A SINGLE ROOT BALL. THE BED SHALL BE TILLED TO A DEPTH EQUAL TO THE ROOT BALL DEPTH PLUS 6".
13. TREE OPENINGS FOR WELL DRAINED SOILS SHALL BE DUG SO THAT THE BOTTOM OF THE ROOT BALL WILL REST ON UNDISTURBED SOIL AND THE TOP OF THE ROOT BALL WILL BE FLUSH WITH FINISH GRADE. IN POORLY DRAINED SOILS THE TREE OPENING SHALL BE DUG SO THAT THE ROOT BALL RESTS ON UNDISTURBED SOIL AND THE TOP OF THE ROOT BALL IS 1" ABOVE FINISH GRADE. PLANT PIT WALLS SHALL BE SCARIFIED PRIOR TO PLANT INSTALLATION.
14. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.
15. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION 'E'.
16. TREES AND SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).
17. AMEND PINE AND OAK PLANT OPENINGS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT OPENINGS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL PRIOR TO INOCULATION.
18. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET, ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE.
19. ALL BURLAP, ROPE, WIRES, BASKETS, ETC... SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.
20. TREES SHALL BE PRUNED, IN ACCORDANCE WITH ANSI A-300, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY CERTIFIED ARBORIST.
21. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. MATERIALS INSTALLED SHALL MEET MINIMUM SPECIMEN REQUIREMENTS OR QUANTITIES SHOWN ON PLANS, WHICHEVER IS GREATER. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. MIX TOP 4" THE PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.
22. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE PROJECT LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY.
23. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S RECOMMENDATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

N. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.
2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS BY MEANS OF A SOD CUTTER TO A DEPTH OF THREE (3) INCHES, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.
3. PREPARE LOOSE BED FOUR (4) INCHES DEEP. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.
4. SODDING
   a. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.
   b. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS ADJACENT TO BUILDINGS. A 24 INCH STONE MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.
5. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.
6. LAWN MAINTENANCE
   a. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK, INCLUDING REGRADING IF NECESSARY.
   b. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PRIOR TO AND UPON ACCEPTANCE, CONTRACTOR TO PROVIDE WATERING/IRRIGATION SCHEDULE TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

O. EDGING

a. CONTRACTOR SHALL INSTALL 4"X¼" ROLLED TOP STEEL EDGING BETWEEN ALL SOD/SEED AREAS AND PLANTING BEDS.

P. CLEANUP

1. UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM CONTRACTORS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

Q. PLANT MATERIAL MAINTENANCE

1. ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, PRUNING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY PLANT CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

R. FINAL INSPECTION AND ACCEPTANCE OF WORK

1. FINAL INSPECTION AT THE END OF THE WARRANTY PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR WARRANTY (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

S. WARRANTY

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED (INCLUDING SOD) BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.
2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.
3. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE AND IRRIGATION MAINTENANCE, THE CONTRACTOR SHOULD VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE (1) YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTHY PLANT GROWTH.

CITY OF GREENWOOD VILLAGE LANDSCAPE NOTES:

1. CONTRACTOR IS TO MAINTAIN ALL PLANTINGS AND ASSOCIATED IRRIGATION SYSTEM INSTALLED UNDER THIS CONTRACT UNTIL FINAL ACCEPTANCE AND TURNOVER TO OWNER. THIS

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

TREE MITIGATION SPECIFICATIONS

A. GENERAL

1. CONTRACTOR SHALL ADHERE TO ALL TREE PROTECTION REQUIREMENTS LISTED IN THESE SPECIFICATIONS AND/OR THOSE REQUIRED BY LOCAL JURISDICTIONAL AUTHORITY. WHICHEVER IS MORE STRINGENT SHALL APPLY.
2. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION PROCEDURES WITH THE PROJECT ARBORIST PRIOR TO BEGINNING WORK.
3. ANY AREAS SUBJECT TO EROSION MUST BE ADEQUATELY STABILIZED WITH VEGETATION MATERIAL THAT WILL, WITHIN A REASONABLE TIME FRAME, DETER SOIL DISTURBANCE.
4. NO SIGNS, BUILDING PERMITS, WIRES OR OTHER ATTACHMENTS OF ANY KIND SHALL BE ATTACHED TO ANY TREE. GUY WIRES DESIGNED TO PROTECT TREES ARE EXCLUDED FROM THIS PROHIBITION.
5. EXISTING TREE LOCATIONS AND SIZES ARE APPROXIMATE AND ARE BASED ON A SURVEY PROVIDED BY THE OWNER SELECTED SURVEYOR, OR FROM ON SITE OBSERVATIONS.
6. CONTRACTOR SHALL COORDINATE TREE REMOVAL WITH LOCAL JURISDICTIONAL AUTHORITY AND PROJECT ARBORIST PRIOR TO CONSTRUCTION. NO PERSON MAY REMOVE OR CAUSE TO BE REMOVED ANY PROTECTED TREE WITHOUT FIRST HAVING RECEIVED APPROVAL FROM THE LOCAL JURISDICTIONAL AUTHORITY.
7. FOR PROTECTED TREES BEING REMOVED, THE CONTRACTOR MUST GIVE THE LOCAL JURISDICTIONAL AUTHORITY REASONABLE OPPORTUNITY TO RELOCATE TO ANOTHER SITE AT THE LOCAL JURISDICTIONAL AUTHORITY'S EXPENSE.
8. CONTRACTOR IS RESPONSIBLE FOR POSSESSING ALL REQUIRED APPLICATOR LICENSES, BUSINESS REGISTRATIONS AND INSURANCE, PESTICIDE LABELS, AND MATERIAL DATA SAFETY SHEETS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR HAVING ALL SPILL CONTAINMENT MATERIALS AND REQUIRED PERSONAL PROTECTIVE EQUIPMENT FOR PESTICIDE APPLICATIONS AND ACCIDENTAL SPILLS ON SITE AT ALL TIMES. THE OWNER RESERVES THE RIGHT TO INSPECT EACH APPLICATOR AND HAVE THESE MATERIALS PRESENTED BEFORE AND DURING ANY PESTICIDE TREATMENT.
9. WHERE TRAFFIC AREAS ARE PROPOSED WITHIN THE DRIP LINE OF PROTECTED TREES AND LESS THAN (4) INCHES OF GRADE CHANGE ARE PROPOSED, PERMEABLE SURFACES THAT ALLOW AIR AND WATER INTO THE SOIL SHOULD BE USED IN LIEU OF ASPHALT OR OTHER SUCH IMPERVIOUS SURFACES.
10. TREE WELLS OF AN APPROVED DESIGN SHALL BE CONSTRUCTED AROUND ALL TREES TO BE PRESERVED WHEN MORE THAN (4) INCHES OF FILL IS TO BE DEPOSITED WITHIN THE DRIP LINE AREA OF THOSE TREES. COORDINATE WITH PROJECT ARBORIST.
11. THE SEQUENCE OF TREE MITIGATION AND PRESERVATION MEASURES IS IMPERATIVE TO THE HEALTH AND SURVIVABILITY OF THE SUBJECT TREES AND SHALL BE COORDINATED WITH THE PROJECT ARBORIST. THE DESIRED SEQUENCE IS OUTLINED BELOW:
    a. TREE PROTECTION FENCING.
    b. ROOT PRUNING AND ROOT BARRIERS.
    c. CLEARING.
    d. TREE CANOPY PRUNING.
    e. FERTILIZATION.
    f. INSECTICIDE.
    g. IRRIGATION.

B. TREE PROTECTION FENCING

1. PRIOR TO THE ERECTION OF ANY TREE PROTECTION FENCING, ALL FOREIGN SURFACE MATERIAL, TRASH OR DEBRIS SHALL BE REMOVED FROM THE AREA TO BE ENCLOSED BY THE FENCING. AFTER ERECTION OF THE FENCING NO SUCH MATERIAL OR LITTER SHALL BE PERMITTED TO REMAIN WITHIN THE PROTECTED AREA.
2. TREE PROTECTION FENCING SHALL BE PLACED AROUND ALL PROTECTED TREES TO CREATE A PROTECTIVE ROOT ZONE AND SHALL REMAIN IN PLACE UNTIL SITE CLEARING, LAND ALTERATION, AND CONSTRUCTION ACTIVITIES ARE COMPLETE.
3. NATIVE GROUND COVER AND UNDERSTORY VEGETATION EXISTING WITHIN THE PROTECTED AREA SHALL REMAIN THROUGHOUT CONSTRUCTION. OTHER DESIGNATED VEGETATION AND INVASIVE PLANT SPECIES SHALL BE REMOVED ONLY BY MANUAL LABOR UTILIZING HAND TOOLS, OR BY OTHER METHODS APPROVED BY THE PROJECT ARBORIST.
4. TREE PROTECTION FENCING TYPES AND LOCATIONS SHALL BE ERECTED AS SHOWN ON THE DRAWINGS, OR AS REQUIRED BY LOCAL JURISDICTIONAL AUTHORITY.
5. FINAL LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE PROJECT ARBORIST.
6. NO MATERIALS, EQUIPMENT, SPOIL, WASTE OR WASHOUT WATER MAY BE DEPOSITED, STORED, OR PARKED WITHIN (20) FEET OF THE TREE PROTECTION ZONE.
7. EROSION CONTROL DEVICES SUCH AS SILT FENCING, DEBRIS BASINS, AND WATER DIVERSION STRUCTURES SHALL BE INSTALLED AS NECESSARY TO PREVENT SILTATION AND/OR EROSION WITHIN THE TREE PROTECTION ZONE.
8. CONSTRUCTION ACTIVITY SHALL NOT DESTROY OR IRREVERSIBLY HARM THE ROOT SYSTEM OF PROTECTED TREES. POST HOLES AND TRENCHES LOCATED CLOSE TO PROTECTED TREES SHALL BE ADJUSTED TO AVOID DAMAGE TO MAJOR ROOTS.
9. DO NOT INSTALL CONDUIT, DRAIN OR IRRIGATION LINES, OR ANY UTILITY LINE WITHIN THE TREE PROTECTION ZONE WITHOUT THE APPROVAL OF THE PROJECT ARBORIST. IF LINES MUST TRAVERSE THE PROTECTION AREA, THEY SHALL BE TUNNELED OR BORED UNDER THE TREE.
10. CONTRACTOR'S ACCESS TO FENCED TREE PROTECTION AREAS WILL BE PERMITTED ONLY WITH APPROVAL OF THE PROJECT ARBORIST.
11. EXCAVATION OR GRADING REQUIRED WITHIN THE PROTECTED AREA SHALL BE LIMITED TO (3) INCHES OF CUT OR FILL. COORDINATE WITH PROJECT ARBORIST.
12. STRUCTURES AND UNDERGROUND FEATURES TO BE REMOVED WITHIN THE TREE PROTECTION ZONE SHALL BE COORDINATED WITH THE PROJECT ARBORIST.
13. TREE PROTECTION FENCING AROUND TREES TO BE RELOCATED SHALL BE ERECTED UNTIL THE TREE IS READY TO BE RELOCATED AND NEW FENCING SHALL BE ERECTED AT THE TREES NEW LOCATION AND WILL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETE.
14. IF ANY DAMAGE TO TREE PROTECTION FENCING SHOULD OCCUR BY ACCIDENT OR NEGLIGENCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE REPAIRS.
15. IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE PROTECTED AREA OF TREES TO BE PRESERVED, A ROAD BED OF (6) INCHES OF MULCH OR GRAVEL (WEED BARRIER FABRIC IS REQUIRED IF GRAVEL) SHALL BE CREATED TO PROTECT THE SOIL. THE ROAD BED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A (6) INCH ROAD BED AT ALL TIMES. CONTRACTOR SHALL REMOVE ALL SUCH MATERIALS FROM THE SITE AS SOON AS TEMPORARY ACCESS IS NO LONGER NECESSARY.
16. CONTRACTOR SHALL COORDINATE WITH THE PROJECT ARBORIST PRIOR TO THE REMOVAL OF ALL TREE PROTECTION FENCING.

C. ROOT PRUNING/TRENCHING

1. TRENCHING LOCATIONS SHALL BE APPROVED IN THE FIELD BY THE PROJECT ARBORIST.
2. TRENCHING EQUIPMENT THAT WILL TURN AT HIGH RPM'S IS PREFERRED, AND SHALL BE APPROVED BY THE PROJECT ARBORIST. APPROVED EQUIPMENT WILL BE USED TO PERFORM ALL ROOT PRUNING OPERATIONS. A MINIMUM DEPTH OF THREE FEET IS REQUIRED.
3. INSTALL ROOT BARRIER WHERE DESIGNATED. SEE DRAWINGS.
4. ALL TRIMMING UNDERTAKEN ON A TREE PROTECTED BY THE PROVISIONS OF LAND DEVELOPMENT CODE SHALL BE IN ACCORDANCE WITH ANSI-300 STANDARDS.
5. THE TRENCH SHALL BE BACKFILLED WITH PREVIOUSLY EXCAVATED SOIL AND COMPACTED IMMEDIATELY.
6. TREES TO BE RELOCATED SHALL BE ROOT PRUNED A MINIMUM OF (12) WEEKS PRIOR TO TREE RELOCATION.
7. WHEN THE TREE ROOT ZONE WILL BE DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT WHERE CONSTRUCTION IMPACTS THE ROOTS.

D. CLEARING

1. ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND-OPERATED EQUIPMENT.
2. CONTRACTOR SHALL CLEAR ALL TREE PROTECTION AREAS OF VINES, SHRUBS, GROUND COVERS, WEEDS, SAPLINGS, AND INVASIVE SPECIES.
3. PROJECT ARBORIST MUST APPROVE METHODS OTHER THAN HAND CLEARING.
4. A (3) INCH LAYER OF MULCH SHALL BE APPLIED OVER THE SURFACE OF EXPOSED ROOTS OF PROTECTED TREES DURING THE SITE CLEARING PHASE.

E. TREE CANOPY PRUNING

1. TREE PRUNING SPECIFICATIONS SHALL BE DEFINED BASED ON SPECIFIC RECOMMENDATIONS OF THE PROJECT ARBORIST. INFORMATION PRESENTED BELOW SHOULD BE USED AS A GUIDELINE
2. CONTRACTOR SHALL VISIT THE SITE WITH THE PROJECT ARBORIST TO VERIFY THE EXTENT OF REQUIRED PRUNING.
3. ALL PRUNING SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST OR AN AMERICAN SOCIETY OF CONSULTING ARBORISTS (ASCA) REGISTERED CONSULTING ARBORIST (RCA).
4. AT LEAST (1) MEMBER OF THE PRUNING CREW SHALL BE AN ISA CERTIFIED ARBORIST.
5. WHILE IN THE TREE, THE ARBORIST SHALL PERFORM AN AERIAL INSPECTION TO IDENTIFY DEFECTS THAT REQUIRE TREATMENT. ANY ADDITIONAL WORK NEEDED SHALL BE REPORTED TO THE OWNER.
6. PRUNING SHALL BE DONE IN ACCORDANCE WITH; THE LATEST EDITION OF THE ANSI A300 PRUNING STANDARD (AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS); THE LATEST EDITION OF ANSI Z133.1 SAFETY STANDARD; THE LATEST EDITION OF ISA'S "BEST MANAGEMENT PRACTICES: TREE PRUNING".
7. WHERE TEMPORARY CLEARANCE IS NEEDED FOR ACCESS, BRANCHES SHALL BE TIED BACK TO HOLD THEM OUT OF THE CLEARANCE ZONE.
8. NO MORE THAN (20) PERCENT OF LIVE FOLIAGE SHALL BE REMOVED WITHIN ANY TREE.
9. ALL TREES WITHIN THE PROJECT AREA SHALL BE PRUNED AS FOLLOWS:
    a. LIVE BRANCH PRUNING SHOULD BE PERFORMED ONLY WHEN THE DANGER OF INSECT OR DISEASE INFESTATION IS NOT PRESENT.
    b. REMOVE STUBS, CUTTING OUTSIDE THE WOUND WOOD TISSUE THAT HAS FORMED AROUND THE BRANCH.
    c. CLEANING, FOR THE SELECTIVE REMOVAL OF DEAD, DISEASED, BROKEN, OR CROSSING BRANCHES DOWN TO ONE INCH IN DIAMETER OR AS DIRECTED BY THE PROJECT ARBORIST.
    d. PRUNING CUTS LARGER THAN (4) INCHES IN DIAMETER, EXCEPT FOR DEAD WOOD, SHALL BE AVOIDED.
    e. PRUNING CUTS THAT EXPOSE HEARTWOOD SHALL BE AVOIDED WHENEVER POSSIBLE.
    f. ALL TREES WITH CROWNS THAT PROJECT INTO PARKING LOT/ROADWAY AREAS SHALL BE RAISED TO (14) FEET ABOVE FINISHED GRADE.
    g. ALL TREES WITH CROWNS THAT PROJECT INTO SIDEWALK AREAS SHALL BE RAISED TO A HEIGHT OF (8) FEET ABOVE FINISHED GRADE.
10. TREES, WHO'S ROOT SYSTEMS WILL BE IMPACTED SHALL RECEIVE THE FOLLOWING PRUNING TO COMPENSATE FOR ROOT LOSS:
    a. THE LOCATION AND SIZE OF BRANCHES FOR REDUCTION SHALL BE DEFINED BY THE PROJECT ARBORIST.
    b. REDUCTION, OR THE SELECTIVE PRUNING TO REDUCE TREE HEIGHT OR SPREAD.
    c. REDUCE END WEIGHT ON HEAVY, HORIZONTAL BRANCHES BY SELECTIVELY REMOVING SMALL DIAMETER BRANCHES, NO GREATER THAN (2) TO (3) INCHES, NEAR THE ENDS OF SCAFFOLD BRANCHES.
    d. RAISING SHALL CONSIST OF SELECTIVE PRUNING TO PROVIDE VERTICAL CLEARANCE.
11. PROPOSED/REPLACEMENT TREES
    a. PRUNING SHALL BE LIMITED TO CLEANING.
13. BRUSH SHALL BE CHIPPED AND SPREAD (ONLY WHEN DISEASE OR INSECT INFESTATION IS NOT PRESENT) UNDERNEATH TREES WITHIN THE TREE PROTECTION ZONE TO A MAXIMUM DEPTH OF (3) INCHES, LEAVING THE TRUNK CLEAR OF MULCH.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EXCESS DEBRIS ON A DAILY BASIS.

F. FERTILIZATION

1. CONTRACTOR SHALL COORDINATE FERTILIZATION PLAN, FOLLOWING BEST MANAGEMENT PRACTICES WITH THE PROJECT ARBORIST PRIOR TO COMMENCEMENT OF WORK.
2. EVERY EFFORT SHALL BE MADE TO UTILIZE CHEMICALS OF AN ORGANIC OR BIODEGRADABLE NATURE IN ORDER TO OFFER THE LEAST IMPACT TO THE NATURAL ENVIRONMENT. CONTRACTOR IS RESPONSIBLE FOR MIXING, APPLYING, AND DISPOSAL OF ALL CHEMICALS IN ACCORDANCE WITH STRICT ADHERENCE TO MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH PROJECT ARBORIST FOR FURTHER INSTRUCTION.
3. ONLY TREES AFFECTED BY CONSTRUCTION OR AS SHOWN ON THE DRAWINGS SHALL BE TREATED.
4. TREES SPECIFIED TO RECEIVE FERTILIZER SHALL BE TREATED AS FOLLOWS.
    a. MIX FERTILIZER ACCORDING TO MANUFACTURER'S SPECIFICATIONS INTO A TANK WITH AGITATION CAPABILITY.
    b. MIX WETTING AGENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS INTO SAME TANK WITH FERTILIZER. AGITATE MIX.
    c. INJECT THE MIXTURE WITH A HYDRAULIC INJECTION SYSTEM INTO THE UPPER (6) TO (12) INCHES OF SOIL WITH A SOIL PROBE. INJECT AT THE RATE OF ONE THIRD (1/3) GALLON AT EACH INJECTION SITE.
    d. THE CRITICAL ROOT ZONE AREA PLUS (2) FEET BEYOND THE CRITICAL ROOT ZONE SHALL BE INJECTED, BUT NOT BEYOND ROOT PRUNING LOCATIONS.
    e. FERTILIZER SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF ANY AERATION SYSTEMS.
    f. EMPTY PRODUCT CONTAINERS SHALL BE STOCKPILED FOR INSPECTION BY THE PROJECT ARBORIST PRIOR TO DISPOSAL.
5. TRANSPLANT INOCULANT & BIOSTIMULANT.
    a. CONTRACTOR SHALL PROVIDE INSECTABLE MYCORRHIZAL TRANSPLANT INOCULANT ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND AS RECOMMENDED BY THE PROJECT ARBORIST. INSECT INOCULANT IN (10) INCH WIDE SOIL RING AROUND THE ROOT BALL.
    b. INJECT THE MIXTURE WITH A HYDRAULIC INJECTION SYSTEM INTO THE UPPER (6) TO (12) INCHES OF SOIL WITH A SOIL PROBE. INJECT AT THE RATE OF ONE THIRD (1/3) GALLON AT EACH INJECTION SITE.
    c. EMPTY PRODUCT CONTAINERS SHALL BE STOCKPILED FOR INSPECTION BY PROJECT ARBORIST PRIOR TO DISPOSAL.
6. TRANSPLANT MAINTENANCE
    a. APPROXIMATELY (1) YEAR AFTER PLANTING, THE CONTRACTOR SHALL REFERTILIZE ALL TRANSPLANTS UTILIZING THE SAME PROCEDURES ABOVE.

G. INSECTICIDE

1. NOTIFY PROJECT ARBORIST IF ANY INFESTATION IS NOTICED.
2. FOLLOW PROJECT ARBORIST'S RECOMMENDED PROCEDURES.
3. FOLLOW ALL MANUFACTURERS' RECOMMENDATIONS CONCERNING APPLICATION. READ ALL WARNING LABELS.
4. ANY PETS, AS WELL AS, THE PETS FOOD AND WATER BOWLS SHOULD BE REMOVED FROM THE AREA AND ANY SWIMMING POOLS SHOULD BE COVERED. COORDINATE WITH PROJECT ARBORIST FOR FURTHER INSTRUCTION.
5. ENSURE COMPLETE COVERAGE AND REAPPLY (2) TO (3) MONTHS (OR IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS) AFTER INITIAL APPLICATION UTILIZING SAME PROCEDURE.

H. IRRIGATION

1. EVERY EFFORT SHALL BE MADE TO WATER THE PRESERVED TREES AND TRANSPLANTS. CONTRACTOR SHALL IRRIGATE BY HAND OR BY TEMPORARY IRRIGATION.
2. IRRIGATE AS REQUIRED BY PROJECT ARBORIST UNTIL PERMANENT IRRIGATION IS INSTALLED AND OPERATING.
3. UNDERGROUND IRRIGATION SHALL NOT BE INSTALLED WITHIN THE DRIP LINES OF EXISTING TREES UNLESS ROOT PROTECTION MEASURES ARE PROVIDED AND APPROVED BY PROJECT ARBORIST.

I. TREE REMOVALS

1. PRIOR TO AND DURING LAND CLEARING, INCLUDING GRUBBING, ALL TREES TO BE REMOVED SHALL BE CLEARLY MARKED BY PROJECT ARBORIST WITH RED SURVEY RIBBON AT (36) INCHES MINIMUM ABOVE GRADE.
2. CONTRACTOR SHALL REMOVE ALL TREES AS SHOWN ON THE DRAWINGS AFTER THE TREE PROTECTION FENCING IS INSTALLED.
3. ALL TREES SHOWN TO BE REMOVED SHALL BE FELLED WITH A CHAIN SAW AND STUMP GROUND (6) INCHES BELOW SURFACE. ANY TREE SHOWN TO BE REMOVED THAT IS IN AN AREA WHERE COMPACTION IS CRITICAL SHALL BE FELLED WITH A CHAIN SAW AND STUMP REMOVED BY CONTRACTOR.
4. ALL WOOD AND STUMPS FROM REMOVALS SHALL BE HAULED FROM THE SITE THE SAME DAY, EXCEPT FOR TOPS. ALL TOPS ARE TO BE MULCHED AND STOCKPILED OR HAULED DIRECTLY TO MULCHED AREAS FOR PROTECTED / RELOCATED TREES IF SCHEDULING PERMITS. TOPS SHALL BE CHIPPED AND PLACED IN THE TREE PROTECTION ZONE TO A DEPTH OF (3) INCHES. ALL EXCESS WOOD CHIPS SHOULD BE HAULED OFF SITE AFTER TRANSPLANTING IS COMPLETE.
5. ALL BURN PITS IF APPLICABLE MUST BE APPROVED BY THE PROJECT ARBORIST, OWNER, AND LOCAL JURISDICTIONAL AUTHORITY.
6. TREES TO BE REMOVED THAT HAVE BRANCHES EXTENDING INTO THE CANOPY OF TREES TO REMAIN MUST BE REMOVED BY AN ISA CERTIFIED ARBORIST AND NOT BY DEMOLITION OR CONSTRUCTION CONTRACTORS. THE QUALIFIED ARBORIST SHALL REMOVE THE TREE IN A MANNER THAT CAUSES NO DAMAGE TO THE TREES AND UNDERSTORY VEGETATION TO REMAIN.
7. TREES TO BE REMOVED LOCATED WITHIN THE TREE PROTECTION ZONE SHALL BE REMOVED BY AN ISA CERTIFIED ARBORIST. THE TREES SHALL BE CUT NEAR GROUND LEVEL AND THE STUMP GROUND OUT.

J. MACHINE DUG TRANSPLANTING

1. DIG TRANSPLANT-RECEIVING HOLE.
2. SET SPADE DUG ROOT BALL INTO RECEIVING HOLE (4) INCHES TO (6) INCHES ABOVE EXISTING GRADE.
3. WASH SAND OR TOPSOIL INTO AIR POCKETS BETWEEN ROOT BALL AND RECEIVING HOLE.
4. INSTALL TOPSOIL RING, (4) INCHES HIGH, (10) INCHES WIDE, AROUND PERIMETER OF ROOT BALL. MIX MYCORRHIZAL TRANSPLANT INOCULANT INTO TOPSOIL RING PER MANUFACTURERS SPECIFICATIONS.
5. INSTALL (3) INCHES OF MULCH FROM PERIMETER OF ROOT BALL TO WITHIN (6) INCHES OF TREE TRUNK.
6. COVER TOPSOIL RING WITH (1) INCH OF MULCH AND EXTEND MULCH (6) INCHES OUTSIDE PERIMETER OF ROOT BALL.
7. WATER TRANSPLANT.

K. HOLDING AREA FOR TRANSPLANTS

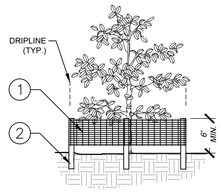
1. HOLDING AREAS SHOULD NOT BE NECESSARY. CONSTRUCTION PHASING SHOULD BE IMPLEMENTED SO THAT TREES ARE IMMEDIATELY RELOCATED TO THEIR PERMANENT LOCATION. COORDINATE WITH PROJECT ARBORIST AS NEEDED.
2. SHOULD A HOLDING AREA BE NECESSARY, TREE PROTECTION FENCING SHALL BE INSTALLED AT THE PERIMETER OF THE ENTIRE AREA.
3. CONTRACTOR SHALL COORDINATE LOCATION AND SPECIFICATIONS OF THE HOLDING AREA WITH PROJECT ARBORIST.
4. CONTRACTOR SHALL SUPPLY TEMPORARY IRRIGATION TO THE HOLDING AREA CONSISTING OF ABOVE GROUND PVC OR POLYETHYLENE PIPE, SPRAY OR ROTOR HEADS (WITH HEAD TO HEAD COVERAGE) AND A CONTROLLER. COORDINATE WITH PROJECT ARBORIST FOR CONTROLLER SETTINGS AND ALTERNATIVE WATERING METHODS.

L. TOPSOIL

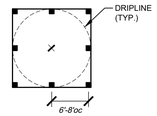
1. ALL TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE TOPSOIL IN THE VICINITY THAT PRODUCES HEAVY GROWTH.
2. TOPSOIL, PH RANGE OF (5.5) TO (7.5), (3) TO (5) PERCENT ORGANIC MATERIAL MINIMUM, FREE FROM SUBSOIL, OBJECTIONABLE WEEDS, LITTER, SODS, STIFF CLAY, STONES LARGER THAN (1) INCH IN DIAMETER, STUMPS, ROOTS, TRASH, TOXIC SUBSTANCES, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH.
3. VERIFY AMOUNT STOCKPILED IF ANY, AND SUPPLY ADDITIONAL AS NEEDED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST (4) INCHES DEEP. DO NOT OBTAIN TOPSOIL FROM BOGS OR MARSHES.
4. PROJECT ARBORIST SHALL APPROVE ALL TOPSOIL PRIOR TO PLACEMENT.

M. REPAIR OF DAMAGED TREES

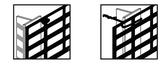
1. IF DAMAGE TO ANY TREE SHOULD OCCUR BY ACCIDENT OR NEGLIGENCE DURING THE CONSTRUCTION PERIOD, THE PROJECT ARBORIST SHALL APPRAISE THE DAMAGE AND MAKE RECOMMENDATIONS TO THE OWNER FOR REPAIR BY THE CONTRACTOR.
2. IF ANY TREE DESIGNATED TO BE SAVED IS DAMAGED BEYOND REPAIR OR REMOVED FROM THE SITE WITHOUT PERMISSION, THE PROJECT ARBORIST SHALL APPRAISE THE TREE AND MAKE RECOMMENDATIONS TO THE OWNER FOR REPLACEMENT BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPRAISED VALUE OF THE TREE. THE REPLACEMENT OF THE TREE, AND ANY FEES / PENALTIES THAT MAY BE ASSESSED TO THE OWNER BY THE LOCAL JURISDICTIONAL AUTHORITY.



ELEVATION



PLAN



1 TREE PROTECTION FENCING
10 ELEVATION / PLAN NTS

1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:

A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.

B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS), WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

811 Know what's below. Call before you dig.

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Kimley»Horn
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6200 SOUTH SYRACUSE WAY, Suite 300
GREENWOOD VILLAGE, CO 80111 (303) 228-2300

DESIGNED BY: CMW
DRAWN BY: SPD
CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
TREE MITIGATION NOTES

PROJECT NO.
096328011

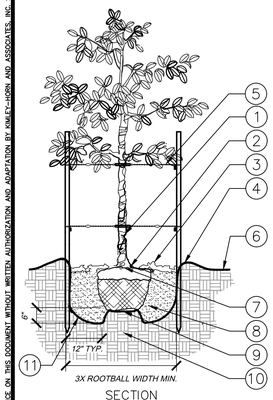
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096328011_LS.dwg

10

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



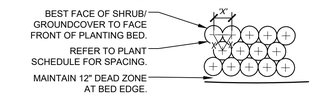
SECTION

1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 4" MINIMUM MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
4. 4" HIGH BERM, FIRMLY COMPACTED.
5. 8' x 2" TREATED LODGE POLE PINE TREE STAKES, TWO (2) PER TREE; AVOID PENETRATING ROOT BALL. 14 GAUGE, ANNEALED STEEL GUY WIRE. STAPLE ENDS TO INSIDE OF TREE STAKE. ADJUST TENSION BY TURNING WIRE PAIRS FROM THE MIDDLE
6. FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. TOP OF ROOTBALL SHALL BE 1" ABOVE FINISHED GRADE. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

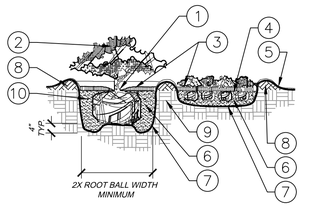
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.
D. INSTALL PRE-EMERGENT HERBICIDE PRIOR TO PLANT INSTALLATION.

1 / 11 TREE PLANTING – STAKING
SECTION / PLAN NTS



PLAN



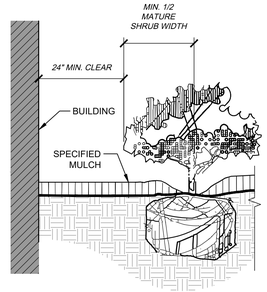
SECTION

1. TOP OF ROOTBALLS TO BE PLANTED AT GRADE OR SLIGHTLY ABOVE SURROUNDING SOIL. 2" DIA. CLEAR OF MULCH AT TRUNK FLARE.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 4" MULCH LAYER AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. FOR CONDITIONS WITH FINISHED GRADE OF 4:1 MAX SLOPE ON ALL SIDES (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES). NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY PLANT OPENING SIDES AND BOTTOM.
8. 4" HIGH BERM FIRMLY COMPACTED.
9. UNDISTURBED NATIVE SOIL.
10. FERTILIZER TABLETS (MAX 3" DEEP)

NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING AREAS PRIOR TO INSTALLATION.
B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.
C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY PROJECT LANDSCAPE ARCHITECT.
D. PRE-EMERGENT HERBICIDE TO BE APPLIED PRIOR TO PLANT INSTALLATION.

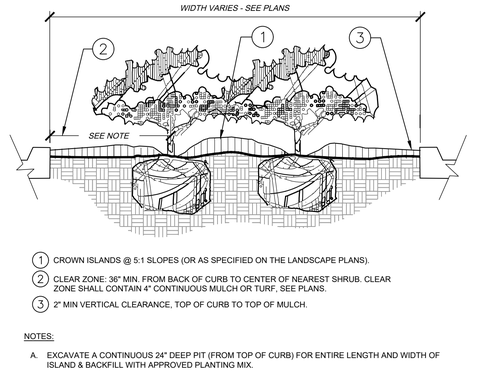
2 / 11 SHRUB/GROUNDCOVER PLANTING
SECTION / PLAN NTS



NOTES:

1. CLEAR ZONE: 36" MIN. FROM BUILDING TO CENTER OF NEAREST SHRUB.
2. INSTALL SPECIFIED MULCH: 24" MIN. FROM BUILDING. SPECIFIED MULCH TO BE INSTALLED AT A DEPTH OF 4" (MIN.)

3 / 11 PLANTINGS ADJACENT TO BUILDINGS
SECTION NTS

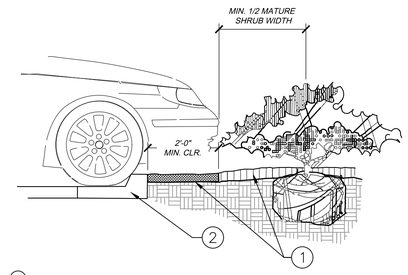


1. CROWN ISLANDS @ 5:1 SLOPES (OR AS SPECIFIED ON THE LANDSCAPE PLANS).
2. CLEAR ZONE: 36" MIN. FROM BACK OF CURB TO CENTER OF NEAREST SHRUB. CLEAR ZONE SHALL CONTAIN 4" CONTINUOUS MULCH OR TURF, SEE PLANS.
3. 2" MIN VERTICAL CLEARANCE, TOP OF CURB TO TOP OF MULCH.

NOTES:

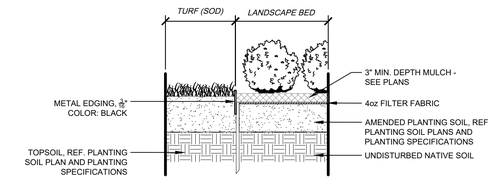
A. EXCAVATE A CONTINUOUS 24" DEEP PIT (FROM TOP OF CURB) FOR ENTIRE LENGTH AND WIDTH OF ISLAND & BACKFILL WITH APPROVED PLANTING MIX.
B. PROTECT AND RETAIN ALL CURBS AND BASE. COMPACTED SUBGRADE TO REMAIN FOR STRUCTURAL SUPPORT OF CURB SYSTEM (TYP).
C. ALL ISLANDS SHALL UTILIZE POOR DRAINAGE DETAIL WHEN PERCOLATION RATES ARE 2" PER HOUR OR LESS.

4 / 11 PLANTED PARKING LOT ISLANDS/MEDIANS
SECTION NTS

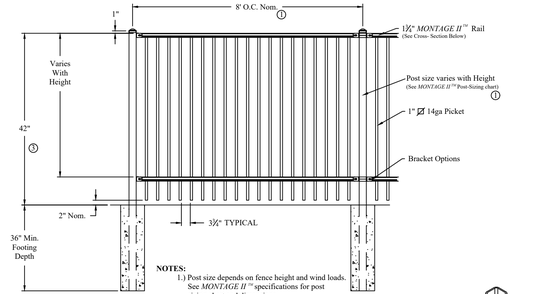


1. INSTALL CONTINUOUS MULCH BED ADJACENT TO PARKING SPACES AS SHOWN. MULCH SHALL BE MIN. 4" DEEP. NO POP-UP IRRIGATION HEADS SHALL BE LOCATED WITHIN 24" OF A PARKING SPACE ON ANY SIDE.
2. CURB / PARKING LOT EDGE.

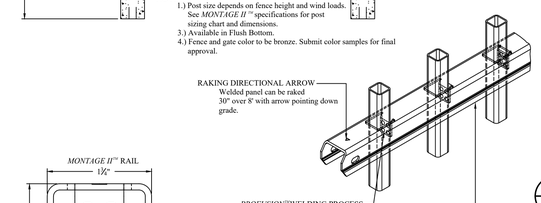
5 / 11 PARKING SPACE/CURB PLANTING
SECTION NTS

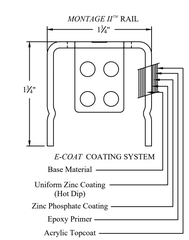


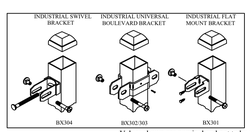
6 / 11 METAL EDGER AT PLANTING BED
1" = 1"
096-BE-011-21



NOTES:
1.) Post size depends on fence height and wind loads. See *MONTAGE II* ™ specifications for post sizing chart and dimensions.
3.) Available in Flush Bottom.
4.) Fence and gate color to be bronze. Submit color samples for final approval.

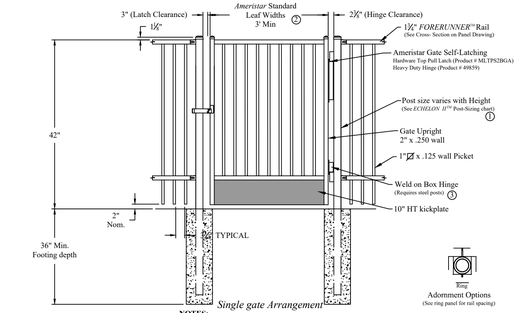






Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

7 / 11 42" MONTAGE II– MAJESTIC STEEL FENCE BY AMERISTAR
NTS
096-BE-011-22



Single gate Arrangement

NOTES:
1.) Post size depends on fence height, weight and wind loads. See *MONTAGE II*™ post sizing chart.
2.) See *Ameristar* gate table for standard out to outs. Custom gate openings available for special out to out/leaf widths.
3.) Additional styles of gate hardware are available on request This could change the Latch & Hinge Clearance.
4.) Third and Fourth rail optional. Some heights noted required a third and/or fourth rail.
5.) Fence and gate color to be bronze. Submit color samples for final approval.

8 / 11 42" MONTAGE II – MAJESTIC STEEL GATE BY AMERISTAR

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6200 SOUTH SYRACUSE WAY, Suite 300
GREENWOOD VILLAGE, CO 80111 (303) 228-2300

DESIGNED BY: CMW
DRAWN BY: SPD
CHECKED BY: CMW
DATE: 08/06/2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
LANDSCAPE DETAILS

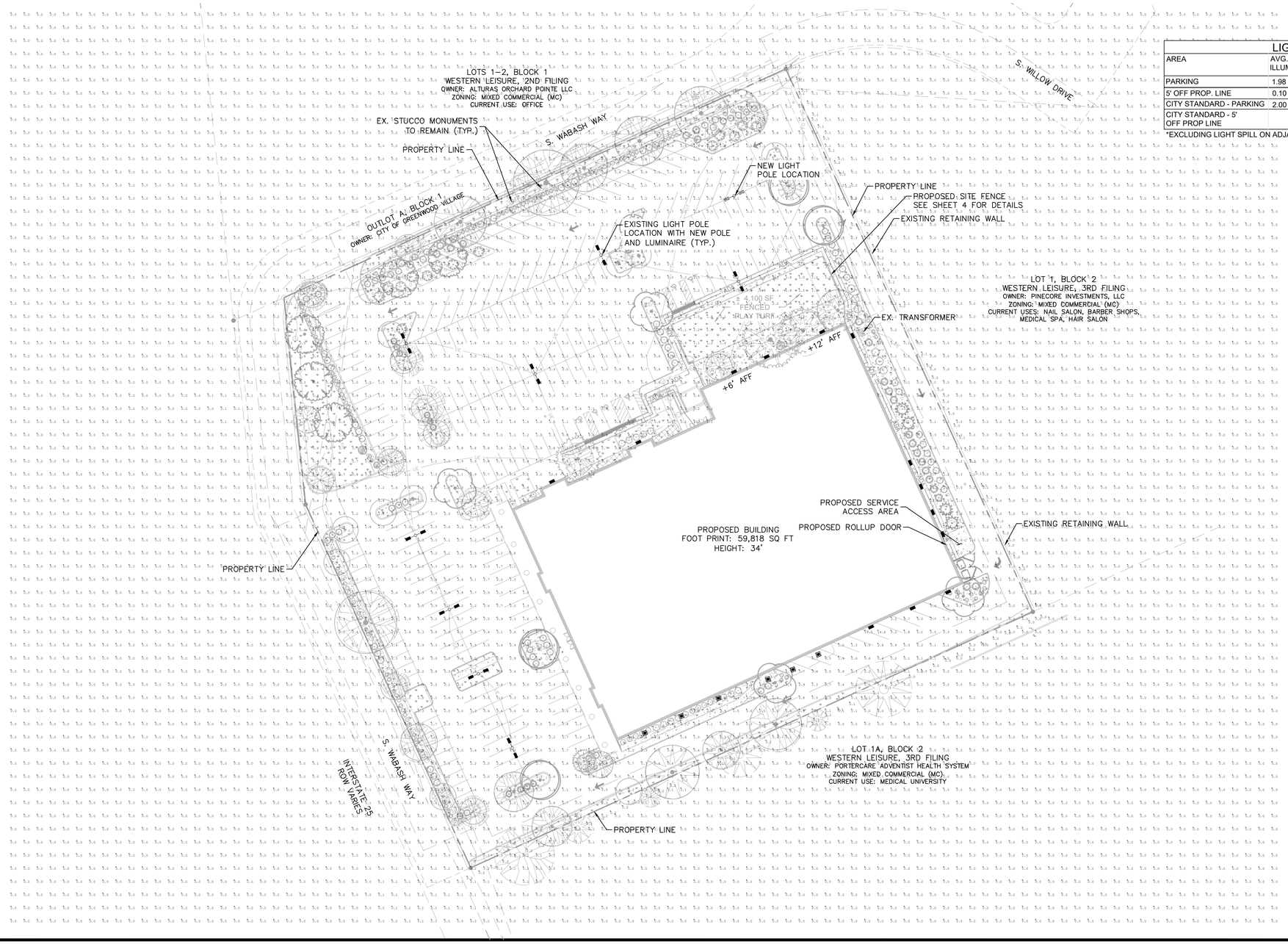
PROJECT NO.
096328011

DRAWING NAME
096328011_LS.dwg

11

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- ADA — ADA ACCESSIBLE ROUTE
- PROPOSED POLE LIGHT IN EXISTING LOCATION
- PROPOSED POLE LIGHT IN NEW LOCATION
- PROPOSED WALLPACK
- PROPOSED SOFFIT LIGHT

LIGHTING SUMMARY TABLE

AREA	AVG. ILLUMINANCE (FC)	UNIFORMITY (AVE/MIN)	MINIMUM ILLUMINANCE (FC)	MAXIMUM ILLUMINANCE (FC)
PARKING	1.98	3.30	0.60	5.10
5' OFF PROP. LINE	0.10	N/A	0.00	0.20
CITY STANDARD - PARKING	2.00	4.00		
CITY STANDARD - 5' OFF PROP LINE				0.20

*EXCLUDING LIGHT SPILL ON ADJACENT ROADWAYS

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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GREENWOOD VILLAGE, CO 80111 (303) 228-2300

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8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
PHOTOMETRIC PLAN

PROJECT NO.
096328011

DRAWING NAME
096328011_PH.dwg

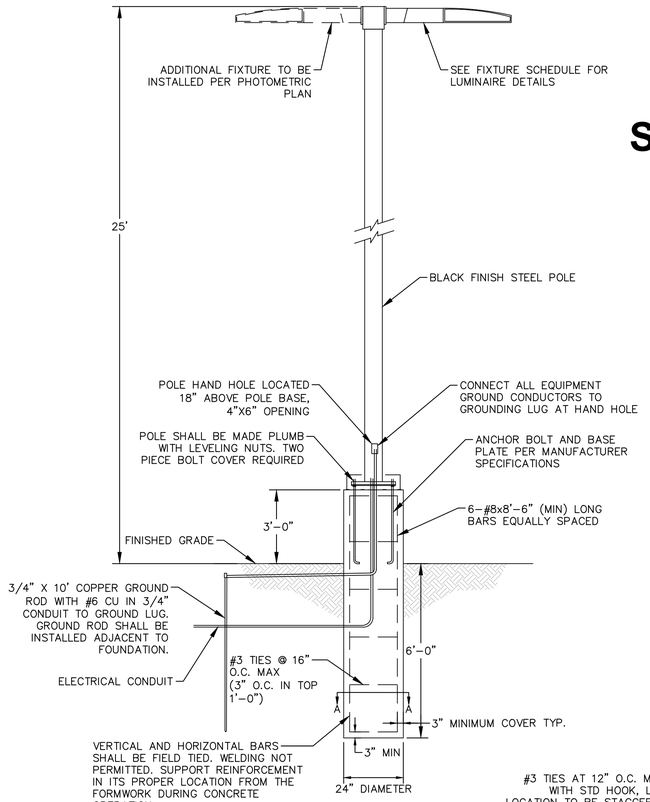
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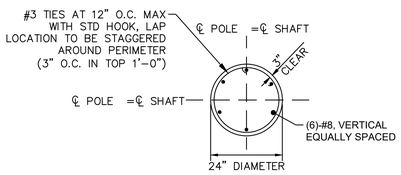
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SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN





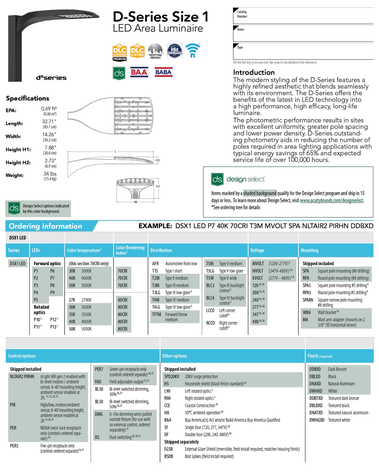
SECTION A–A
NOT TO SCALE

NOTES:

1. 4000 PSI MIN. 28 DAY COMPRESSIVE STRENGTH CONCRETE WITH GRADE 60 REINFORCING STEEL
2. IF WATER IS PRESENT IN HOLE, REMOVE BEFORE POURING CONCRETE.
3. FOUNDATION EXCAVATION SHALL BE BY 24" AUGER IN UNDISTURBED OR PROPERLY COMPACTED FILL PER SPECIFICATIONS.
4. FOUNDATION HAS BEEN DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 1500 PSF.
5. FOUNDATION HAS BEEN DESIGNED FOR A MINIMUM ALLOWABLE LATERAL SOIL PRESSURE OF 100 PCF.

1 POLE FOUNDATION DETAIL

SCALE: NTS







2 LUMINAIRE CUTSHEETS

SCALE: NTS

LUMINAIRE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER AND MODEL	LLF	VOLTAGE	WATTAGE	LUMENS	FINISH	POLE MANUFACTURER	POLE MODEL	POLE FINISH	MOUNTING HEIGHT	NOTES
▬○▬ / ⊠○⊠	SHORT ARM STYLE FULL CUTOFF LED LUMINAIRE	LITHONIA DSX1 DSX1 LED-P3-40K-70CRI-T3M-MVOLT-RPA-PER	0.90	120-277V	102 W	13,205 LUMENS	BLACK	LITHONIA LIGHTING	RSS-22-5B-DM28AS-DBLXD	BLACK	25'-0"	PROVIDE PHOTOCELL
▬	WALL MOUNTED FULL CUTOFF LED LUMINAIRE	LITHONIA WPX LED WPX2 LED-40K-MVOLT-PE	0.90	120-277V	48 W	5,896 LUMENS	COORDINATE WITH OWNER	N/A	N/A	N/A	9' UNLESS OTHERWISE NOTED	
■	RECESSED SOFFIT LED LUMINAIRE	LITHONIA SCNY LED SCNY LED-P1-40K-PFL-MVOLT-DWHXD-M3	0.90	120-277V	28 W	4,000 LUMENS	COORDINATE WITH OWNER	N/A	N/A	N/A	12'-0"	

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GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN
PHOTOMETRIC DETAILS

PROJECT NO.
096328011

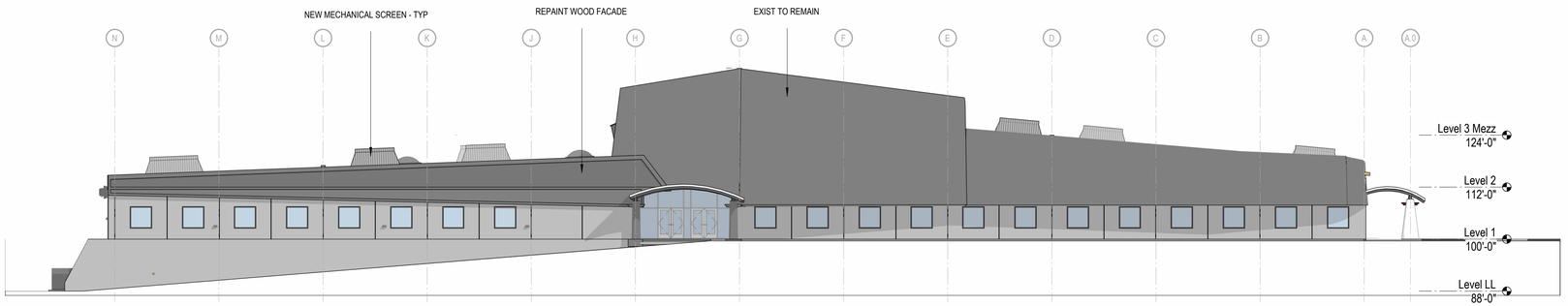
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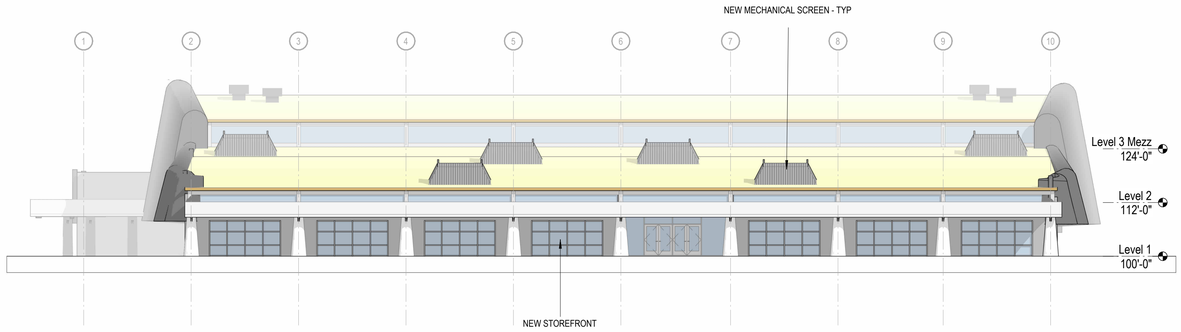
8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



1 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



2 WEST ELEVATION
SCALE: 1/16" = 1'-0"

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BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 300
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

PRELIMINARY
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PROJECT NO:
175850

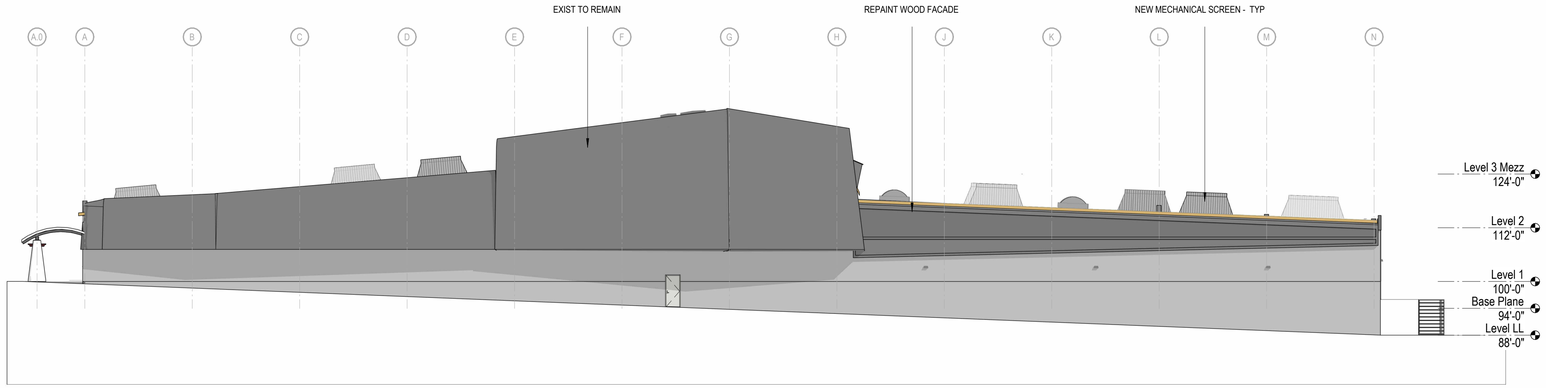
BUILDING ELEVATIONS

14

8500 E ORCHARD RD

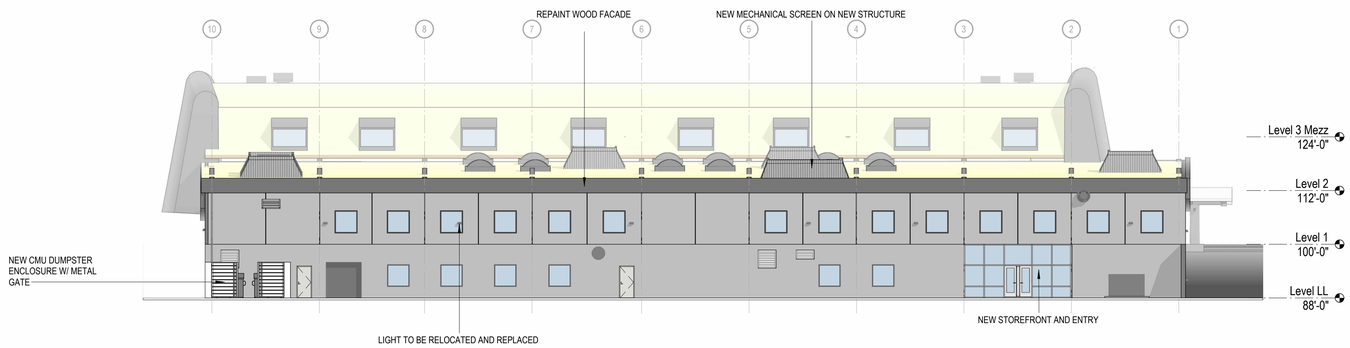
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CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



1 SOUTH ELEVATION

SCALE: 1/16" = 1'-0"



2 EAST ELEVATION

SCALE: 1/16" = 1'-0"

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BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 400
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

DATE:05-12-2026

8500 E ORCHARD RD
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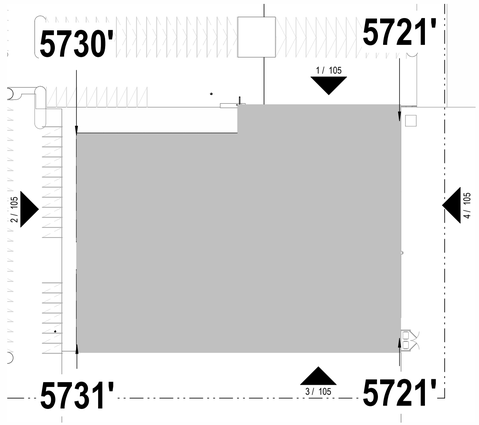
BUILDING ELEVATIONS

15

8500 E ORCHARD RD

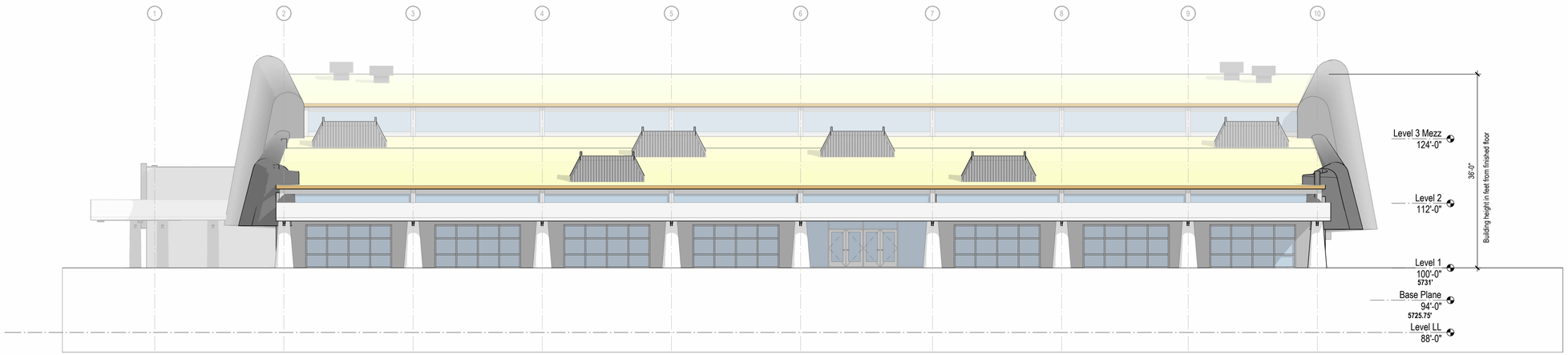
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CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



AVERAGE GRADE PLAN: 5725.75'
BUILDING HEIGHT: 34'
MAX BUILDING HEIGHT: 5759.75'

1 SITE PLAN
SCALE: 1/64" = 1'-0"



2 WEST ELEVATION
SCALE: 3/32" = 1'-0"

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BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 400
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

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SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

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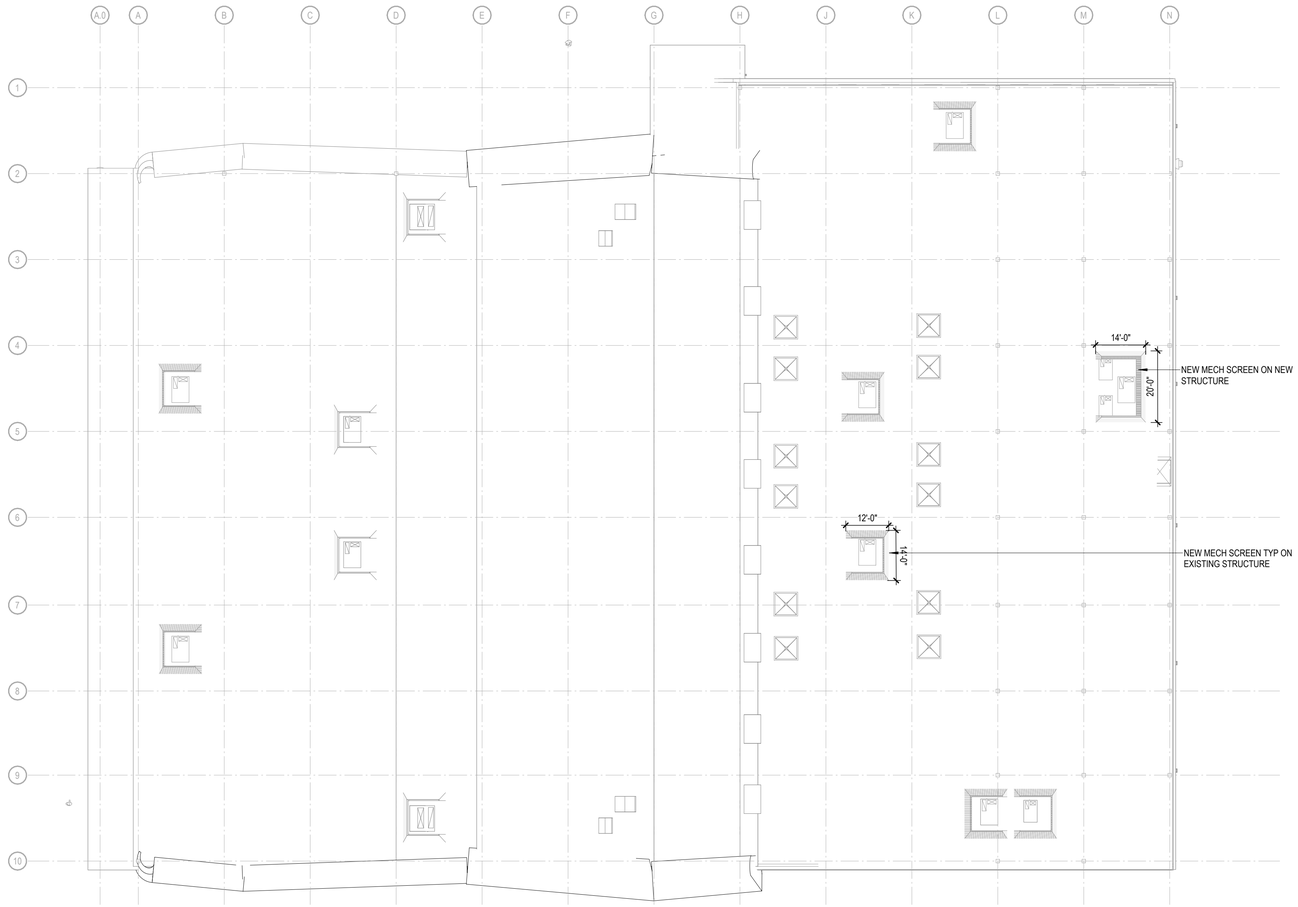
HEIGHT CALCULATION

16

8500 E ORCHARD RD

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CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



1 ROOF PLAN
SCALE: 1" = 20'-0"

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BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 400
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

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ROOF PLAN

17

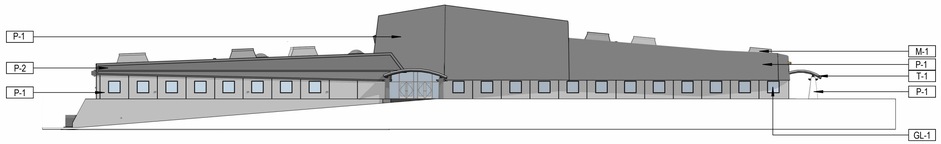
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TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

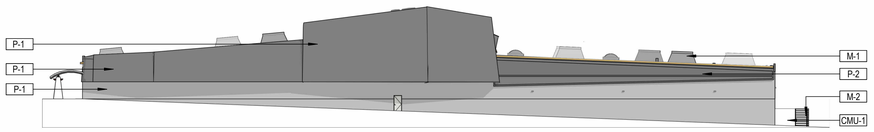
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



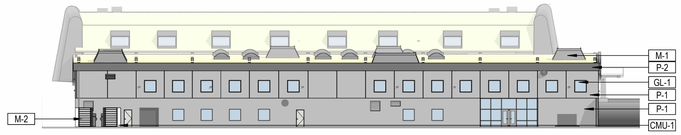
1 WEST ELEVATION
SCALE: 1" = 30'-0"



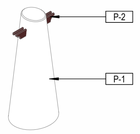
2 NORTH ELEVATION
SCALE: 1" = 30'-0"



3 SOUTH ELEVATION
SCALE: 1" = 30'-0"



4 EAST ELEVATION
SCALE: 1" = 30'-0"



5 AXON - STUCCO MONUMENTS -TYP
SCALE:



T-1 TERRACOTTA TILES
EXIST TO REMAIN



M-1 STEEL ROOF DECKING-CORRUGATED
REPLACE AS IS

P-1 PAINT
REPAINT AS IS

CMU-1 WALL WITH TEX - COAT FINISH TO MATCH THE BUILDING
TRASH ENCLOSURE WALL



C-1 CONCRETE WALL
REMAIN AS IS



P-2 WOOD PAINT
REPAINT AS IS

M-2 METAL GATE WITH WHITE PAINT
TRASH ENCLOSURE



G-1 STOREFRONT GLAZING
NEW ADDITION

NO	REVISION	BY	DATE	APPR

BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 250
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NO:
175850

COLOR AND MATERIAL BOARD

18

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



NORTH ELEVATION



WEST ELEVATION

BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 1000
DENVER, CO 80202
PH: (303) 468-9865
WWW.BECKGROUP.COM

NO	REVISION	BY	DATE	APPR.

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

PRELIMINARY

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NO:
175850

COLOR RENDERINGS

19

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



SOUTH ELEVATION



EAST ELEVATION

BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 400
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

NO	REVISION	BY	DATE	APPR

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

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PROJECT NO:
175850

COLOR RENDERINGS

20

8500 E ORCHARD RD

A PARCEL OF LAND LOCATED IN SECTION 21,
TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPLE MERIDIAN
CITY OF GREENWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN



NORTH VIEW RENDER



WEST VIEW RENDER

NO	REVISION	BY	DATE	APPR.

BECK ARCHITECTURE, LLC
1001 17TH STREET
SUITE 400
DENVER, CO 80202
PH: (303) 468-9665
WWW.BECKGROUP.COM

DATE:05-12-2026

8500 E ORCHARD RD
GREENWOOD VILLAGE, CO 80111
SPECIAL USE PERMIT / SITE DEVELOPMENT PLAN

PRELIMINARY

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NOT FOR CONSTRUCTION

PROJECT NO:
175850

COLOR RENDERINGS

21

Interstate Corridor Planning Area

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Natural Environment
Built Environment

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Planning Area Facilities
Parks
Homeowners Associations

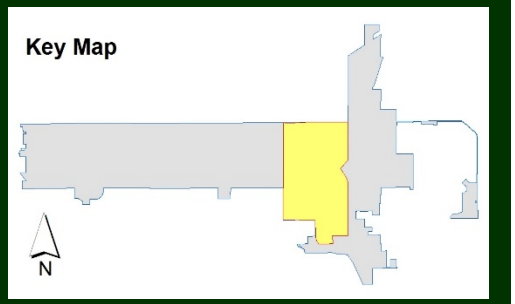
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PLANNING AREA DESCRIPTION

Planning Area Boundaries

The Corridor planning area generally includes the areas of the Village south of Belleview Avenue, west of Yosemite Street, north of Arapahoe Road, and east of Quebec Street. Half of the Denver Technological Center, Greenwood Plaza and office and mixed-use centers are located within this planning area.



Planning Area History

The majority of this area was annexed into the Village in 1975. Smaller areas were annexed in 1976, 1979, 1980, 1999, 2000, 2001, 2005, 2006, and 2015.



Interstate Corridor Planning Area





CORRIDOR CHARACTER

Natural Environment

Natural features in this planning area were incorporated into the built or suburban environment.

Built Environment

The planning area is characterized by suburban office parks, an amphitheater, commercial activity, and higher density residential neighborhoods.

- Land Uses: The planning area is comprised primarily of commercial land uses with some higher-density residential components also mixed in the area.
- Residential Density: The single-family and multi-family residential area is comprised of an average of eight dwelling units per acre.
- Street Characteristics: Paved streets meander throughout the planning area. Vertical curbs and gutters are prevalent.
- Landscape: Detention ponds, open green spaces and plazas are part of the suburban commercial office park development.

CORRIDOR INVENTORY

Utilities/Services

The following utility/service providers serve the Corridor planning area:

- School District: Cherry Creek
- Sanitation: Goldsmith Gulch, Southgate, Castlewood
- Water: Castlewood, Southgate, Greenwood Plaza
- Metro Districts: Greenwood North, Greenwood, Greenwood South, Goldsmith, Orchard Valley, Marin Metropolitan Improvement District

Planning Area Facilities

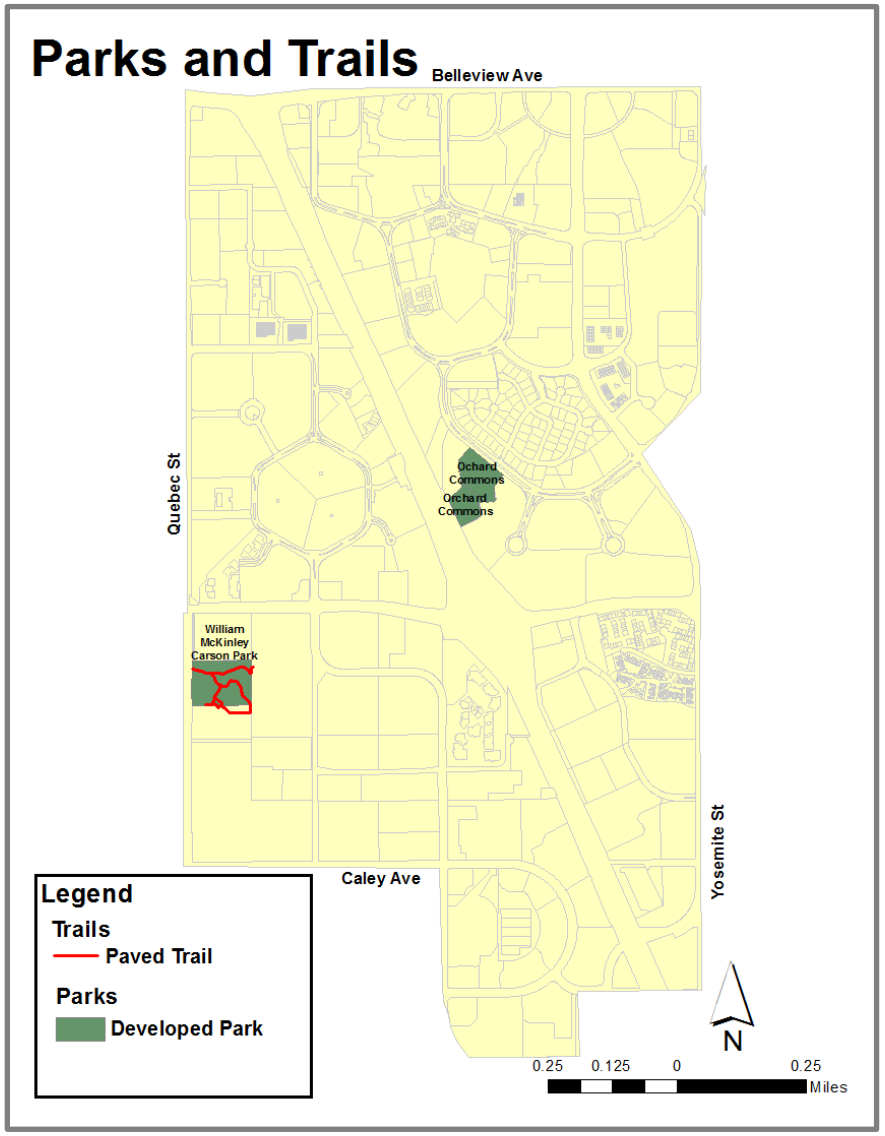
Parks and open space consist of the following:

- Improved Parks: 4.90 acres
- Unimproved Parks: 12.19 acres
- Natural Parks: None
- Bike Paths: 1.19 miles
- Equestrian Paths: None

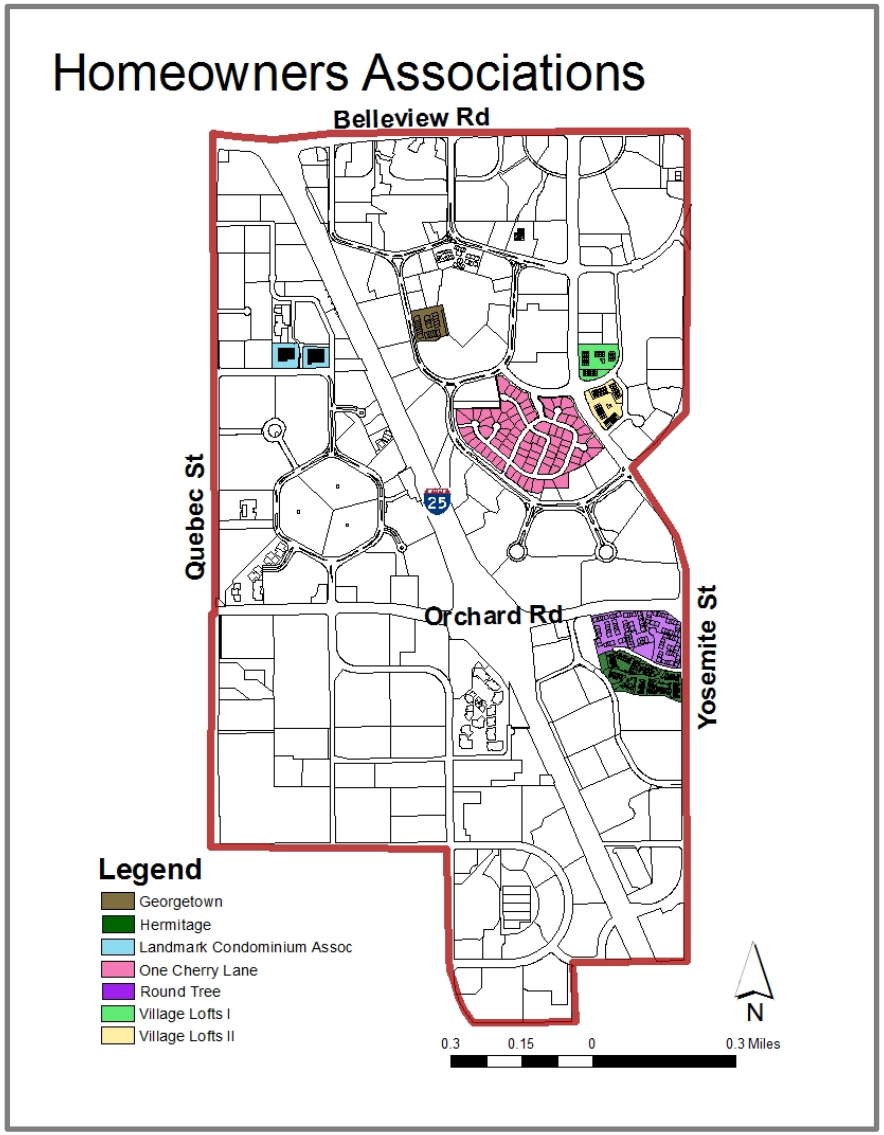
Parks

- William McKinley Carson Park
- Orchard Commons
- Orchard Station Park

Schools – None



Interstate Corridor Planning Area



Homeowners Associations

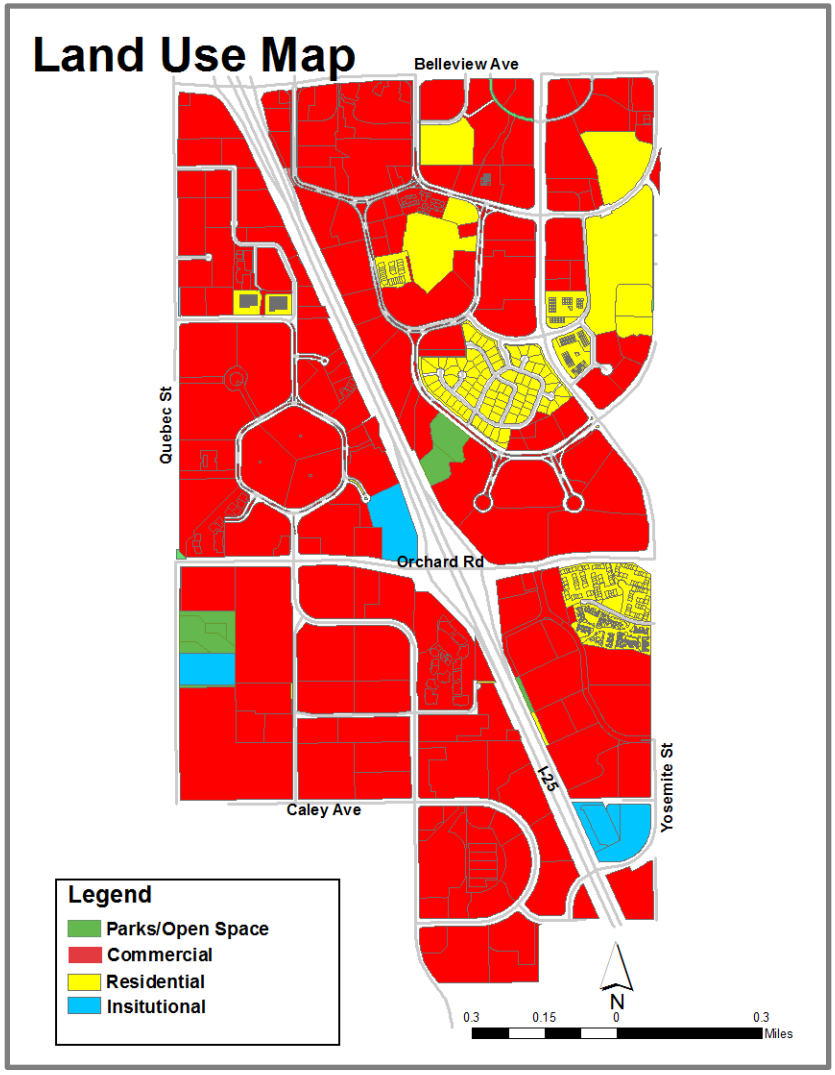
There are seven homeowners associations maintained in the Corridor planning area. The associated neighborhoods are shown in the related map.

- Georgetown
- Hermitage
- Landmark
- One Cherry Lane
- Round Tree
- Village Plaza Lofts I
- Village Plaza Lofts II

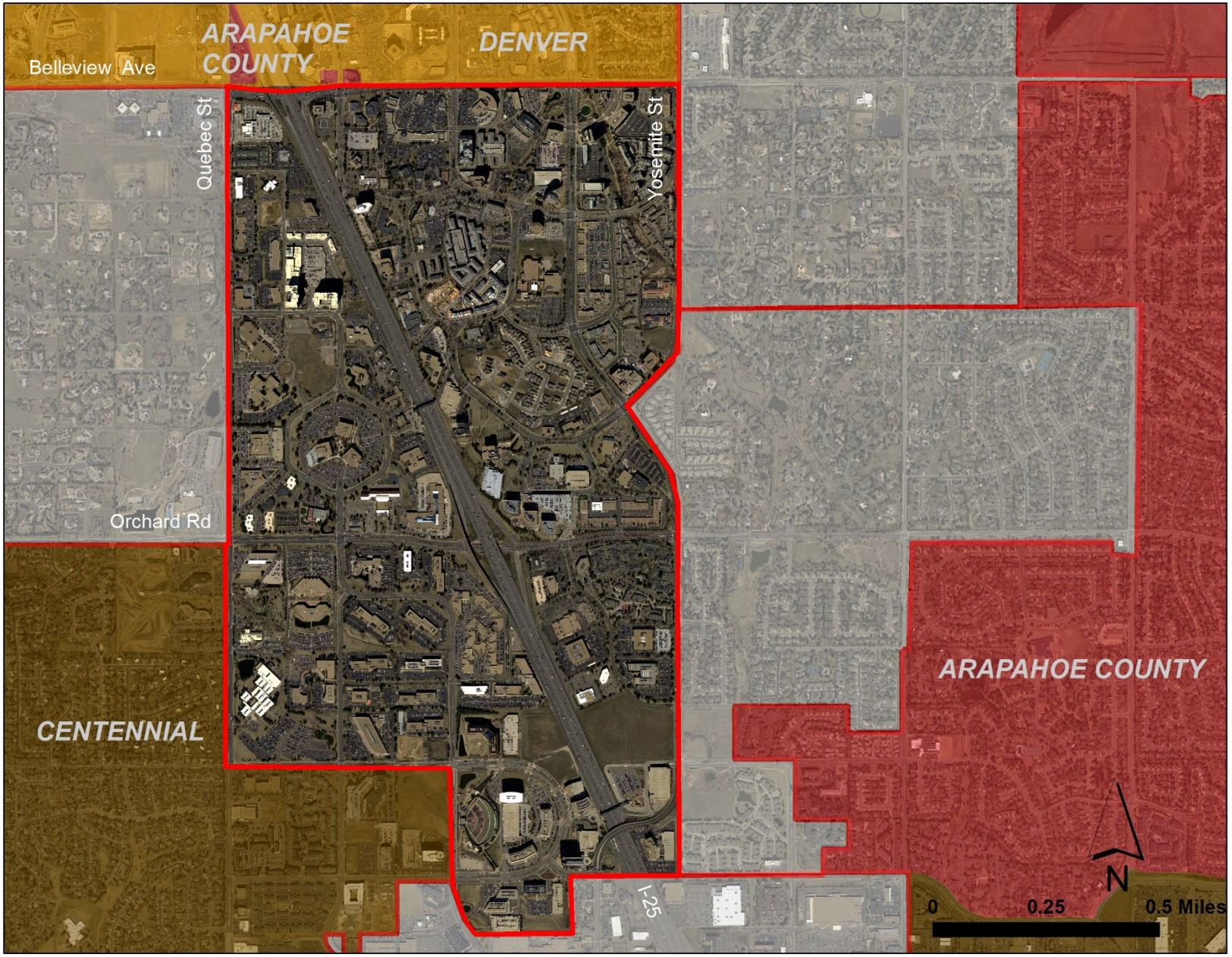


THE CORRIDOR PLANNING AREA VISION

The Corridor, as a whole, serves as the primary employment district within the Village. This area provides a diverse economic and employment base. The concept of the Corridor planning area is to contain a mix of low to mid-density office, institutional and civic uses supported by retail and restaurant amenities. The existing residential is a supporting use to the commercial/employment base. `The Corridor has a background dominated by open areas, quality landscaping, scenic views and plazas. The vision preserves Colorado view corridors that attract and serve people who desire to work in an area that maximizes the unique experience of Colorado culture and natural beauty. The Corridor sets high standards in site planning, architecture, landscaping, lighting, and signage amidst an open space, park-like setting with tree-lined streets.



Interstate Corridor Planning Area



Land Use

Goals / Objectives

- ***Encourage development that supports a diverse economic and employment base.***
- ***Maintain the open space, park-like character of the Village.***
- ***Plan development to preserve scenic views and vistas.***
- ***Protect water quality when development occurs.***
- ***The current mix of uses in the I-25 Corridor is considered appropriate. Development and redevelopment should principally be focused on commercial and employment aspects of the Corridor Planning Area.***





Policies

1a. Maintain a mixture of complementary retail and restaurant amenities that serve the business office community and the Village residents.

1b. Maintain easy access to and within the Corridor to include ample parking.

1c. For all development, the developer must demonstrate that the infrastructure, roads, utilities, water, sewage, and drainage are sufficient to accommodate the proposed use and density.

1d. Protect and enhance riparian, wetland, and aquatic habits of upper Greenwood Gulch.

1e. The existing development intensity levels are considered generally appropriate for the Corridor Planning Area.

1f. Due to the built-out nature of the I-25 Corridor, significant additional housing is neither anticipated nor encouraged. Limited additional residential developments may occur where there is a previously vested right.

1g. Higher density residential development will be discouraged in the Corridor. For purposes of the Corridor Planning Area, higher density residential is a use that exceeds on average four dwelling units per acre.

Interstate Corridor Planning Area

Transportation

Goals / Objectives

- ***Maintain pedestrian and bike linkages to and throughout the planning area.***
- ***Promote easy accessibility to and from the Corridor planning area and the employment activities within the area.***
- ***Minimize traffic congestion on the periphery of the planning area.***
- ***Provide ample parking for the uses planned.***
- ***To effectuate the open space and landscaping goals of the Corridor, encourage surface parking to be well landscaped and broken up into smaller lots.***





Policies

2a. Promote land use patterns, parking policies, and traffic management methods to minimize congestion.

2b. Provide an interconnected network of tree-lined streets that tie into the surrounding neighborhoods, allowing automobile, pedestrian, and bicycle travel as appropriate.

2c. Provide connections to the Village's comprehensive trail and sidewalk system.

Image, Identity, & Quality of Life

Goals / Objectives

- ***Ensure that development minimizes the impact of noise and light on adjacent commercial and residential areas.***
- ***Promote the planning area as a major office park in the region.***
- ***Assure highest quality architecture and site planning design.***
- ***Promote high quality open space and landscaping in development.***
- ***New buildings should relate well to the existing community.***
- ***Encourage development in the corridor that contains pedestrian and plaza facilities as well as open landscaped areas, that allow employees and residents to recreate, walk, exercise, and enjoy the attributes of the character of the Corridor which includes natural views and a sense of openness.***



Policies

3a. Emphasize landscaping and open space treatments for development in the Corridor Planning Area

3b. A 30 percent open space requirement for development and redevelopment in the Corridor Planning Area is appropriate.

3c. Promote the design of buildings and streets to maintain existing view planes.

3d. Support design measures that eliminate or minimize the impacts of blank walls along streets, parks, and plazas.

3e. Encourage public plazas with amenities such as parks, outdoor pavilions, water features, benches, and trees



Image, Identity, & Quality of Life

Policies (continued)

3f. Design entrances and parking lots to be functional and inviting with continuous landscaped walkways.

3g. Display public art, particularly at public plazas, building entrances, and along pedestrian walkways.

3h. Height limitations shall maintain existing view planes.

3i. The maximum allowed height for buildings along Quebec Street should be no greater than what exists at the current building setback.

3j. In determining the appropriateness of a proposed building, the structure placement, height and massing shall consider: the existing grades and topography, separation between buildings, and impacts on the surrounding area.

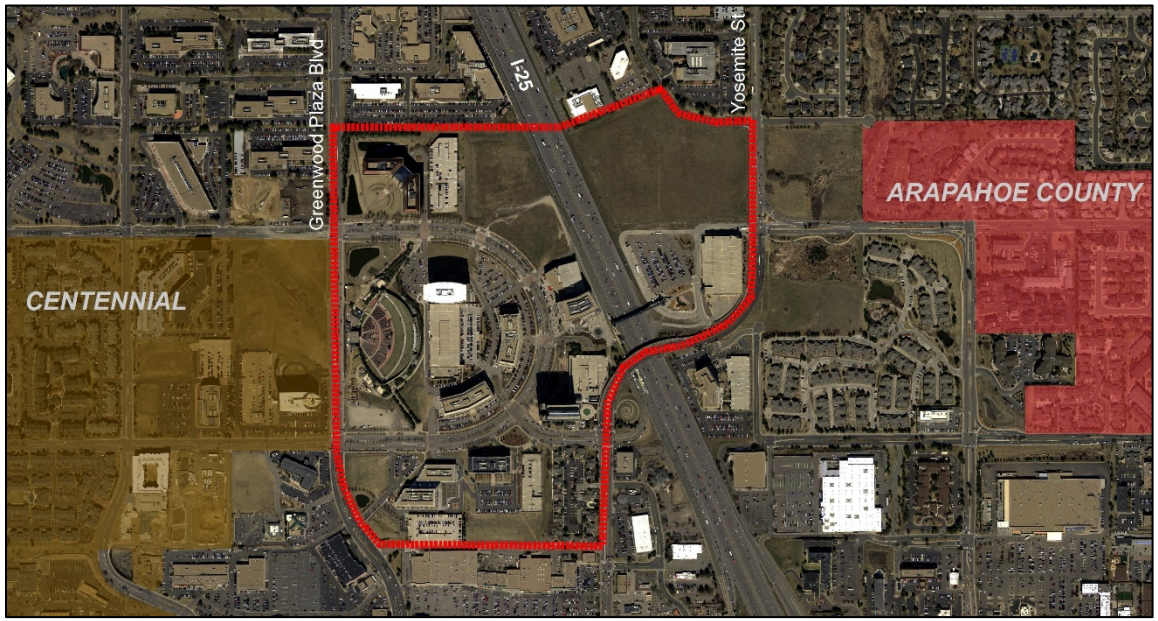
3k. Visual simulations will be required to promote an understanding of a proposed development's height and massing impact on views of the surrounding area, from multiple vantage points.

3l. Continue to encourage excellence in architecture and site planning and maintain or enhance the high-quality image, appearance, and identity of the Corridor.

THE VILLAGE CENTER PLANNING SUBAREA

The Village Center is a smaller area within the Corridor Planning Area, which has a focus on the Arapahoe Light Rail Station.

The Village Center is comprised of two parts, parcels to the east of I-25 and parcels to the west of I-25. On the west side of I-25, the Village Center has developed as a more dense office setting dominated by the light rail plaza adjoining the light rail station and the Fiddler's Green Amphitheatre. The west side of the Village Center is walkable in and around S. Fiddlers Green Circle, a tree lined boulevard. The east side of the Village Center currently has one office building and the RTD parking garage which provides parking to support the light rail station located on the west side of I-25.



Interstate Corridor Planning Area

The goals and policies of the Corridor Planning Area apply to the Village Center except for the policies below which may be conflicting:

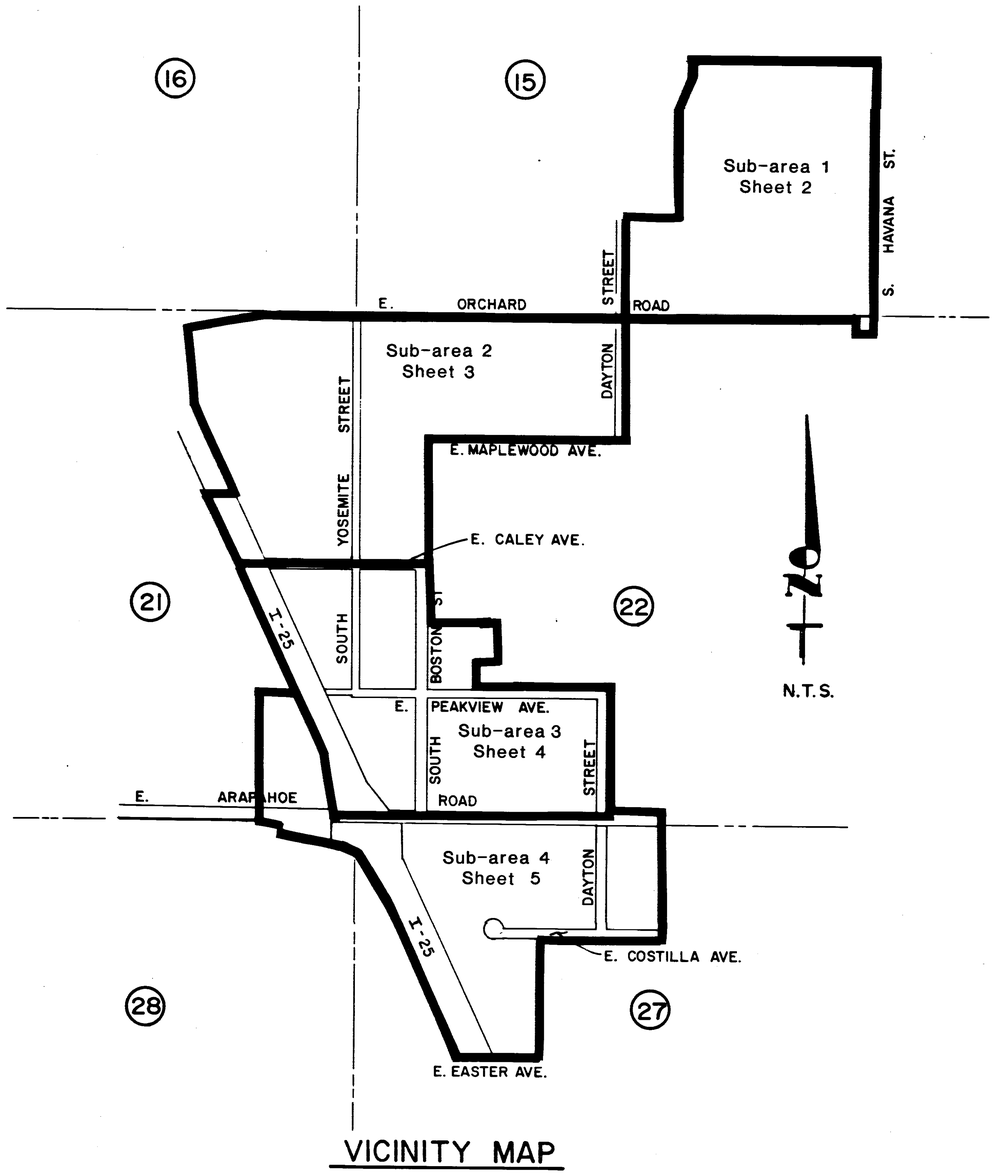
- Due to the built-out nature of the I-25 Corridor, additional housing is neither anticipated nor encouraged in the Village Center.
- Greater density will be considered in the Village Center than what is otherwise present in the Corridor Planning Area, but this greater density should not exceed the Municipal Code standards for Town Center and Mixed Commercial.
- The tallest buildings in the Village Center will be located along I-25. Other buildings in the Village Center to the west and east should decline in height to transition and blend into buildings adjacent to the Village Center. Buildings along Yosemite should be no taller than two stories.
- Ample parking in the Village Center will accommodate the uses proposed shall be provided.
- For all development, the developer must demonstrate the infrastructure in Greenwood Village is sufficient to accommodate the proposed use and density.



The Village Center serves as the primary employment district within the village.

DRAWING NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 075AR
POSITION EDGE OF PRINT ON THIS LINE

MASTER LAND USE PLAN



VICINITY MAP

This Master Land Use Plan is divided into five Sub-Areas. Sub Area plans are included as sheets 2 through 5, herein. The Sub-Area plans show specific Zone Districts for all properties within the Master Plan area.

PROPERTY DESCRIPTION

A parcel of land in Sections 14, 15, 21, 22, 23, 27 and 28, all in Township 5 South, Range 67 West of the Sixth Principal Meridian, Arapahoe County, State of Colorado, more particularly described as follows:

Beginning at the intersection of the southerly line of Orchard Road and the easterly line of South Dayton Street being 30.00 feet southerly of and 30.00 feet easterly of the northwest corner of the Northeast Quarter of said Section 22, said point also being a point on the existing City limits of the City of Greenwood Village, Colorado;

Thence the following six (6) courses along the existing City limits of the City of Greenwood Village, Colorado:

1) N00°06'20"E a distance of 1022.34 feet;

2) Thence S89°54'07"E a distance of 632.48 feet;

3) Thence N00°05'23"E a distance of 1182.14 feet;

4) Thence N18°10'08"E a distance of 288.39 feet;

5) Thence N00°35'34"W a distance of 204.94 feet;

6) Thence N39°32'46"E a distance of 584.46 feet;

Thence continuing N89°32'46"E along the northerly line of Sundance Hills Filing No. Six and the prolongation thereof a distance of 1360.91 feet;

Thence S00°12'21"W along the easterly right-of-way line of Havana Street a distance of 2658.53 feet;

Thence S00°00'16"W along said easterly right-of-way line a distance of 226.63 feet;

Thence N89°59'44"W along the southerly line of Lot 10 Block 1 Orchard Gate Subdivision Filing No. Four and the prolongation thereof non-tangent with the following described curve a distance of 257.80 feet;

Thence along the arc of a curve to the left being the southwesterly line of said Lot 10, Block 1 having a central angle of 4°29'15", a radius of 125.00 feet, a cnord bearing N52°08'44"W a distance of 14.15 feet, and an arc distance of 14.15 feet;

Thence N00°00'16"E along the westerly line of said Lot 10, Block 1 non-tangent with the last described curve a distance of 161.96 feet;

Thence S89°46'20"W along the southerly line of Outlot "H" in said Orchard Gate Subdivision Filing No. Four, the southerly line of Outlot "G" in Orchard Gate Subdivision Filing No. Three, the southerly line of Outlots "E" and "D" in Orchard Gate Subdivision Filing No. Two, a southerly line of Outlot "A" in A Resubdivision of Orchard Gate Subdivision Filing No. One and the prolongations thereof a distance of 2240.64 feet;

Thence S44°51'04"W along a southeasterly line of said Outlot "A" in A Resubdivision of Orchard Gate Subdivision Filing No. One a distance of 31.16 feet;

Thence S00°04'12"E along an easterly line of said Outlot "A" a distance of 531.57 feet;

Thence S39°16'22"E along a southeasterly line of said Outlot "A" a distance of 66.58 feet;

Thence S89°55'48"W along a southerly line of said Outlot "A" and the prolongation thereof a distance of 70.08 feet;

Thence S00°04'12"E along the westerly line of Outlot "C" in said A Resubdivision of Orchard Gate Subdivision Filing No. One and the prolongation thereof a distance of 663.40 feet;

Thence N89°44'03"E along the southerly line of said A Resubdivision of Orchard Gate Subdivision Filing No. One a distance of 10.00 feet;

Thence S00°04'12"E along the easterly right-of-way line of South Dayton Street a distance of 30.00 feet;

Thence N89°52'27"W along the southerly right-of-way line of East Maplewood Avenue and the prolongation thereof a distance of 1376.69 feet;

Thence N00°04'12"W along the westerly right-of-way line of South Boston Street a distance of 17.50 feet;

Thence S89°43'42"W along the southerly right-of-way line of East Maplewood Avenue a distance of 650.20 feet;

Thence S00°05'05"E along the easterly line of Sundance Valley, the easterly line of Tract 25 of Clark Colony, the easterly line of Block B, Southtech Filing No. 2, and the prolongation thereof a distance of 1271.70 feet;

Thence N89°41'55"E along the northerly right-of-way line of East Caley Avenue a distance of 701.64 feet;

Thence S00°04'38"E along the easterly right-of-way line of South Boston Street and the prolongation thereof a distance of 701.86 feet;

Thence N89°39'00"E along the northerly line of Southtech Subdivision Filing No. 1 a distance of 621.90 feet;

Thence S00°03'09"E along an easterly line of said Southtech Subdivision Filing No. 1 a distance of 331.03 feet;

Thence S89°40'01"W along a southerly line of said Southtech Subdivision Filing No. 1 a distance of 315.85 feet;

Thence S00°03'40"E along an easterly line of said Southtech Subdivision Filing No. 1 a distance of 290.93 feet;

Thence S89°41'01"W along a southerly line of said Southtech Subdivision Filing No. 1 a distance of 8.67 feet;

Thence S00°34'18"E along the easterly line of that parcel of land described in Book 3962 at Pages 620 and 630 in the Arapahoe County Clerk and Recorder's Office a distance of 10.00 feet;

Thence N89°41'01"E along the northerly right-of-way line of East Peakview Avenue and the prolongation thereof a distance of 991.67 feet;

Thence S00°00'44"E along the easterly right-of-way line of South Dayton Street a distance of 699.80 feet;

Thence N89°40'49"E along the easterly right-of-way line of South Dayton Street a distance of 10.00 feet;

Thence S00°37'38"E along the easterly right-of-way line of South Dayton Street a distance of 601.51 feet;

Thence N89°02'28"E along the northerly right-of-way line of East Arapahoe Road a distance of 485.62 feet;

Thence S00°41'12"E along the easterly right-of-way line of South Emporia Street and the prolongation thereof a distance of 1413.39 feet;

Thence S89°38'21"W along the southerly right-of-way line of East Costilla Avenue a distance of 526.25 feet;

Thence S89°24'52"W continuing along the southerly right-of-way line of East Costilla Avenue a distance of 649.89 feet;

Thence S00°25'37"E along the easterly right-of-way line of South Clinton Street a distance of 649.70 feet;

Thence S89°34'23"W continuing along the easterly right-of-way line of South Clinton Street a distance of 10.00 feet;

Thence S00°25'37"E continuing along the easterly right-of-way line of South Clinton Street and the prolongation thereof a distance of 672.77 feet;

Thence S89°15'39"W along the southerly right-of-way line of East Easter Avenue and the prolongation thereof a distance of 793.68 feet;

Thence N23°58'37"W along the westerly right-of-way line of Interstate Highway 25 a distance of 1814.77 feet;

Thence N32°37'53"W continuing along said westerly right-of-way line of Interstate Highway 25 a distance of 797.21 feet;

Thence N89°56'28"W continuing along the combined right-of-way line of Interstate Highway 25 and East Arapahoe Road a distance of 30.00 feet;

Thence N00°03'32"E along said combined right-of-way line a distance of 5.15 feet;

Thence N63°01'23"W along said combined right-of-way line a distance of 180.58 feet;

Thence the following two (2) courses along the southerly right-of-way line of East Arapahoe Road:

1) N83°51'40"W a distance of 872.64 feet;

2) Thence N06°08'20"E a distance of 40.00 feet;

Thence N08°23'33"E a distance of 160.94 feet;

Thence N00°22'37"E along the westerly right-of-way line of South Yosemite Street a distance of 1242.36 feet;

Thence S89°53'12"E a distance of 90.00 feet;

Thence N00°09'01"W a distance of 60.00 feet;

Thence N89°35'10"E along the northerly line of East Peakview Avenue a distance of 334.74 feet;

Thence N24°26'30"W along the westerly right-of-way line of Interstate I-25 a distance of 2130.23 feet;

Thence the following eight (8) courses along the existing City limits of the City of Greenwood Village, Colorado;

1) N89°31'51"E a distance of 229.89 feet;

2) Thence N24°28'39"W a distance of 1075.23 feet;

3) Thence N06°06'47"W a distance of 790.67 feet;

4) Thence N77°53'12"E a distance of 890.66 feet;

5) Thence N89°30'07"E a distance of 868.08 feet;

6) Thence N00°11'16"W a distance of 21.00 feet;

7) Thence N89°30'07"E a distance of 0.11 feet;

8) Thence N89°40'55"E a distance of 2679.52 feet to the Point of Beginning;

Containing 646.479 acres, more or less.

EXHIBIT "B"

DATE July 15, 1987
REV. NO. DATE

LANDAIDE, INC.
5655 SOUTH DELAWARE STREET
LITTLETON, COLORADO 80120
(303) 794-3972

MERRICK
Merrick & Company • Telephone: 303/751-0741
Engineers • Surveyors • Telecopier: 303/779-1246
Post Office Box 22028 • Denver, Colorado 80222

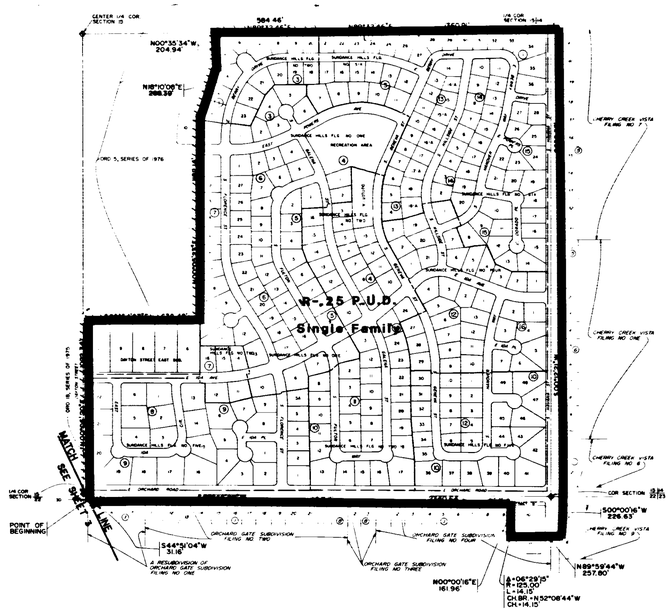
MASTER LAND USE PLAN

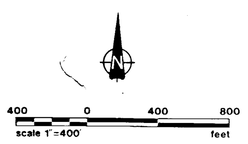
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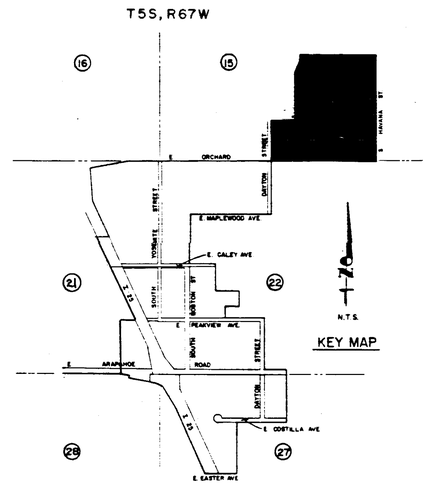
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MASTER LAND USE PLAN
SUB-AREA 1
(SINGLE FAMILY RESIDENTIAL)







KEY MAP

Development Standards

Sub-Area 1 is completely platted for single family homesites and consists of Sundance Hills and Dayton Street East Subdivisions. With the exception two lots in Dayton Street East and four lots in Sundance Hills, Sub-Area 1 is completely built and developed. No portion of Sub-Area 1 is included within a P.U.D. Plan under the Arapahoe County Zoning Resolution. This Master Land Use Plan is the Planned Unit Development Plan for the zoned properties in Sub-Area 1. Any amendments to this Master Land Use Plan shall follow the procedures for Planned Unit Development amendments as described in the Ordinances of the City of Greenwood Village. Sub-Area 1 shall be zoned R-.25 P.U.D. and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(G) entitled "R-.25 Residential" except as otherwise provided below:

1. Minimum Lot Size: 10,000 S.F.
2. Maximum Building Height: 26' Principal use structure
   10' Accessory structure
3. Minimum Lot Width and Yard Requirements:
   a. Minimum lot width: 75 feet at the building setback
   b. Minimum front yard setback:
      Principal structure: 25'
      Accessory structure: 25'
   c. Minimum side yard setback:
      Principal structure: 10'
      Accessory structure: 5'
   d. Rear yard setback:
      Principal structure: 25'
      Accessory use structure: 25'

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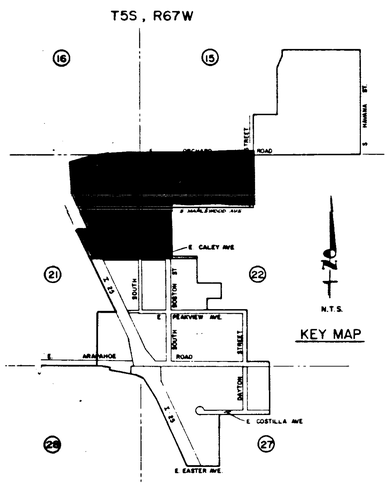
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SUB AREA 1

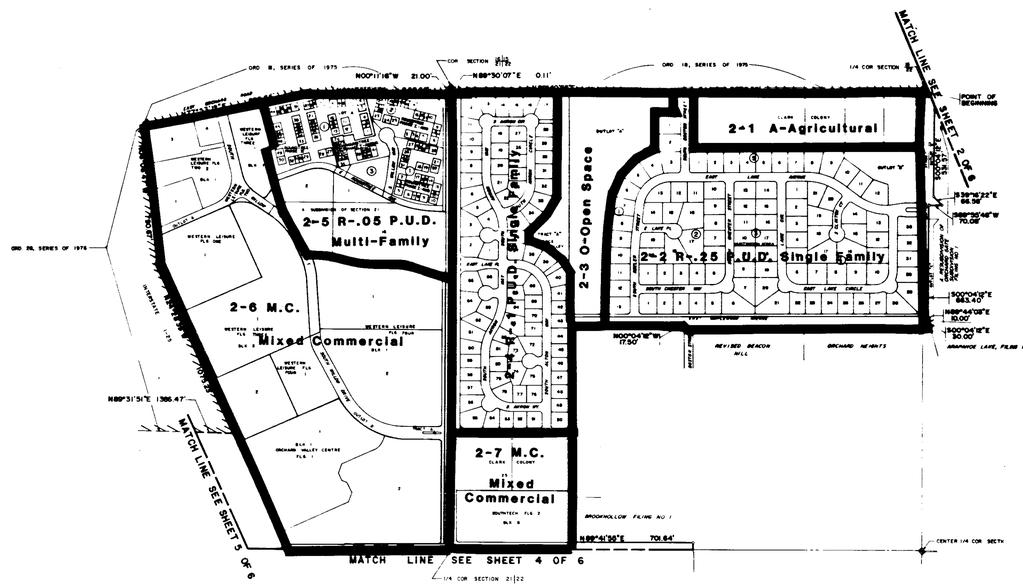
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MASTER LAND USE PLAN
SUB-AREA 2
(SINGLE FAMILY, MULTI-FAMILY, AGRICULTURAL, OPEN SPACE, MIXED COMMERCIAL)





Development Standards

Sub-Area 2 is divided into agricultural, open space, residential and mixed commercial uses. This sub-area includes the residentially zoned areas of Huntington Acres, Sundance Valley and Roundtree along with Western Leisure, Ledford and a portion of Southtech. This Master Land Use Plan is the Planned Unit Development Plan for the zoned properties in Sub-Areas 2-1 through 2-9. Any amendments to this Master Land Use Plan for Sub-Areas 2-1 through 2-5 shall follow the procedures for Planned Unit Development amendments as described in the Ordinances of the City of Greenwood Village. Sub-Areas 2-1 through 2-5 shall be zoned as shown on the Sub-Area Plan and as described below:

1. Sub-Area 2-1: (A, Agricultural)

   Sub-Area 2-1 consists of a single ownership, hobby farm of approximately 10.3 acres and shall be zoned "A" and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(M) entitled "A-Agricultural".

2. Sub-Area 2-2: (R-.25 P.U.D., Single Family Residential)

   Sub-Area 2-2 is a fully developed, single family residential neighborhood. A portion of the sub-area south of Sub-Area 2-1 and abutting South Dayton Street is a floodway. Sub-Area 2-2 shall be zoned "R-.25 P.U.D." and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(G) entitled "R-.25 Residential" except as otherwise provided below:

   A. Minimum Lot Size: 10,000 S.F.

   B. Maximum Building Height: 26' Principal use structure
      10' Accessory structure

   C. Minimum Lot Width and Yard Requirements:

      [1] Minimum lot width: 75 feet at the building setback

      [2] Minimum front yard setback:

      Principal structure: 25'
      Accessory structure: 25'

      [3] Minimum side yard setback:

      Principal structure: 10'
      Accessory structure: 5'

      [4] Rear yard setback:

      Principal structure: 25'
      Accessory structure: 25'

3. Sub-Area 2-3: (O, Open Space)

   Sub-Area 2-3 consists of a park, a recreation facility constructed by and for the Huntington Acres and Sundance Valley Homeowners' Associations and a floodway. Sub-Area 2-3 shall be zoned "O" and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(O) entitled "O-Open Space".

4. Sub-Area 2-4: (R-.1 P.U.D., Single Family Residential)

   Sub-Area 2-4 is a fully developed, single family residential neighborhood. Sub-Area 2-4 shall be zoned "R-.1 P.U.D." and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(H) entitled "R-.1 Residential" except as otherwise provided below:

   A. Minimum Lot Size: 7,000 S.F.

   B. Maximum Building Height: 26' Principal use structure
      10' Accessory structure

   C. Minimum Lot Width and Yard Requirements:

      [1] Minimum lot width: 40 feet at the building setback

      [2] Minimum front yard setback:

      Principal structure: 15'
      Accessory structure: 15'

      [3] Minimum side yard setback:

      Principal structure: 0'
      Accessory structure: 0'

      [4] Minimum rear yard setback:

      Principal structure: 15'
      Accessory structure: 15'

      [5] Minimum distance between structures: 6'

5. Sub-Area 2-5: (R-.05 P.U.D., Multi-Family Residential)

   Sub-Area 2-5 is a partially developed, multi-family residential neighborhood. Sub-Area 2-5 shall be zoned "R-.05 P.U.D." and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(I) entitled "R-.05 Residential" except as otherwise provided herein below:

   A. Maximum Density: 25 d.u.a.

   B. Maximum Building Height: 55' Principal use structure
      10' Accessory structure

   C. Minimum Open Space: 40%

   D. Minimum Yard Requirements:

      [1] Minimum setback from public or private streets: 20'

      [2] Minimum separation between buildings: 20'

      [3] Minimum setback from internal property lines: 20'

   E. Subdivision platting is required prior to the issuance of building permits for the undeveloped portion of Sub-Area 2-5.

6. Sub-Area 2-6: (M.C., Mixed Commercial)

   Sub-Area 2-6 is a completely developed commercial area containing Sheplers, Ambank at Orchard Valley, Peppermill Restaurant and a variety of office buildings all in the area known as Western Leisure. Sub-Area 2-6 shall be zoned M.C. and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. Mixed Commercial District" with special development standards as provided below:

   A. Any Preliminary and Final Development Plans which have been approved by Arapahoe County for Sub-Area 2-6 are hereby accepted by the City of Greenwood Village as fulfilling the requirements of Preliminary and Final Development Plans, respectively, under the provisions of the said Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village. Minor amendments to these approved plans (i.e. amendments which do not increase building heights, densities, or change uses and which do not reduce established building setback requirements) shall be reviewed by the City of Greenwood Village based upon the land use standards and criteria of the aforesaid approved Preliminary and Final Development Plans.

   B. All Final Subdivision Plats and associated Subdivision Improvement Agreements approved by the Arapahoe County Board of County Commissioners are hereby accepted by the City of Greenwood Village.

7. Sub-Area 2-7: (M.C. Commercial Zone)

   Sub-Area 2-7 is an undeveloped commercial area containing two ownerships, Great Bear (Ledford) on the north half and a portion of Southtech on the south half. A portion of both properties is in the designated flood plain of Goldsmith Gulch. Sub-Area 2-7 shall be zoned M.C. and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. Mixed Commercial District" with special development standards as provided below:

   A. Any Preliminary Development Plans which have been approved by Arapahoe County for Sub-Area 2-7 are hereby accepted by the City of Greenwood Village as fulfilling the requirements of Preliminary Development Plans under the provisions of the said Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village. Minor amendments to these approved plans (i.e. amendments which do not increase building heights, densities, or change uses and which do not reduce established building setback requirements) shall be reviewed by the City of Greenwood Village based upon the land use standards and criteria of the aforesaid approved Preliminary and Final Development Plans.

   B. All Final Subdivision Plats and associated Subdivision Improvement Agreements approved by the Arapahoe County Board of County Commissioners are hereby accepted by the City of Greenwood Village.

   C. Final Development Plans submitted to the City of Greenwood Village for review and approval shall be reviewed based upon the land use standards and criteria of the aforesaid approved Preliminary Development Plans except as they may be modified herein below.

   D. In addition to the uses approved in the Preliminary Development Plan for Southtech in Sub-Area 2-7, convenience retail and service uses including one convenience grocery store with accessory gasoline sales and one full-service car wash will be permitted on the Southtech property indicated herein as Southtech Filing No. 2, Block B.

   E. That portion of development density not used by Southtech on Southtech Filing No. 2, Block B in the south half of Sub-Area 2-7 may be transferred to Southtech Filing No. 2, Blocks C and E, Southtech Filing No. 1, Block A and/or Southtech Filing No. 2 Amended, Lot 1 in Sub-Area 3.

GENERAL NOTE: In order to obtain building permits, Final Development Plans are required for all properties which do not have approved Final Development Plans as described herein. Final Development Plans and amendments to Preliminary and Final Development Plans shall be processed for review and approval by the City of Greenwood Village in accordance with the procedures outlined for the processing of such Final Plans and Plan Amendments as described in the M.C. Zone Category of the Greenwood Village Zoning Ordinance.

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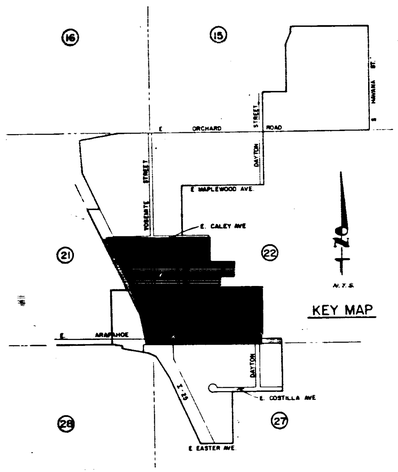
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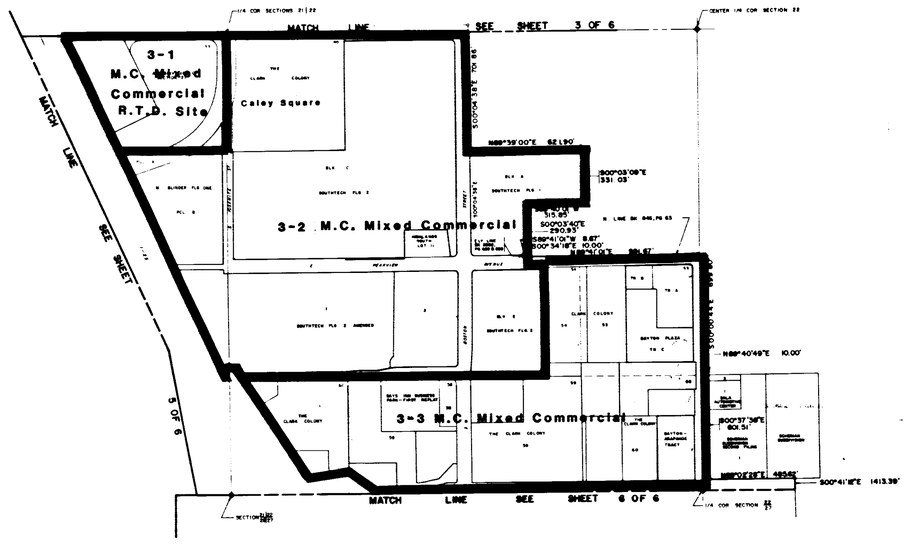
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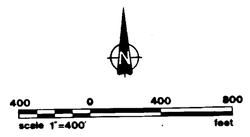
MASTER LAND USE PLAN
SUB-AREA2

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MASTER LAND USE PLAN
SUB-AREA 3
(R.T.D. SITE and MIXED COMMERCIAL)

Development Standards

Sub-Area 3 consists of the R.T.D. Park and Ride site at the northwest corner of East Caley Avenue and South Yosemite Street, all of Southtech south of East Caley Avenue, Caley Square, the Meyer Blinder property and mixed hotel and commercial usage north of Arapahoe Road between South Dayton Street and I-25. Any amendments to this Master Land Use Plan shall follow the procedures for the M.C. Zone District as described in the Ordinances of the City of Greenwood Village. The various sub-areas within Sub-Area 3 shall be zoned as shown on the Sub-Area Plan and as described below:

1. Sub-Area 3-1: (M.C. Mixed Commercial)

   Sub-Area 3-1 consists of the R.T.D. Park and Ride site which shall be the only permitted use for the property. Sub-Area 3-1 shall be zoned M.C. and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. Mixed Commercial District" with special development standards as provided below:

   A. The existing Park and Ride facility shall be deemed to be a use by right in this sub-area and shall be considered to be in conformity with this Master Land Use Plan and the stipulations of the aforesaid Section 5-2-4(Q).

2. Sub-Area 3-2: (M.C. Mixed Commercial)

   Sub-Area 3-2 contains the Blinder Robinson property, Caley Square and that portion of Southtech lying south of East Caley Avenue. A portion of Southtech and Caley Square lying between South Boston Street and East Caley Avenue is located in the designated flood plain of Goldsmith Gulch. Sub-area 3-2 is undeveloped except for the Meyer Blinder property and the Marriott hotel on the southwest corner of East Peakview Avenue and South Boston Street within Southtech. Sub-Area 3-2 shall be zoned M.C. and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. Mixed Commercial District" with special development standards as provided below:

   A. Any Preliminary and Final Development Plans which have been approved by Arapahoe County for Sub-Area 3-2 are hereby accepted by the City of Greenwood Village as fulfilling the requirements of Preliminary and Final Development Plans, respectively, under the provisions of the said Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village. Minor amendments to these approved plans (i.e. amendments which do not increase building heights, densities, or change uses and which do not reduce established building setback requirements) shall be reviewed by the City of Greenwood Village based upon the land use standards and criteria of the aforesaid approved Preliminary and Final Development Plans.

   B. All Final Subdivision Plats and associated Subdivision Improvement Agreements approved by the Arapahoe County Board of County Commissioners are hereby accepted by the City of Greenwood Village.

   C. Final Development Plans submitted to the City of Greenwood Village for review and approval shall be reviewed based upon the land use standards and criteria of the aforesaid approved Preliminary Development Plans except as they may be modified herein below.

   D. The various Preliminary Development Plans approved for Southtech in Use Area 3-2 permit a combined total of 1,958,500 square feet of mixed office and commercial development on the properties described herein as Block A, Southtech Filing 1; Blocks C and E, Southtech Filing 2, and Lot 1, Southtech Filing 2 Amended. The number of square feet of permitted development indicated on the approved Preliminary Development Plans for the above referenced Southtech properties may be transferred and used anywhere within the Southtech Development area, however, the total amount of permitted development shall not exceed 1,958,500 square feet plus that portion of development density not used by Southtech on Block B, Southtech Filing 2 in the south half of Sub-Area 2-7.

   E. A building height of up to 180' including screened mechanical equipment shall be permitted on any portion of the property indicated as "Caley Square" herein and the Southtech properties in Sub-Area 3-2 described in paragraph D, above.

   F. The Preliminary Development Plan for the Meyer Blinder property shall include an additional 100,000 square feet of permitted development for a maximum permitted development on the site of 308,000 square feet along with the right to construct sufficient structured parking to service the additional development.

3. Sub-Area 3-3: (Mixed Commercial)

   Sub-Area 3-3 contains the Arapahoe Motel Venture property (Holiday Inn), Day's Inn, automobile dealerships and restaurants, the Arapahoe Dayton shopette on the northwest corner of South Dayton Street and Arapahoe Road, a child care facility, convenience center on the southwest corner of East Peakview Avenue and South Dayton Street and various other offices and commercial businesses. Development in the area is substantially complete and the pattern of uses fairly well established. Sub-Area 3-3 shall be zoned "M.C." and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. - Mixed Commercial Zone District" with special development standards as provided below:

   A. Any Preliminary and Final Development Plans which have been approved by Arapahoe County for Sub-Area 3-3 are hereby accepted by the City of Greenwood Village as fulfilling the requirements of Preliminary and Final Development Plans, respectively, under the provisions of the said Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village. Minor amendments to these approved plans (i.e. amendments which do not increase building heights, densities, or change uses and which do not reduce established building setback requirements) shall be reviewed by the City of Greenwood Village based upon the land use standards and criteria of the aforesaid approved Preliminary and Final Development Plans.

   B. All Final Subdivision Plats and associated Subdivision Improvement Agreements approved by the Arapahoe County Board of County Commissioners are hereby accepted by the City of Greenwood Village.

   C. All existing principal uses within Sub-Area 3-3 are hereby considered to be in conformity with the Zoning Ordinance of the City of Greenwood Village and this Master Land Use Plan.

   D. Final Development Plans submitted to the City of Greenwood Village for review and approval shall be reviewed based upon the land use standards and criteria employed by Arapahoe County at the time that the aforesaid Preliminary Development Plans were approved. Final Development Plans for properties which do not have approved Preliminary Development Plans in Arapahoe County shall be based upon the standards and criteria described in paragraph F, below.

   E. This Master Land Use Plan is hereby deemed to be the Preliminary Development Plan for Sub-Area 3-3 as defined in the aforesaid Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village for those properties which do not have approved Preliminary Development Plans in Arapahoe County.

   F. For those properties in Sub-Area 3-3 for which Preliminary Development Plans have not been approved in Arapahoe County, property owners shall be entitled to the maximum development densities and maximum building heights set forth herein below. In addition, such property owners shall not be required to provide open space or building setbacks in exceess of the minimum standards set forth herein below.

      1] Maximum Development Densities:
      1.2 F.A.R. for the Arapahoe Motel Venture (Holiday Inn) property on the northeast corner of Arapahoe Road and I-25. For all other properties, .5 F.A.R. for office uses .25 for retail commercial uses.

      2] Maximum Building Heights:
      180' including screened mechanical equipment for the Arapahoe Motel Venture (Holiday Inn) property on the northeast corner of Arapahoe Road and I-25. 50' for other hotels and office buildings. 25' for retail commercial buildings.

      3] Minimum Unobstructed Open Space:
      20% for one and two story structures
      25% for three story structures under 50' in height
      30% for building heights of 50' - 85'
      35% for building heights between 86' - 180'

      4] Minimum Setback Requirements:

Minimum front setback:	25'
Minimum rear setback:	25'
Minimum side setback:	25'

      Individual pad sites within a larger development may have 0' setbacks provided the pad site meets the minimum front, rear and side setbacks indicated herein

GENERAL NOTE: In order to obtain building permits, Final Development Plans are required for all properties which do not have approved Final Development Plans as described herein. Final Development Plans and amendments to Preliminary and Final Development Plans shall be processed for review and approval by the City of Greenwood Village in accordance with the procedures outlined for the processing of such Final Plans and Plan Amendments as described in the M.C. Zone Category of the Greenwood Village Zoning Ordinance.

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LITTLETON, COLORADO 80120
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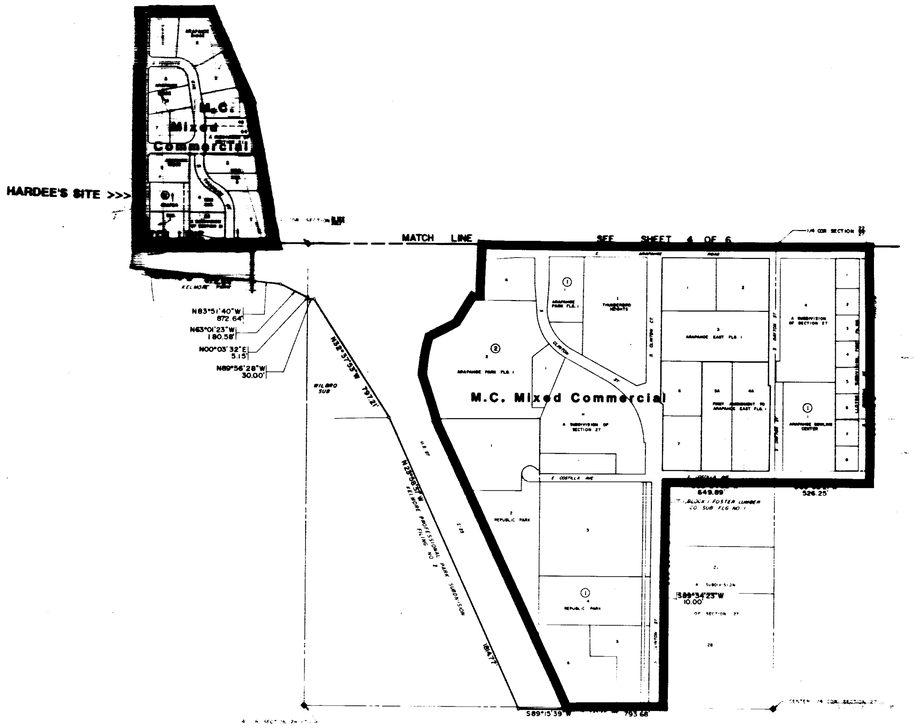
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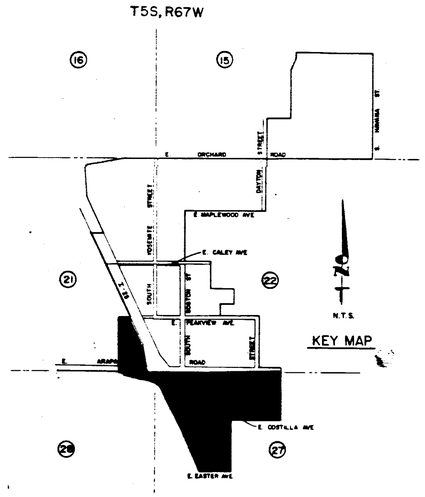
MASTER LAND USE PLAN
SUB-AREA 3

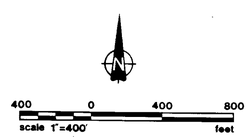
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MASTER LAND USE PLAN
SUB-AREA 4
(MIXED COMMERCIAL)







Development Standards

Sub-Area 4 is a mixed commercial area containing retail commercial, office, hotel and light industrial uses. The area includes the Arapahoe East Shopping Center, Omni Bank Building, Republic Park and Republic Park Ramada Hotel, Hugh M. Woods Building Material Center, Target and numerous restaurants, offices and retail businesses. Sub-Area 4 shall be zoned "M.C." and shall conform to the ordinances of the City of Greenwood Village as described in Section 5-2-4(Q) entitled "M.C. - Mixed Commercial Zone District" with special development standards as provided below:

A. Any Preliminary and Final Development Plans which have been approved by Arapahoe County for Sub-Area 4 are hereby accepted by the City of Greenwood Village as fulfilling the requirements of Preliminary and Final Development Plans, respectively, under the provisions of the said Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village. Minor amendments to these approved plans (i.e. amendments which do not increase building heights, densities, or change uses and which do not reduce established building setback requirements) shall be reviewed by the City of Greenwood Village based upon the land use standards and criteria of the aforesaid approved Preliminary and Final Development Plans.

B. All Final Subdivision Plats and associated Subdivision Improvement Agreements approved by the Arapahoe County Board of County Commissioners are hereby accepted by the City of Greenwood Village.

C. All principal uses within Sub-Area 4 are hereby considered to be in conformity with this Master Land Use Plan.

D. Final Development Plans submitted to the City of Greenwood Village for review and approval shall be reviewed based upon the land use standards and criteria of the aforesaid approved Preliminary Development Plans. Final Development Plans for properties which do not have approved Preliminary Development Plans in Arapahoe County shall be based upon the standards and criteria described in paragraph F, below.

E. This Master Land Use Plan is hereby deemed to be the Preliminary Development Plan for Sub-Area 4 as defined in the aforesaid Section 5-2-4(Q) of the Zoning Ordinance of the City of Greenwood Village for those properties which do not have approved Preliminary Development Plans in Arapahoe County.

F. For those properties in Sub-Area 4 for which Preliminary Development Plans have not been approved in Arapahoe County, property owners shall be entitled to the maximum development densities and maximum building heights set forth herein below. In addition, such property owners shall not be required to provide open space or building setbacks in excess of the minimum standards set forth herein below.

1] Maximum Development Densities:
.5 F.A.R. for office uses .25 for retail commercial uses.

2] Maximum Building Heights:
50' for office buildings. 25' for other commercial buildings

3] Minimum Unobstructed Open Space:
20% for one and two story structures
25% for three or more story structures

4] Minimum Setback Requirements:

Minimum front setback:	25'
Minimum rear setback:	25'
Minimum side setback:	25'

Individual pad sites within a larger development may have 0' setbacks provided the pad site meets the minimum front, rear and side setbacks indicated herein

GENERAL NOTE: In order to obtain building permits, Final Development Plans are required for all properties which do not have approved Final Development Plans as described herein. Final Development Plans and amendments to Preliminary and Final Development Plans shall be processed for review and approval by the City of Greenwood Village in accordance with the procedures outlined for the processing of such Final Plans and Plan Amendments as described in the M.C. Zone Category of the Greenwood Village Zoning Ordinance.

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LANDAIDE, INC.
5655 SOUTH DELAWARE STREET
LITTLETON, COLORADO 80120
(303) 794-3972

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MASTER LAND USE PLAN
SUB-AREA 4

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TRAFFIC IMPACT STUDY

Grace Chapel

City of Greenwood Village, Colorado

Prepared for:

Beck Architecture, LLC

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

Grace Chapel

City of Greenwood Village, Colorado

Prepared for
Beck Architecture, LLC
1001 17th Street
Suite PL100
Denver, Colorado 80202

Prepared by
Jeffery R. Planck, PE
Kimley-Horn and Associates, Inc.
6200 South Syracuse Way
Suite 300
Greenwood Village, Colorado 80111
(303) 228-2300



April 2026

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1.0 EXECUTIVE SUMMARY

Grace Chapel is proposed to be located on the southwest corner of the Wabash Way and Willow Drive intersection in the City of Greenwood Village, Colorado. The project is proposed to relocate the existing Grace Chapel from 8505 South Valley Highway to 8500 East Orchard Road and replace the existing Boot Barn department store. The existing Grace Chapel contains 640 seats for church services while the new site will initially provide approximately 750 seats with the ultimate capacity being 1,000 seats. It is expected that the project will be completed in the next several years. Therefore, analysis was conducted for the 2030 short-term buildout horizon as well as the 2050 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Greenwood Village, Colorado requested scope:

- Orchard Road and I-25 Southbound Ramp (Intersection #1)
- Orchard Road and I-25 Northbound Ramp (#2)
- Orchard Road and Willow Drive (#3)
- Orchard Road and Yosemite Street (#4)
- Fair Avenue and Yosemite Street (#5)
- Caley Avenue and Willow Drive (#6)
- Caley Avenue and Yosemite Street (#7)
- Wabash Way and Willow Drive (#8)
- Fair Avenue and Willow Drive (#9)

In addition, the existing four (4) accesses along Wabash Way were evaluated.

Regional access to the site is provided by Interstate 25 (I-25) while primary access will continue to be provided by Orchard Road and Yosemite Street. Direct access will be provided by four (4) existing accesses along Wabash Way.

Based on the analysis presented in this report, Kimley-Horn believes Grace Chapel will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north and south legs of the I-25 Northbound and Southbound Ramps at Orchard Road is not anticipated to increase existing traffic volumes by 20 percent during weekday peak hours. The maximum increase in existing traffic volumes is reported as 2.7 percent (11 project volumes / 403 existing volumes) during the afternoon peak hour at the I-25 Northbound Off Ramp at Orchard Road. Therefore, a CDOT access permit is not anticipated to be needed at the I-25 interchange ramps with Orchard Road.

- **Intersection #7 – Caley Avenue & Yosemite Street:**
  By 2050, signal timing optimization is recommended, including an additional five (5) seconds for the southbound left-turn phase during the weekday afternoon peak hour.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Greenwood Village and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for Grace Chapel, proposed to be located on the southwest corner of the Wabash Way and Willow Drive intersection in the City of Greenwood Village, Colorado. A vicinity map illustrating the project development location is shown in **Figure 1**. The project is proposed to relocate the existing Grace Chapel from 8505 South Valley Highway to 8500 East Orchard Road and replace the existing Boot Barn department store. The existing Grace Chapel contains 640 seats for church services while the new site will initially provide approximately 750 seats with the ultimate capacity being 1,000 seats. A conceptual site plan is included in **Appendix A**. It is expected that the project will be completed in the next several years; therefore, analysis was conducted for the 2030 short-term buildout horizon as well as the 2050 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Greenwood Village, Colorado requested scope:

- Orchard Road and I-25 Southbound Ramp (Intersection #1)
- Orchard Road and I-25 Northbound Ramp (#2)
- Orchard Road and Willow Drive (#3)
- Orchard Road and Yosemite Street (#4)
- Fair Avenue and Yosemite Street (#5)
- Caley Avenue and Willow Drive (#6)
- Caley Avenue and Yosemite Street (#7)
- Wabash Way and Willow Drive (#8)
- Fair Avenue and Willow Drive (#9)

In addition, the existing four (4) accesses along Wabash Way were evaluated.

Regional access to the site is provided by Interstate 25 (I-25) while primary access is provided by Orchard Road and Yosemite Street. Direct access will be provided by four (4) existing accesses along Wabash Way.

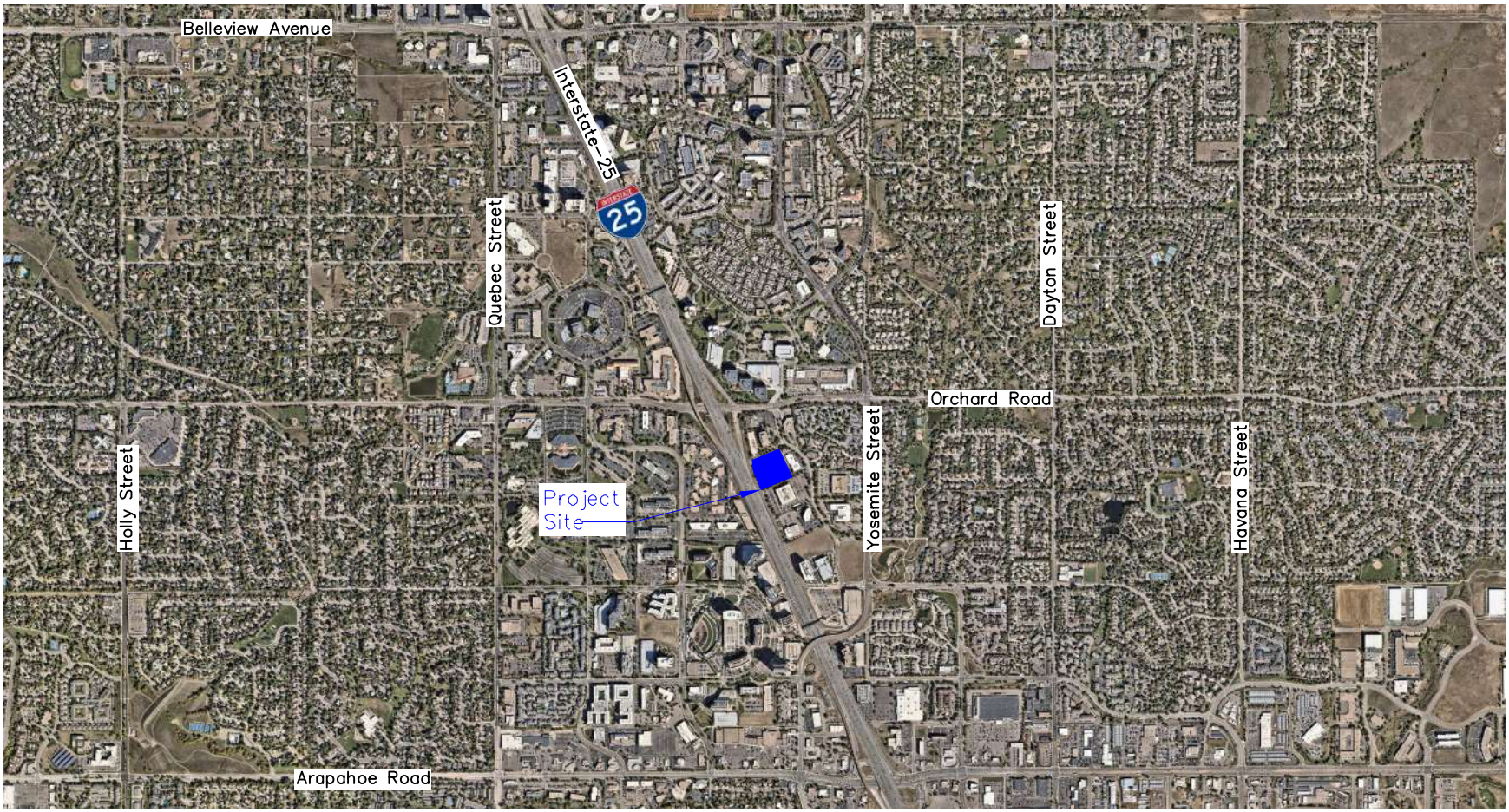


FIGURE 1
Grace Chapel
Greenwood Village, Colorado
Vicinity Map

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site is comprised of a western apparel department store. The surrounding area primarily consists of office and residential uses. A mix of multifamily and single-family residences are located to the east of the site while I-25 is located west of the site. A retail center is located to northeast on the north side of Orchard Road. The Denver Tech Center is primarily located in the extended area to the north.

3.2 Existing Roadway Network

Orchard Road extends east/west with two through lanes in each direction with a raised center median and a posted speed limit of 35 miles per hour (mph) within the study limits.

Yosemite Street extends northbound and southbound with two lanes of travel in each direction, a center striped median, and a speed limit of 40 mph within the project limits. A raised center median exists along Yosemite Street north of Orchard Road.

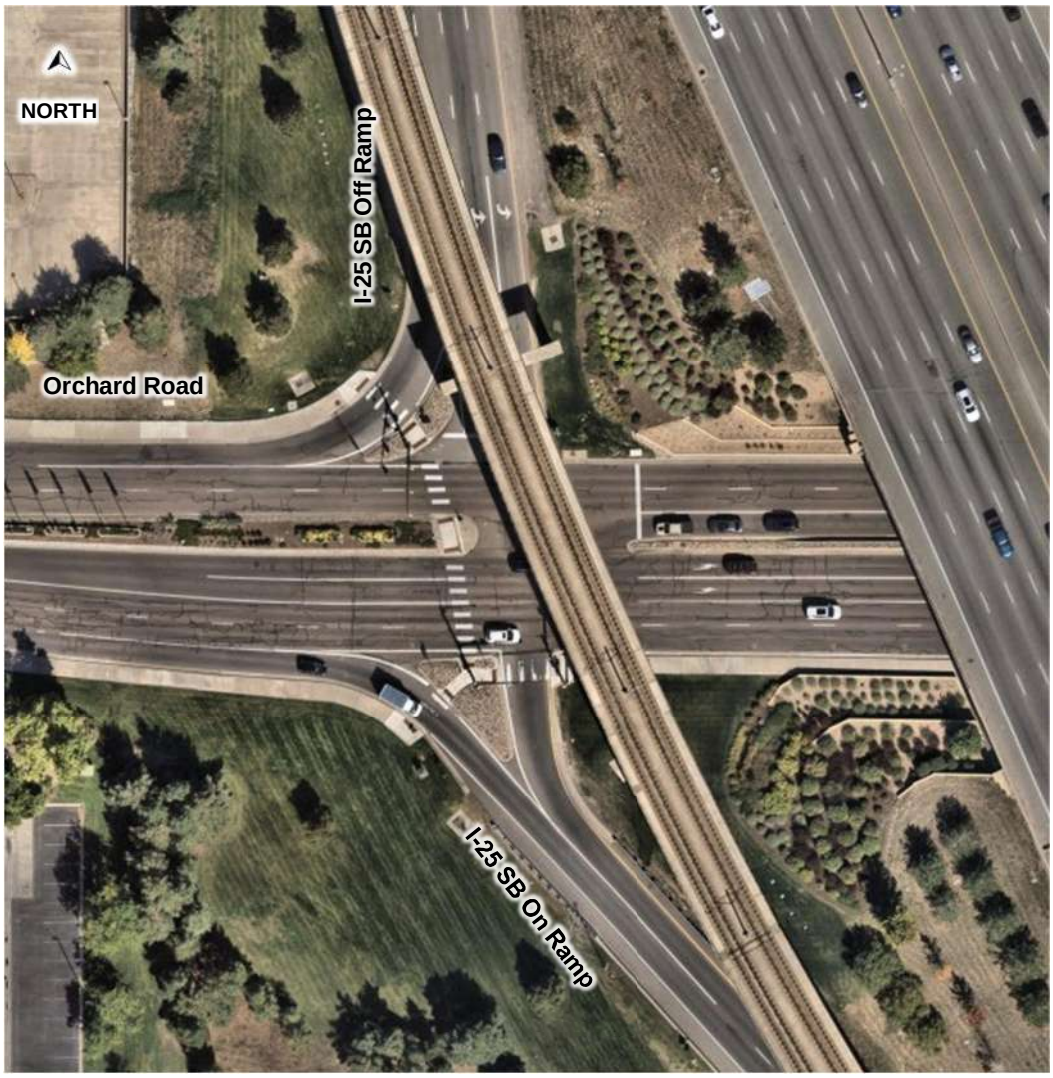
Willow Drive extends primarily northbound and southbound with one through lane in each direction and has a speed limit of 25 mph in the study area. Willow Drive consists of both a two-lane section and a three-lane section with a mix of two-way left turn lane and designated left turn lanes within the three-lane sections. Willow Drive does not provide left turn lanes at intersections south of Fair Avenue and is two-lane roadway section in that area.

Wabash Way extends both east/west and north/south as a two-lane roadway and has a speed limit of 25 mph.

Caley Avenue extends eastbound and westbound with a mix of one through lane in each direction as well as two through lanes in each direction. Caley Avenue provides a raised center median and has a speed limit of 25 mph west of Yosemite Street and 35 mph east of Yosemite Street.

Fair Avenue extends east/west for approximately 1,000 feet with one through lane in each direction and has a speed limit of 25 mph.

The signalized intersection of Orchard Road and I-25 Southbound Ramps (#1) operates with protected only left turn phasing on the westbound and southbound approaches. The eastbound approach of this intersection includes dual spillback lanes, two through lanes, and a channelized free right turn lane while the westbound approach provides a left turn lane and two through lanes. The southbound off ramp approach consists of a left turn lane, a shared left turn/through lane and dual right turn lanes. The inside right turn lane is to prevent vehicle weaving and is controlled at the signal while the outside right turn lane is a channelized free right turn lane. The south leg of this intersection contains two receiving lanes for entering southbound I-25. An aerial photo of the existing intersection configuration is below.



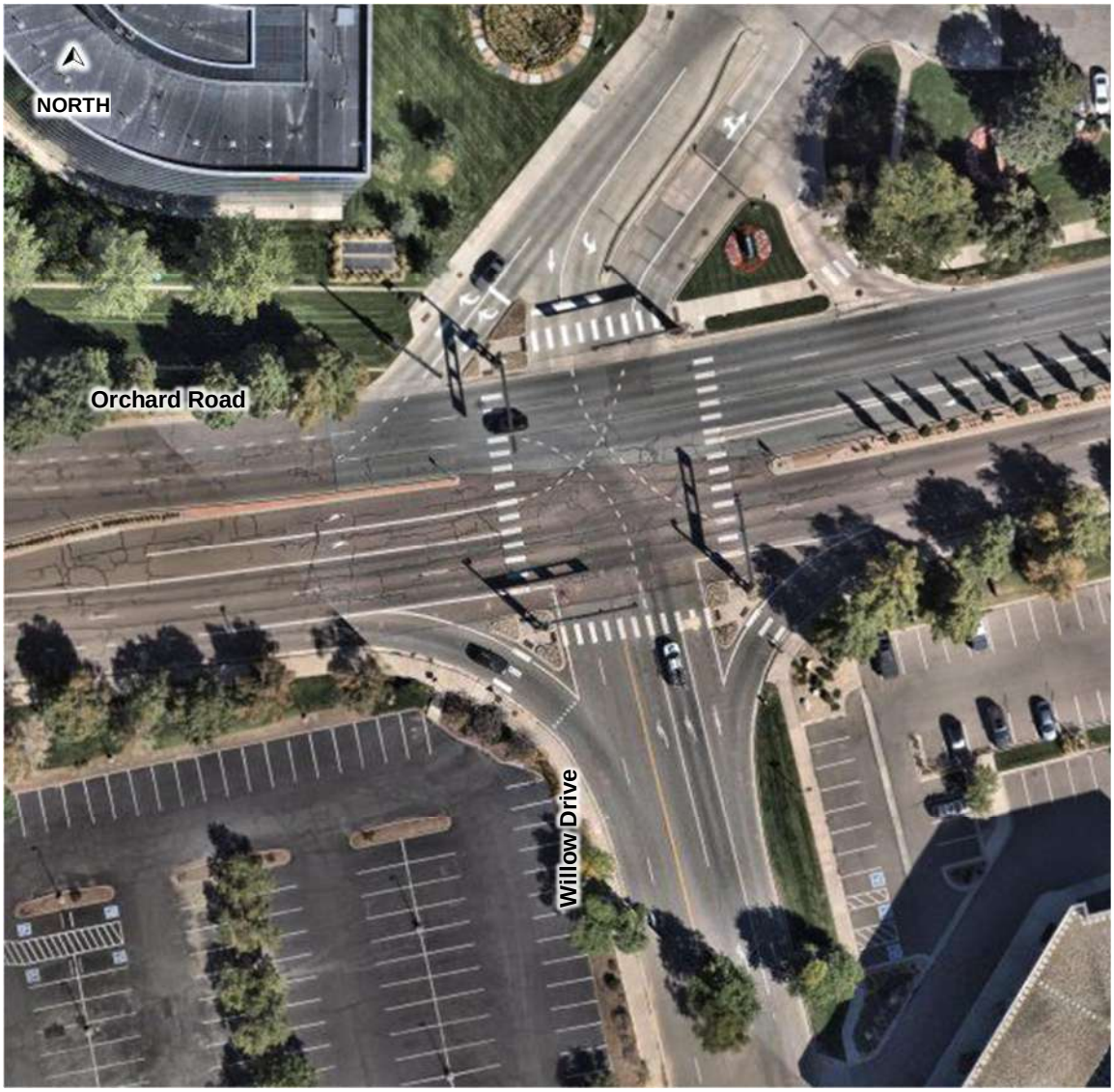
Orchard Road and I-25 Southbound Ramp (#1)

The signalized intersection of Orchard Road and I-25 Northbound Ramps (#2) operates with protected only left turn phasing on the eastbound and northbound approaches. The eastbound approach of this intersection includes dual left turn lanes and two through lanes while the westbound approach provides a spillback lane, two through lanes, and a right turn lane. The northbound off ramp approach consists of a left turn lane, a shared left turn/through lane and dual right turn lanes. The inside right turn lane is to prevent vehicle weaving and is controlled at the signal while the outside right turn lane is a channelized free right turn lane. The north leg of this intersection contains two receiving lanes for entering northbound I-25. An aerial photo of the existing intersection configuration is below.



Orchard Road and I-25 Northbound Ramp (#2)

The signalized intersection of Orchard Road and Willow Drive (#3) operates with protected/permissive left turn phasing on the eastbound and westbound approaches and protected left turn phasing on the northbound and southbound approaches. The eastbound approach of this intersection includes dual left turn lanes, two through lanes and a right turn lane while the westbound approach provides a left turn lane and three through lanes with the outside lane being a shared through/right turn lane. The northbound approach of Willow Drive provides dual left turn lanes and a shared through/right turn lane while the southbound approach consists of a left turn lane, one through lane, and protected only dual right turn lanes. An aerial photo of the existing intersection configuration is below.



Orchard Road and Willow Drive (#3)

The signalized intersection of Orchard Road and Yosemite Street/DTC Boulevard (#4) operates with protected/permissive left turn phasing on all four approaches. The eastbound approach of this intersection includes dual left turn lanes, two through lanes and a channelized yield right turn lane while the westbound approach provides a left turn lane, two through lanes, and a channelized free right turn lane. The northbound approach of Yosemite Street provides dual left turn lanes and two through lanes with the outside lane being shared through/right turn lane. The southbound approach of DTC Boulevard provides a left turn lane, two through lanes, and a channelized free right turn lane. An aerial photo of the existing intersection configuration is below.



Orchard Road and Yosemite Street/DTC Boulevard (#4)

The signalized intersection of Fair Avenue and Yosemite Street (#5) operates with protected/permissive left turn phasing on the northbound and southbound approaches and permitted left turn phasing on eastbound and westbound approaches. The northbound and southbound approaches include a left turn lane and two through lanes in each direction with the outside lane being shared through/right turn lane. The eastbound approach includes a shared left turn/through lane and a right turn lane while the westbound approach provides a left turn lane and shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Fair Avenue and Yosemite Street (#5)

The signalized intersection of Caley Avenue and Willow Drive (#6) operates with permitted left turn phasing on all four approaches. The northbound and southbound approaches include a single lane shared for left, through, and right turn movements. The eastbound approach includes a left turn lane, one through lane, and a shared through/right turn lane while the westbound approach consists of a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



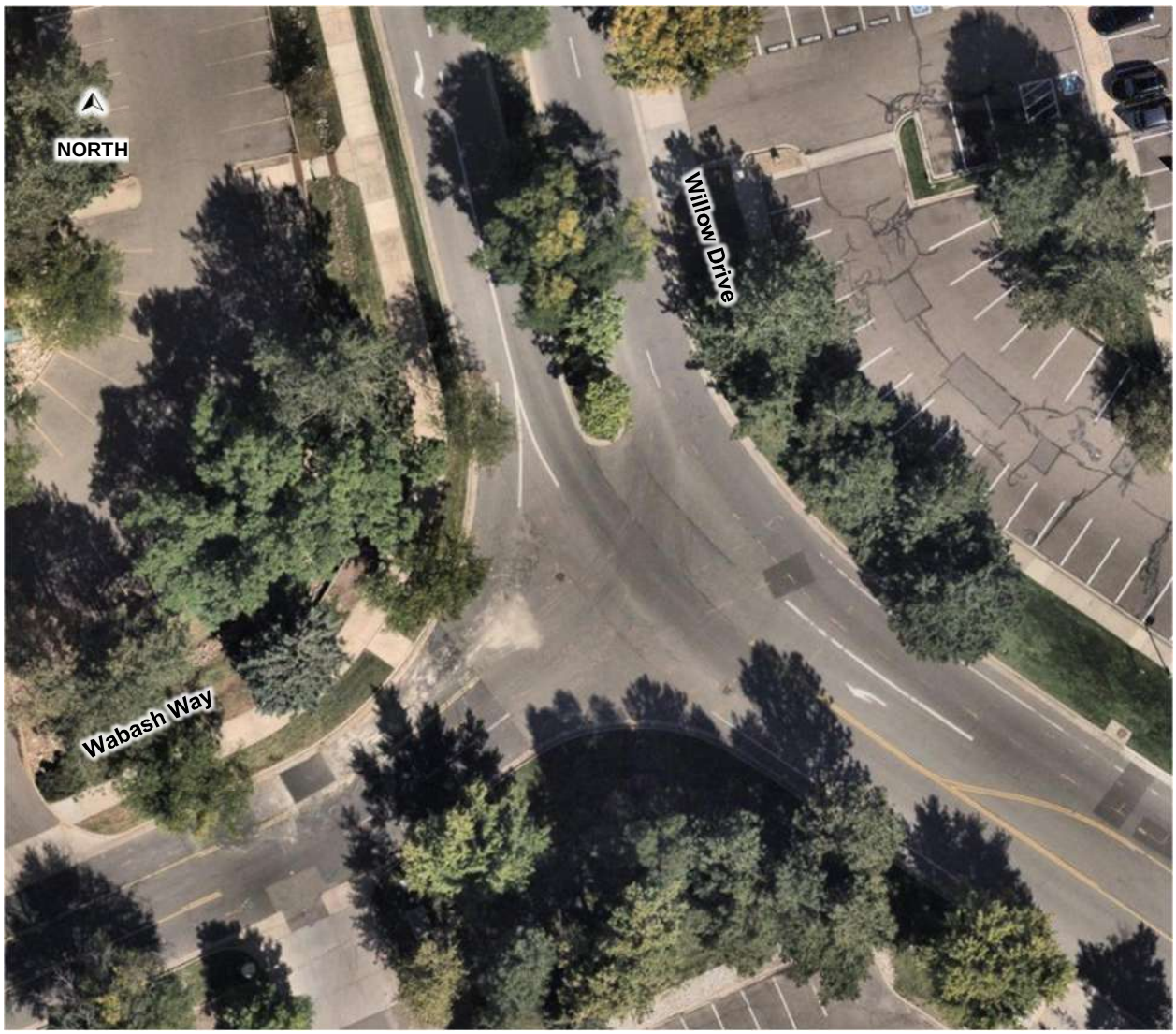
Caley Avenue and Willow Drive (#6)

The signalized intersection of Caley Avenue and Yosemite Street (#7) operates with protected only left turn phasing on all approaches. The eastbound approach provides dual left turn lanes and two through lanes with the outside lane being a shared through/right turn lane while the westbound approach includes dual left turn lanes, one through lane, and dual right turn lanes operated under protected turn phasing. The northbound and southbound approaches of this intersection provide dual left turn lanes, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below.



Caley Avenue and Yosemite Street (#7)

The unsignalized T-intersection of Wabash Way and Willow Drive (#8) operates under stop control on the eastbound Wabash Way approach. The eastbound approach provides separate left and right turn lanes. The northbound approach includes a left turn lane and one through lane while the southbound approach provides one through lane and a right turn lane. An aerial photo of the existing intersection configuration is below.



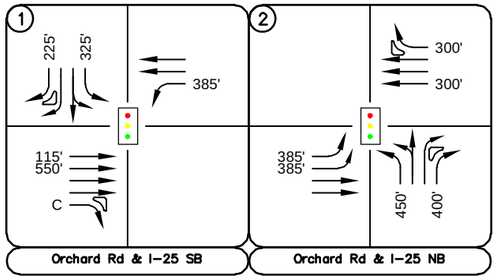
Wabash Way and Willow Drive (#8)

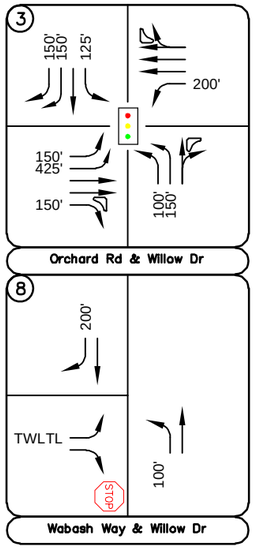
The unsignalized “T”-intersection of Fair Avenue and Willow Drive (#9) operates with stop control along the westbound approach of Fair Avenue. The northbound approach of this intersection provides a single lane shared for through and right turn movements while the southbound approach includes a left turn lane and one through lane. The westbound approach includes a separate left and right turn lane. An aerial photo of the existing intersection configuration is below.

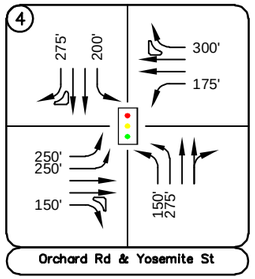


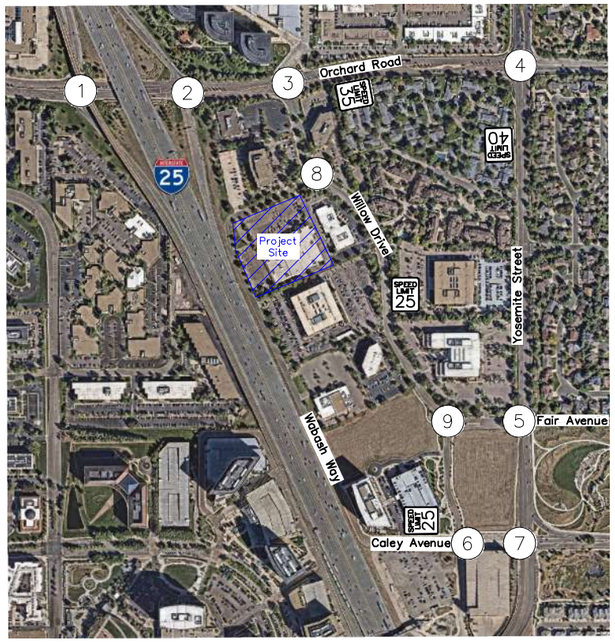
Fair Avenue and Willow Drive (#9)

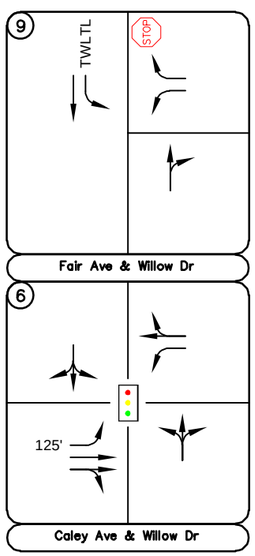
The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.

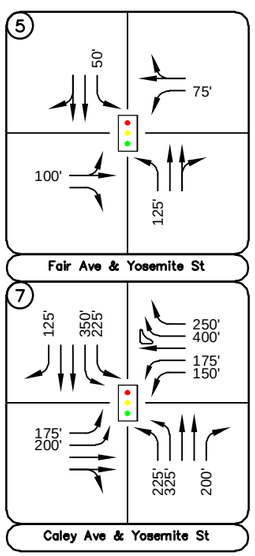












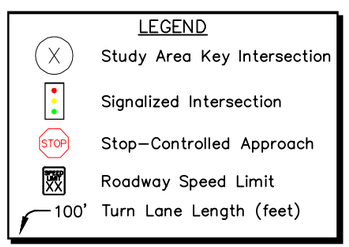


FIGURE 2
Grace Chapel
Greenwood Village, Colorado
Existing Geometry and Control

3.3 Existing Traffic Volumes

Turning movement counts at the study area signalized intersections were obtained from the City of Greenwood Village. Weekday peak hour turning movement counts for signalized intersections were collected Tuesday, September 17, 2019 to Thursday September 19, 2019. The average of these three days is reported as recorded by the City of Greenwood Village. Sunday counts for signalized intersections (#1-#5, #7) were collected for five consecutive Sundays in 2025, from Sunday, August 31, 2025 to Sunday, September 28, 2025 while the Sunday counts at the intersection of Caley Avenue and Willow Drive (#6) were collected on Sunday, September 7, 2025. The average of these five days has been reported as recorded by the city of Greenwood Village.

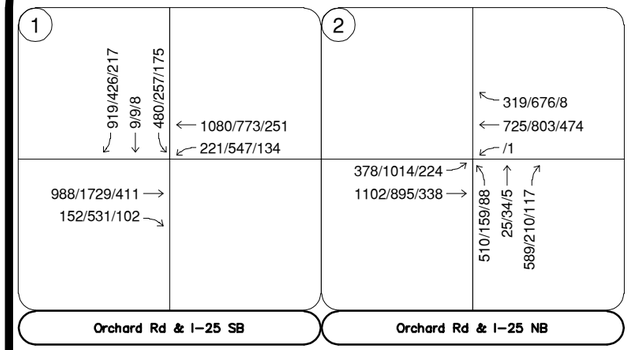
As the 2019 weekday counts at signalized intersections exceed the 2025 counts, the 2019 volumes can be regarded as the adjusted representation of the 2025 counts and were utilized in this traffic study. Notably, the eastbound left turn at the intersection of Orchard Road & Willow Drive (#3) during the morning peak hour from 2019 was 873 vehicles while the 2025 volumes was 320 vehicles. Due to the variability, the average, 597 vehicles, was used as coordinated with the City of Greenwood Village as a estimate without skewing too far toward one volume or the other.

Weekday and weekend counts for unsignalized intersections were collected on Thursday, December 11, 2025 and Sunday, December 14, 2025, respectively. Weekday counts collected in 2025 for unsignalized intersections were adjusted by applying a 1.3 scaling factor to balance traffic volumes appropriately with the 2019 weekday counts from the signalized intersections. The weekday traffic counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. The weekend traffic counts were collected on Sunday during the peak hours of the existing Grace Chapel in 15-minute intervals from 9:30 AM to 11:30 AM. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B.**

3.4 Unspecified Development Traffic Growth

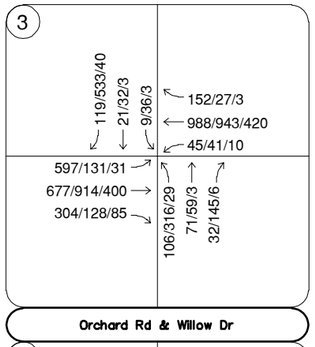
According to traffic projections from the Denver Regional Council of Governments (DRCOG) traffic model, the area surrounding the site is expected to have an average 30-year growth factor of 1.13. This growth factor equates to an annual growth rate of 0.39 percent. Future traffic volume projections and growth rate calculations are provided in **Appendix C**. This annual traffic growth

rate was used to calculate future traffic volumes at study area intersections. In addition, project traffic volumes from the 8081 E. Orchard Road Traffic Impact Study completed in July 2024 were included as background traffic. The existing Boot Barn (occupies same development area) traffic was conservatively not removed from the external street system. The calculated background traffic volumes for 2030 and 2050 are shown in **Figure 4** and **Figure 5**, respectively.

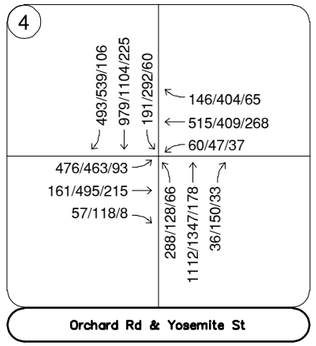


Week of Sep 17, 2019
8:00 to 9:00AM/
4:00 to 5:00PM/
Month of Sep 2025
9:45 to 10:45AM

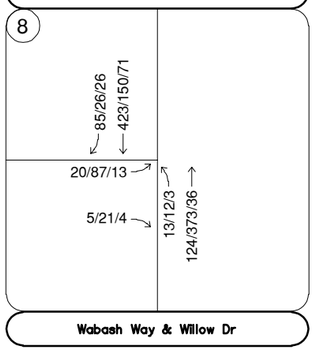
Week of Sep 17, 2019
8:00 to 9:00AM/
4:00 to 5:00PM/
Month of Sep 2025
9:45 to 10:45AM



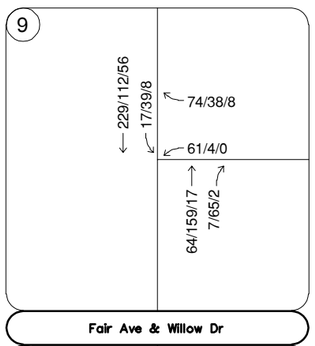
Week of Sep 17, 2019
8:00 to 9:00AM/
5:00 to 6:00PM/
Month of Sep 2025
9:45 to 10:45AM

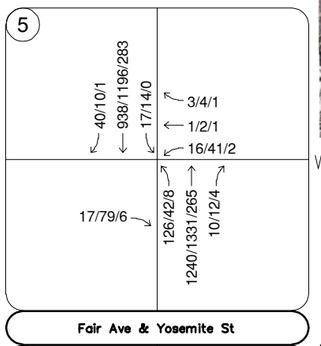


Week of Sep 17, 2019
8:00 to 9:00AM/
5:00 to 6:00PM/
Month of Sep 2025
9:45 to 10:45AM



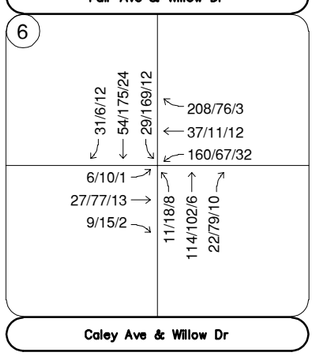
Thurs, Dec 11, 2025
8:00 to 9:00AM/
4:00 to 5:00PM/
Sun, Dec 14, 2025
10:00 to 11:00AM



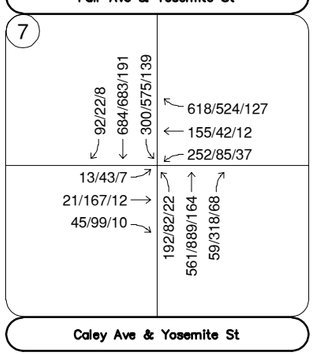


Week of Sep 17, 2019
6:30 to 7:30AM/
3:30 to 4:30PM/
Month of Sep 2025
9:45 to 10:45AM

Thurs, Dec 11, 2025
8:00 to 9:00AM/
4:00 to 5:00PM/
Sun, Dec 14, 2025
10:00 to 11:00AM



Week of Sep 17, 2019
8:00 to 9:00AM/
5:00 to 6:00PM/
Sun, Sep 7, 2025
9:45 to 10:45AM



Week of Sep 17, 2019
8:00 to 9:00AM/
5:00 to 6:00PM/
Month of Sep 2025
9:45 to 10:45AM



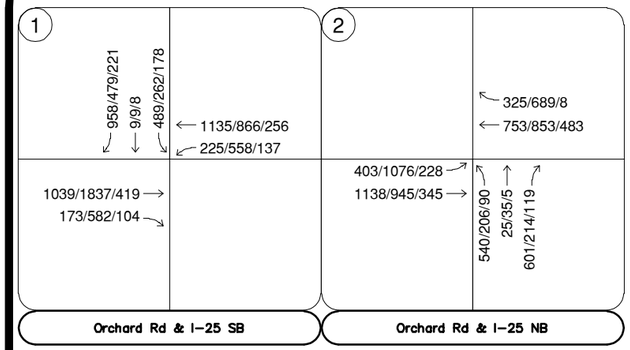
***2025 Adjusted Traffic Volumes Notes**

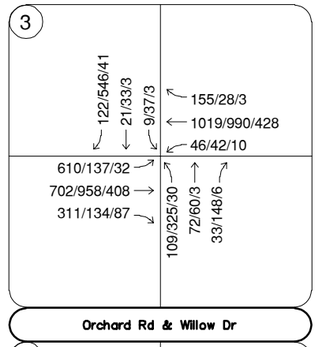
1. Weekday counts for signalized intersections (#1–#7) were collected Tuesday, September 17, 2019 to Thursday September 19, 2019. The average of these three days is reported as recorded by the City of Greenwood Village.
2. Sunday counts for signalized intersections (#1–#5,#7) were collected for five consecutive Sundays in 2025, from Sunday, August 31, 2025 to Sunday, September 28, 2025. The average of these five days has been reported as recorded by the City of Greenwood Village.
3. Weekday and weekend counts for unsignalized intersections were collected on Thursday, December 11, 2025 and Sunday, December 14, 2025, respectively.
4. As the 2019 weekday counts at signalized intersections exceed the 2025 counts, the 2019 volumes can be regarded as the adjusted representation of the 2025 counts.
5. Weekday counts for unsignalized intersections were adjusted by applying a 1.3 scaling factor to ensure volume balancing with the 2019 weekday counts for signalized intersections.
6. The AM peak hour's eastbound left at Orchard Road & Willow Drive was 873 vehicles in 2019 and 320 vehicles in 2025. Therefore, an average of the two, 597 vehicles was used as a conservative, realistic estimate.

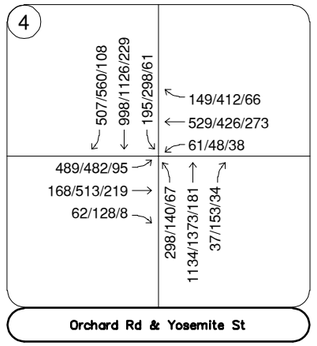
LEGEND

(X)	Study Area Key Intersection
XXX/XXX/XXX	Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

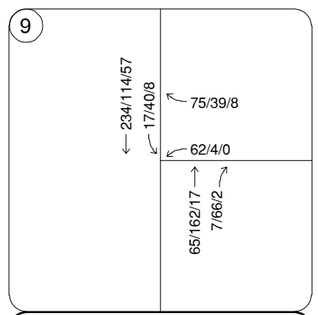
FIGURE 3
Grace Chapel
Greenwood Village, CO
*2025 Adjusted Traffic Volumes

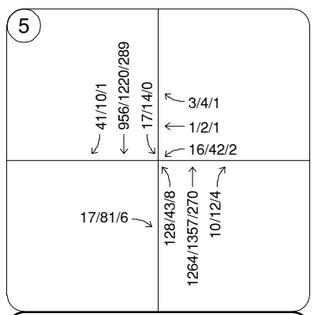


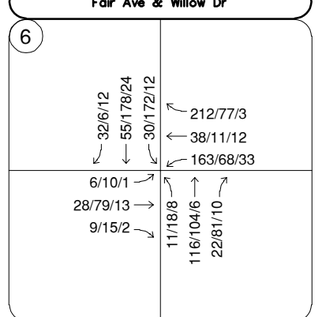


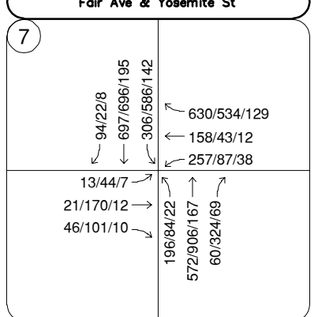








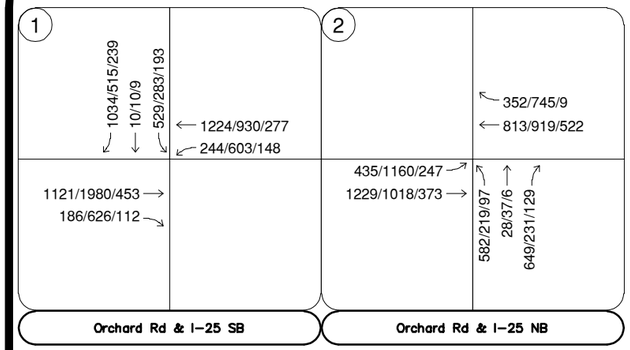


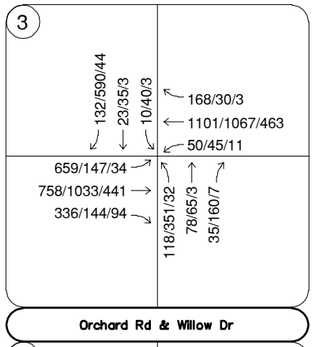


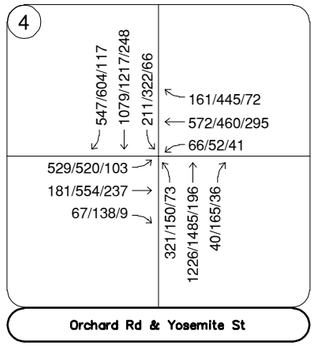
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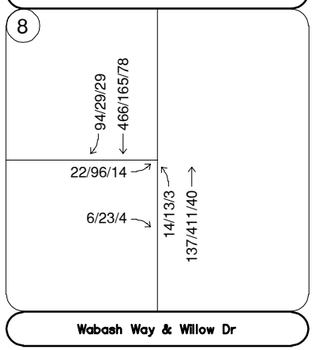
(X)	Study Area Key Intersection
XXX/XXX/XXX	Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

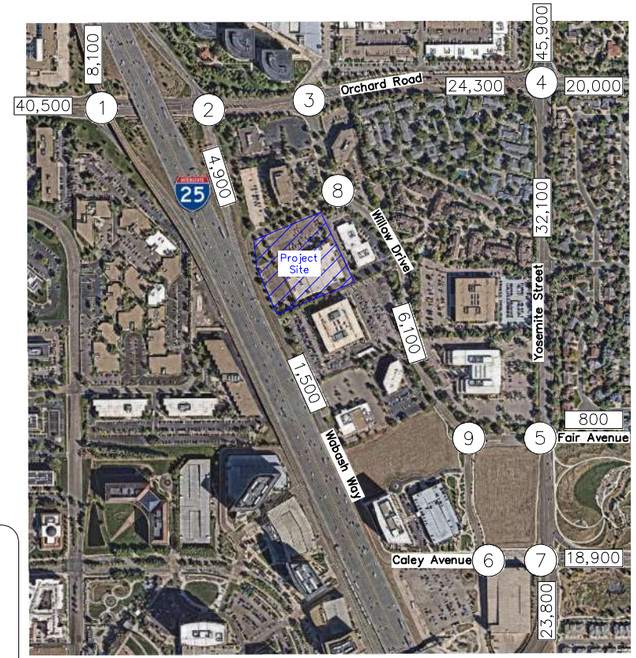
FIGURE 4
Grace Chapel
Greenwood Village, CO
2030 Background Traffic Volumes

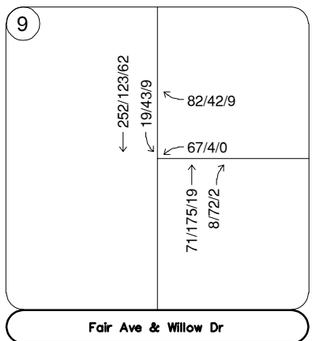


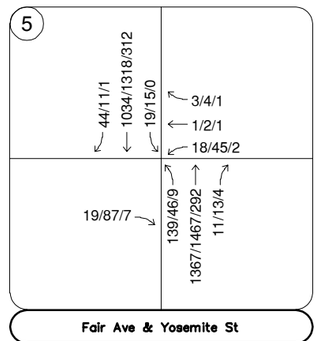


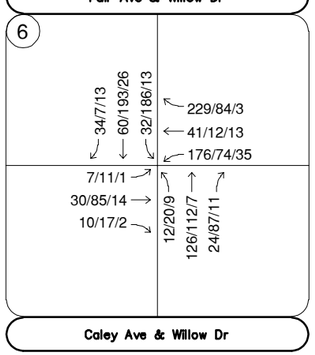


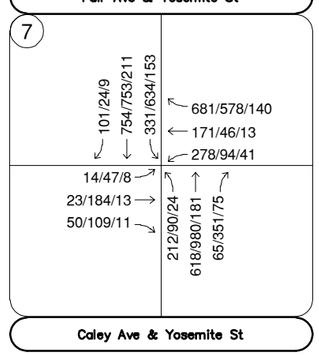












LEGEND

(X) Study Area Key Intersection

XXX/XXX/XXX Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes

[XX,X00] Estimated Daily Traffic Volume

FIGURE 5
Grace Chapel
Greenwood Village, CO
2050 Background Traffic Volumes

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rate equations that apply to Church (ITE Land Use Code 560) for traffic associated with the development.

The existing Grace Chapel is proposed to relocate from 8505 South Valley Highway to 8500 East Orchard Road. The existing Grace Chapel contains 640 seats for church services while the new site will initially provide approximately 750 seats with the ultimate capacity being 1,000 seats. For the purposes of this analysis, 1,000 seats for church services were evaluated for both the buildout 2030 and long term 2050 horizons. Turning movement counts were collected at the existing driveways at the existing 8505 South Valley Highway Grace Chapel location on Sunday, December 14, 2025. The Sunday traffic counts were collected during the peak hours of the existing Grace Chapel in 15-minute intervals from 9:30 AM to 11:30 AM.

Based on ITE Trip Generation Manual equations and 1,000 Seats, Grace Chapel is expected to generate approximately 900 daily weekday trips, with 70 of these trips occurring during the morning peak hour and 100 trips occurring during the afternoon peak hour. Further, the site is calculated to generate 540 trips during the Sunday peak hour of the generator based on ITE Trip Generation Manual Data.

Based on user specific data and the existing 640 seats, Grace Chapel is currently generating 244 trips during the Sunday peak hour of the generator and would be calculated to generate 381 trips with the future 1,000 seats based on user specific data. ITE Trip Generation Manual data is calculated to generate 159 more trips during the Sunday peak hour of the generator when compared to user-specific data; therefore, to provide a conservative analysis, ITE Trip Generation

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Twelfth Edition, Washington DC, 2025.

Manual data was utilized in this traffic study. The majority of calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 12th Edition – Volume 1: User's Guide and Handbook*, 2025. **Table 1** summarizes the estimated weekday trip generation for the site.

Table 1 – Grace Chapel Weekday Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
ITE Trip Generation Manual Data – Future 1,000 500 Seats							
Church (ITE 560) – 1,000 Seats	900	42	28	70	45	55	100

Table 2 summarizes the estimated Sunday peak hour trip generation for the site using both site specific and ITE Trip Generation Manual data. The trip generation worksheets are included in

Appendix D.

Table 2 – Grace Chapel Sunday Traffic Generation

Land Use and Size	Sunday Peak Hour Vehicle Trips		
	In	Out	Total
Site Specific Data – Existing 640 Seats			
Grace Chapel (8505 S Valley Highway) (Site Data) – 640 Seats	94	150	244
ITE Trip Generation Manual Data – Existing 640 Seats			
Church (ITE 560) 640 Seats	170	176	346
Site Specific Data – Future 1,000 Seats			
Grace Chapel (8505 S Valley Highway) (Equivalent Site Data) – 1,000 Seats	147	234	381
ITE Trip Generation Manual Data – Future 1,000 Seats			
Church (ITE 560) 1,000 Seats	265	275	540

Notably, the church is designed to accommodate occasional community events such as weddings, concerts, and public meetings. These events are anticipated to occur during off-peak periods of adjacent roadway traffic and are expected to generate fewer vehicle trips than a typical Sunday worship service, which represents the highest recurring traffic demand associated with church operations. Accordingly, these events are not anticipated to result in traffic conditions exceeding those associated with regular Sunday services.

4.2 Trip Distribution

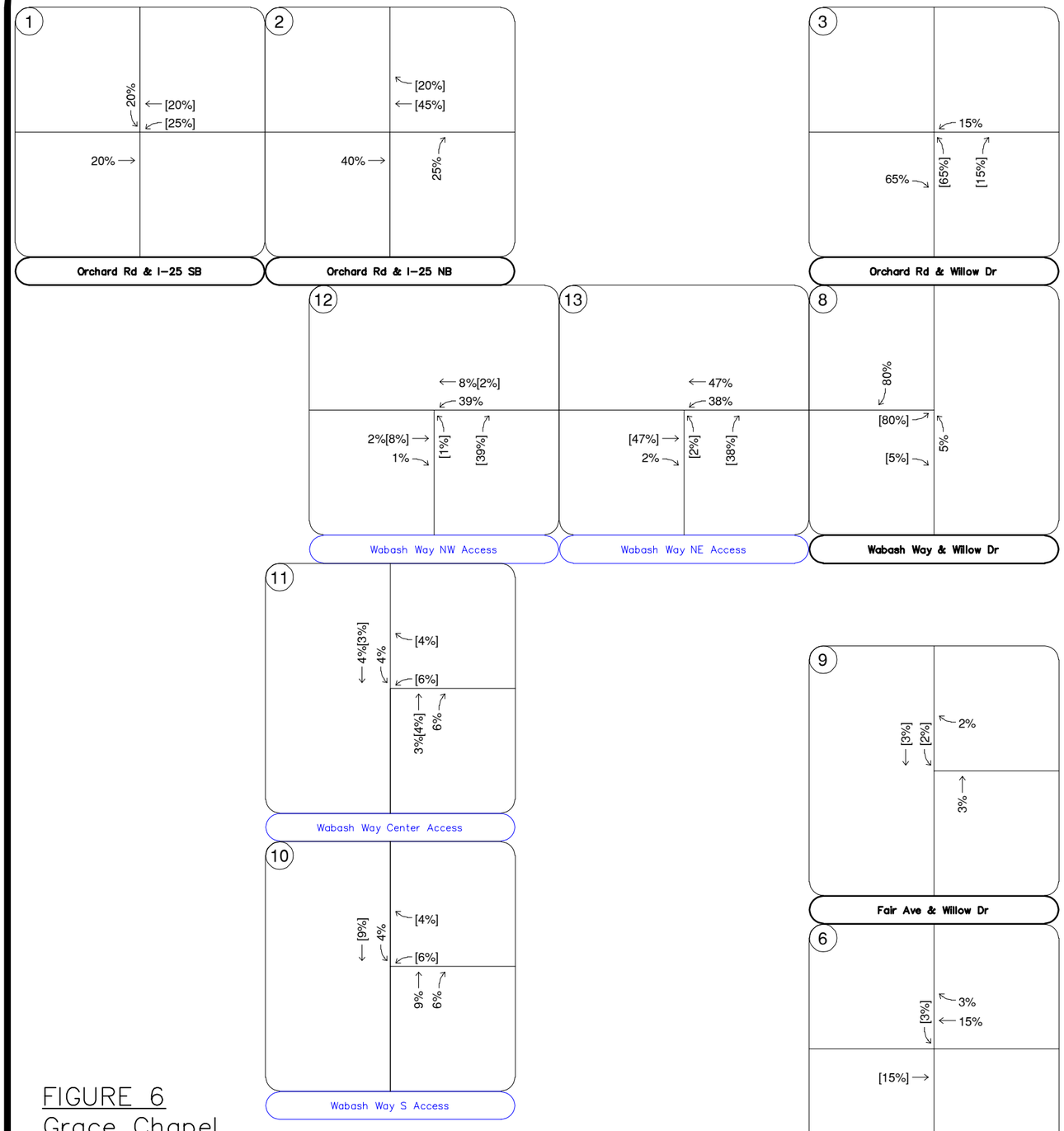
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development ITE generated trips is illustrated in **Figure 6**.

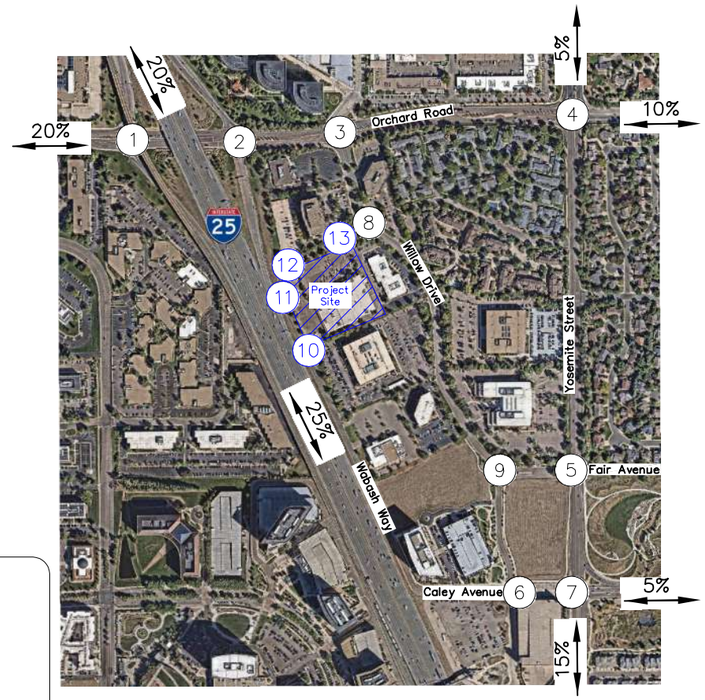
4.3 Traffic Assignment

The project's traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment for the project is shown in **Figure 7**.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2030 buildout horizon and long-term 2050 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2030 and 2050 horizon years in **Figure 8** and **Figure 9**, respectively.

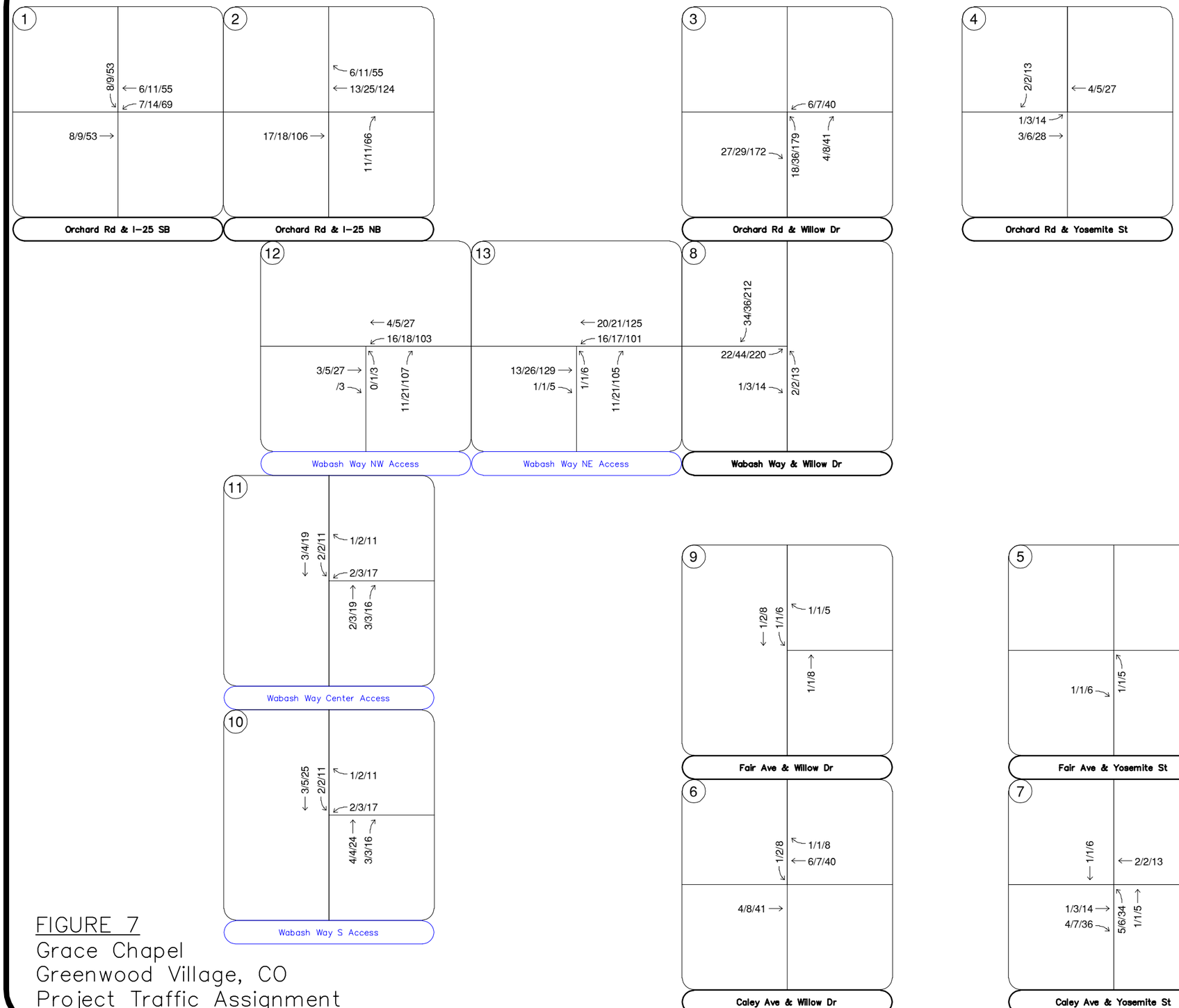




LEGEND

- X — Study Area Key Intersection
- X — Project Access Intersection
- XX% — External Trip Distribution Percentage
- XX%[XX%] — Entering[Exiting] Trip Distribution Percentage

FIGURE 6
Grace Chapel
Greenwood Village, CO
Project Trip Distribution

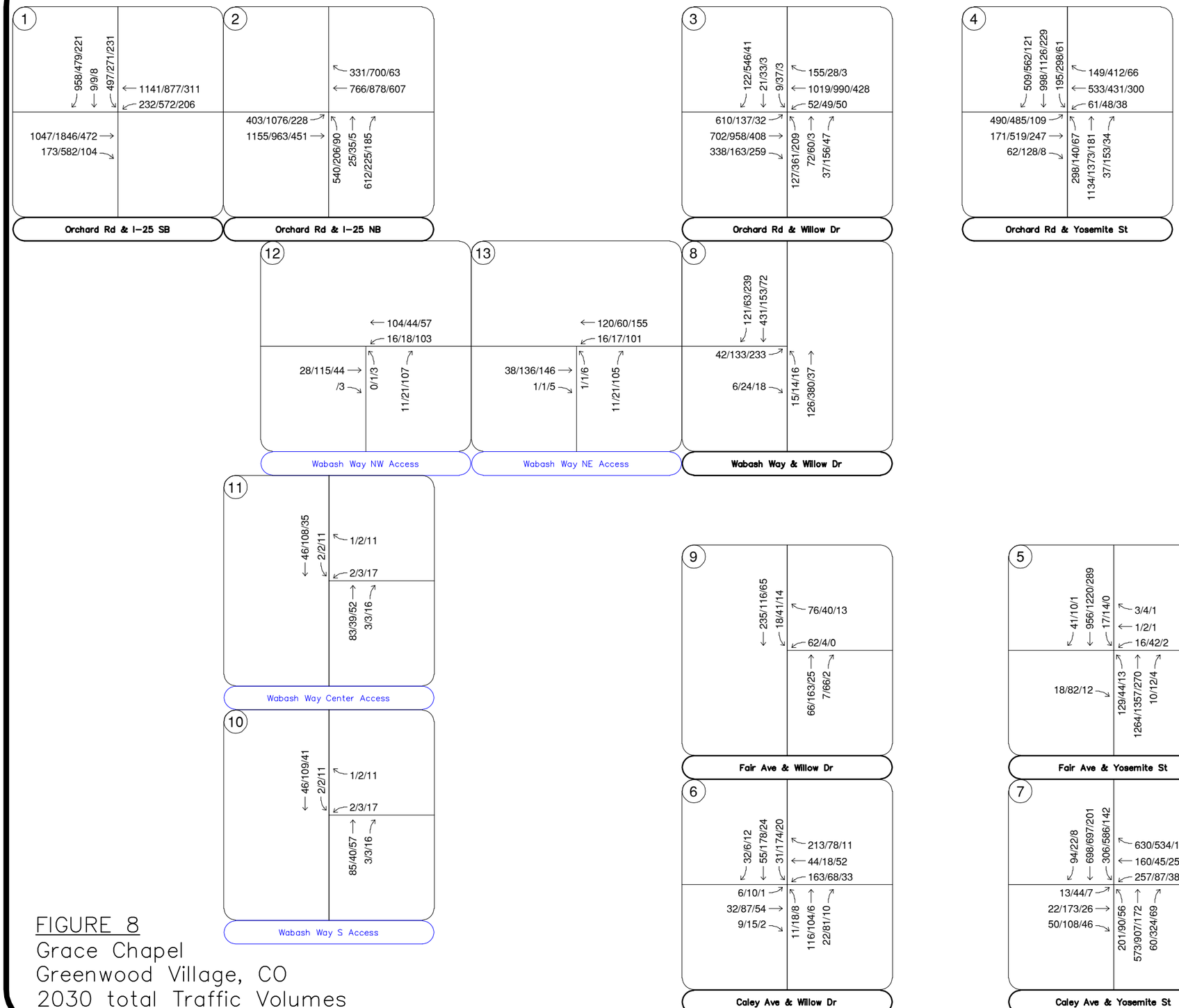




LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX/XXX/XXX	Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 7
Grace Chapel
Greenwood Village, CO
Project Traffic Assignment

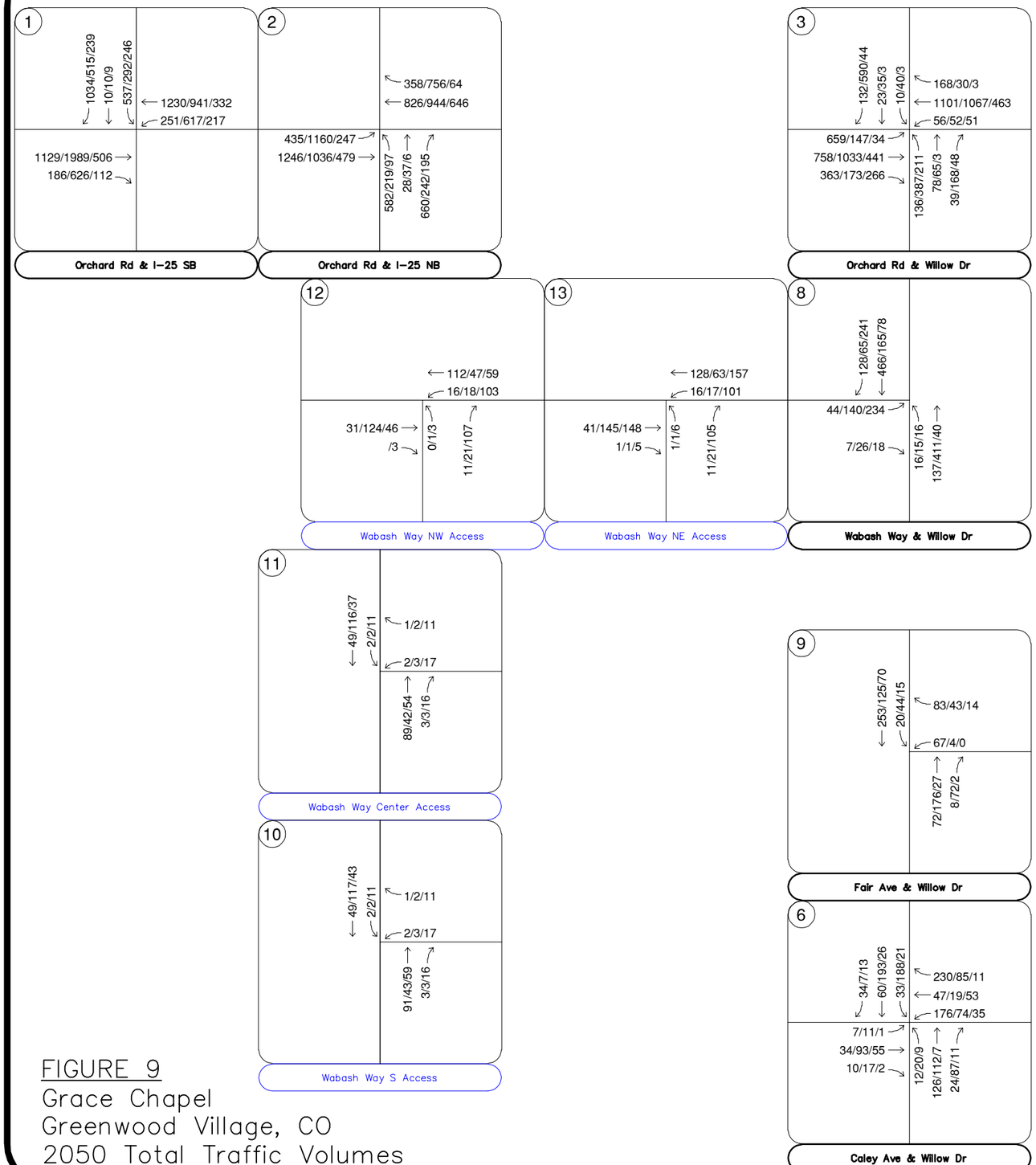




LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX/XXX/XXX	Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 8
Grace Chapel
Greenwood Village, CO
2030 total Traffic Volumes





LEGEND

X	Study Area Key Intersection
X	Project Access Intersection
XXX/XXX/XXX	Weekday AM/Weekday PM/Sunday AM Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 9
Grace Chapel
Greenwood Village, CO
2050 Total Traffic Volumes

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2030 and 2050 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 3** shows the definition of level of service for signalized and unsignalized intersections.

Table 3 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Seventh Edition, Transportation Research Board, 2022.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized is defined for the overall intersection.

[2] Transportation Research Board, *Highway Capacity Manual*, Seventh Edition, Washington DC, 2022.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in

Figure 2**.** Existing peak hour factors were utilized in the existing, 2030 buildout, and 2050 planning level horizons for unsignalized intersections. For signalized intersections, the HCM urban standard of 0.92 was utilized as a peak hour factor in the existing, 2030, and 2050 planning level horizons. A standard of two percent heavy vehicles was used for the existing conditions and each horizon year. The signalized intersection analysis utilizes existing signal timings provided by the City of Greenwood Village. The signal timing worksheets are included in **Appendix F**. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

Orchard Road and I-25 Southbound Ramps (#1)

The intersection of Orchard Road and I-25 Southbound Ramps (#1) is signalized and operates with protected only left turn phasing on the westbound and southbound approaches. The intersection currently operates acceptably at LOS D or better during the three peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – Orchard Road and I-25 Southbound Ramps (#1) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	28.4	C	36.0	D	21.7	C
2030 Background	29.2	C	37.7	D	21.8	C
2030 Background Plus Project	29.5	C	39.7	D	25.5	C
2050 Background	33.2	C	46.5	D	22.1	C
2050 Background Plus Project	33.5	C	49.0	D	25.8	C

Orchard Road and I-25 Northbound Ramps (#2)

The signalized intersection of Orchard Road and I-25 Northbound Ramps (#2) operates with protected only left turn phasing on the eastbound and northbound approaches. The intersection currently operates acceptably at LOS C or better during the three peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Of note, although traffic volumes increase under the total conditions, the overall intersection delay decreases because the project adds traffic to movements that already operate with lower delay than the average delay of the intersection. Since overall delay is a volume-weighted average, shifting more volume onto efficient movements lowers the intersection's total average delay, even with higher total traffic. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – Orchard Road and I-25 Northbound Ramps (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	27.5	C	24.3	C	14.9	B
2030 Background	25.4	C	33.6	C	14.9	B
2030 Background Plus Project	25.3	C	33.5	C	14.0	B
2050 Background	26.4	C	45.2	D	15.0	B
2050 Background Plus Project	26.3	C	45.1	D	14.3	B

Orchard Road and Willow Drive (#3)

The signalized intersection of Orchard Road and Willow Drive (#3) operates with protected/permissive left turn phasing on the eastbound and westbound approaches and protected left turn phasing on the northbound and southbound approaches. The intersection of Orchard Road and Willow Drive operates acceptably at LOS D or better during the three peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – Orchard Road and Willow Drive (#3) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	22.1	C	28.5	C	7.6	A
2030 Background	23.4	C	29.2	C	7.7	A
2030 Background Plus Project	24.1	C	30.6	C	17.6	B
2050 Background	30.8	C	33.6	C	7.7	A
2050 Background Plus Project	31.8	C	35.2	D	17.1	B

Orchard Road and Yosemite Street/DTC Boulevard (#4)

The signalized intersection of Orchard Road and Yosemite Street/DTC Boulevard (#4) operates with protected/permissive left turn phasing on all four approaches. The intersection currently operates acceptably at LOS C during the weekday morning peak hour and the Sunday peak hour. However, the weekday afternoon peak hour operates at an LOS E in the existing condition. To improve operations, an additional southbound left turn lane is recommended. Dual left turn lanes are typically recommended as a left turn volume approaches 300 vehicles per hour. Dual southbound left turn lanes operate acceptably through the 2030 horizon with and without project traffic. It should be noted that project traffic does not contribute to this movement. However, an existing Capital Improvement Program (CIP) project has rejected dual southbound left turn lanes. Therefore, the analysis with dual southbound left turn lanes has been included for reference only. Without dual southbound left turn lanes, the 2030 overall intersection is expected to operate as LOS E during the afternoon peak hour.

By the 2050 horizon, it is expected that this intersection will experience traffic demand that exceeds the potential capacity for the intersection. Without the additional southbound left turn lane, the overall intersection is anticipated to operate with an overall failing level of service during the afternoon weekday peak hour. Alternatively, with the installation of the additional southbound left turn lane, this intersection may still operate at LOS E during the weekday afternoon peak hour, both prior to and with the addition of project traffic. With the southbound dual left turn lanes, this intersection will be built to the ultimate configuration, and it is believed that existing right-of-way and structure constraints prevent this intersection from having additional through lanes. Of note, utilizing pre-COVID traffic volumes and future growth results in the LOS E during the afternoon peak hour in 2050 at this intersection. With the new normal of travel patterns consisting of flexible work schedules and increased working from home, utilization of actual 2025 traffic counts and growth is expected to result in acceptably operations in the future. **Table 7** provides the results of the LOS analysis conducted at this intersection.

Table 7 – Orchard Road and Yosemite Street/DTC Boulevard (#4) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	33.1	C	60.3	E	31.3	C
2030 Background	35.2	D	65.4	E	31.3	C
2030 Background (Alternative)	27.6	C	45.3	D	31.3	C
2030 Background Plus Project	35.4	D	65.9	E	32.2	C
2030 Background Plus Project (Alternative)	27.7	C	45.7	D	32.2	C
2050 Background	46.6	D	84.4	F	31.3	C
2050 Background (Alternative)	34.7	C	60.2	E	31.3	C
2050 Background Plus Project	47.0	D	85.0	F	32.2	C
2050 Background Plus Project (Alternative)	35.1	C	60.8	E	32.2	C

Fair Avenue and Yosemite Street (#5)

The signalized intersection of Fair Avenue and Yosemite Street (#5) operates with protected/permissive left turn phasing on the northbound and southbound approaches and permitted left turn phasing on eastbound and westbound approaches. The intersection of Fair Avenue and Yosemite Street operates acceptably at LOS A during the weekday morning and afternoon peak hours and the Sunday peak hour under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 8** provides the results of the LOS analysis conducted at this intersection.

Table 8 – Fair Avenue and Yosemite Street (#5) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	1.7	A	6.6	A	2.7	A
2030 Background	1.7	A	6.6	A	2.7	A
2030 Background Plus Project	1.8	A	6.7	A	3.4	A
2050 Background	1.9	A	6.9	A	2.7	A
2050 Background Plus Project	1.9	A	7.0	A	3.4	A

Caley Avenue and Willow Drive (#6)

The signalized intersection of Caley Avenue and Willow Drive (#6) operates with permitted left turn phasing on all four approaches. The intersection of Caley Avenue and Willow Drive operates acceptably at LOS B during the three peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Of note, although traffic volumes increase under the total conditions, the overall intersection delay decreases because the project adds traffic to movements that already operate with low delay. Since overall delay is a volume-weighted average, shifting more volume onto efficient movements lowers the intersection's total average delay, even with higher total traffic. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 9** provides the results of the LOS analysis conducted at this intersection.

Table 9 – Caley Avenue and Willow Drive (#6) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	12.3	B	16.5	B	15.6	B
2030 Background	12.3	B	16.6	B	15.5	B
2030 Background Plus Project	12.2	B	16.4	B	10.6	B
2050 Background	12.3	B	16.7	B	15.7	B
2050 Background Plus Project	16.4	B	16.6	B	10.9	B

Caley Avenue and Yosemite Street (#7)

The signalized intersection of Caley Avenue and Yosemite Street (#7) operates with protected only left turn phasing on all approaches. The intersection currently operates acceptably at LOS D or better during the three peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2030 horizon. By 2050, the afternoon peak hour is anticipated to operate at an overall LOS E. To improve operations, it is recommended that additional green time is provided for the southbound left movement during the afternoon peak hour. With five (5) seconds of additional green time on the southbound left turn movement, the intersection is anticipated to operate with an overall LOS D. With project traffic and optimized timings, the intersection is anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. **Table 10** provides the results of the LOS analysis conducted at this intersection.

Table 10 – Caley Avenue and Yosemite Street (#7) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing	33.5	C	46.7	D	35.7	D
2030 Background	33.9	C	48.0	D	35.6	D
2030 Background Plus Project	34.4	C	48.2	D	39.9	D
2050 Background	35.8	D	55.1	E	35.7	D
2050 Background[1]	35.8	D	46.1	D	35.7	D
2050 Background Plus Project[1]	36.4	D	46.3	D	39.5	D

1 = Afternoon peak hour timings optimized, 5s added to SBL movement

Wabash Way and Willow Drive (#8)

The unsignalized T-intersection of Wabash Way and Willow Drive (#8) operates under stop control on the eastbound Wabash Way approach. The intersection movements operate acceptably at LOS C or better during the three peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 11** provides the results of the LOS analysis conducted at this intersection.

Table 11 – Wabash Way and Willow Drive (#8) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing						
Northbound Left	8.6	A	7.7	A	7.4	A
Eastbound Left	13.7	B	18.0	C	9.2	A
Eastbound Right	11.1	B	9.4	A	8.7	A
2030 Background						
Northbound Left	8.7	A	7.7	A	7.4	A
Eastbound Left	13.9	A	18.5	C	9.2	A
Eastbound Right	11.2	A	9.4	A	8.7	A
2030 Background Plus Project						
Northbound Left	8.8	A	7.9	A	8.0	A
Eastbound Left	14.5	B	22.3	C	11.4	B
Eastbound Right	11.2	B	9.5	A	8.7	A
2050 Background						
Northbound Left	8.8	A	7.8	A	7.5	A
Eastbound Left	14.6	B	20.8	C	9.3	A
Eastbound Right	11.5	B	9.5	A	8.7	A
2050 Background Plus Project						
Northbound Left	9.0	A	7.9	A	8.0	A
Eastbound Left	15.4	C	26.2	D	11.5	B
Eastbound Right	11.5	B	9.6	A	8.8	A

Fair Avenue and Willow Drive (#9)

The unsignalized "T"-intersection of Fair Avenue and Willow Drive (#9) operates with stop control along the westbound approach of Fair Avenue. The intersection movements operate acceptably at LOS B or better during the three peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2050 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 12** provides the results of the LOS analysis conducted at this intersection.

Table 12 – Fair Avenue and Willow Drive (#9) LOS Results

Scenario	AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2025 Existing						
Westbound Left	11.8	B	12.0	B	0.0	A
Westbound Right	9.0	A	9.8	A	8.4	A
Southbound Left	7.4	A	7.9	A	7.3	A
2030 Background						
Westbound Left	11.9	B	12.1	B	0.0	A
Westbound Right	9.1	A	9.8	A	8.4	A
Southbound Left	7.4	A	7.9	A	7.3	A
2030 Background Plus Project						
Westbound Left	12.0	B	12.1	B	0.0	A
Westbound Right	9.1	A	9.9	A	8.5	A
Southbound Left	7.4	A	8.0	A	7.3	A
2050 Background						
Westbound Left	12.4	B	12.5	B	0.0	A
Westbound Right	9.1	A	10.0	B	8.5	A
Southbound Left	7.4	A	8.0	A	7.3	A
2050 Background Plus Project						
Westbound Left	12.5	B	12.6	B	0.0	A
Westbound Right	9.2	A	10.0	B	8.5	A
Southbound Left	7.4	A	8.0	A	7.3	A

Project Accesses

With completion of the project, the four (4) existing accesses serving the current development will remain and be utilized by the proposed development. There are two project accesses located along the east/west segment of Wabash Way and two project accesses located along the north/south segment of Wabash Way. The four accesses each provide single lanes on each approach for shared movements except the northwest access utilizes a two-way left turn lane for entering the project site. The exiting approaches of the four accesses operate with assumed stop control and are absent of R1-1 "STOP" signs. **Table 13** provides the results of the level of service for the project accesses. As shown in the table, the project access intersections are anticipated to have all movements operating with acceptable LOS B or better during the peak hours in both the buildout year 2030 and the 2050 long-term horizons.

Table 13 – Project Access Level of Service Results

Intersection	2030 Total						2050 Total					
	AM Peak Hour		PM Peak Hour		SUN Peak Hour		AM Peak Hour		PM Peak Hour		SUN Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
Wabash Way South Access (#10)												
Westbound Approach	9.2	A	10.6	B	9.1	A	9.2	A	10.8	B	9.8	A
Southbound Left	7.4	A	7.8	A	7.4	A	7.4	A	7.9	A	7.4	A
Wabash Way Center Access (#11)												
Westbound Approach	9.2	A	10.6	B	9.1	A	9.2	A	10.8	B	9.8	A
Southbound Left	7.4	A	7.8	A	7.4	A	7.4	A	7.9	A	7.4	A
Wabash Way NW Access (#12)												
Northbound Approach	8.5	A	9.0	A	9.1	A	8.5	A	9.1	A	9.1	A
Westbound Left	7.3	A	7.5	A	7.5	A	7.3	A	7.5	A	7.5	A
Wabash Way NE Access (#13)												
Northbound Approach	8.7	A	9.2	A	9.9	A	8.7	A	9.2	A	9.9	A
Westbound Left	7.3	A	7.5	A	7.8	A	7.3	A	7.6	A	7.8	A

5.3 CDOT Auxiliary Turn Lane Warrant and Length Evaluation

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north and south legs of the I-25 Northbound and Southbound Ramps at Orchard Road is not anticipated to increase existing traffic volumes by 20 percent during weekday peak hours. The maximum increase in existing traffic volumes is reported as 2.7 percent (11 project volumes / 403 existing volumes) during the afternoon peak hour at the I-25 Northbound Off Ramp at Orchard Road. Therefore, a CDOT access permit is not anticipated to be needed at the I-25 interchange ramps with Orchard Road.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for auxiliary turn lanes of the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 14** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix G** for signalized intersections.

Table 14 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length	2030 Calculated Queue*	2030 Recommended Length	2050 Calculated Queue*	2050 Recommended Length
Orchard Rd & I-25 SB (#1)					
Eastbound Right	C	25’	C	25’	C
Westbound Left	385’+300’	678’	385’+300’	768’	385’+300’
Southbound Left	325’	356’	325’	403’	325’
Southbound Left/Thru	C (1,015’)	355’	C (1,015’)	398’	C (1,015’)
Southbound Right	C	679’	C	761’	C (1,015’)
Orchard Rd & I-25 NB (#2)					
Eastbound Left	385’+330’	415’	385’+330’	424’	385’+330’
Westbound Right	300’	48’	300’	51’	300’
Northbound Left	450’	378’	450’	425’	450’
Northbound Left/Thru	C (900’)	384’	C (900’)	433’	C (900’)
Northbound Right	C	319’	C	387’	C
Orchard Rd & Willow Dr (#3)					
Eastbound Left	150’/425’	364’	150’/425’	458’	150’/425’
Eastbound Right	150’	108’	150’	118’	150’
Westbound Left	200’	60’	200’	61’	200’
Northbound Left	100’/150’	211’	100’/150’	227’	100’/150’
Southbound Left	125’	67’	125’	70’	125’
Southbound Right	150’/150’	258’	150’/150’	286’	150’/150’
Orchard Rd & Yosemite (#4)					
Eastbound Left	250’ DL	313’	**350’ DL**	328’	**350’ DL**
Eastbound Right	150’	63’	150’	61’	150’
Westbound Left	175’	58’	175’	61’	175’
Westbound Right	300’	25’	300’	25’	300’
Northbound Left	150’/275’	198’	150’/275’	236’	150’/275’
Southbound Left	200’	410’	200’	460’	200’
Southbound Right	275’	25’	275’	25’	275’
Orchard Rd & Yosemite (#4) (Alternative)					
Eastbound Left	250’ DL	313’	**350’ DL**	335’	**350’ DL**
Eastbound Right	150’	63’	150’	61’	150’
Westbound Left	175’	58’	175’	61’	175’
Westbound Right	300’	25’	300’	25’	300’
Northbound Left	150’/275’	213’	150’/275’	248’	150’/275’
Southbound Left	200’	124’	**200’ DL**	124’	**200’ DL**
Southbound Right	275’	25’	275’	25’	275’
Fair Ave & Yosemite St (#5)					
Eastbound Left/Thru	100’	25’	100’	25’	100’
Eastbound Right	C	25’	C	25’	C
Westbound Left	75’	73’	75’	77’	75’
Northbound Left	125’	25’	125’	25’	125’
Southbound Left	50’	25’	50’	25’	50’
Caley Ave & Willow Dr (#6)					
Eastbound Left	125’	25’	125’	25’	125’
Westbound Left	C (275’)	111’	C (275’)	118’	C (275’)
Northbound Approach	C	91’	C	97’	C
Southbound Approach	C	222’	C	248’	C

Intersection Turn Lane	Existing Turn Lane Length	2030 Calculated Queue*	2030 Recommended Length	2050 Calculated Queue*	2050 Recommended Length
Caley A & Yosemite St (#7)					
Eastbound Left	175'/200'	33'	175'/200'	36'	175'/200'
Westbound Left	150'/175'	158'	150'/175'	179'	150'/175'
Westbound Right	400'/250'	100'	400'/250'	101'	400'/250'
Northbound Left	225'/325'	126'	225'/325'	138'	225'/325'
Northbound Right	200'	196'	200'	245'	200'
Southbound Left	225'/350'	229'	225'/350'	312'	225'/350'
Southbound Right	125'	25'	125'	25'	125'
Wabash W & Willow Dr (#8)					
Northbound Left	100'	25'	100'	25'	100'
Eastbound Left	TWLTL	75'	TWLTL	75'	TWLTL
Eastbound Right	C	25'	C	25'	C
Southbound Right	200'	25'	200'	25'	200'
Fair Ave & Willow Dr (#9)					
Westbound Left	C (350')	25'	C (350')	25'	C (350')
Westbound Right	C (350')	25'	C (350')	25'	C (350')
Southbound Left	TWLTL	25'	TWLTL	25'	TWLTL
Wabash South Access (#10)					
Westbound Approach	C	25'	C	25'	C
Southbound Left/Thru	C	25'	C	25'	C
Wabash Center Access (#11)					
Westbound Approach	C	25'	C	25'	C
Southbound Left/Thru	C	25'	C	25'	C
Wabash NW Access (#12)					
Northbound Approach	C	25'	C	25'	C
Westbound Left	TWLTL	25'	TWLTL	25'	TWLTL
Wabash NE Access (#13)					
Northbound Approach	C	25'	C	25'	C
Westbound Left/Thru	C (75')	25'	C (75')	25'	C (75')

TWLTL = Two Way Left Turn Lane; C = Continuous Lane; **Red** Text = Turn Lane Constraint; **Blue** Text = Recommendation; * = Highest reported volume among weekday AM/PM peak hours & Sunday peak hour

At the intersection of Orchard Road and Willow Drive, the eastbound left and southbound right may extend past the existing storage by 2030. The eastbound left turn lane cannot be extended at Orchard Road and Willow Drive intersection due to the back-to-back left turn condition with the westbound spillback left at the intersection of Orchard Road and I-25 Northbound Ramp. Further, the southbound dual right turn lanes cannot be extended due to the geometry of the intersection and the proximity of the Empower Access Drive approximately 175 feet to the north of the Orchard Road and Willow Drive intersection. It is anticipated that the vehicle queues extending past the existing storage will stack at the intersection to the north. Of note, project traffic does not contribute to the turn lane deficiencies at the intersection of Orchard Road and Willow Drive.

If 2050 traffic volumes are realized, the westbound left turn volume at the Orchard Road and I-25 Southbound Ramp may extend past the existing storage. This turn lane and spillback lane cannot be extended further due to a back-to-back left turn condition with the eastbound left at the intersection of Orchard Road and Willow Drive.

The eastbound dual left turn lanes at the intersection of Orchard Road and Yosemite Street may need to be extended from 250 feet of storage to 350 feet. Project traffic is expected to only contribute three (3) of the 485 eastbound left turn movements at this intersection during the peak hour and notably, project traffic does not contribute to this extended queue. Further, with a single southbound left turn lane, the queue is expected to extend past the existing storage. The single southbound left turn lane cannot be extended due to existing back-to-back left turn configuration. As dual southbound left turn lanes have been rejected by the CIP project, the queues are provided only for reference.

If 2050 volumes are realized, it is anticipated that northbound right turn lane queues at the intersection of Caley Avenue and Yosemite Street may extend past the existing storage. Project traffic does not contribute to this movement, and the queue is calculated to be contained at buildout. This queue should be monitored in the future to determine if extended queues are realized.

5.5 Pedestrian and Bicycle Facilities

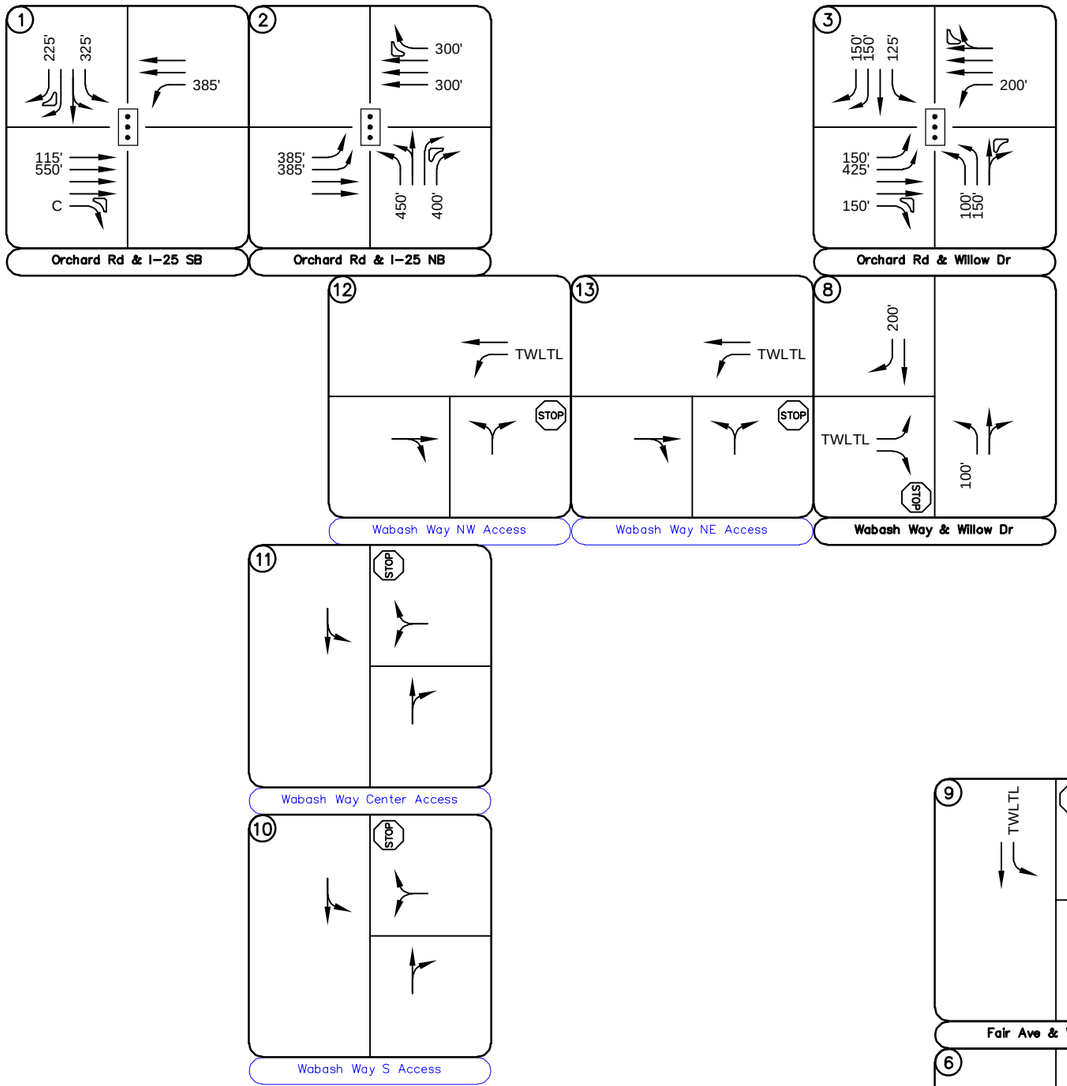
The area surrounding the proposed site of Grace Chapel, 8500 Orchard Road, includes a mix of pedestrian and bicycle facilities that support local mobility and access to nearby commercial, office, and residential land uses. Orchard Road provides continuous sidewalks on both sides, establishing well-defined pedestrian routes throughout the corridor. Intersections such as Orchard & Willow Drive and Orchard & Yosemite Street include marked crosswalks and pedestrian signal heads, contributing to safe and accessible crossings at key locations. Notably, there are not sidewalks or designated bike lanes along Wabash Way. Since this project is a redevelopment, the surrounding area is already fully built out, and continuous sidewalks were previously established as part of the existing development pattern. Similarly, bicycle infrastructure in this area is considered to be in its ultimate condition, with no additional on-site opportunities for expansion. While dedicated on-street bike lanes are limited along Orchard Road and Yosemite Street, cyclists commonly rely on adjacent lower-volume streets and multi-use paths within the

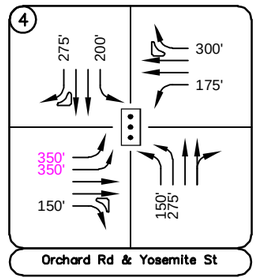
established neighborhood network to connect to major corridors. Overall, the corridor offers a mature multimodal environment with foundational pedestrian and bicycle facilities already in place.

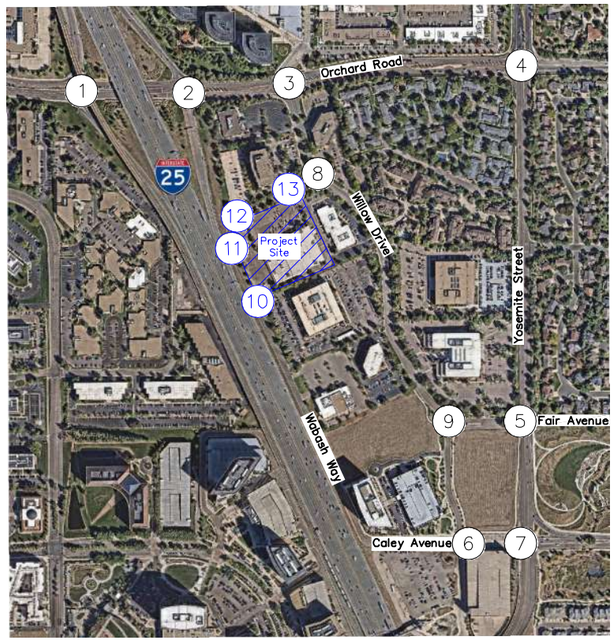
5.6 Improvement Summary

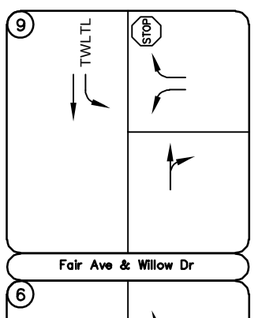
Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 10**.

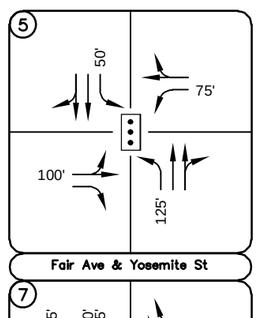
Kimley»Horn NORTH
NTS 096328011











LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- STOP Stop-Controlled Approach
- Improvement by Others
- 100' Turn Lane Length (feet)

FIGURE 10
Grace Chapel
Greenwood Village, Colorado
Recommended Geometry & Control

Kimley»Horn

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes Grace Chapel will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north and south legs of the I-25 Northbound and Southbound Ramps at Orchard Road is not anticipated to increase existing traffic volumes by 20 percent during weekday peak hours. The maximum increase in existing traffic volumes is reported as 2.7 percent (11 project volumes / 403 existing volumes) during the afternoon peak hour at the I-25 Northbound Off Ramp at Orchard Road. Therefore, a CDOT access permit is not anticipated to be needed at the I-25 interchange ramps with Orchard Road.

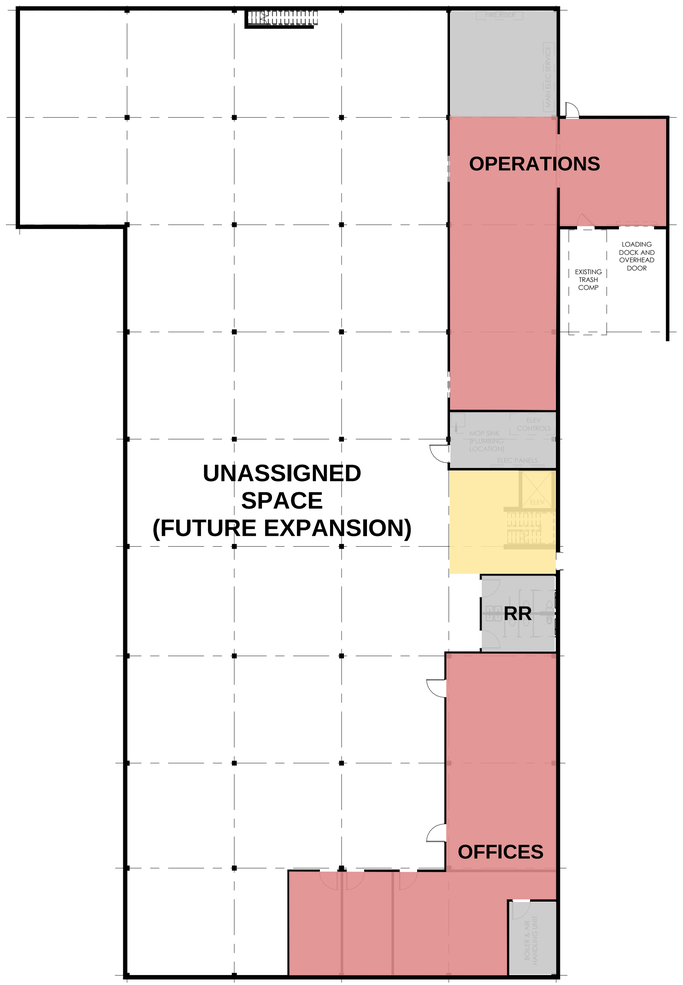
- **Intersection #7 – Caley Avenue & Yosemite Street:**
  By 2050, signal timing optimization is recommended, including an additional five (5) seconds for the southbound left-turn phase during the weekday afternoon peak hour.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Greenwood Village and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

Appendix A: Conceptual Site Plan

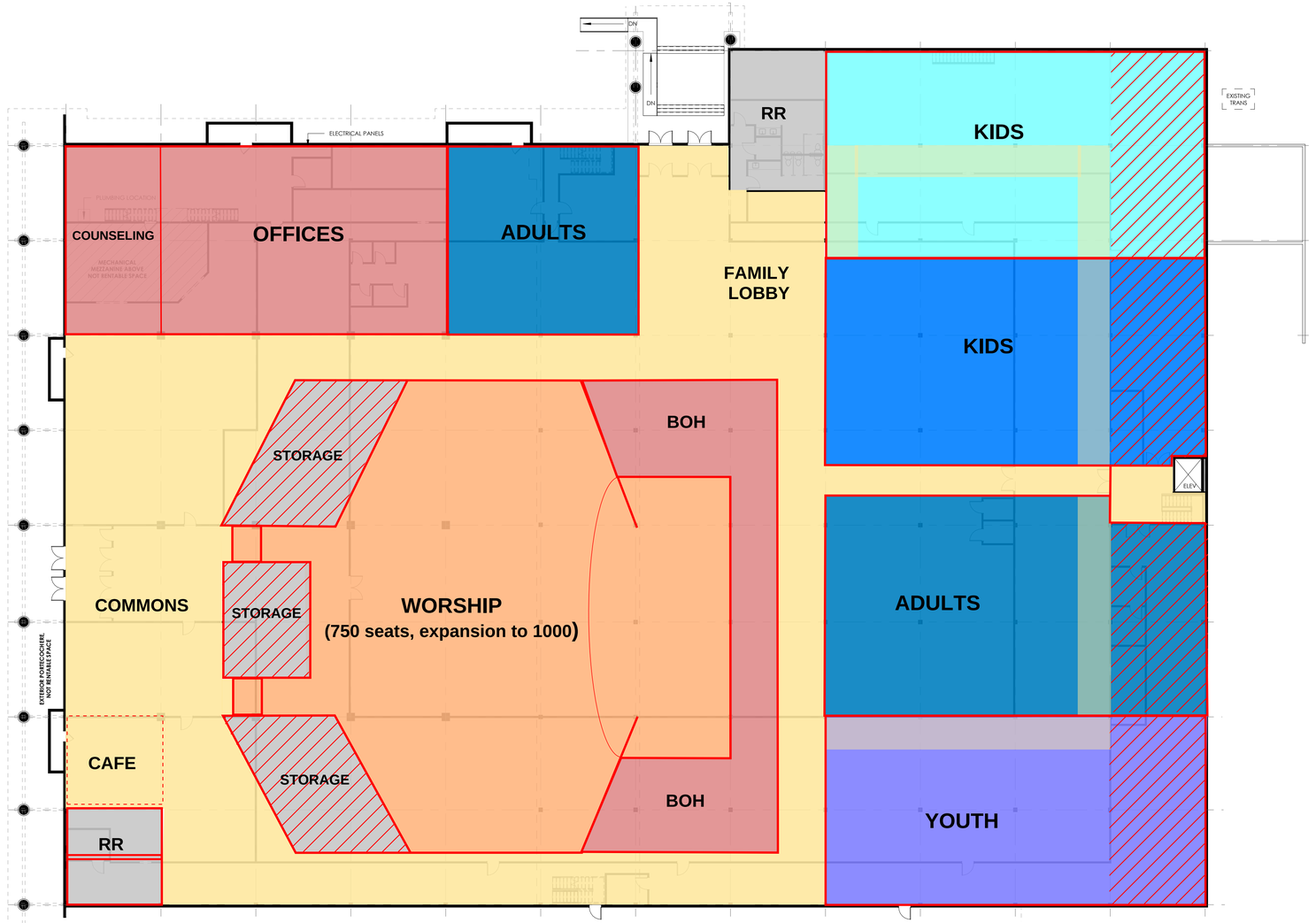
BASEMENT

22,449 SF TOTAL BASEMENT



LEVEL 1

58,262 SF TOTAL LEVEL 1



- WORSHIP ROOM
- KIDS: YOUNGER
- KIDS: OLDER
- YOUTH
- ADULTS
- OFFICES / SUPPORT
- GATHERING / CIRCULATION
- EXPANSION ZONE (from 750 to 1000 program)

8500 E. Orchard
CONCEPTUAL SPACE USE PLAN

11/25/2025

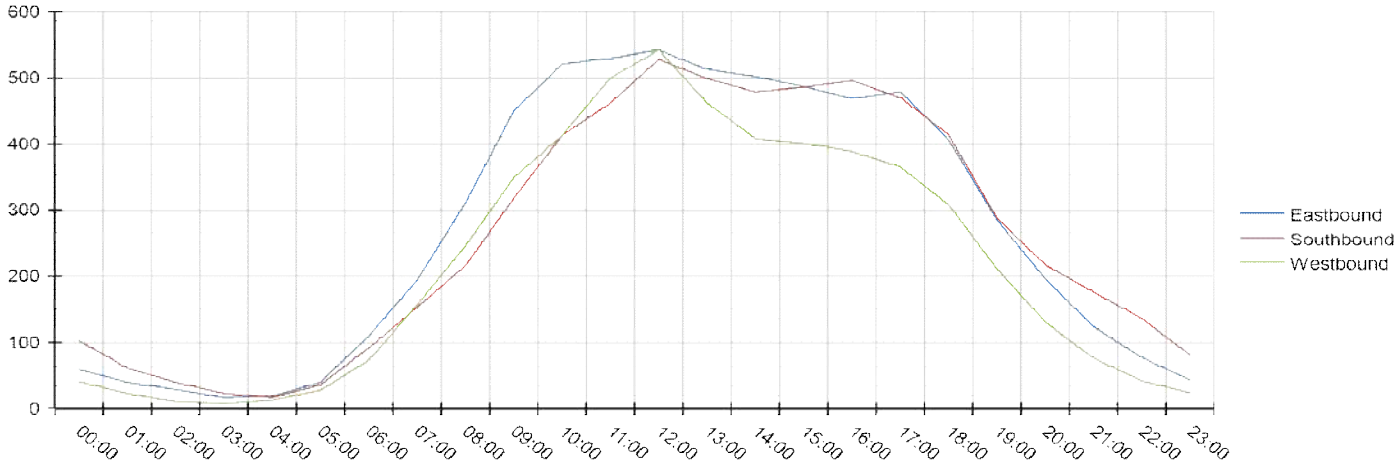
Appendix B: Intersection Count Sheets

VOS Data (9/17/2019 - 9/19/2019)								
	Direction of Travel							
Time of Day	**EBT**	**EBR**	**WBL**	**WBT**	**SBL**	**SBT**	**SBR**	**Hourly Total**
00:00 - 01:00	42	8	8	11	33	2	41	**177**
01:00 - 02:00	264	42	56	206	110	4	236	**1019**
02:00 - 03:00	19	2	1	4	12	1	9	**64**
03:00 - 04:00	20	1	1	6	12	1	13	**69**
04:00 - 05:00	34	3	6	19	28	1	38	**157**
05:00 - 06:00	95	13	14	115	102	2	197	**601**
06:00 - 07:00	312	53	67	296	223	8	407	**1558**
07:00 - 08:00	687	103	145	633	262	7	496	**2594**
08:00 - 09:00	988	152	221	1080	480	9	919	**4240**
09:00 - 10:00	718	179	192	770	385	22	745	**3400**
10:00 - 11:00	733	222	201	502	312	9	442	**2872**
11:00 - 12:00	974	312	258	622	271	16	375	**3400**
12:00 - 13:00	967	321	284	678	263	6	593	**3652**
13:00 - 14:00	940	283	252	612	291	9	499	**3456**
14:00 - 15:00	1016	322	300	534	266	10	448	**3572**
15:00 - 16:00	1291	415	455	639	266	9	426	**4340**
16:00 - 17:00	1729	531	547	773	257	9	426	**5329**
17:00 - 18:00	1646	469	495	759	312	8	543	**5220**
18:00 - 19:00	965	265	304	445	285	7	381	**3242**
19:00 - 20:00	567	139	173	268	212	5	262	**2003**
20:00 - 21:00	338	103	106	162	198	7	208	**1340**
21:00 - 22:00	235	59	65	99	179	5	204	**1000**
22:00 - 23:00	138	33	32	54	134	4	126	**623**
23:00 - 00:00	74	13	16	20	59	2	64	**308**
Daily Total	**14791**	**4043**	**4198**	**9305**	**4951**	**163**	**8098**	**54236**

Turning Movement Counts - Average

Intersection 107 Orchard & I-25 SB
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Eastbound	1224	5204	0	0	6428
Southbound	3291	239	2653	0	6183
Westbound	0	3409	1799	0	5208
Total	4515	8852	4452	0	17819

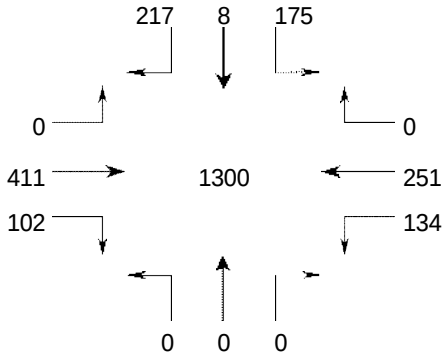


	Eastbound			Southbound				Westbound			
	R	T	L	R	T	L	U	R	T	L	U
00:00	2	56	0	38	7	57	0	0	26	14	0
01:00	1	39	0	21	7	33	0	0	15	7	0
02:00	1	28	0	13	3	23	0	0	5	5	0
03:00	0	16	0	6	3	13	0	0	5	3	0
04:00	1	18	0	7	1	8	0	0	8	4	0
05:00	1	39	0	14	4	17	0	0	19	9	0
06:00	14	96	0	56	3	32	0	0	49	23	0
07:00	26	167	0	97	4	51	0	0	111	46	0
08:00	48	262	0	127	6	82	0	0	176	70	0
09:00	83	367	0	182	9	127	0	0	234	114	0
10:00	107	413	0	221	9	182	0	0	263	149	0
11:00	129	399	0	259	14	189	0	0	309	190	0
12:00	139	403	0	293	17	216	0	0	329	212	0
13:00	124	387	0	281	12	204	0	0	296	164	0
14:00	105	397	0	270	13	195	0	0	266	142	0
15:00	99	388	0	285	19	182	0	0	258	143	0
16:00	97	370	0	270	17	208	0	0	264	125	0
17:00	102	375	0	259	13	197	0	0	240	124	0
18:00	87	318	0	227	11	175	0	0	219	89	0
19:00	41	244	0	135	18	134	0	0	143	67	0
20:00	8	187	0	79	16	121	0	0	80	51	0
21:00	4	120	0	73	14	88	0	0	48	28	0
22:00	3	74	0	51	11	74	0	0	28	14	0
23:00	2	41	0	27	8	45	0	0	18	6	0
Total	1224	5204	0	3291	239	2653	0	0	3409	1799	0

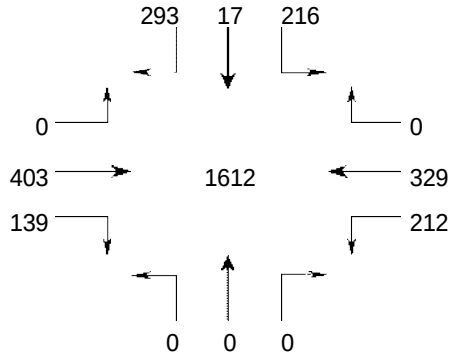
Turning Movement Counts - Average

Intersection 107 Orchard & I-25 SB
Date 8/31/2025-9/28/2025

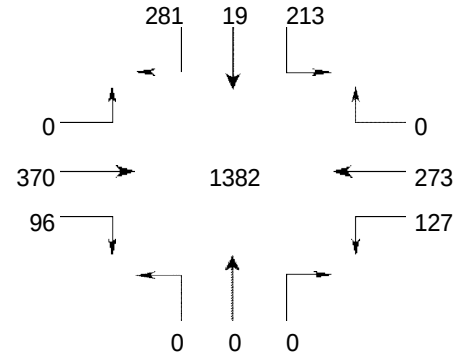
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



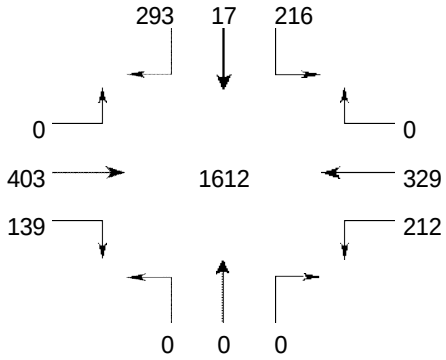
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 12:00 TO 13:00



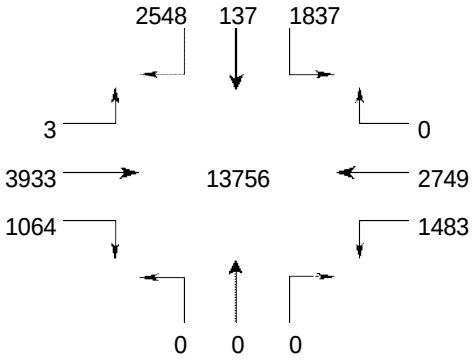
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 15:45 TO 16:45



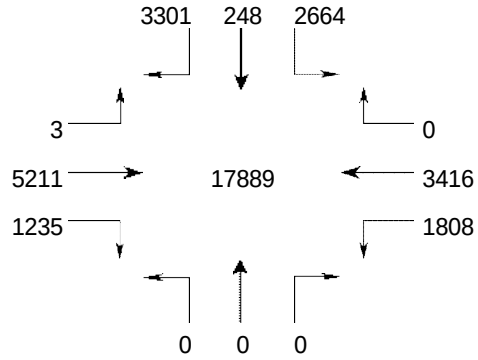
OVERALL PEAK HOUR VOLUME
FROM 12:00 TO 13:00



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



SELECTED TIME VOLUME
FROM 00:00 TO 23:59

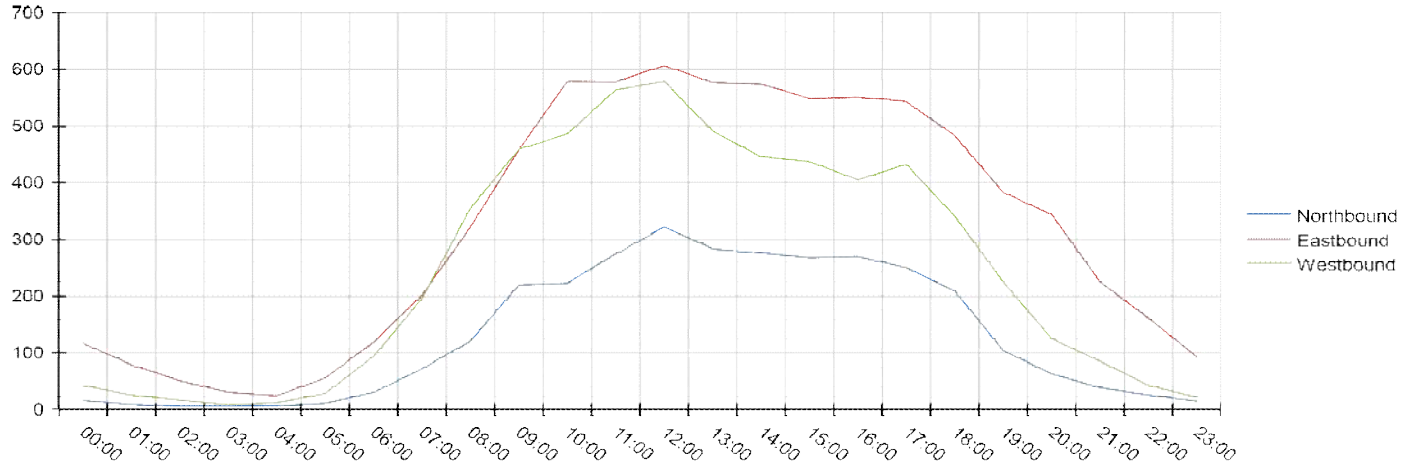


VOS Data (9/17/2019 - 9/19/2019)								
	Direction of Travel							
Time of Day	**EBL**	**EBT**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	44	30	15	25	6	0	5	**129**
01:00 - 02:00	92	265	182	60	103	4	127	**883**
02:00 - 03:00	17	13	5	7	2	0	2	**46**
03:00 - 04:00	19	10	7	6	5	0	1	**49**
04:00 - 05:00	32	29	23	19	10	1	8	**128**
05:00 - 06:00	74	129	111	58	61	4	53	**503**
06:00 - 07:00	176	337	282	182	153	8	194	**1393**
07:00 - 08:00	230	701	483	184	290	16	404	**2453**
08:00 - 09:00	378	1102	725	319	510	25	589	**3855**
09:00 - 10:00	398	735	505	263	371	18	437	**2900**
10:00 - 11:00	455	579	427	316	226	11	216	**2412**
11:00 - 12:00	579	687	536	358	277	14	245	**2936**
12:00 - 13:00	538	721	529	339	263	8	256	**2909**
13:00 - 14:00	543	664	627	370	242	12	215	**2902**
14:00 - 15:00	648	585	597	476	192	14	189	**2986**
15:00 - 16:00	794	688	706	566	174	23	223	**3617**
16:00 - 17:00	1014	895	803	676	159	34	210	**4318**
17:00 - 18:00	949	958	765	553	206	21	240	**4166**
18:00 - 19:00	593	649	529	371	187	24	275	**2899**
19:00 - 20:00	375	396	343	256	116	12	125	**1775**
20:00 - 21:00	237	321	236	165	74	7	91	**1219**
21:00 - 22:00	183	251	151	98	48	7	67	**859**
22:00 - 23:00	124	156	80	83	25	2	22	**517**
23:00 - 00:00	72	58	35	42	13	1	11	**243**
Daily Total	**8564**	**10959**	**8702**	**5790**	**3710**	**267**	**4205**	**46096**

Turning Movement Counts - Average

Intersection 108 Orchard & I-25 NB
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Northbound	1562	178	1359	0	3099
Eastbound	0	4555	3106	28	7689
Westbound	211	5675	19	0	5905
Total	1773	10408	4484	28	16693

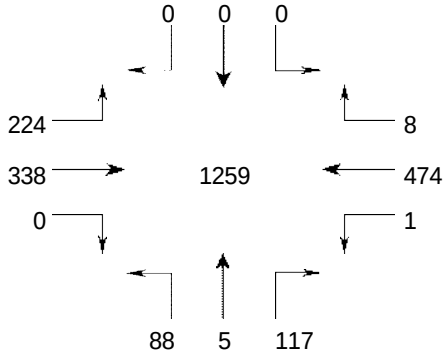


	Northbound				Eastbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U
00:00	3	2	10	0	0	68	49	0	6	36	0	0
01:00	1	1	5	0	0	44	34	0	5	20	0	0
02:00	1	1	2	0	0	24	27	0	5	12	0	0
03:00	1	1	2	0	0	15	15	0	1	6	0	0
04:00	1	0	5	0	0	11	14	0	2	10	0	0
05:00	2	2	6	0	0	21	35	0	5	24	0	0
06:00	12	2	16	0	0	46	73	0	4	89	0	0
07:00	28	3	40	0	0	91	110	0	6	189	0	0
08:00	62	5	53	0	0	167	153	2	10	344	0	0
09:00	131	3	86	0	0	257	200	0	8	450	0	0
10:00	119	6	97	0	0	350	226	2	7	477	1	0
11:00	149	10	115	0	0	357	218	2	10	551	2	0
12:00	178	15	127	0	0	387	215	2	11	564	3	0
13:00	149	13	121	0	0	362	213	1	11	478	2	0
14:00	145	12	118	0	0	361	211	1	7	437	2	0
15:00	141	17	109	0	0	333	213	2	11	424	2	0
16:00	145	13	112	0	0	353	193	4	9	392	3	0
17:00	128	15	107	0	0	333	203	6	16	412	3	0
18:00	96	18	94	0	0	289	188	5	15	324	1	0
19:00	37	11	55	0	0	235	146	1	16	208	0	0
20:00	15	13	34	0	0	197	146	0	18	107	0	0
21:00	8	8	22	0	0	124	100	0	15	70	0	0
22:00	7	4	14	0	0	82	79	0	9	34	0	0
23:00	3	3	9	0	0	48	45	0	4	17	0	0
Total	1562	178	1359	0	0	4555	3106	28	211	5675	19	0

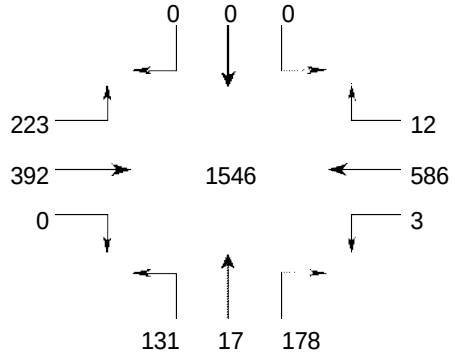
GRIDSMART® Turning Movement Counts - Average

Intersection 108 Orchard & I-25 NB
Date 8/31/2025-9/28/2025

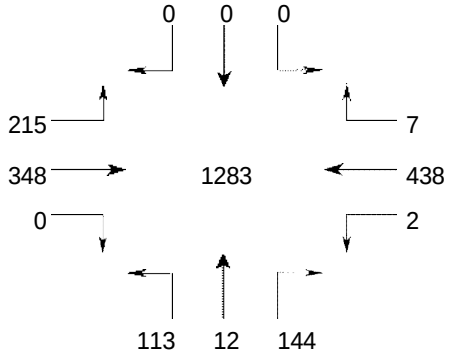
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



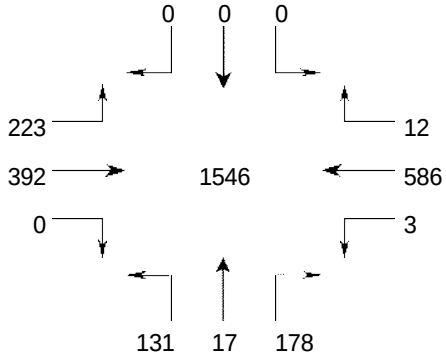
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 11:45 TO 12:45



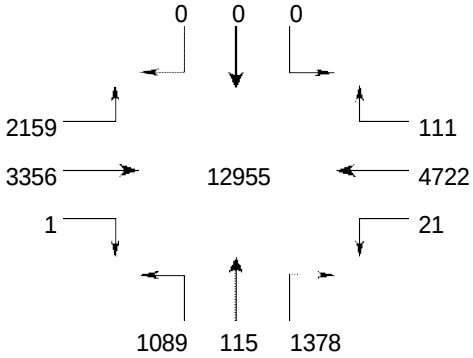
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 14:15 TO 15:15



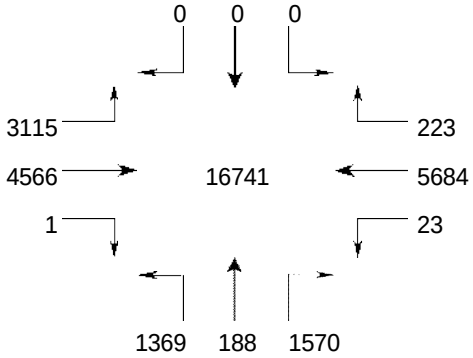
OVERALL PEAK HOUR VOLUME
FROM 11:45 TO 12:45



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



SELECTED TIME VOLUME
FROM 00:00 TO 23:59

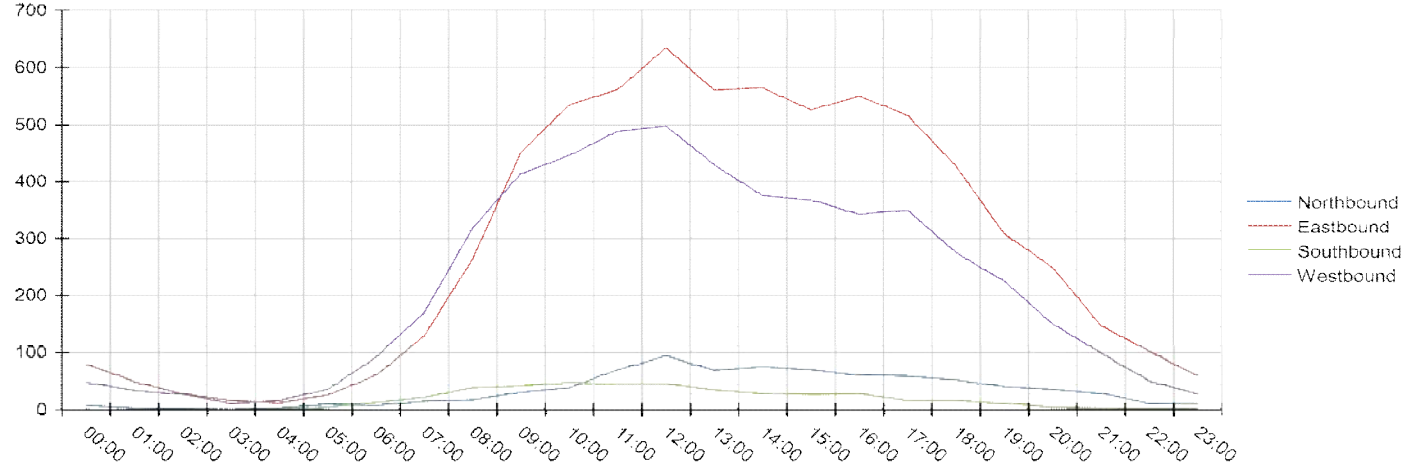


VOS Data (9/17/2019 - 9/19/2019)													
	Direction of Travel												
Time of Day	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	2	28	5	0	22	1	0	1	4	11	0	2	**76**
01:00 - 02:00	161	179	55	13	221	30	5	3	29	18	14	5	**732**
02:00 - 03:00	1	11	3	0	6	0	0	1	1	4	0	0	**26**
03:00 - 04:00	1	5	5	0	4	0	0	0	1	4	0	1	**20**
04:00 - 05:00	15	13	9	0	27	0	0	0	1	8	0	0	**73**
05:00 - 06:00	82	45	55	1	107	7	1	2	7	12	3	0	**322**
06:00 - 07:00	257	149	141	6	333	33	1	5	34	30	9	2	**1000**
07:00 - 08:00	502	463	171	27	603	99	4	12	85	59	48	20	**2092**
08:00 - 09:00	873	677	304	45	988	152	9	21	119	106	71	32	**3395**
09:00 - 10:00	397	624	230	42	746	60	6	13	96	75	17	21	**2327**
10:00 - 11:00	192	444	177	27	583	24	3	12	119	109	10	28	**1730**
11:00 - 12:00	163	560	200	40	653	28	9	23	170	158	9	48	**2062**
12:00 - 13:00	165	602	190	58	728	40	11	17	162	167	17	60	**2218**
13:00 - 14:00	146	569	171	47	685	33	9	15	147	196	13	62	**2093**
14:00 - 15:00	90	553	124	37	691	20	11	19	241	195	11	54	**2047**
15:00 - 16:00	91	695	117	27	841	21	18	31	410	246	13	62	**2573**
16:00 - 17:00	116	835	113	38	994	26	33	33	546	298	29	102	**3162**
17:00 - 18:00	131	914	128	41	943	27	36	32	533	316	59	145	**3304**
18:00 - 19:00	56	765	98	26	592	7	10	11	240	149	10	66	**2029**
19:00 - 20:00	23	415	68	12	389	5	3	3	89	108	1	18	**1134**
20:00 - 21:00	12	325	63	4	204	1	0	0	70	82	0	19	**781**
21:00 - 22:00	14	246	49	4	123	1	0	2	20	75	1	14	**549**
22:00 - 23:00	9	146	26	2	74	0	1	0	12	56	0	7	**335**
23:00 - 00:00	4	57	9	1	29	0	0	0	8	31	0	4	**145**
Daily Total	**3503**	**9319**	**2509**	**499**	**10589**	**615**	**172**	**253**	**3146**	**2513**	**338**	**771**	**34226**

Turning Movement Counts - Average

Intersection 021 Orchard & Willow
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Northbound	72	82	632	0	786
Eastbound	861	5647	305	12	6825
Southbound	346	24	27	6	403
Westbound	28	5152	89	0	5269
Total	1307	10905	1053	18	13283

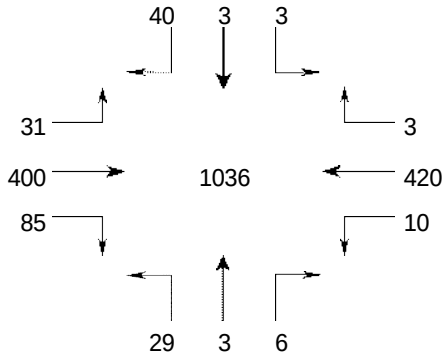


	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00	0	2	5	0	6	74	0	0	1	0	0	0	0	48	0	0
01:00	0	0	2	0	3	45	0	0	0	0	0	0	0	33	0	0
02:00	0	0	1	0	2	25	0	0	0	0	0	0	0	26	0	0
03:00	0	0	1	0	2	13	0	0	0	0	0	0	0	11	0	0
04:00	0	1	1	0	4	7	0	0	0	0	0	0	1	15	0	0
05:00	0	3	6	0	6	19	0	0	3	1	0	0	1	34	0	0
06:00	1	0	5	0	14	40	6	0	10	1	1	0	1	90	0	0
07:00	1	1	13	0	14	95	18	0	18	1	1	0	1	167	2	0
08:00	1	2	13	0	25	210	28	0	33	1	1	1	4	308	5	0
09:00	3	1	24	0	44	367	38	1	32	1	4	2	3	401	9	0
10:00	6	3	28	0	89	409	33	1	40	2	4	0	2	431	11	0
11:00	7	7	54	0	78	448	32	1	37	3	2	1	4	477	6	0
12:00	12	10	71	0	78	524	28	2	36	3	4	1	3	482	11	0
13:00	7	4	57	0	77	459	22	0	27	2	3	1	1	419	8	0
14:00	8	5	62	0	87	454	20	2	23	2	2	0	2	362	10	0
15:00	7	4	58	0	69	432	22	1	22	1	1	0	1	356	8	0
16:00	5	4	51	0	70	456	20	2	23	2	1	0	2	333	6	0
17:00	7	4	47	0	56	441	17	1	14	0	1	0	0	343	6	0
18:00	5	3	43	0	46	364	15	1	12	2	1	0	1	269	5	0
19:00	1	7	31	0	32	271	5	0	8	1	1	0	0	222	2	0
20:00	0	9	25	0	21	225	1	0	2	1	0	0	1	149	0	0
21:00	0	7	20	0	16	131	0	0	2	0	0	0	0	99	0	0
22:00	1	3	6	0	12	89	0	0	2	0	0	0	0	50	0	0
23:00	0	2	8	0	10	49	0	0	1	0	0	0	0	27	0	0
Total	72	82	632	0	861	5647	305	12	346	24	27	6	28	5152	89	0

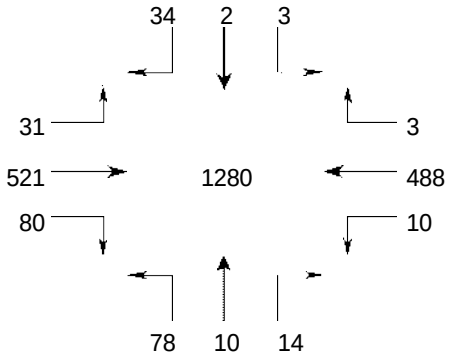
GRIDSMART Turning Movement Counts - Average

Intersection 021 Orchard & Willow
Date 8/31/2025-9/28/2025

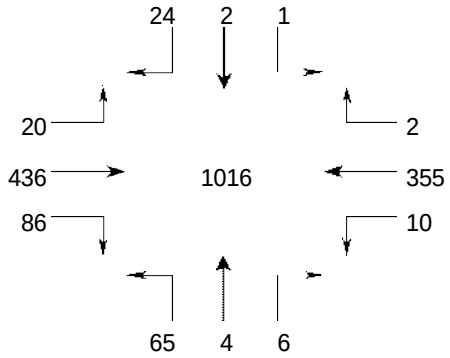
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



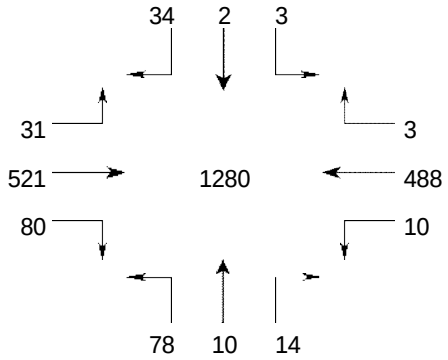
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 11:45 TO 12:45



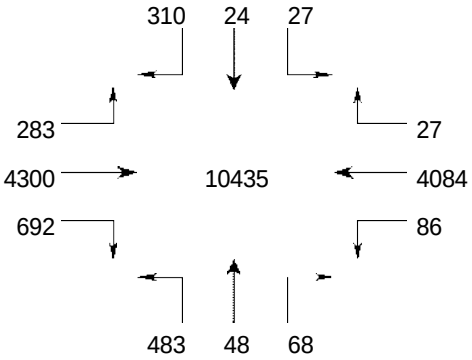
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 14:15 TO 15:15



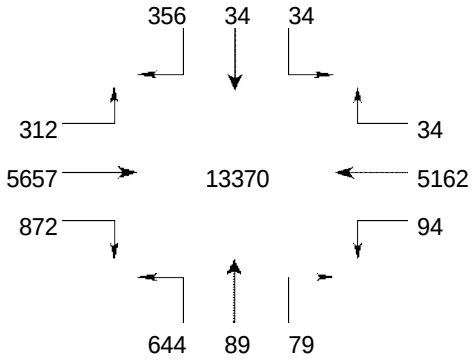
OVERALL PEAK HOUR VOLUME
FROM 11:45 TO 12:45



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



SELECTED TIME VOLUME
FROM 00:00 TO 23:59

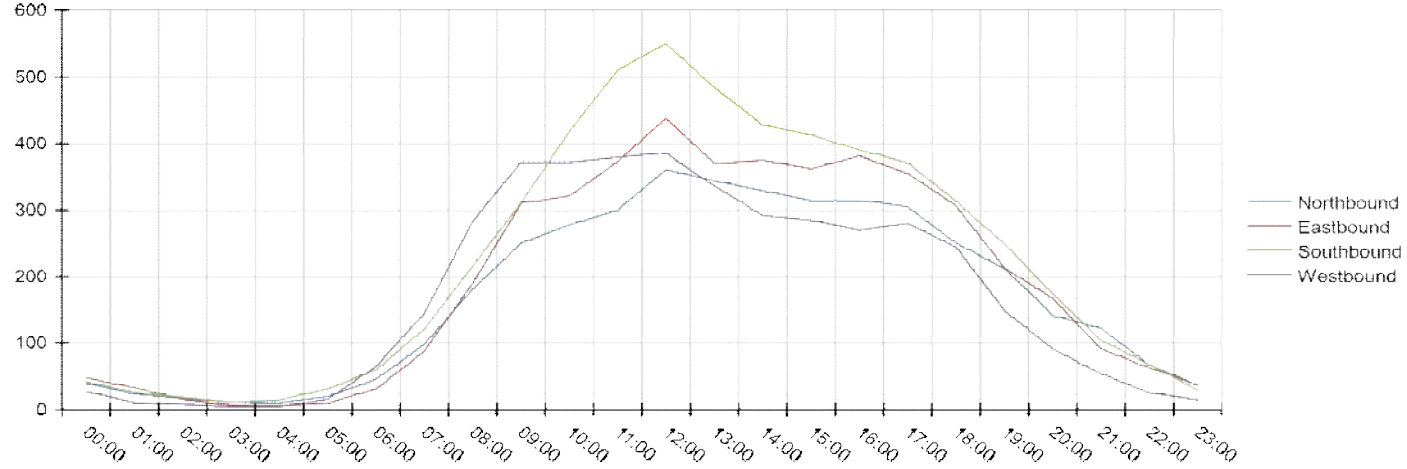


VOS Data (9/17/2019 - 9/19/2019)													
	Direction of Travel												
Time of Day	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	4	17	6	0	10	1	4	22	6	6	17	1	**93**
01:00 - 02:00	116	45	12	13	130	16	41	206	115	95	274	9	**1073**
02:00 - 03:00	4	4	3	0	3	0	1	5	1	2	5	1	**29**
03:00 - 04:00	2	2	1	0	1	0	0	7	1	2	3	0	**20**
04:00 - 05:00	2	4	3	1	19	1	4	14	5	5	11	0	**70**
05:00 - 06:00	16	15	11	4	83	8	9	64	24	22	33	3	**291**
06:00 - 07:00	79	50	19	20	236	15	41	242	109	60	146	6	**1023**
07:00 - 08:00	298	98	26	37	342	43	96	586	354	168	724	23	**2796**
08:00 - 09:00	476	161	57	60	515	146	191	979	493	288	1112	36	**4514**
09:00 - 10:00	333	197	87	58	431	157	126	589	308	147	587	18	**3038**
10:00 - 11:00	186	192	88	40	284	116	102	434	214	120	382	28	**2187**
11:00 - 12:00	259	246	100	39	312	135	154	586	305	139	484	44	**2802**
12:00 - 13:00	278	267	96	40	321	155	152	634	364	179	570	41	**3098**
13:00 - 14:00	252	262	77	41	301	144	147	561	322	162	525	44	**2839**
14:00 - 15:00	225	273	82	35	298	117	167	573	324	159	524	41	**2818**
15:00 - 16:00	330	330	108	49	406	194	209	695	396	170	873	71	**3831**
16:00 - 17:00	438	429	116	43	471	346	255	989	529	147	1279	68	**5110**
17:00 - 18:00	463	495	118	47	409	404	292	1104	539	128	1347	150	**5495**
18:00 - 19:00	311	403	103	42	352	180	174	591	260	113	798	78	**3405**
19:00 - 20:00	120	250	63	33	192	29	102	343	138	68	323	32	**1693**
20:00 - 21:00	72	209	58	15	104	18	68	210	65	38	204	16	**1076**
21:00 - 22:00	56	155	42	7	63	8	45	130	44	31	128	6	**714**
22:00 - 23:00	29	86	31	3	33	4	18	64	27	17	72	6	**391**
23:00 - 00:00	16	29	15	2	13	3	9	31	7	10	36	3	**172**
Daily Total	**4365**	**4218**	**1319**	**627**	**5329**	**2241**	**2408**	**9661**	**4949**	**2276**	**10457**	**725**	**48577**

Turning Movement Counts - Average

Intersection 022 Orchard & Yosemite/DTC
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Northbound	442	2781	826	0	4049
Eastbound	230	3150	1182	1	4563
Southbound	1340	3100	880	8	5328
Westbound	729	2931	430	0	4090
Total	2741	11962	3318	9	18030

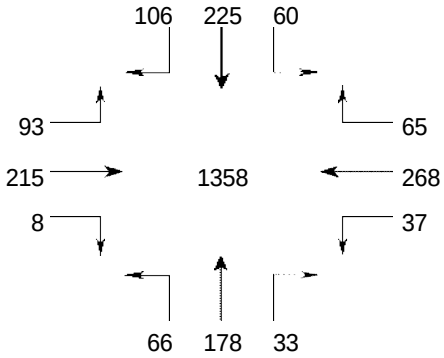


	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00	7	25	7	0	2	39	7	0	8	27	7	0	4	21	2	0
01:00	3	16	3	0	0	26	6	0	7	13	4	0	2	6	1	0
02:00	3	11	2	0	0	12	3	0	5	9	2	0	1	4	1	0
03:00	1	7	3	0	0	4	1	0	2	6	2	0	0	3	0	0
04:00	0	5	4	0	0	3	2	0	5	8	1	0	1	3	0	0
05:00	0	10	7	0	0	6	2	0	7	22	1	0	1	13	1	0
06:00	2	26	17	0	2	19	9	0	17	34	9	0	6	53	4	0
07:00	6	60	31	0	4	58	25	0	29	76	15	0	19	116	10	0
08:00	19	114	48	0	8	124	56	0	61	125	28	0	34	228	20	0
09:00	24	164	61	0	9	167	132	0	83	178	49	0	64	273	33	0
10:00	32	178	67	0	9	232	79	0	114	239	64	0	65	270	36	0
11:00	30	205	64	0	16	244	112	0	152	275	81	1	55	280	43	0
12:00	46	247	67	0	23	275	138	0	164	298	86	1	69	267	49	0
13:00	36	240	67	0	22	260	87	0	120	281	82	0	62	235	38	0
14:00	36	225	67	0	21	264	90	0	107	252	68	1	65	196	30	0
15:00	32	219	63	0	18	249	94	1	99	238	74	1	55	196	33	0
16:00	34	223	56	0	25	266	89	0	94	226	70	0	56	181	32	0
17:00	42	205	58	0	24	252	78	0	85	217	65	3	56	186	37	0
18:00	36	171	43	0	16	222	67	0	69	182	61	0	51	161	31	0
19:00	20	159	32	0	12	155	45	0	54	145	48	1	22	108	17	0
20:00	14	107	19	0	10	129	28	0	30	114	28	0	15	69	7	0
21:00	10	90	21	0	6	69	14	0	16	67	20	0	13	38	3	0
22:00	6	49	12	0	2	46	13	0	9	46	12	0	8	16	1	0
23:00	3	25	7	0	1	29	5	0	3	22	3	0	5	8	1	0
Total	442	2781	826	0	230	3150	1182	1	1340	3100	880	8	729	2931	430	0

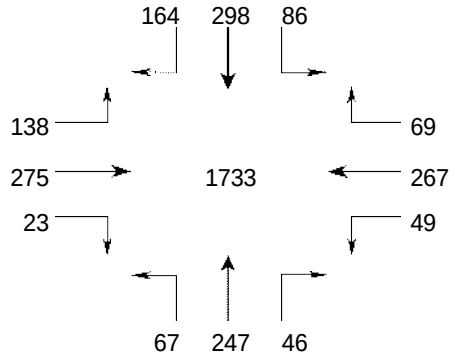
GRIDSMART® Turning Movement Counts - Average

Intersection 022 Orchard & Yosemite/DTC
Date 8/31/2025-9/28/2025

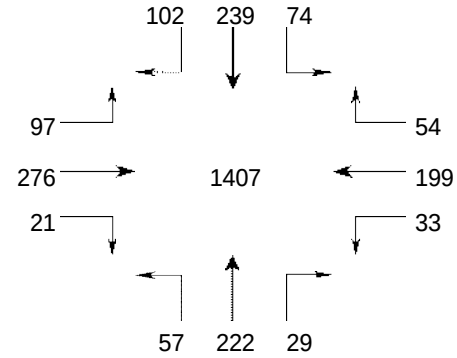
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



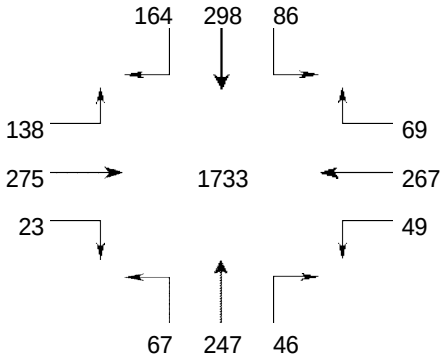
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 12:00 TO 13:00



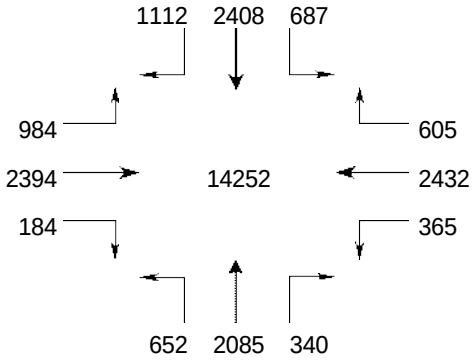
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 15:30 TO 16:30



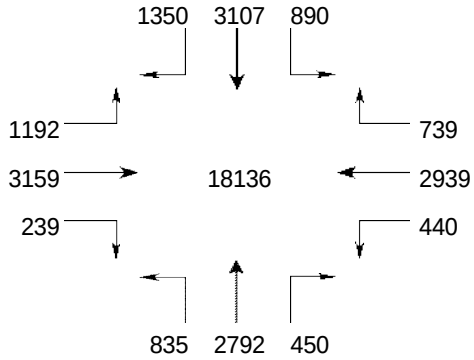
OVERALL PEAK HOUR VOLUME
FROM 12:00 TO 13:00



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



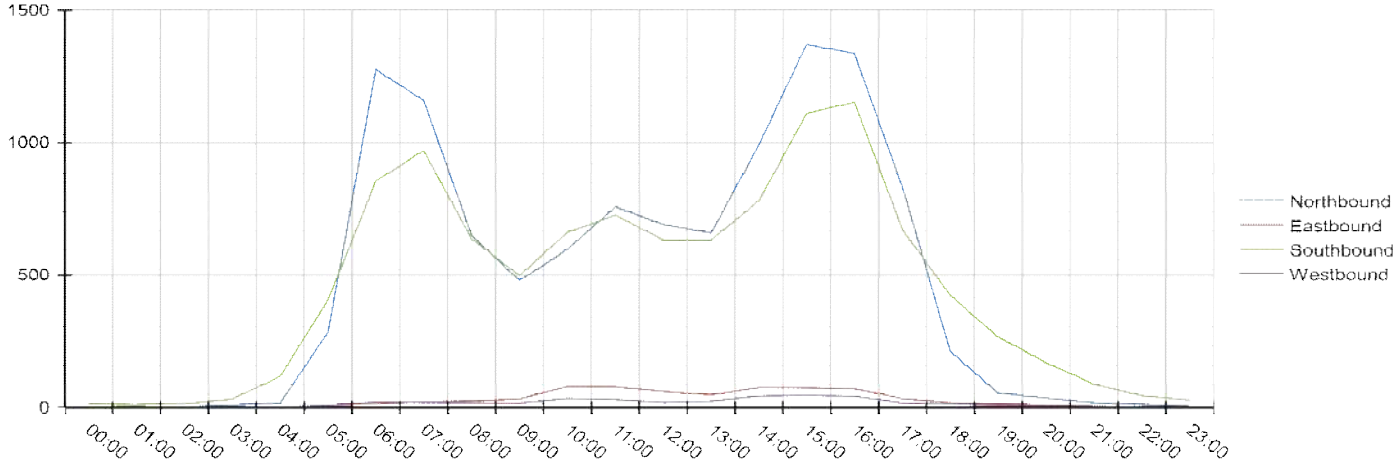
SELECTED TIME VOLUME
FROM 00:00 TO 23:59



Turning Movement Counts - Average

Intersection 048 Yosemite & Fair
Date 9/17/2019-9/19/2019

	Right	Through	Left	UTurn	Total
Northbound	117	10570	755	3	11446
Eastbound	666	1	187	0	854
Southbound	266	10549	113	4	10933
Westbound	55	22	115	1	193
Total	1106	21143	1153	9	23411

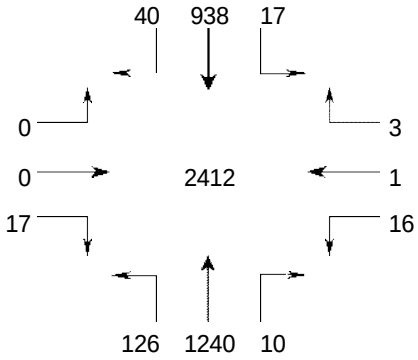


	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00		1	0		1		0			11					0	
01:00	0	1			0		0			8					0	
02:00		1	0		0		0		0	14			0		0	
03:00		4	3		1	0	0		1	29	1				0	
04:00		9	7		2		1		5	109	0			0	0	
05:00	2	235	44	0	5		1		25	379	1			1	4	
06:00	6	1160	110		13	1	6		38	799	17	0	4	1	9	
07:00	10	1039	108	0	22		6		40	920	8		3	0	9	
08:00	3	601	44		24		10		19	612	4		3	2	2	0
09:00	5	441	32		30		6	0	12	483	4		4	0	7	
10:00	7	540	49		79		20		15	637	8	0	5	2	5	
11:00	9	674	73	1	78		13		25	694	7	0	8	2	5	0
12:00	7	622	62		60	0	9		24	604	4	0	4	1	4	
13:00	4	613	41		46		10		12	614	6	0	5	2	4	
14:00	9	944	37		75		28		8	763	9		4	1	7	
15:00	13	1316	43		74		29		10	1088	11		3	2	10	
16:00	14	1264	56	1	70		25		11	1126	14	0	2	1	11	
17:00	12	794	24		32		6		3	660	5	0	3	1	7	
18:00	7	201	4		18		4		4	414	4	0	1	1	5	
19:00	2	45	4		11		2		2	261	1	0	1	1	1	
20:00	1	29	4		7		3		3	164	1	0	0	0	0	
21:00		15	2		4		1		2	83	1				0	0
22:00		9			2		0		1	41	0				0	
23:00		3		0	2		0			26	0				0	
Total	117	10570	755	3	666	1	187	0	266	10549	113	4	55	22	115	1

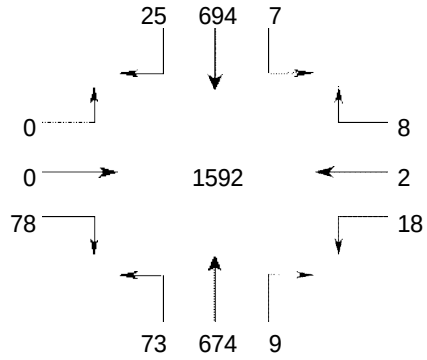
GRIDSMART® Turning Movement Counts - Average

Intersection 048 Yosemite & Fair
Date 9/17/2019-9/19/2019

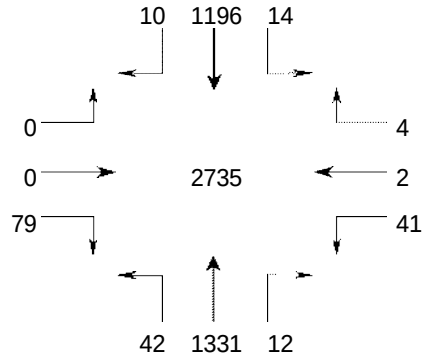
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 06:30 TO 07:30



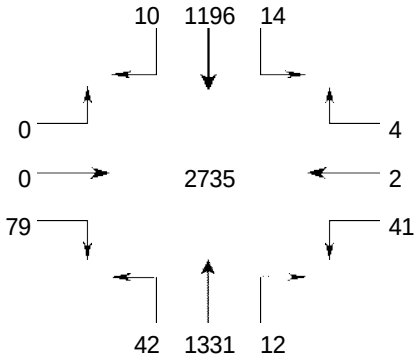
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 11:00 TO 12:00



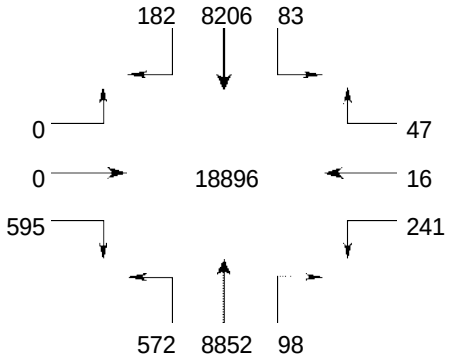
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 15:30 TO 16:30



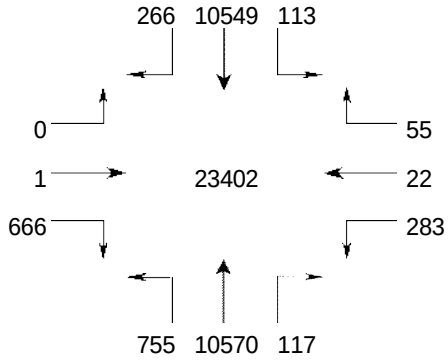
OVERALL PEAK HOUR VOLUME
FROM 15:30 TO 16:30



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



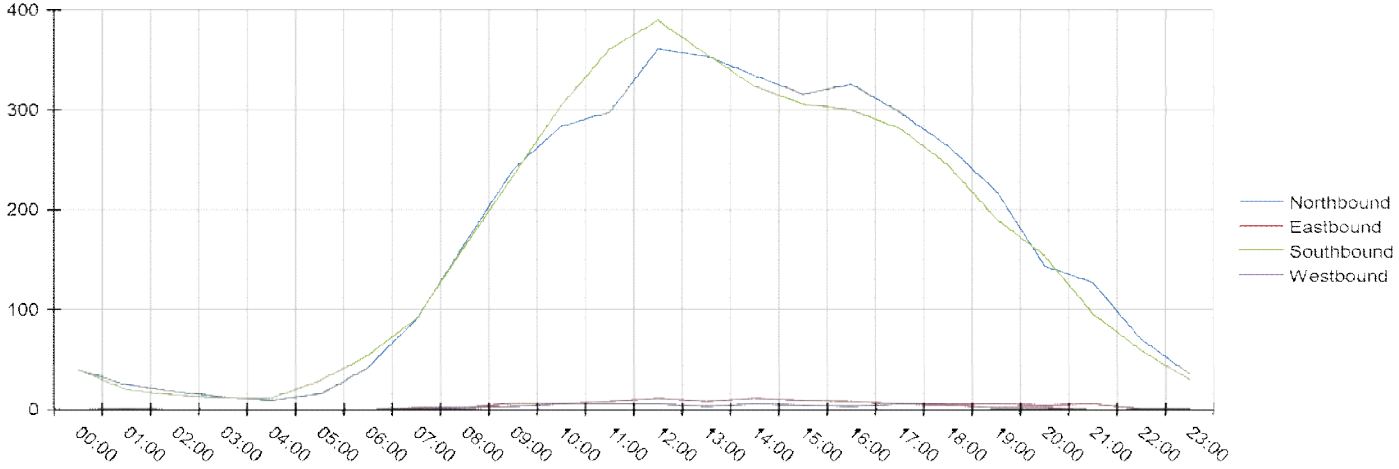
SELECTED TIME VOLUME
FROM 00:00 TO 23:59



Turning Movement Counts - Average

Intersection 048 Yosemite & Fair
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Northbound	42	3953	82	0	4077
Eastbound	81	0	3	0	84
Southbound	18	4027	9	0	4054
Westbound	4	0	37	0	41
Total	145	7980	131	0	8256

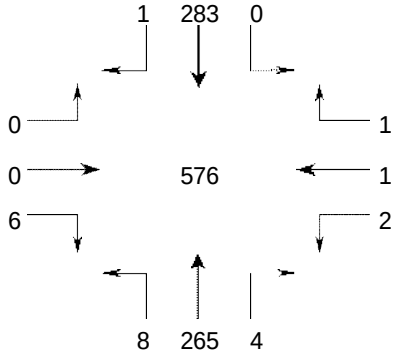


	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
00:00	0	40	0	0	0	0	0	0	0	40	0	0	0	0	0
01:00	0	25	0	0	0	0	0	0	0	20	0	0	0	0	1
02:00	0	18	0	0	0	0	0	0	0	14	0	0	0	0	0
03:00	0	12	0	0	0	0	0	0	0	11	0	0	0	0	0
04:00	0	9	0	0	0	0	0	0	0	11	0	0	0	0	0
05:00	0	15	0	0	0	0	0	0	0	29	0	0	0	0	0
06:00	0	39	2	0	0	0	0	0	0	54	0	0	0	0	0
07:00	0	86	3	0	2	0	0	0	1	90	0	0	0	0	0
08:00	1	162	2	0	2	0	0	0	1	161	1	0	1	0	1
09:00	1	236	2	0	5	0	0	0	1	232	0	0	0	0	2
10:00	4	269	10	0	5	0	0	0	1	303	1	0	1	0	3
11:00	2	289	6	0	7	0	0	0	2	357	1	0	0	0	4
12:00	7	346	8	0	10	0	0	0	1	386	2	0	1	0	4
13:00	3	342	8	0	8	0	0	0	2	352	1	0	0	0	3
14:00	4	322	9	0	9	0	1	0	1	321	0	0	0	0	4
15:00	3	303	9	0	7	0	1	0	1	303	1	0	0	0	3
16:00	6	311	8	0	6	0	1	0	1	297	1	0	0	0	3
17:00	4	288	5	0	5	0	0	0	2	278	1	0	1	0	3
18:00	4	253	7	0	4	0	0	0	1	242	0	0	0	0	3
19:00	2	212	3	0	4	0	0	0	1	189	0	0	0	0	1
20:00	1	143	0	0	3	0	0	0	1	153	0	0	0	0	2
21:00	0	127	0	0	4	0	0	0	1	95	0	0	0	0	0
22:00	0	70	0	0	0	0	0	0	0	59	0	0	0	0	0
23:00	0	36	0	0	0	0	0	0	0	30	0	0	0	0	0
Total	42	3953	82	0	81	0	3	0	18	4027	9	0	4	0	37

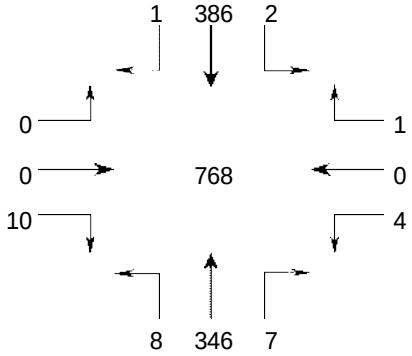
GRIDSMART® Turning Movement Counts - Average

Intersection 048 Yosemite & Fair
Date 8/31/2025-9/28/2025

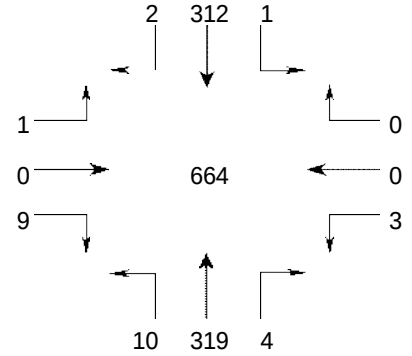
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



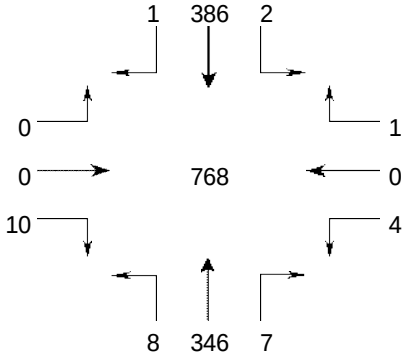
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 12:00 TO 13:00



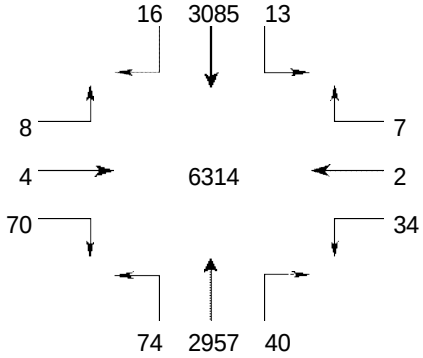
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 14:15 TO 15:15



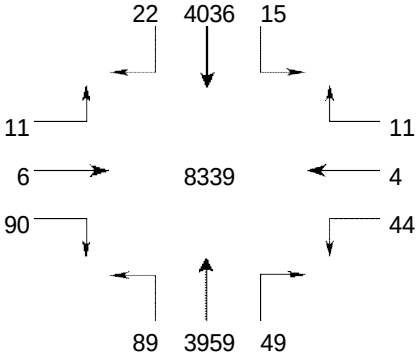
OVERALL PEAK HOUR VOLUME
FROM 12:00 TO 13:00



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



SELECTED TIME VOLUME
FROM 00:00 TO 23:59



VOS Data (9/17/2019 - 9/19/2019)													
	Direction of Travel												
Time of Day	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	0	2	0	1	0	0	6	2	1	0	5	1	**19**
01:00 - 02:00	3	9	2	37	11	42	8	12	7	1	24	6	**161**
02:00 - 03:00	0	1	0	0	0	2	2	2	0	0	1	0	**9**
03:00 - 04:00	0	2	0	3	0	0	4	4	0	0	2	1	**16**
04:00 - 05:00	1	1	1	6	1	1	2	4	1	0	1	1	**20**
05:00 - 06:00	1	5	0	15	0	7	2	5	1	0	4	4	**44**
06:00 - 07:00	2	9	7	57	4	28	8	17	2	1	13	7	**158**
07:00 - 08:00	5	22	16	104	14	138	13	38	12	4	65	24	**453**
08:00 - 09:00	6	27	9	160	37	208	29	54	31	11	114	22	**707**
09:00 - 10:00	6	24	10	83	16	66	35	47	13	7	44	21	**371**
10:00 - 11:00	4	28	9	52	14	31	33	34	11	10	25	20	**271**
11:00 - 12:00	5	47	13	77	21	47	81	66	16	16	58	40	**486**
12:00 - 13:00	6	46	11	87	20	87	84	74	20	18	61	40	**554**
13:00 - 14:00	5	33	9	59	16	66	48	57	10	13	49	42	**406**
14:00 - 15:00	5	44	7	50	14	34	42	45	9	7	40	29	**326**
15:00 - 16:00	7	46	10	52	7	27	76	76	5	6	57	35	**405**
16:00 - 17:00	8	59	13	72	13	60	144	162	9	11	97	62	**712**
17:00 - 18:00	10	77	15	67	11	76	169	175	6	18	102	79	**804**
18:00 - 19:00	4	44	10	44	8	15	64	46	5	6	39	61	**345**
19:00 - 20:00	4	22	5	29	8	8	25	24	5	2	17	28	**178**
20:00 - 21:00	2	17	3	15	8	11	11	18	2	1	11	17	**115**
21:00 - 22:00	3	16	2	15	7	9	12	12	3	1	12	16	**107**
22:00 - 23:00	1	14	2	8	3	4	11	9	2	1	6	10	**72**
23:00 - 00:00	1	6	1	5	2	1	7	7	1	0	9	4	**44**
Daily Total	**89**	**602**	**155**	**1098**	**236**	**969**	**915**	**989**	**172**	**135**	**857**	**570**	**6785**

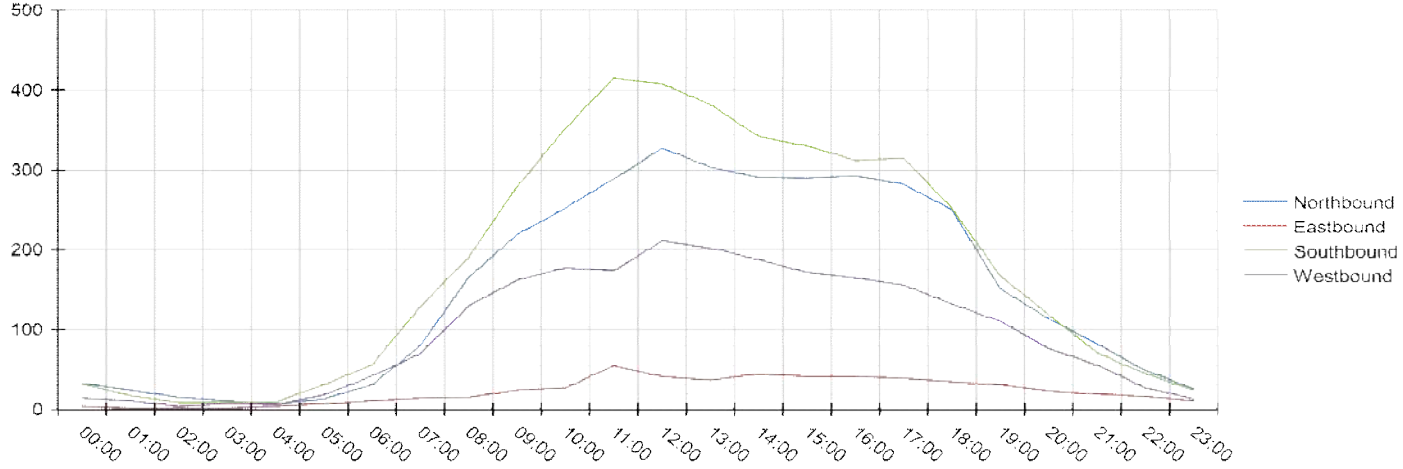
VOS Data (9/7/2025 - 9/7/2025)													
	Direction of Travel												
Time of Day	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	0	3	0	2	2	1	1	4	0	1	2	2	**18**
01:00 - 02:00	0	2	0	2	1	1	1	3	1	2	4	3	**20**
02:00 - 03:00	0	0	0	2	2	1	1	2	3	1	2	1	**15**
03:00 - 04:00	0	0	1	6	2	3	3	7	2	4	3	3	**34**
04:00 - 05:00	1	1	2	5	0	0	2	6	1	0	2	1	**21**
05:00 - 06:00	1	7	4	11	2	3	3	3	3	2	5	6	**50**
06:00 - 07:00	1	7	3	5	1	3	4	5	1	3	1	4	**38**
07:00 - 08:00	2	6	4	12	1	3	8	2	1	1	5	2	**47**
08:00 - 09:00	1	11	6	14	8	2	8	10	6	3	8	11	**88**
09:00 - 10:00	2	12	2	12	3	6	7	17	8	3	15	10	**97**
10:00 - 11:00	1	13	2	32	12	3	12	24	12	8	10	6	**135**
11:00 - 12:00	2	14	4	47	4	6	10	17	5	4	13	11	**137**
12:00 - 13:00	5	34	4	52	5	6	12	21	5	8	18	19	**189**
13:00 - 14:00	3	14	3	24	2	4	19	27	4	5	22	13	**140**
14:00 - 15:00	4	18	4	25	3	9	19	36	8	3	28	12	**169**
15:00 - 16:00	7	15	4	26	5	8	18	28	4	9	15	18	**157**
16:00 - 17:00	2	19	1	22	3	2	17	23	2	7	9	22	**129**
17:00 - 18:00	4	16	3	22	2	4	16	17	4	2	16	14	**120**
18:00 - 19:00	1	23	6	26	3	4	10	13	2	5	14	19	**126**
19:00 - 20:00	2	36	5	23	7	6	11	16	5	2	17	22	**152**
20:00 - 21:00	5	14	0	13	7	7	13	11	3	2	10	9	**94**
21:00 - 22:00	3	9	3	13	4	7	7	6	1	1	5	9	**68**
22:00 - 23:00	0	9	3	6	1	0	7	5	2	0	5	7	**45**
23:00 - 00:00	3	8	2	8	4	4	3	11	4	2	6	10	**65**
Daily Total	**50**	**291**	**66**	**410**	**84**	**93**	**212**	**314**	**87**	**78**	**235**	**234**	**2154**

VOS Data (9/17/2019 - 9/19/2019)													
	Direction of Travel												
Time of Day	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**	**NBL**	**NBT**	**NBR**	**Hourly Total**
00:00 - 01:00	2	6	5	1	0	8	12	14	0	1	10	4	**63**
01:00 - 02:00	4	8	13	59	32	187	60	136	69	36	182	19	**805**
02:00 - 03:00	0	1	1	0	1	3	5	1	0	1	3	2	**18**
03:00 - 04:00	0	5	4	1	1	1	4	3	1	2	2	0	**25**
04:00 - 05:00	1	1	1	1	1	8	5	12	2	4	5	1	**43**
05:00 - 06:00	3	1	6	6	8	22	23	38	4	9	27	3	**151**
06:00 - 07:00	4	8	11	43	36	109	84	153	12	43	100	19	**621**
07:00 - 08:00	9	18	43	147	86	439	178	414	191	118	472	51	**2169**
08:00 - 09:00	13	21	45	252	155	618	300	684	92	192	561	59	**2994**
09:00 - 10:00	13	22	38	127	54	331	266	407	34	88	309	62	**1751**
10:00 - 11:00	12	20	38	72	29	227	234	284	21	52	239	74	**1302**
11:00 - 12:00	21	58	88	86	35	270	338	393	30	79	325	147	**1871**
12:00 - 13:00	19	67	94	132	43	390	373	416	36	115	386	154	**2226**
13:00 - 14:00	22	45	52	123	39	341	307	375	21	85	358	119	**1888**
14:00 - 15:00	17	48	58	86	26	301	298	351	26	56	369	125	**1761**
15:00 - 16:00	32	75	40	98	26	421	384	472	25	40	592	174	**2379**
16:00 - 17:00	54	141	58	94	37	481	543	622	30	72	949	279	**3361**
17:00 - 18:00	43	167	99	85	42	524	575	683	22	82	889	318	**3531**
18:00 - 19:00	22	70	73	64	23	324	336	391	19	28	518	153	**2019**
19:00 - 20:00	11	35	33	44	16	154	192	225	13	23	239	84	**1070**
20:00 - 21:00	8	21	22	24	8	89	125	131	8	13	157	58	**664**
21:00 - 22:00	7	15	28	9	10	61	86	69	5	14	93	37	**436**
22:00 - 23:00	2	21	15	3	6	34	51	30	2	10	46	13	**234**
23:00 - 00:00	3	10	9	3	1	14	29	11	3	2	25	6	**116**
Daily Total	**322**	**887**	**876**	**1561**	**716**	**5358**	**4809**	**6313**	**668**	**1165**	**6857**	**1962**	**31495**

Turning Movement Counts - Average

Intersection 034 Yosemite & Caley
Date 8/31/2025-9/28/2025

	Right	Through	Left	UTurn	Total
Northbound	980	2433	166	0	3579
Eastbound	208	207	107	0	522
Southbound	104	2282	1893	0	4279
Westbound	1662	178	469	0	2309
Total	2954	5100	2635	0	10689

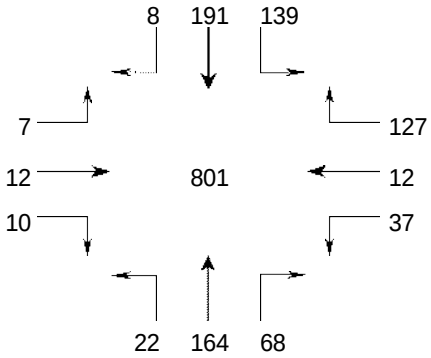


	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00	9	22	0	0	2	1	0	0	0	16	16	0	8	4	1	0
01:00	5	17	1	0	1	1	0	0	0	9	8	0	6	4	1	0
02:00	4	11	0	0	1	0	0	0	0	6	3	0	2	1	0	0
03:00	2	6	3	0	1	0	0	0	0	5	4	0	5	1	0	0
04:00	1	3	2	0	2	0	0	0	0	5	4	0	2	2	1	0
05:00	4	8	1	0	1	4	1	0	1	15	14	0	8	7	3	0
06:00	6	20	4	0	4	5	2	0	3	27	26	0	28	6	8	0
07:00	17	57	5	0	3	8	2	0	4	68	56	0	49	5	15	0
08:00	44	109	12	0	5	6	3	0	3	97	90	0	90	8	32	0
09:00	61	147	10	0	9	9	5	0	7	150	121	0	112	9	40	0
10:00	70	160	20	0	10	10	7	0	9	193	149	0	131	11	36	0
11:00	84	194	11	0	29	16	9	0	10	228	176	0	128	8	37	0
12:00	94	218	14	0	15	16	8	0	9	225	172	0	153	11	46	0
13:00	80	212	11	0	12	16	8	0	9	206	166	0	156	5	41	0
14:00	81	195	15	0	17	18	8	0	12	181	148	0	146	7	33	0
15:00	76	203	10	0	14	13	13	0	13	178	139	0	128	6	37	0
16:00	77	204	10	0	15	17	9	0	7	162	142	0	124	6	35	0
17:00	82	192	7	0	15	13	9	0	9	165	140	0	110	5	40	0
18:00	72	169	8	0	14	13	7	0	5	137	109	0	93	8	29	0
19:00	47	97	6	0	13	11	5	0	1	91	74	0	74	21	15	0
20:00	28	78	8	0	8	11	4	0	1	57	61	0	46	19	11	0
21:00	18	60	3	0	6	9	3	0	0	32	38	0	36	15	4	0
22:00	13	33	3	0	7	6	3	0	1	17	26	0	18	6	3	0
23:00	5	18	2	0	4	4	1	0	0	12	11	0	9	3	1	0
Total	980	2433	166	0	208	207	107	0	104	2282	1893	0	1662	178	469	0

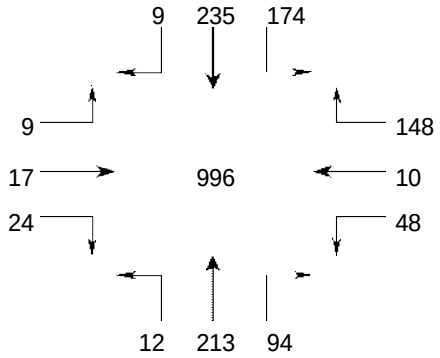
Turning Movement Counts - Average

Intersection 034 Yosemite & Caley
Date 8/31/2025-9/28/2025

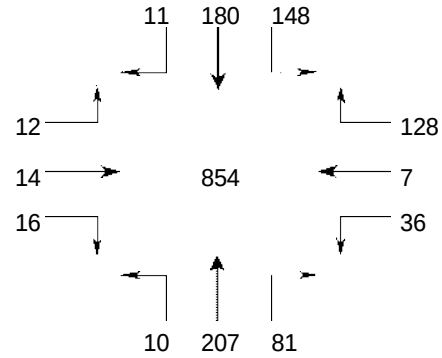
AM PEAK HOUR VOLUME (0:00-10:45)
FROM 09:45 TO 10:45



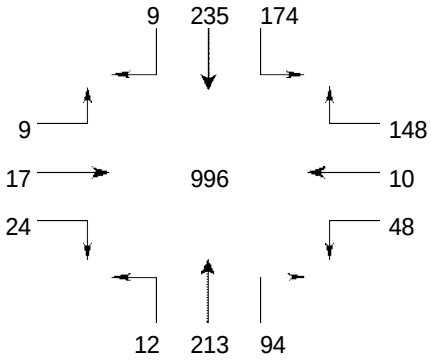
MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 11:45 TO 12:45



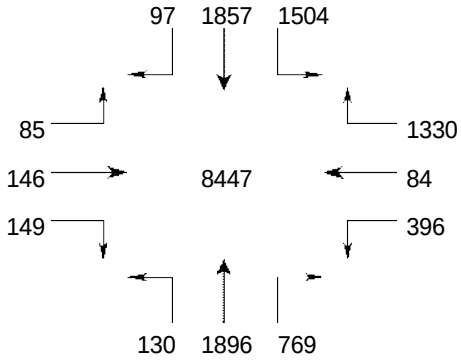
PM PEAK HOUR VOLUME (14:15-23:45)
FROM 15:15 TO 16:15



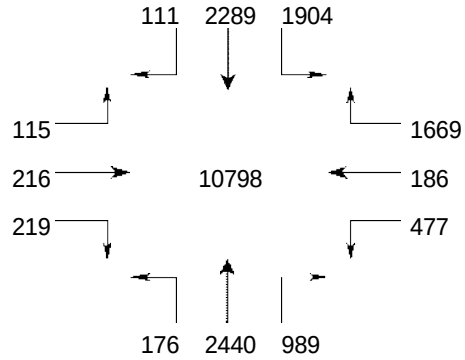
OVERALL PEAK HOUR VOLUME
FROM 11:45 TO 12:45



DAYTIME TOTAL VOLUME
FROM 07:00 TO 18:00



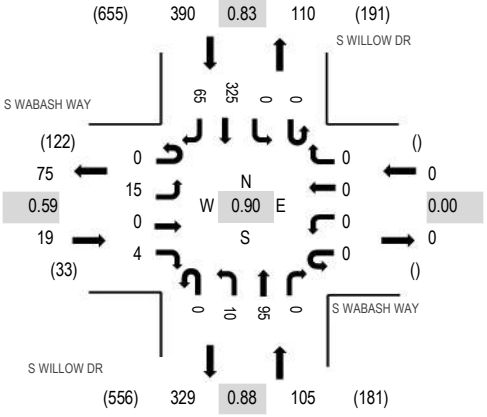
SELECTED TIME VOLUME
FROM 00:00 TO 23:59



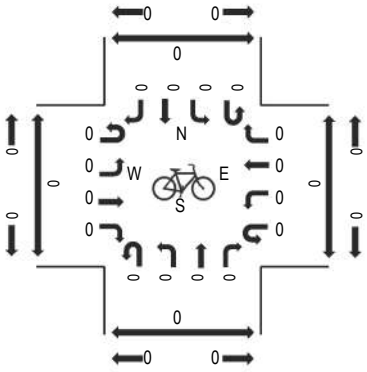
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 S WILLOW DR & S WABASH WAY AM
Date: Thursday, December 11, 2025
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

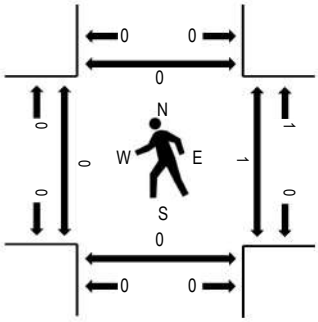
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

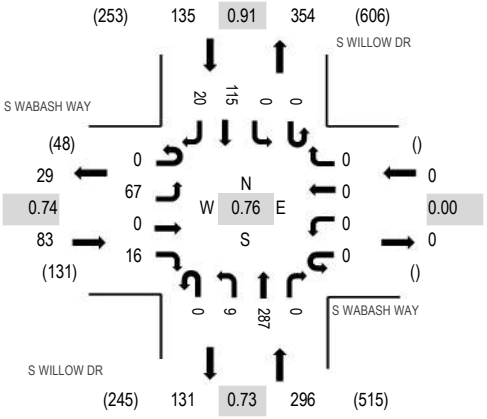
Traffic Counts - Motorized Vehicles

Interval Start Time	S WABASH WAY Eastbound				S WABASH WAY Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	52	10	82	355	0	0	0	0
7:15 AM	0	4	0	0	0	0	0	0	0	3	13	0	0	0	63	13	96	384	0	0	0	0
7:30 AM	0	3	0	2	0	0	0	0	0	1	18	0	0	0	53	6	83	423	0	0	0	0
7:45 AM	0	4	0	1	0	0	0	0	0	2	19	0	0	0	56	12	94	465	0	0	0	0
8:00 AM	0	3	0	0	0	0	0	0	0	3	27	0	0	0	65	13	111	514	0	0	0	0
8:15 AM	0	0	0	3	0	0	0	0	0	2	28	0	0	0	87	15	135		0	0	0	0
8:30 AM	0	8	0	0	0	0	0	0	0	3	21	0	0	0	77	16	125		0	0	0	0
8:45 AM	0	4	0	1	0	0	0	0	0	2	19	0	0	0	96	21	143		0	1	0	0
Count Total	0	26	0	7	0	0	0	0	0	16	165	0	0	0	549	106	869		0	1	0	0
Peak Hour	0	15	0	4	0	0	0	0	0	10	95	0	0	0	325	65	514		0	1	0	0

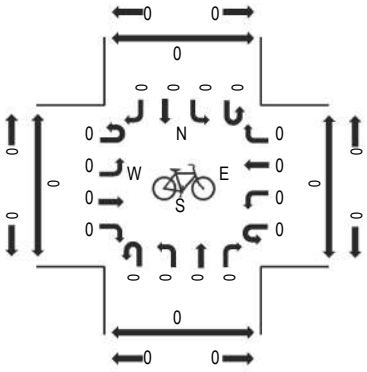
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 S WILLOW DR & S WABASH WAY PM
Date: Thursday, December 11, 2025
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

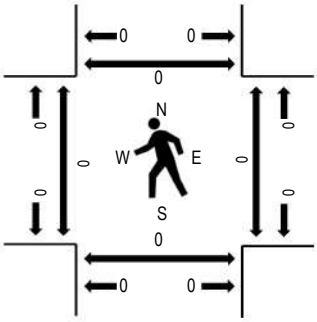
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

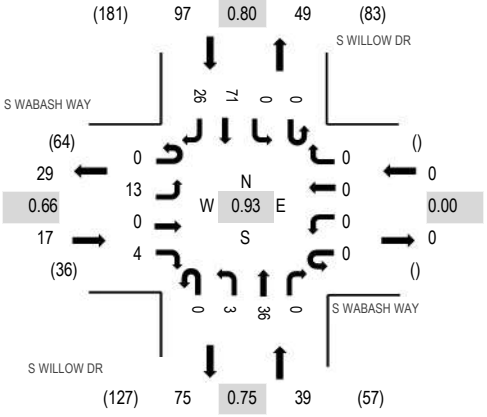
Traffic Counts - Motorized Vehicles

Interval Start Time	S WABASH WAY Eastbound				S WABASH WAY Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	23	0	5	0	0	0	0	0	0	102	0	0	0	33	6	169	514	0	0	0	0
4:15 PM	0	16	0	4	0	0	0	0	0	4	66	0	0	0	21	3	114	462	0	0	0	0
4:30 PM	0	19	0	6	0	0	0	0	0	1	56	0	0	0	25	9	116	455	0	0	0	0
4:45 PM	0	9	0	1	0	0	0	0	0	4	63	0	0	0	36	2	115	424	0	0	0	0
5:00 PM	0	17	0	2	0	0	0	0	0	0	65	0	0	0	30	3	117	385	0	0	0	0
5:15 PM	0	9	0	4	0	0	0	0	0	2	59	0	0	0	28	5	107		0	0	0	0
5:30 PM	0	4	0	3	0	0	0	0	0	0	52	0	0	0	22	4	85		0	0	0	0
5:45 PM	0	6	0	3	0	0	0	0	0	1	40	0	0	0	22	4	76		0	0	0	0
Count Total	0	103	0	28	0	0	0	0	0	12	503	0	0	0	217	36	899		0	0	0	0
Peak Hour	0	67	0	16	0	0	0	0	0	9	287	0	0	0	115	20	514		0	0	0	0

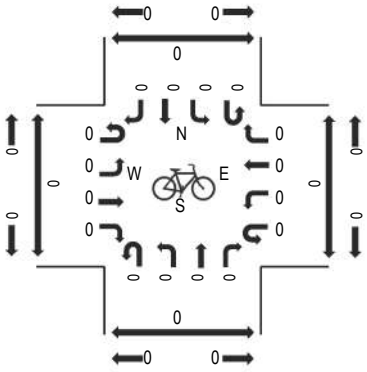
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 S WILLOW DR & S WABASH WAY AM
Date: Sunday, December 14, 2025
Peak Hour: 10:00 AM - 11:00 AM
Peak 15-Minutes: 10:00 AM - 10:15 AM

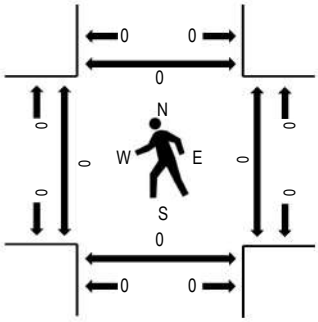
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

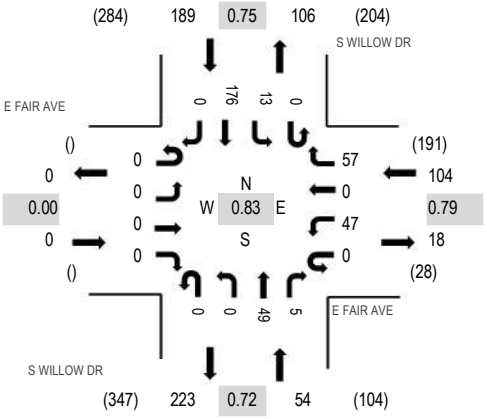
Traffic Counts - Motorized Vehicles

Interval Start Time	S WABASH WAY Eastbound				S WABASH WAY Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
9:30 AM	0	2	0	0	0	0	0	0	0	0	4	0	0	0	9	7	22	130	0	0	0	0
9:45 AM	0	3	0	0	0	0	0	0	0	0	6	0	0	0	20	3	32	149	0	0	0	0
10:00 AM	0	2	0	2	0	0	0	0	0	0	13	0	0	0	19	5	41	153	0	0	0	0
10:15 AM	0	4	0	2	0	0	0	0	0	1	9	0	0	0	15	4	35	144	0	0	0	0
10:30 AM	0	2	0	0	0	0	0	0	0	1	7	0	0	0	22	9	41	144	0	0	0	0
10:45 AM	0	5	0	0	0	0	0	0	0	1	7	0	0	0	15	8	36		0	0	0	0
11:00 AM	0	6	0	0	0	0	0	0	0	0	5	0	0	0	10	11	32		0	0	0	0
11:15 AM	0	6	0	2	0	0	0	0	0	1	2	0	0	0	11	13	35		0	0	0	0
Count Total	0	30	0	6	0	0	0	0	0	4	53	0	0	0	121	60	274		0	0	0	0
Peak Hour	0	13	0	4	0	0	0	0	0	3	36	0	0	0	71	26	153		0	0	0	0

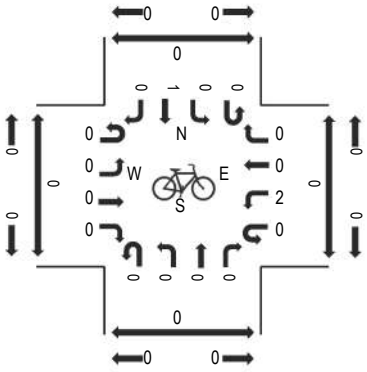
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 S WILLOW DR & E FAIR AVE AM
Date: Thursday, December 11, 2025
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

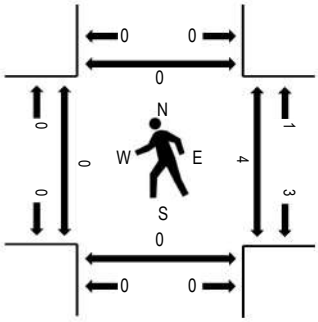
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

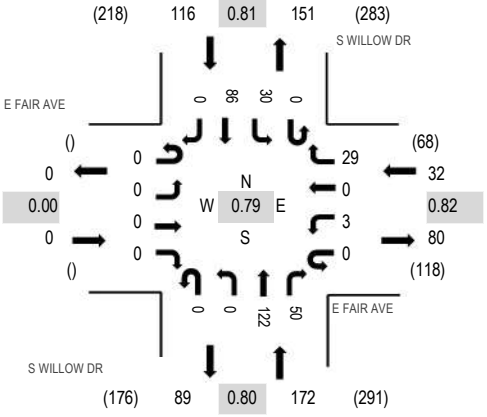
Traffic Counts - Motorized Vehicles

Interval Start Time	E FAIR AVE Eastbound				E FAIR AVE Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	5	0	6	0	0	5	0	0	4	23	0	43	232	0	1	0	0
7:15 AM	0	0	0	0	0	11	0	18	0	0	8	2	0	0	26	0	65	254	0	0	0	0
7:30 AM	0	0	0	0	0	10	0	14	0	0	11	0	0	1	15	0	51	276	0	0	0	0
7:45 AM	0	0	0	0	0	9	0	14	0	0	22	2	0	1	25	0	73	329	0	1	0	0
8:00 AM	0	0	0	0	0	6	0	19	0	0	12	1	0	1	26	0	65	347	0	1	0	0
8:15 AM	0	0	0	0	0	15	0	11	0	0	15	0	0	2	44	0	87		0	1	0	0
8:30 AM	0	0	0	0	0	17	0	17	0	0	14	3	0	3	50	0	104		0	1	0	0
8:45 AM	0	0	0	0	0	9	0	10	0	0	8	1	0	7	56	0	91		0	1	0	0
Count Total	0	0	0	0	0	82	0	109	0	0	95	9	0	19	265	0	579		0	6	0	0
Peak Hour	0	0	0	0	0	47	0	57	0	0	49	5	0	13	176	0	347		0	4	0	0

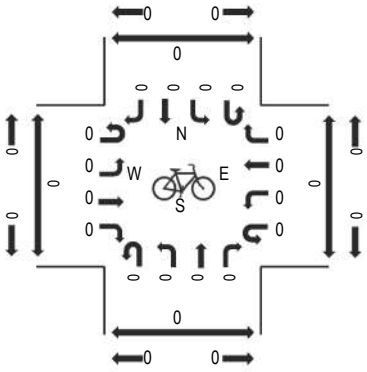
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 S WILLOW DR & E FAIR AVE PM
Date: Thursday, December 11, 2025
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

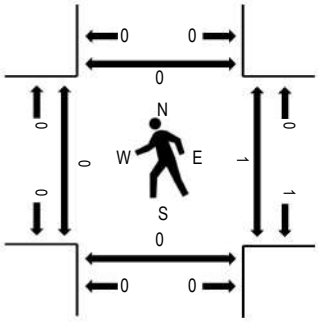
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

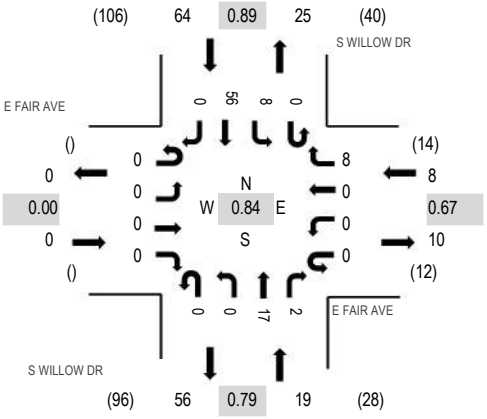
Traffic Counts - Motorized Vehicles

Interval Start Time	E FAIR AVE Eastbound				E FAIR AVE Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	1	0	10	0	0	44	10	0	10	26	0	101	320	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	7	0	0	24	12	0	5	23	0	72	292	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	28	17	0	8	18	0	75	299	0	1	0	0
4:45 PM	0	0	0	0	0	1	0	8	0	0	26	11	0	7	19	0	72	277	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	6	0	0	31	6	0	6	23	0	73	257	0	3	0	0
5:15 PM	0	0	0	0	0	1	0	7	0	0	31	9	0	5	26	0	79		0	3	0	0
5:30 PM	0	0	0	0	0	0	0	10	0	0	18	4	0	4	17	0	53		0	1	0	0
5:45 PM	0	0	0	0	0	1	0	10	0	0	19	1	0	3	18	0	52		0	0	0	0
Count Total	0	0	0	0	0	6	0	62	0	0	221	70	0	48	170	0	577		0	8	0	0
Peak Hour	0	0	0	0	0	3	0	29	0	0	122	50	0	30	86	0	320		0	1	0	0

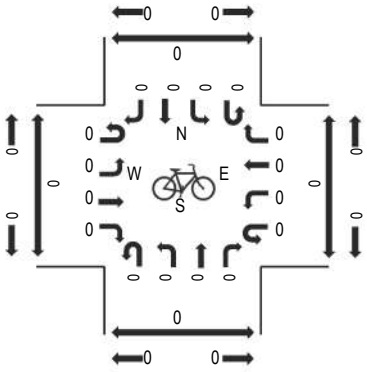
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 S WILLOW DR & E FAIR AVE AM
Date: Sunday, December 14, 2025
Peak Hour: 10:00 AM - 11:00 AM
Peak 15-Minutes: 10:30 AM - 10:45 AM

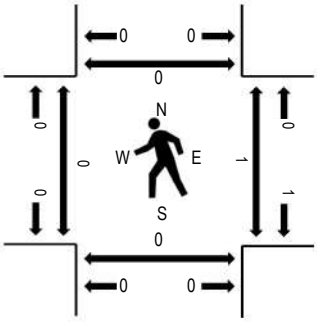
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E FAIR AVE Eastbound				E FAIR AVE Westbound				S WILLOW DR Northbound				S WILLOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
9:30 AM	0	0	0	0	0	0	0	3	0	0	3	0	0	1	8	0	15	72	0	1	0	0
9:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	12	0	15	84	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	1	14	0	20	91	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	3	0	0	2	1	0	1	15	0	22	84	0	1	0	0
10:30 AM	0	0	0	0	0	0	0	3	0	0	5	1	0	3	15	0	27	76	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	2	0	0	5	0	0	3	12	0	22		0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	10	0	13		0	1	0	0
11:15 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	1	10	0	14		0	1	0	0
Count Total	0	0	0	0	0	0	0	14	0	0	26	2	0	10	96	0	148		0	4	0	0
Peak Hour	0	0	0	0	0	0	0	8	0	0	17	2	0	8	56	0	91		0	1	0	0

Appendix C: Future Traffic Projections and Background Studies

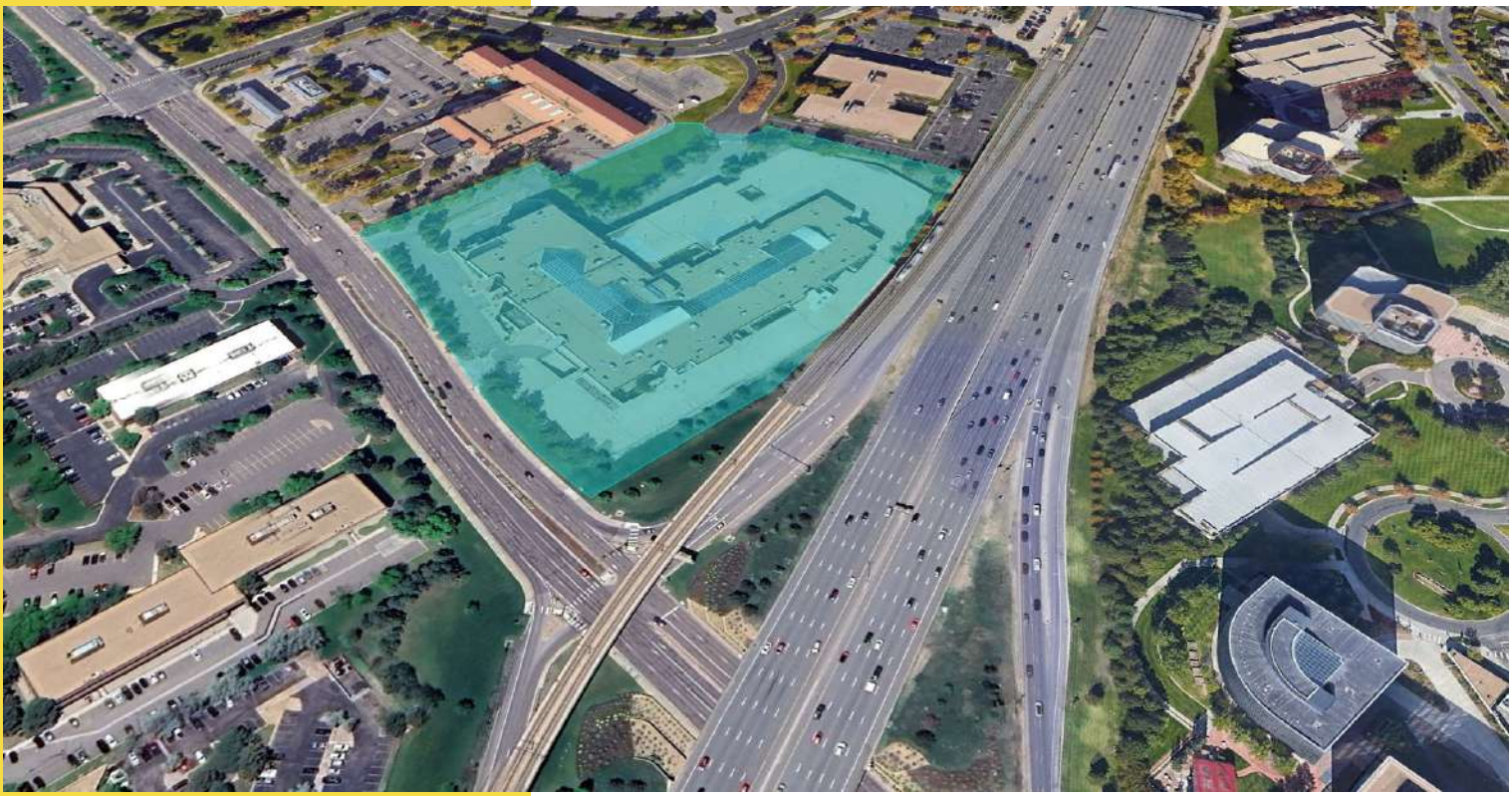
DRCOG Traffic Projections: Grace Chapel

Location	2020	2050	Growth Factor	Annual Growth
Orchard Rd btwn I-25 SB and NB Ramps	49,000	53,000	1.08	0.26%
Orchard Rd btwn I-25 NB Ramp and Willow Dr	39,000	44,000	1.13	0.40%
Orchard Rd east of Willow Dr	33,000	37,000	1.12	0.38%
Orchard Rd west of Yosemite	23,000	28,000	1.22	0.66%
Yosemite south of Orchard Rd	45,000	49,000	1.09	0.28%
Yosemite btwn Lake Place and Willow Dr/Fair Ave	43,000	48,000	1.12	0.37%
Yosemite south of Willow Dr/Fair Ave	46,000	53,000	1.15	0.47%
Willow Dr south of Orchard Rd	8,000	9,000	1.13	0.39%
Willow Dr North of Fair Ave	4,000	5,000	1.25	0.75%
Total	144,000	162,000	1.13	0.39%

8081 E. Orchard Road

Traffic Impact Study

City of Greenwood Village



Date: July 3, 2024



Submitted To:
Alberta Development Partners, LLC
5750 DTC Pkwy #210
Greenwood Village, CO 80111

Submitted By:
Fox Tuttle Transportation Group, LLC
1580 Logan Street, 6th Floor
Denver, CO 80203

FOX TUTTLE

5.0 PROPOSED DEVELOPMENT TRAFFIC

5.1 Trip Generation

In order to estimate the anticipated volume of trips generated by the site at buildout, trip rates contained in the Institute of Transportation Engineers (ITE) Trip Generation manual[3] for the most appropriate land use categories were applied, as follows:

- 54 "brownstone" units = ITE #215: Single-Family Attached Housing
- 35,500 SF grocery store = ITE #850: Supermarket
- 9,000 SF of pad site retail = ITE #822: Strip Retail Plaza (<40k)

The resulting existing trip estimates using ITE rates are provided on **Table 3**, below.

Table 3 – Trip Generation Estimates

Land Use	Size	Unit	Internal Capture	Non-Auto Factor	Weekday Average Daily Rate	Average Daily Total	Average Daily In	Average Daily Out	AM Peak Hour Rate	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Rate	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
ITE 850: Supermarket	35.5	1,000 Square Feet GFA	0.95	1.00	93.84	3165	1583	1582	2.86	102	60	42	8.95	318	159	159
PM Pass-by Trips	*24%*													76	38	38
Total New Trips						3165	1583	1582		102	60	42		242	121	121
ITE 822: Strip Retail Plaza (<40k)	9	1,000 Square Feet GFA	0.95	1.00	54.45	466	233	233	2.36	21	13	8	6.59	59	30	29
ITE 215: Single-Family Attached Housing	54	Dwelling Units	0.95	1.00	7.20	369	185	184	0.48	26	7	19	0.57	31	18	13
Pass-by Trips						***0***	***0***	***0***		***0***	***0***	***0***		***76***	***38***	***38***
Total New Trips						***4000***	***2001***	***1999***		***149***	***80***	***69***		***332***	***169***	***163***
Total Trips						***4000***	***2001***	***1999***		***149***	***80***	***69***		***408***	***207***	***201***

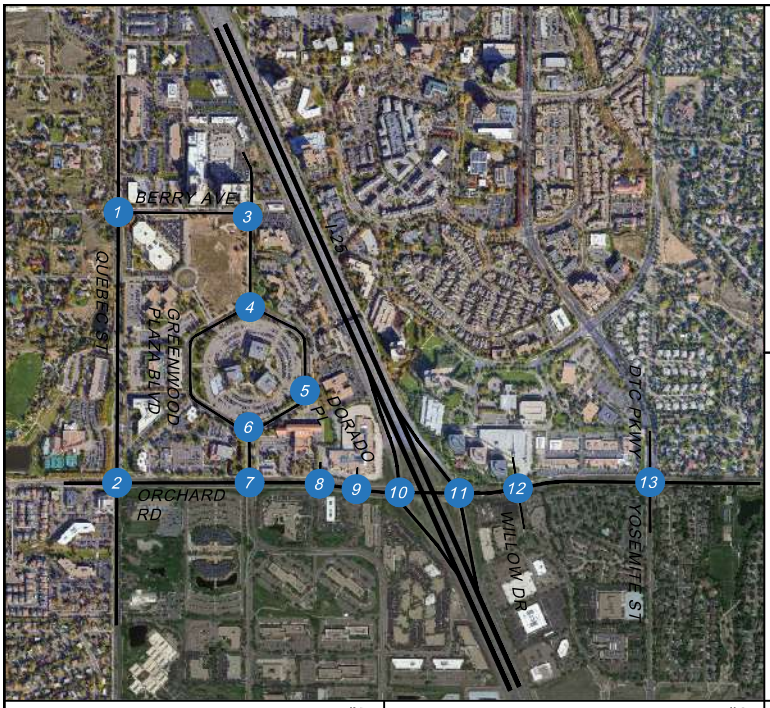
Source : ITE Trip Generation 11th Edition, 2021.

As show above, the project site is anticipated to generate approximately 4,000 daily, 149 AM peak hour and 408 PM peak hour trips at full buildout. Per ITE data, it is anticipated that 24% of the PM peak hour retail trips will be "pass-by" trips. These are trips that will already exist on the adjacent roadways but will divert into the site to visit the retail uses (i.e.: someone who stops at the grocery store on the way home from work). This trip is not new to the adjacent arterial roadway but is a new trip at the site access points. Using these assumptions, the project would generate 332 "new" PM peak hour trips within the study area with 76 of these PM peak hour trips being "pass-by" trips.

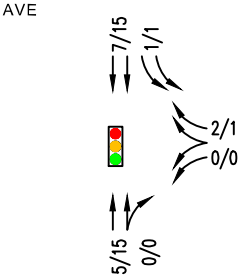
5.2 Trip Distribution and Assignment

The site-generated traffic volumes presented in **Table 3** were distributed onto the adjacent street network based on existing and anticipated future traffic patterns in and around the area, as well as regional origins and destinations for the proposed land use. The assumed distribution percentages are shown on **Figure 5**. The resulting site-generated traffic volume estimates with buildout of the project are provided on **Figure 6**.

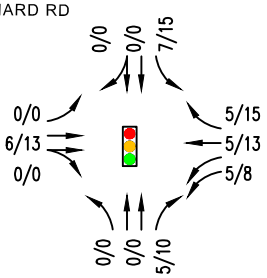
[3] Trip Generation 11th Edition, Institute of Transportation Engineers, 2021.



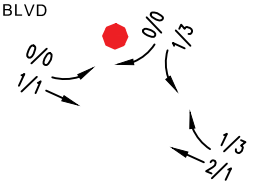
QUEBEC ST AT BERRY AVE #1



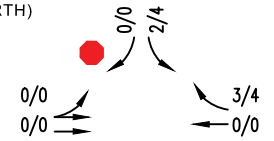
QUEBEC ST AT ORCHARD RD #2



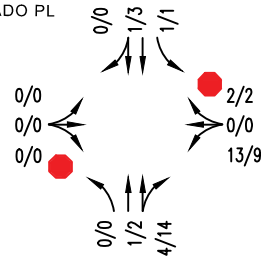
BERRY AVE AT GREENWOOD PLAZA BLVD #3



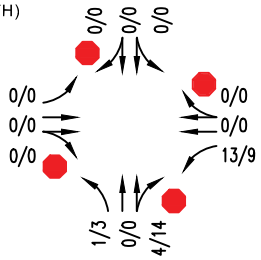
GREENWOOD PLAZA BLVD (NORTH) #4



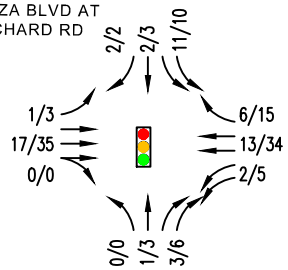
GREENWOOD PLAZA BLVD AT DORADO PL #5



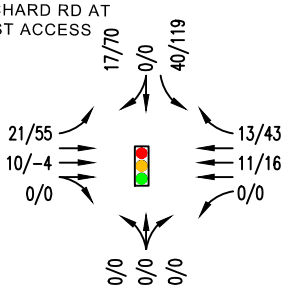
GREENWOOD PLAZA BLVD (SOUTH) #6



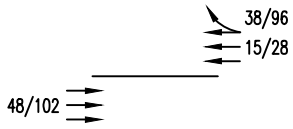
GREENWOOD PLAZA BLVD AT ORCHARD RD #7



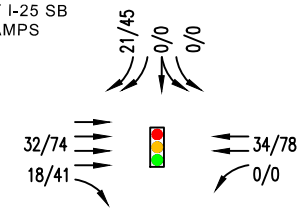
ORCHARD RD AT WEST ACCESS #8



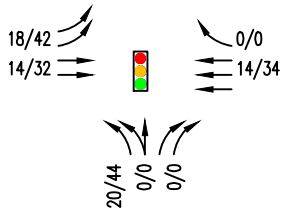
ORCHARD RD AT EAST ACCESS #9



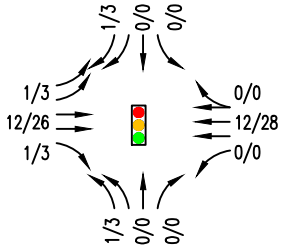
ORCHARD RD AT I-25 SB RAMPS #10



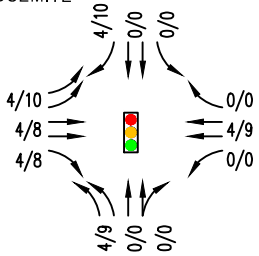
ORCHARD RD AT I-25 NB RAMPS #11



ORCHARD RD AT WILLOW DR #12



ORCHARD RD AT YOSEMITE ST #13



KEY

XX/XX AM/PM PEAK HOUR TRIPS

EXISTING LANE CONFIGURATION

PROPOSED FUTURE LANE

N

FOX TUTTLE TRANSPORTATION GROUP

8081 E. ORCHARD ROAD TRANSPORTATION IMPACT STUDY

SITE-GENERATED TRIPS

Project #	23105	Original Scale	NTS	Date	7/3/24	Drawn by	CAF	Figure #	6

Appendix D: Trip Generation Worksheets

Grace Chapel Daily Trip Generation Calculations

	TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			NEW EXTERNAL VEHICLE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total	In	Out	Total
1	(560) Church	ITE 12th Ed	1000	SEAT	T = 0.9(X)	50%	50%	450	450	900	450	450	900
							Total:	450	450	900	450	450	900

Grace Chapel AM Peak Hour Trip Generation Calculations

	TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			NEW EXTERNAL VEHICLE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total	In	Out	Total
1	(560) Church	ITE 12th Ed	1000	SEAT	T = 0.07(X)	60%	40%	42	28	70	42	28	70
							Total:	42	28	70	42	28	70

Grace Chapel PM Peak Hour Trip Generation Calculations

	TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			NEW EXTERNAL VEHICLE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total	In	Out	Total
1	(560) Church	ITE 12th Ed	1000	SEAT	T = 0.1(X)	45%	55%	45	55	100	45	55	100
							Total:	45	55	100	45	55	100

Grace Chapel Sunday Peak Hour Trip Generation Calculations

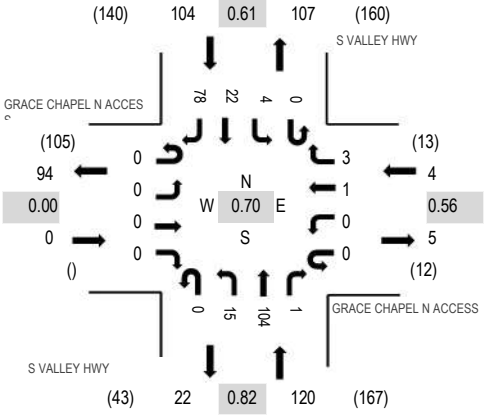
	TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			NEW EXTERNAL VEHICLE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total	In	Out	Total
1	(560) Church	ITE 12th Ed	1000	SEAT	T = 0.54(X)	49%	51%	265	275	540	265	275	540
							Total:	265	275	540	265	275	540

	640 Seats			1,000 Seats		
	Sunday Peak Hour			Sunday Peak Hour		
	In	Out	Total	In	Out	Total
Site Specific Collected Count	94	150	244	147	234	381
ITE Trip Gen Church (LUC 560)	170	176	346	265	275	540
Net Difference in Trips	-76	-26	-102	-118	-41	-159

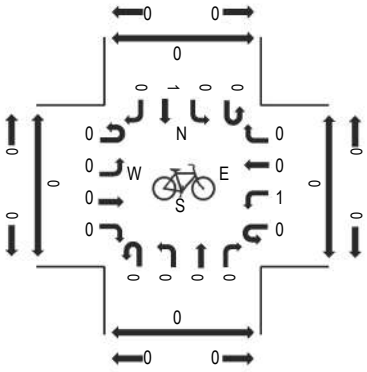
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 S VALLEY HWY & GRACE CHAPEL N ACCESS AM
Date: Sunday, December 14, 2025
Peak Hour: 10:15 AM - 11:15 AM
Peak 15-Minutes: 10:45 AM - 11:00 AM

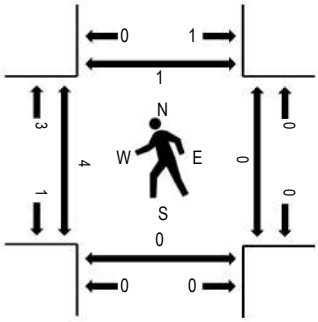
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

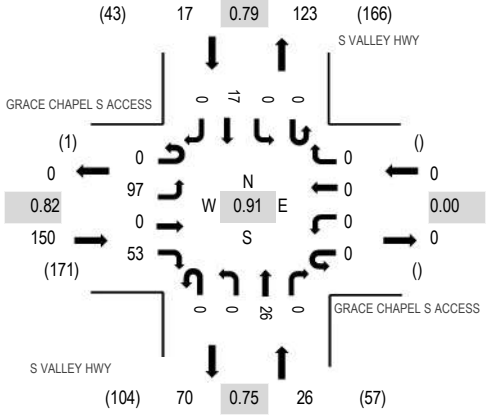
Traffic Counts - Motorized Vehicles

Interval Start Time	GRACE CHAPEL N ACCESS Eastbound				GRACE CHAPEL N ACCESS Westbound				S VALLEY HWY Northbound				S VALLEY HWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
9:30 AM	0	0	0	0	0	2	0	2	0	0	5	0	0	2	7	2	20	106	1	0	0	0
9:45 AM	0	0	0	0	0	0	0	3	0	0	8	0	0	1	6	0	18	141	1	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	21	0	0	1	3	3	28	205	0	0	0	2
10:15 AM	0	0	0	0	0	0	0	2	0	2	28	1	0	0	3	4	40	228	0	0	0	1
10:30 AM	0	0	0	0	0	0	0	0	0	4	29	0	0	1	6	15	55	214	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	1	0	9	28	0	0	3	5	36	82		2	0	0	0
11:00 AM	0	0	0	0	0	0	1	0	0	0	19	0	0	0	8	23	51		2	0	0	0
11:15 AM	0	0	0	0	0	1	0	1	0	0	13	0	0	3	2	6	26		0	0	0	0
Count Total	0	0	0	0	0	3	1	9	0	15	151	1	0	11	40	89	320		6	0	0	3
Peak Hour	0	0	0	0	0	0	1	3	0	15	104	1	0	4	22	78	228		4	0	0	1

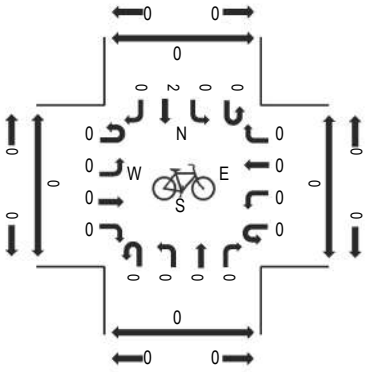
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 S VALLEY HWY & GRACE CHAPEL S ACCESS AM
Date: Sunday, December 14, 2025
Peak Hour: 10:00 AM - 11:00 AM
Peak 15-Minutes: 10:15 AM - 10:30 AM

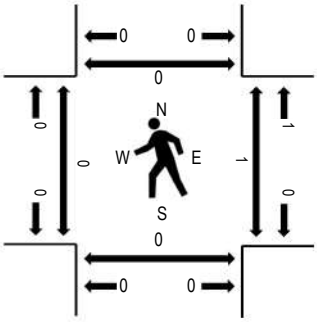
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	GRACE CHAPEL S ACCESS Eastbound				GRACE CHAPEL S ACCESS Westbound				S VALLEY HWY Northbound				S VALLEY HWY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
9:30 AM	0	2	0	1	0	0	0	0	0	0	2	0	0	0	9	0	14	118	2	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	6	0	14	156	0	0	0	0
10:00 AM	0	20	0	10	0	0	0	0	0	0	4	0	0	0	3	0	37	193	0	0	0	0
10:15 AM	0	24	0	22	0	0	0	0	0	0	4	0	0	0	3	0	53	188	0	0	0	0
10:30 AM	0	25	0	13	0	0	0	0	0	0	8	0	0	0	6	0	52	153	0	0	0	0
10:45 AM	0	28	0	8	0	0	0	0	0	0	10	0	0	0	5	0	51		0	1	0	0
11:00 AM	0	5	0	7	0	0	0	0	0	0	13	0	0	0	6	1	32		0	0	0	0
11:15 AM	0	5	0	1	0	0	0	0	0	0	8	0	0	0	4	0	18		0	0	0	0
Count Total	0	109	0	62	0	0	0	0	0	0	57	0	0	0	42	1	271		2	1	0	0
Peak Hour	0	97	0	53	0	0	0	0	0	0	26	0	0	0	17	0	193		0	1	0	0

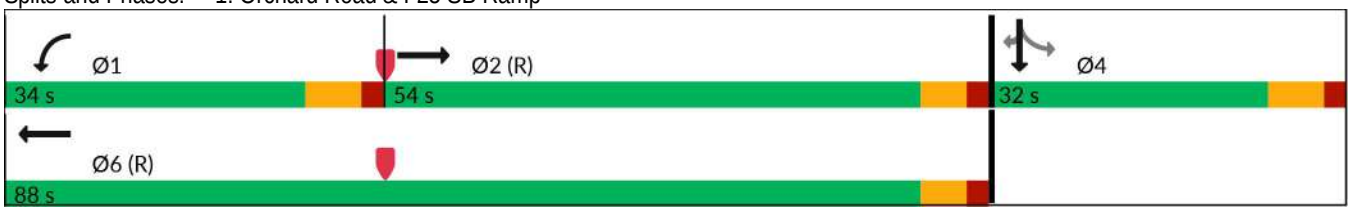
Appendix E: Intersection Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	988	152	221	1080	480	9	460
Future Volume (vph)	988	152	221	1080	480	9	460
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		22.0	30.0	37.0	37.0	37.0
Total Split (s)	54.0		34.0	88.0	32.0	32.0	32.0
Total Split (%)	45.0%		28.3%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	988	152	221	1080	0	0	0	0	480	9	460
Future Volume (veh/h)	0	988	152	221	1080	0	0	0	0	480	9	460
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1074	0	240	1174	0				529	0	337
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3058		267	2428	0				742	0	330
Arrive On Green	0.00	0.48	0.00	0.30	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	1074	0	240	1174	0				529	0	337
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	12.6	0.0	15.5	0.0	0.0				16.6	0.0	25.0
Cycle Q Clear(g_c), s	0.0	12.6	0.0	15.5	0.0	0.0				16.6	0.0	25.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3058		267	2428	0				742	0	330
V/C Ratio(X)	0.00	0.35		0.90	0.48	0.00				0.71	0.00	1.02
Avail Cap(c_a), veh/h	0	3058		401	2428	0				742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.8	0.0	41.2	0.0	0.0				44.2	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.3	0.0	15.0	0.6	0.0				3.2	0.0	54.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	0.0	6.9	0.2	0.0				7.6	0.0	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	20.2	0.0	56.2	0.6	0.0				47.4	0.0	102.4
LnGrp LOS		C		E	A					D		F
Approach Vol, veh/h		1074			1414						866	
Approach Delay, s/veh		20.2			10.0						68.8	
Approach LOS		C			B						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.0	63.0		32.0		88.0
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	27.0	48.0		25.0		82.0
Max Q Clear Time (g_c+I1), s	17.5	14.6		27.0		2.0
Green Ext Time (p_c), s	0.5	9.4		0.0		12.5

Intersection Summary	
HCM 7th Control Delay, s/veh	28.4
HCM 7th LOS	C

Notes

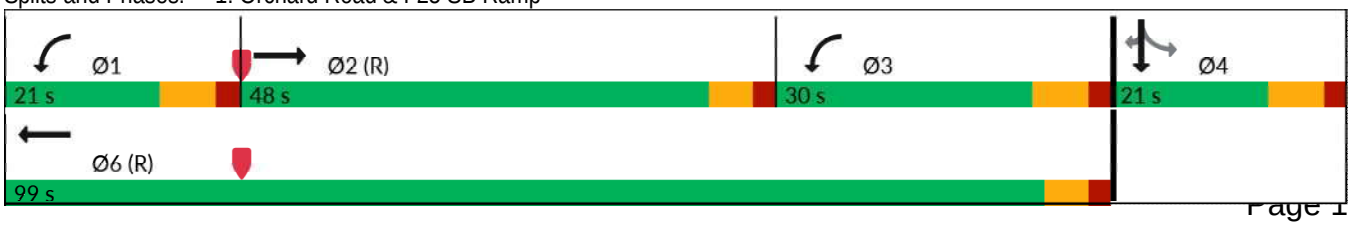
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1729	531	547	773	0	0	0	0	257	9	213
Future Volume (vph)	0	1729	531	547	773	0	0	0	0	257	9	213
Satd. Flow (prot)	0	6408	1583	1770	3539	0	0	0	0	1681	1692	1583
Flt Permitted				0.950						0.950	0.956	
Satd. Flow (perm)	0	6408	1583	1770	3539	0	0	0	0	1681	1692	1583
Satd. Flow (RTOR)			349									232
Lane Group Flow (vph)	0	1879	577	595	840	0	0	0	0	145	144	232
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		2		1 3	6						4	
Permitted Phases			Free							4		4
Detector Phase		2		1 3	6					4	4	4
Switch Phase												
Minimum Initial (s)		10.0			10.0					5.0	5.0	5.0
Minimum Split (s)		30.0			30.0					37.0	37.0	37.0
Total Split (s)		48.0			99.0					21.0	21.0	21.0
Total Split (%)		40.0%			82.5%					17.5%	17.5%	17.5%
Yellow Time (s)		4.0			4.0					5.0	5.0	5.0
All-Red Time (s)		2.0			2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0					7.0	7.0	7.0
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Recall Mode		C-Max			C-Max					None	None	None
Act Effct Green (s)		42.0	120.0	37.8	93.8					13.2	13.2	13.2
Actuated g/C Ratio		0.35	1.00	0.32	0.78					0.11	0.11	0.11
v/c Ratio		0.84	0.36	1.07	0.30					0.79	0.78	0.61
Control Delay (s/veh)		40.1	0.7	87.2	5.5					80.3	79.0	13.7
Queue Delay		0.0	0.0	0.0	0.5					0.0	0.0	0.0
Total Delay (s/veh)		40.1	0.7	87.2	5.9					80.3	79.0	13.7
LOS		D	A	F	A					F	E	B
Approach Delay (s/veh)		30.8			39.6						50.3	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay (s/veh): 36.0 Intersection LOS: D
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



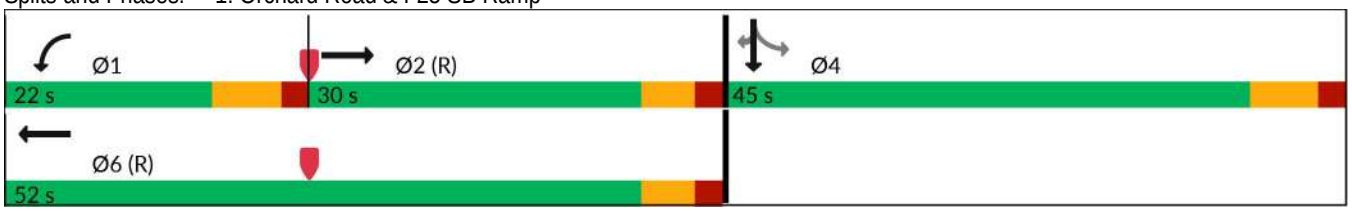
Lane Group	Ø1	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	1	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	22.0	12.0
Total Split (s)	21.0	30.0
Total Split (%)	18%	25%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	411	102	134	251	175	8	109
Future Volume (vph)	411	102	134	251	175	8	109
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		12.0	30.0	37.0	37.0	37.0
Total Split (s)	30.0		22.0	52.0	45.0	45.0	45.0
Total Split (%)	30.9%		22.7%	53.6%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary
Cycle Length: 97
Actuated Cycle Length: 97
Offset: 41 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	411	102	134	251	0	0	0	0	175	8	109
Future Volume (veh/h)	0	411	102	134	251	0	0	0	0	175	8	109
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	447	0	146	273	0				196	0	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3922		179	2780	0				298	0	133
Arrive On Green	0.00	0.61	0.00	0.10	0.78	0.00				0.08	0.00	0.08
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	447	0	146	273	0				196	0	80
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	2.8	0.0	7.8	1.8	0.0				5.2	0.0	4.7
Cycle Q Clear(g_c), s	0.0	2.8	0.0	7.8	1.8	0.0				5.2	0.0	4.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3922		179	2780	0				298	0	133
V/C Ratio(X)	0.00	0.11		0.82	0.10	0.00				0.66	0.00	0.60
Avail Cap(c_a), veh/h	0	3922		275	2780	0				1396	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.9	0.0	42.7	2.5	0.0				43.1	0.0	42.9
Incr Delay (d2), s/veh	0.0	0.1	0.0	10.3	0.1	0.0				2.5	0.0	4.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	3.9	0.5	0.0				2.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	8.0	0.0	53.0	2.6	0.0				45.6	0.0	47.2
LnGrp LOS		A		D	A					D		D
Approach Vol, veh/h		447			419						276	
Approach Delay, s/veh		8.0			20.1						46.0	
Approach LOS		A			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.7	65.1		15.1		81.9
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	15.0	24.0		38.0		46.0
Max Q Clear Time (g_c+I1), s	9.8	4.8		7.2		3.8
Green Ext Time (p_c), s	0.2	2.9		1.0		1.9

Intersection Summary		
HCM 7th Control Delay, s/veh		21.7
HCM 7th LOS		C

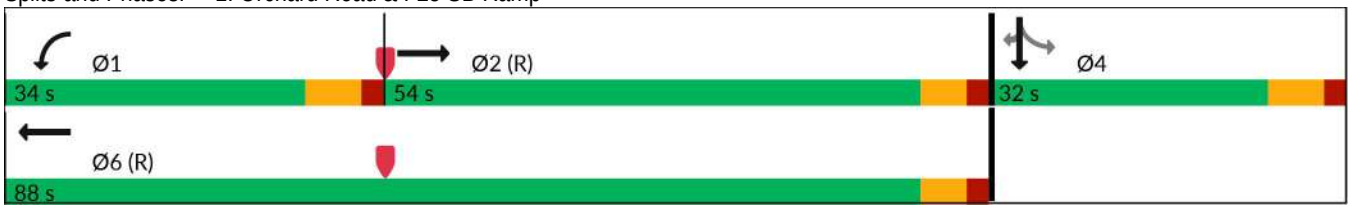
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1039	173	225	1135	489	9	479
Future Volume (vph)	1039	173	225	1135	489	9	479
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		22.0	30.0	37.0	37.0	37.0
Total Split (s)	54.0		34.0	88.0	32.0	32.0	32.0
Total Split (%)	45.0%		28.3%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1039	173	225	1135	0	0	0	0	489	9	479
Future Volume (veh/h)	0	1039	173	225	1135	0	0	0	0	489	9	479
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1129	0	245	1234	0				539	0	347
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3040		272	2428	0				742	0	330
Arrive On Green	0.00	0.47	0.00	0.30	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	1129	0	245	1234	0				539	0	347
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	13.5	0.0	15.8	0.0	0.0				16.9	0.0	25.0
Cycle Q Clear(g_c), s	0.0	13.5	0.0	15.8	0.0	0.0				16.9	0.0	25.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3040		272	2428	0				742	0	330
V/C Ratio(X)	0.00	0.37		0.90	0.51	0.00				0.73	0.00	1.05
Avail Cap(c_a), veh/h	0	3040		401	2428	0				742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	20.2	0.0	40.8	0.0	0.0				44.3	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.3	0.0	15.4	0.7	0.0				3.6	0.0	63.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	0.0	7.0	0.2	0.0				7.8	0.0	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	20.6	0.0	56.2	0.7	0.0				47.9	0.0	111.0
LnGrp LOS		C		E	A					D		F
Approach Vol, veh/h		1129			1479						886	
Approach Delay, s/veh		20.6			9.9						72.6	
Approach LOS		C			A						E	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	25.3	62.7		32.0		88.0						
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0						
Max Green Setting (Gmax), s	27.0	48.0		25.0		82.0						
Max Q Clear Time (g_c+I1), s	17.8	15.5		27.0		2.0						
Green Ext Time (p_c), s	0.5	10.0		0.0		13.7						

Intersection Summary												
HCM 7th Control Delay, s/veh			29.2									
HCM 7th LOS			C									

Notes

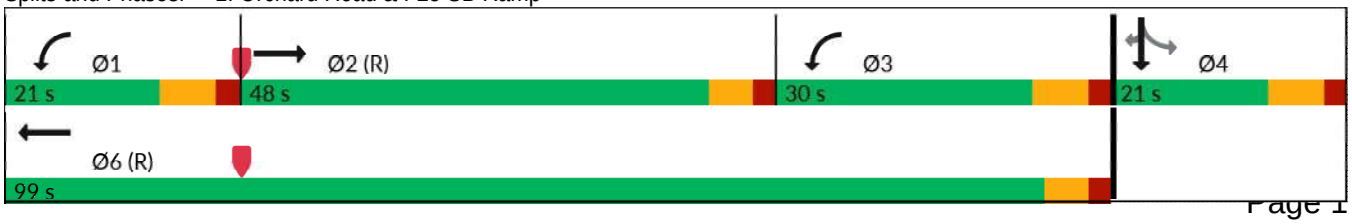
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1837	582	558	866	0	0	0	0	262	9	240
Future Volume (vph)	0	1837	582	558	866	0	0	0	0	262	9	240
Satd. Flow (prot)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Flt Permitted				0.950						0.950	0.955	
Satd. Flow (perm)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Satd. Flow (RTOR)			360									223
Lane Group Flow (vph)	0	1997	633	607	941	0	0	0	0	148	147	261
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		2		1 3	6						4	
Permitted Phases			Free							4		4
Detector Phase		2		1 3	6					4	4	4
Switch Phase												
Minimum Initial (s)		10.0			10.0					5.0	5.0	5.0
Minimum Split (s)		30.0			30.0					37.0	37.0	37.0
Total Split (s)		48.0			99.0					21.0	21.0	21.0
Total Split (%)		40.0%			82.5%					17.5%	17.5%	17.5%
Yellow Time (s)		4.0			4.0					5.0	5.0	5.0
All-Red Time (s)		2.0			2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0					7.0	7.0	7.0
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Recall Mode		C-Max			C-Max					None	None	None
Act Effct Green (s)		42.0	120.0	37.7	93.7					13.3	13.3	13.3
Actuated g/C Ratio		0.35	1.00	0.31	0.78					0.11	0.11	0.11
v/c Ratio		0.89	0.40	1.09	0.34					0.80	0.79	0.70
Control Delay (s/veh)		42.9	0.8	94.4	5.7					80.9	79.8	21.1
Queue Delay		0.0	0.0	0.0	0.6					0.0	0.0	0.0
Total Delay (s/veh)		42.9	0.8	94.4	6.3					80.9	79.8	21.1
LOS		D	A	F	A					F	E	C
Approach Delay (s/veh)		32.8			40.8						52.6	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay (s/veh): 37.7 Intersection LOS: D
Intersection Capacity Utilization 74.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



Lane Group	Ø1	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	1	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	22.0	12.0
Total Split (s)	21.0	30.0
Total Split (%)	18%	25%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

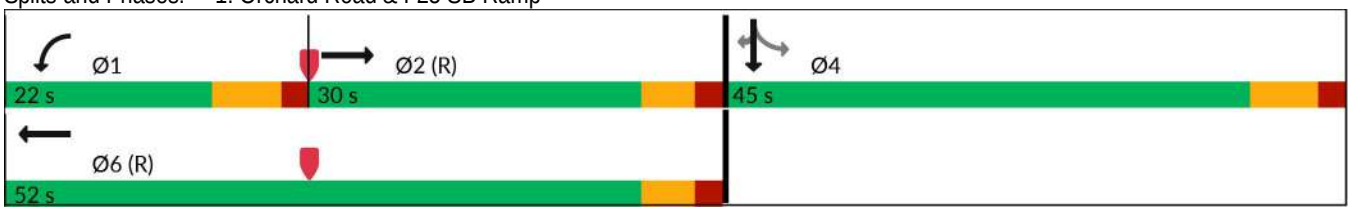
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	419	104	137	256	178	8	110
Future Volume (vph)	419	104	137	256	178	8	110
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		12.0	30.0	37.0	37.0	37.0
Total Split (s)	30.0		22.0	52.0	45.0	45.0	45.0
Total Split (%)	30.9%		22.7%	53.6%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 97
Actuated Cycle Length: 97
Offset: 41 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	419	104	137	256	0	0	0	0	178	8	110
Future Volume (veh/h)	0	419	104	137	256	0	0	0	0	178	8	110
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	455	0	149	278	0				199	0	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3904		182	2776	0				302	0	134
Arrive On Green	0.00	0.61	0.00	0.10	0.78	0.00				0.08	0.00	0.08
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	455	0	149	278	0				199	0	82
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	2.9	0.0	7.9	1.8	0.0				5.3	0.0	4.8
Cycle Q Clear(g_c), s	0.0	2.9	0.0	7.9	1.8	0.0				5.3	0.0	4.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3904		182	2776	0				302	0	134
V/C Ratio(X)	0.00	0.12		0.82	0.10	0.00				0.66	0.00	0.61
Avail Cap(c_a), veh/h	0	3904		275	2776	0				1396	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.1	0.0	42.7	2.5	0.0				43.0	0.0	42.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	10.9	0.1	0.0				2.5	0.0	4.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.0	4.0	0.5	0.0				2.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	8.1	0.0	53.5	2.6	0.0				45.5	0.0	47.3
LnGrp LOS		A		D	A					D		D
Approach Vol, veh/h		455			427						281	
Approach Delay, s/veh		8.1			20.4						46.0	
Approach LOS		A			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.9	64.9		15.2		81.8
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	15.0	24.0		38.0		46.0
Max Q Clear Time (g_c+I1), s	9.9	4.9		7.3		3.8
Green Ext Time (p_c), s	0.2	2.9		1.0		2.0

Intersection Summary		
HCM 7th Control Delay, s/veh		21.8
HCM 7th LOS		C

Notes

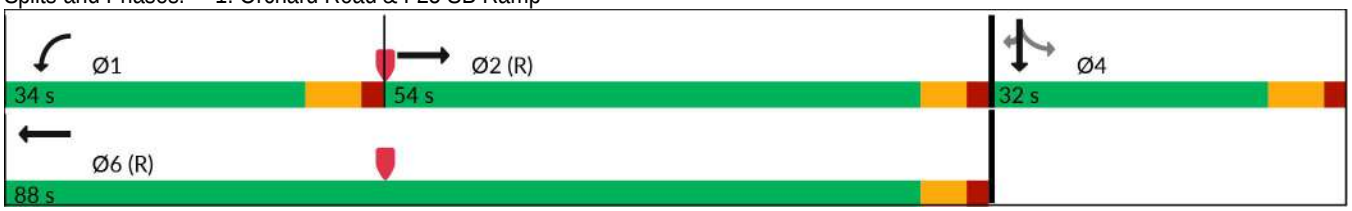
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1047	173	232	1141	497	9	479
Future Volume (vph)	1047	173	232	1141	497	9	479
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		22.0	30.0	37.0	37.0	37.0
Total Split (s)	54.0		34.0	88.0	32.0	32.0	32.0
Total Split (%)	45.0%		28.3%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1047	173	232	1141	0	0	0	0	497	9	479
Future Volume (veh/h)	0	1047	173	232	1141	0	0	0	0	497	9	479
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1138	0	252	1240	0				547	0	347
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3016		278	2428	0				742	0	330
Arrive On Green	0.00	0.47	0.00	0.31	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	1138	0	252	1240	0				547	0	347
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	13.7	0.0	16.3	0.0	0.0				17.2	0.0	25.0
Cycle Q Clear(g_c), s	0.0	13.7	0.0	16.3	0.0	0.0				17.2	0.0	25.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3016		278	2428	0				742	0	330
V/C Ratio(X)	0.00	0.38		0.91	0.51	0.00				0.74	0.00	1.05
Avail Cap(c_a), veh/h	0	3016		401	2428	0				742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	20.6	0.0	40.4	0.0	0.0				44.4	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	16.3	0.7	0.0				3.9	0.0	63.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	0.0	7.3	0.2	0.0				8.0	0.0	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	20.9	0.0	56.7	0.7	0.0				48.3	0.0	111.0
LnGrp LOS		C		E	A					D		F
Approach Vol, veh/h		1138			1492						894	
Approach Delay, s/veh		20.9			10.1						72.6	
Approach LOS		C			B						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.8	62.2		32.0		88.0
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	27.0	48.0		25.0		82.0
Max Q Clear Time (g_c+I1), s	18.3	15.7		27.0		2.0
Green Ext Time (p_c), s	0.5	10.0		0.0		13.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.5
HCM 7th LOS	C

Notes

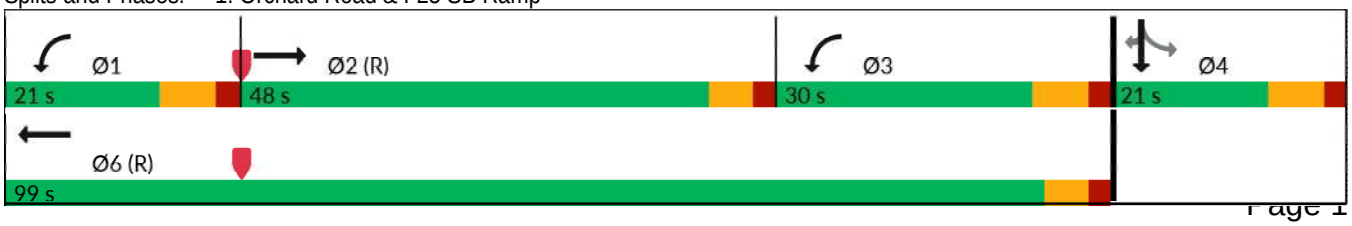
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1846	582	572	877	0	0	0	0	271	9	240
Future Volume (vph)	0	1846	582	572	877	0	0	0	0	271	9	240
Satd. Flow (prot)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Flt Permitted				0.950						0.950	0.955	
Satd. Flow (perm)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Satd. Flow (RTOR)			358									219
Lane Group Flow (vph)	0	2007	633	622	953	0	0	0	0	153	152	261
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		2		1 3	6						4	
Permitted Phases			Free							4		4
Detector Phase		2		1 3	6					4	4	4
Switch Phase												
Minimum Initial (s)		10.0			10.0					5.0	5.0	5.0
Minimum Split (s)		30.0			30.0					37.0	37.0	37.0
Total Split (s)		48.0			99.0					21.0	21.0	21.0
Total Split (%)		40.0%			82.5%					17.5%	17.5%	17.5%
Yellow Time (s)		4.0			4.0					5.0	5.0	5.0
All-Red Time (s)		2.0			2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0					7.0	7.0	7.0
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Recall Mode		C-Max			C-Max					None	None	None
Act Effct Green (s)		42.0	120.0	37.6	93.6					13.4	13.4	13.4
Actuated g/C Ratio		0.35	1.00	0.31	0.78					0.11	0.11	0.11
v/c Ratio		0.90	0.40	1.12	0.35					0.82	0.81	0.70
Control Delay (s/veh)		43.2	0.8	105.0	5.8					83.7	82.3	21.9
Queue Delay		0.0	0.0	0.0	0.7					0.0	0.0	0.0
Total Delay (s/veh)		43.2	0.8	105.0	6.5					83.7	82.3	21.9
LOS		D	A	F	A					F	F	C
Approach Delay (s/veh)		33.1			45.4						54.8	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay (s/veh): 39.7 Intersection LOS: D
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



Lane Group	Ø1	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	1	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	22.0	12.0
Total Split (s)	21.0	30.0
Total Split (%)	18%	25%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

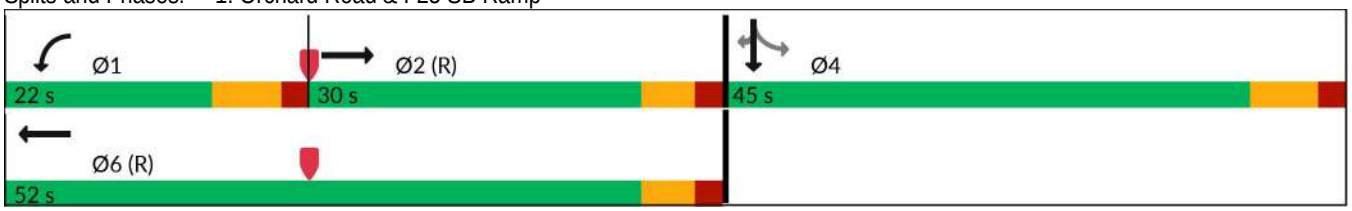
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	472	104	206	311	231	8	110
Future Volume (vph)	472	104	206	311	231	8	110
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		12.0	30.0	37.0	37.0	37.0
Total Split (s)	30.0		22.0	52.0	45.0	45.0	45.0
Total Split (%)	30.9%		22.7%	53.6%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 97
Actuated Cycle Length: 97
Offset: 41 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	472	104	206	311	0	0	0	0	231	8	110
Future Volume (veh/h)	0	472	104	206	311	0	0	0	0	231	8	110
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	513	0	224	338	0				257	0	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3520		257	2713	0				366	0	163
Arrive On Green	0.00	0.55	0.00	0.14	0.76	0.00				0.10	0.00	0.10
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	513	0	224	338	0				257	0	82
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	3.8	0.0	11.9	2.4	0.0				6.8	0.0	4.7
Cycle Q Clear(g_c), s	0.0	3.8	0.0	11.9	2.4	0.0				6.8	0.0	4.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3520		257	2713	0				366	0	163
V/C Ratio(X)	0.00	0.15		0.87	0.12	0.00				0.70	0.00	0.50
Avail Cap(c_a), veh/h	0	3520		275	2713	0				1396	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.8	0.0	40.6	3.0	0.0				42.1	0.0	41.2
Incr Delay (d2), s/veh	0.0	0.1	0.0	23.6	0.1	0.0				2.5	0.0	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.0	6.9	0.7	0.0				3.1	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	10.9	0.0	64.2	3.1	0.0				44.6	0.0	43.6
LnGrp LOS		B		E	A					D		D
Approach Vol, veh/h		513			562						339	
Approach Delay, s/veh		10.9			27.5						44.3	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.0	59.1		17.0		80.0
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	15.0	24.0		38.0		46.0
Max Q Clear Time (g_c+I1), s	13.9	5.8		8.8		4.4
Green Ext Time (p_c), s	0.1	3.3		1.2		2.4

Intersection Summary		
HCM 7th Control Delay, s/veh		25.5
HCM 7th LOS		C

Notes

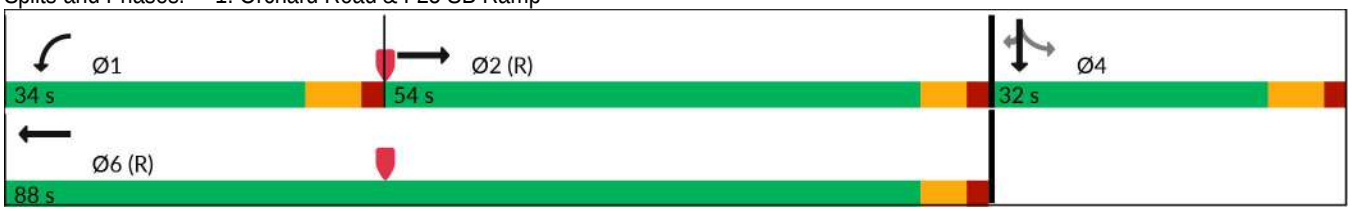
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1121	186	244	1224	529	10	517
Future Volume (vph)	1121	186	244	1224	529	10	517
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		22.0	30.0	37.0	37.0	37.0
Total Split (s)	54.0		34.0	88.0	32.0	32.0	32.0
Total Split (%)	45.0%		28.3%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1121	186	244	1224	0	0	0	0	529	10	517
Future Volume (veh/h)	0	1121	186	244	1224	0	0	0	0	529	10	517
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1218	0	265	1330	0				583	0	377
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2971		291	2428	0				742	0	330
Arrive On Green	0.00	0.46	0.00	0.33	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	1218	0	265	1330	0				583	0	377
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	15.1	0.0	17.1	0.0	0.0				18.6	0.0	25.0
Cycle Q Clear(g_c), s	0.0	15.1	0.0	17.1	0.0	0.0				18.6	0.0	25.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2971		291	2428	0				742	0	330
V/C Ratio(X)	0.00	0.41		0.91	0.55	0.00				0.79	0.00	1.14
Avail Cap(c_a), veh/h	0	2971		401	2428	0				742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.84	0.84	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.4	0.0	39.6	0.0	0.0				45.0	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	17.4	0.8	0.0				5.6	0.0	93.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.0	7.7	0.3	0.0				8.8	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	21.9	0.0	57.0	0.8	0.0				50.5	0.0	141.2
LnGrp LOS		C		E	A					D		F
Approach Vol, veh/h		1218			1595						960	
Approach Delay, s/veh		21.9			10.1						86.1	
Approach LOS		C			B						F	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.6	61.4		32.0		88.0						
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0						
Max Green Setting (Gmax), s	27.0	48.0		25.0		82.0						
Max Q Clear Time (g_c+I1), s	19.1	17.1		27.0		2.0						
Green Ext Time (p_c), s	0.5	10.8		0.0		15.7						

Intersection Summary	
HCM 7th Control Delay, s/veh	33.2
HCM 7th LOS	C

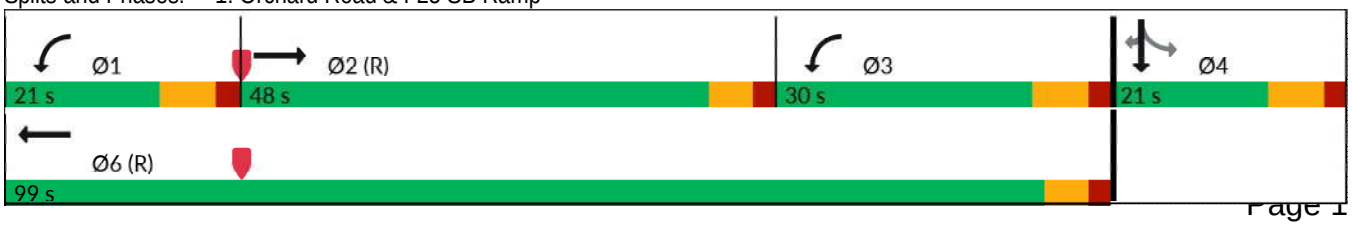
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1980	626	603	930	0	0	0	0	283	10	260
Future Volume (vph)	0	1980	626	603	930	0	0	0	0	283	10	260
Satd. Flow (prot)	0	6408	1583	1770	3539	0	0	0	0	1681	1692	1583
Flt Permitted				0.950						0.950	0.956	
Satd. Flow (perm)	0	6408	1583	1770	3539	0	0	0	0	1681	1692	1583
Satd. Flow (RTOR)			358									198
Lane Group Flow (vph)	0	2152	680	655	1011	0	0	0	0	160	159	283
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		2		1 3	6						4	
Permitted Phases			Free							4		4
Detector Phase		2		1 3	6					4	4	4
Switch Phase												
Minimum Initial (s)		10.0			10.0					5.0	5.0	5.0
Minimum Split (s)		30.0			30.0					37.0	37.0	37.0
Total Split (s)		48.0			99.0					21.0	21.0	21.0
Total Split (%)		40.0%			82.5%					17.5%	17.5%	17.5%
Yellow Time (s)		4.0			4.0					5.0	5.0	5.0
All-Red Time (s)		2.0			2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0					7.0	7.0	7.0
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Recall Mode		C-Max			C-Max					None	None	None
Act Effct Green (s)		42.0	120.0	37.5	93.5					13.5	13.5	13.5
Actuated g/C Ratio		0.35	1.00	0.31	0.78					0.11	0.11	0.11
v/c Ratio		0.96	0.43	1.19	0.37					0.85	0.84	0.80
Control Delay (s/veh)		50.0	0.9	129.3	6.1					87.2	85.7	34.0
Queue Delay		0.0	0.0	0.0	0.8					0.0	0.0	0.0
Total Delay (s/veh)		50.0	0.9	129.3	6.9					87.2	85.7	34.0
LOS		D	A	F	A					F	F	C
Approach Delay (s/veh)		38.2			55.0						61.8	
Approach LOS		D			E						E	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay (s/veh): 46.5 Intersection LOS: D
Intersection Capacity Utilization 78.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



Lane Group	Ø1	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	1	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	22.0	12.0
Total Split (s)	21.0	30.0
Total Split (%)	18%	25%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

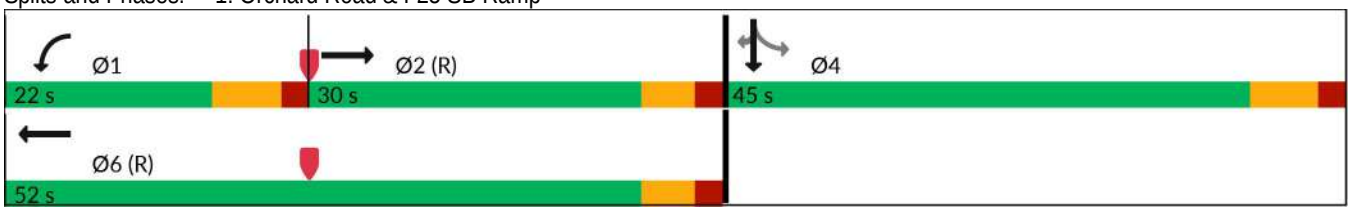
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	453	112	148	277	193	9	119
Future Volume (vph)	453	112	148	277	193	9	119
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		12.0	30.0	37.0	37.0	37.0
Total Split (s)	30.0		22.0	52.0	45.0	45.0	45.0
Total Split (%)	30.9%		22.7%	53.6%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 97
Actuated Cycle Length: 97
Offset: 41 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	453	112	148	277	0	0	0	0	193	9	119
Future Volume (veh/h)	0	453	112	148	277	0	0	0	0	193	9	119
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	492	0	161	301	0				217	0	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3823		195	2756	0				322	0	143
Arrive On Green	0.00	0.59	0.00	0.11	0.78	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	492	0	161	301	0				217	0	86
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	3.3	0.0	8.6	2.0	0.0				5.7	0.0	5.1
Cycle Q Clear(g_c), s	0.0	3.3	0.0	8.6	2.0	0.0				5.7	0.0	5.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3823		195	2756	0				322	0	143
V/C Ratio(X)	0.00	0.13		0.83	0.11	0.00				0.67	0.00	0.60
Avail Cap(c_a), veh/h	0	3823		275	2756	0				1396	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.7	0.0	42.3	2.7	0.0				42.7	0.0	42.4
Incr Delay (d2), s/veh	0.0	0.1	0.0	13.1	0.1	0.0				2.5	0.0	4.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.0	4.4	0.5	0.0				2.6	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	8.7	0.0	55.4	2.7	0.0				45.2	0.0	46.4
LnGrp LOS		A		E	A					D		D
Approach Vol, veh/h		492			462						303	
Approach Delay, s/veh		8.7			21.1						45.5	
Approach LOS		A			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	17.6	63.6		15.8		81.2						
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0						
Max Green Setting (Gmax), s	15.0	24.0		38.0		46.0						
Max Q Clear Time (g_c+I1), s	10.6	5.3		7.7		4.0						
Green Ext Time (p_c), s	0.2	3.2		1.1		2.1						

Intersection Summary	
HCM 7th Control Delay, s/veh	22.1
HCM 7th LOS	C

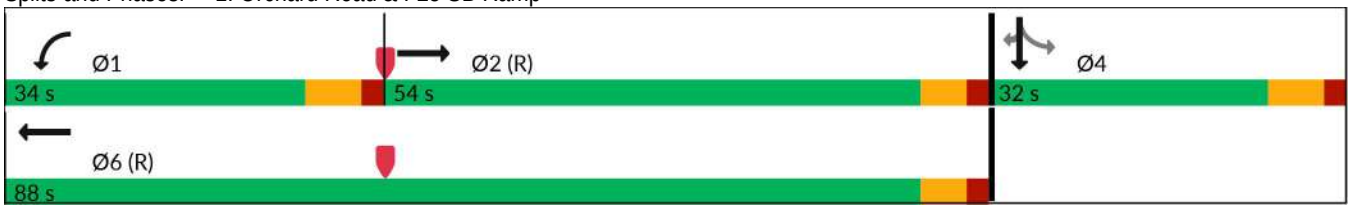
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1129	186	251	1230	537	10	517
Future Volume (vph)	1129	186	251	1230	537	10	517
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		22.0	30.0	37.0	37.0	37.0
Total Split (s)	54.0		34.0	88.0	32.0	32.0	32.0
Total Split (%)	45.0%		28.3%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1129	186	251	1230	0	0	0	0	537	10	517
Future Volume (veh/h)	0	1129	186	251	1230	0	0	0	0	537	10	517
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1227	0	273	1337	0				592	0	377
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2943		299	2428	0				742	0	330
Arrive On Green	0.00	0.46	0.00	0.34	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	1227	0	273	1337	0				592	0	377
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	15.3	0.0	17.6	0.0	0.0				18.9	0.0	25.0
Cycle Q Clear(g_c), s	0.0	15.3	0.0	17.6	0.0	0.0				18.9	0.0	25.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2943		299	2428	0				742	0	330
V/C Ratio(X)	0.00	0.42		0.91	0.55	0.00				0.80	0.00	1.14
Avail Cap(c_a), veh/h	0	2943		401	2428	0				742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.84	0.84	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.8	0.0	39.1	0.0	0.0				45.1	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	18.4	0.8	0.0				6.1	0.0	93.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	0.0	8.0	0.3	0.0				9.0	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	22.3	0.0	57.4	0.8	0.0				51.2	0.0	141.2
LnGrp LOS		C		E	A					D		F
Approach Vol, veh/h		1227			1610						969	
Approach Delay, s/veh		22.3			10.4						86.2	
Approach LOS		C			B						F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.1	60.9		32.0		88.0
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	27.0	48.0		25.0		82.0
Max Q Clear Time (g_c+I1), s	19.6	17.3		27.0		2.0
Green Ext Time (p_c), s	0.5	10.9		0.0		15.9

Intersection Summary	
HCM 7th Control Delay, s/veh	33.5
HCM 7th LOS	C

Notes

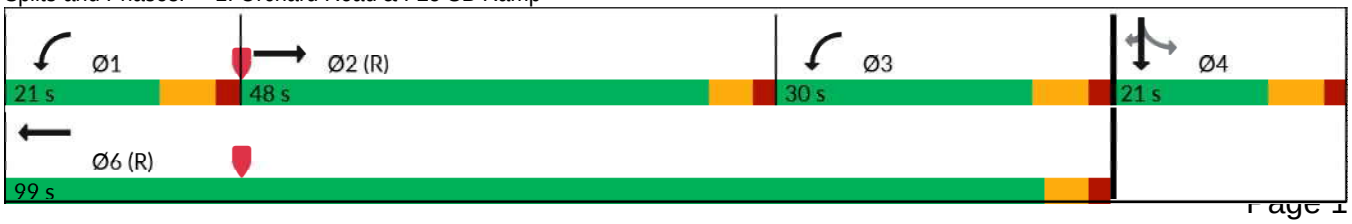
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1989	626	617	941	0	0	0	0	292	10	260
Future Volume (vph)	0	1989	626	617	941	0	0	0	0	292	10	260
Satd. Flow (prot)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Flt Permitted				0.950						0.950	0.955	
Satd. Flow (perm)	0	6408	1583	1770	3539	0	0	0	0	1681	1690	1583
Satd. Flow (RTOR)			357									194
Lane Group Flow (vph)	0	2162	680	671	1023	0	0	0	0	165	163	283
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		2		1 3	6						4	
Permitted Phases			Free							4		4
Detector Phase		2		1 3	6					4	4	4
Switch Phase												
Minimum Initial (s)		10.0			10.0					5.0	5.0	5.0
Minimum Split (s)		30.0			30.0					37.0	37.0	37.0
Total Split (s)		48.0			99.0					21.0	21.0	21.0
Total Split (%)		40.0%			82.5%					17.5%	17.5%	17.5%
Yellow Time (s)		4.0			4.0					5.0	5.0	5.0
All-Red Time (s)		2.0			2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0					7.0	7.0	7.0
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Recall Mode		C-Max			C-Max					None	None	None
Act Effct Green (s)		42.0	120.0	37.4	93.4					13.6	13.6	13.6
Actuated g/C Ratio		0.35	1.00	0.31	0.78					0.11	0.11	0.11
v/c Ratio		0.96	0.43	1.22	0.37					0.86	0.85	0.80
Control Delay (s/veh)		50.8	0.9	142.2	6.2					90.1	87.6	35.1
Queue Delay		0.0	0.0	0.0	0.8					0.0	0.0	0.0
Total Delay (s/veh)		50.8	0.9	142.2	7.0					90.1	87.6	35.1
LOS		D	A	F	A					F	F	D
Approach Delay (s/veh)		38.8			60.6						64.0	
Approach LOS		D			E						E	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay (s/veh): 49.0 Intersection LOS: D
Intersection Capacity Utilization 79.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Orchard Road & I-25 SB Ramp



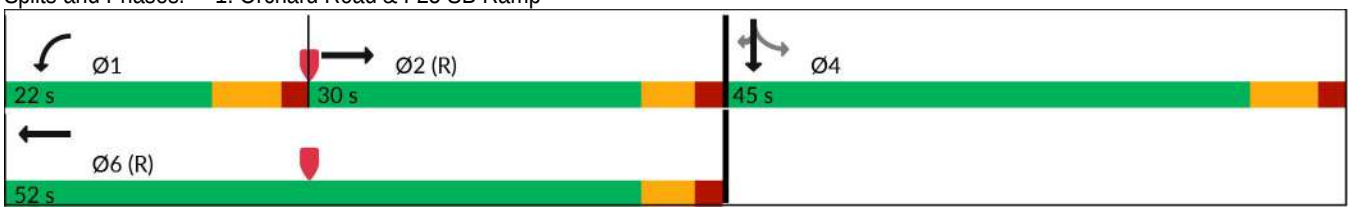
Lane Group	Ø1	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	1	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	22.0	12.0
Total Split (s)	21.0	30.0
Total Split (%)	18%	25%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	506	112	217	332	246	9	119
Future Volume (vph)	506	112	217	332	246	9	119
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0	5.0
Minimum Split (s)	30.0		12.0	30.0	37.0	37.0	37.0
Total Split (s)	30.0		22.0	52.0	45.0	45.0	45.0
Total Split (%)	30.9%		22.7%	53.6%	46.4%	46.4%	46.4%
Yellow Time (s)	4.0		5.0	4.0	5.0	5.0	5.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		7.0	6.0	7.0	7.0	7.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	C-Max		None	C-Max	None	None	None

Intersection Summary
Cycle Length: 97
Actuated Cycle Length: 97
Offset: 41 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Orchard Road & I-25 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	506	112	217	332	0	0	0	0	246	9	119
Future Volume (veh/h)	0	506	112	217	332	0	0	0	0	246	9	119
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	550	0	236	361	0				274	0	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3445		268	2694	0				385	0	171
Arrive On Green	0.00	0.54	0.00	0.15	0.76	0.00				0.11	0.00	0.11
Sat Flow, veh/h	0	6696	1585	1781	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	550	0	236	361	0				274	0	86
Grp Sat Flow(s),veh/h/ln	0	1609	1585	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	4.2	0.0	12.6	2.7	0.0				7.2	0.0	5.0
Cycle Q Clear(g_c), s	0.0	4.2	0.0	12.6	2.7	0.0				7.2	0.0	5.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3445		268	2694	0				385	0	171
V/C Ratio(X)	0.00	0.16		0.88	0.13	0.00				0.71	0.00	0.50
Avail Cap(c_a), veh/h	0	3445		275	2694	0				1396	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	0.0	40.4	3.2	0.0				41.8	0.0	40.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	25.5	0.1	0.0				2.5	0.0	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	7.3	0.8	0.0				3.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	11.5	0.0	65.9	3.3	0.0				44.3	0.0	43.1
LnGrp LOS		B		E	A					D		D
Approach Vol, veh/h		550			597						360	
Approach Delay, s/veh		11.5			28.0						44.0	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.6	57.9		17.5		79.5
Change Period (Y+Rc), s	7.0	6.0		7.0		6.0
Max Green Setting (Gmax), s	15.0	24.0		38.0		46.0
Max Q Clear Time (g_c+I1), s	14.6	6.2		9.2		4.7
Green Ext Time (p_c), s	0.0	3.5		1.3		2.6

Intersection Summary	
HCM 7th Control Delay, s/veh	25.8
HCM 7th LOS	C

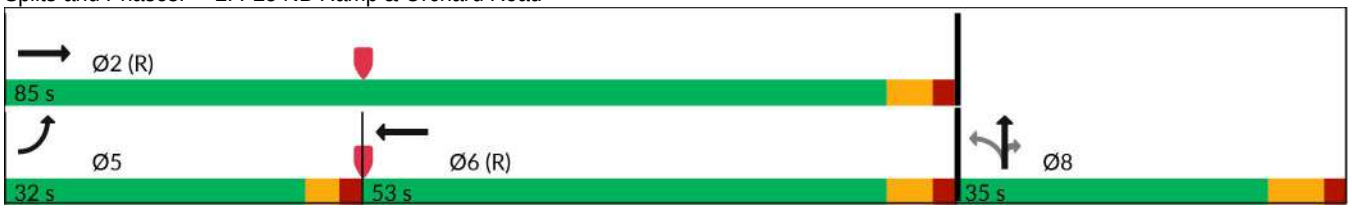
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	378	1102	725	319	510	25	295
Future Volume (vph)	378	1102	725	319	510	25	295
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	22.5		22.5	22.5	22.5
Total Split (s)	32.0	85.0	53.0		35.0	35.0	35.0
Total Split (%)	26.7%	70.8%	44.2%		29.2%	29.2%	29.2%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	378	1102	0	0	725	319	510	25	295	0	0	0
Future Volume (veh/h)	378	1102	0	0	725	319	510	25	295	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	411	1198	0	0	788	0	573	0	214			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	491	2500	0	0	2654		670	0	298			
Arrive On Green	0.14	0.70	0.00	0.00	0.52	0.00	0.19	0.00	0.19			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	411	1198	0	0	788	0	573	0	214			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	13.9	18.1	0.0	0.0	10.5	0.0	18.7	0.0	15.2			
Cycle Q Clear(g_c), s	13.9	18.1	0.0	0.0	10.5	0.0	18.7	0.0	15.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	491	2500	0	0	2654		670	0	298			
V/C Ratio(X)	0.84	0.48	0.00	0.00	0.30		0.85	0.00	0.72			
Avail Cap(c_a), veh/h	778	2500	0	0	2654		831	0	370			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.89	0.89	0.00	0.00	0.89	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.1	8.0	0.0	0.0	16.4	0.0	47.1	0.0	45.7			
Incr Delay (d2), s/veh	4.1	0.6	0.0	0.0	0.3	0.0	7.3	0.0	5.0			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.3	6.5	0.0	0.0	4.1	0.0	8.9	0.0	6.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.3	8.5	0.0	0.0	16.6	0.0	54.4	0.0	50.7			
LnGrp LOS	D	A			B		D		D			
Approach Vol, veh/h		1609			788			787				
Approach Delay, s/veh		20.2			16.6			53.4				
Approach LOS		C			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.4			22.1	68.4		29.6				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		79.0			27.0	47.0		28.0				
Max Q Clear Time (g_c+I1), s		20.1			15.9	12.5		20.7				
Green Ext Time (p_c), s		12.7			1.2	6.4		1.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	27.5
HCM 7th LOS	C

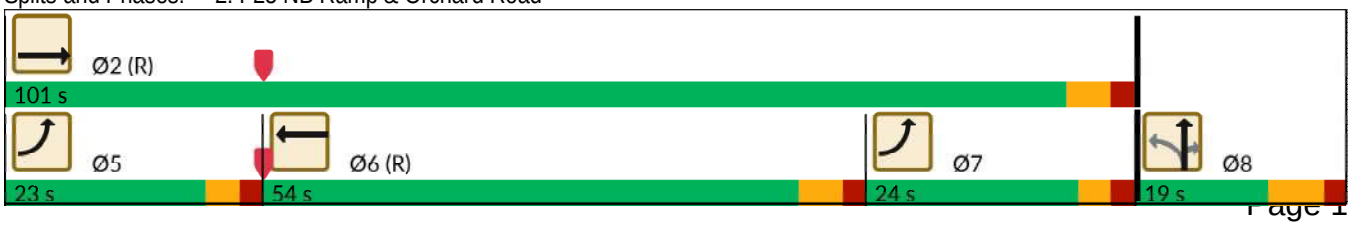
Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1014	895	0	0	803	676	159	34	105	0	0	0
Future Volume (vph)	1014	895	0	0	803	676	159	34	105	0	0	0
Satd. Flow (prot)	3433	3539	0	0	5085	1583	1681	1713	1583	0	0	0
Flt Permitted	0.950						0.950	0.968				
Satd. Flow (perm)	3433	3539	0	0	5085	1583	1681	1713	1583	0	0	0
Satd. Flow (RTOR)						633			127			
Lane Group Flow (vph)	1102	973	0	0	873	735	104	106	114	0	0	0
Turn Type	Prot	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5 7	2			6			8				
Permitted Phases						Free	8		8			
Detector Phase	5 7	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)		10.0			10.0		5.0	5.0	5.0			
Minimum Split (s)		30.0			22.5		22.5	22.5	22.5			
Total Split (s)		101.0			54.0		19.0	19.0	19.0			
Total Split (%)		84.2%			45.0%		15.8%	15.8%	15.8%			
Yellow Time (s)		4.0			4.0		5.0	5.0	5.0			
All-Red Time (s)		2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		6.0			6.0		7.0	7.0	7.0			
Lead/Lag					Lag							
Lead-Lag Optimize?					Yes							
Recall Mode		C-Max			C-Max		None	None	None			
Act Effct Green (s)	38.1	96.1			48.0	120.0	10.9	10.9	10.9			
Actuated g/C Ratio	0.32	0.80			0.40	1.00	0.09	0.09	0.09			
v/c Ratio	1.01	0.34			0.43	0.46	0.68	0.68	0.44			
Control Delay (s/veh)	42.6	11.0			23.9	2.0	74.7	74.4	12.4			
Queue Delay	0.0	0.3			0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	42.6	11.3			23.9	2.0	74.7	74.4	12.4			
LOS	D	B			C	A	E	E	B			
Approach Delay (s/veh)		28.0			13.9			52.7				
Approach LOS		C			B			D				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 117 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 24.3	Intersection LOS: C
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Lane Group	Ø5	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	5	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	10.0	10.0
Total Split (s)	23.0	24.0
Total Split (%)	19%	20%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

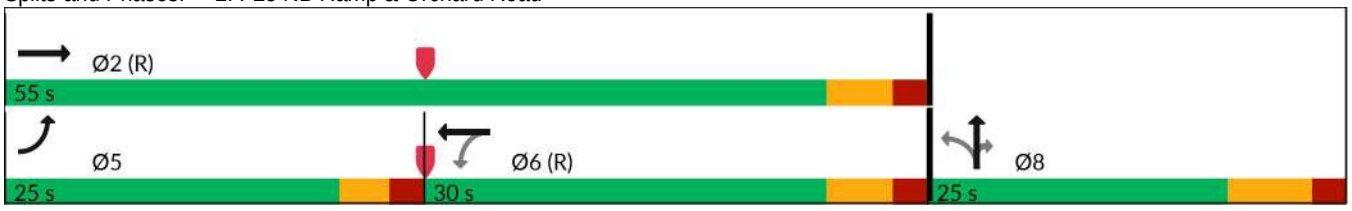
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR
Lane Configurations								
Traffic Volume (vph)	224	338	1	474	8	88	5	58
Future Volume (vph)	224	338	1	474	8	88	5	58
Turn Type	Prot	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	5	2		6			8	
Permitted Phases			6		Free	8		8
Detector Phase	5	2	6	6		8	8	8
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	24.0	24.0		25.0	25.0	25.0
Total Split (s)	25.0	55.0	30.0	30.0		25.0	25.0	25.0
Total Split (%)	31.3%	68.8%	37.5%	37.5%		31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0		6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max		None	None	None

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	338	0	1	474	8	88	5	58	0	0	0
Future Volume (veh/h)	224	338	0	1	474	8	88	5	58	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	243	367	0	1	515	0	100	0	42			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	2	2	2	2	2	2			
Cap, veh/h	348	2764	0	46	3052		213	0	95			
Arrive On Green	0.10	0.78	0.00	0.61	0.61	0.00	0.06	0.00	0.06			
Sat Flow, veh/h	3456	3647	0	1	4966	1585	3563	0	1585			
Grp Volume(v), veh/h	243	367	0	194	322	0	100	0	42			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	1870	1549	1585	1781	0	1585			
Q Serve(g_s), s	5.4	2.0	0.0	0.0	3.6	0.0	2.2	0.0	2.0			
Cycle Q Clear(g_c), s	5.4	2.0	0.0	3.6	3.6	0.0	2.2	0.0	2.0			
Prop In Lane	1.00		0.00	0.01		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	348	2764	0	1194	1904		213	0	95			
V/C Ratio(X)	0.70	0.13	0.00	0.16	0.17		0.47	0.00	0.44			
Avail Cap(c_a), veh/h	864	2764	0	1194	1904		802	0	357			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.8	2.2	0.0	6.6	6.6	0.0	36.4	0.0	36.3			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.3	0.2	0.0	1.6	0.0	3.2			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.4	0.5	0.0	1.3	1.1	0.0	1.0	0.0	0.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.3	2.3	0.0	6.9	6.8	0.0	38.0	0.0	39.5			
LnGrp LOS	D	A		A	A		D		D			
Approach Vol, veh/h		610			516			142				
Approach Delay, s/veh		16.3			6.9			38.4				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		68.2			13.1	55.2		11.8				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		49.0			20.0	24.0		18.0				
Max Q Clear Time (g_c+I1), s		4.0			7.4	5.6		4.2				
Green Ext Time (p_c), s		2.7			0.6	3.1		0.3				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Notes

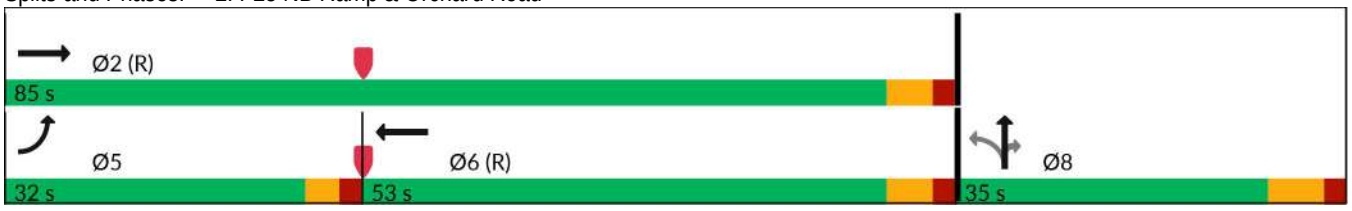
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	403	1138	753	325	540	25	300
Future Volume (vph)	403	1138	753	325	540	25	300
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	22.5		22.5	22.5	22.5
Total Split (s)	32.0	85.0	53.0		35.0	35.0	35.0
Total Split (%)	26.7%	70.8%	44.2%		29.2%	29.2%	29.2%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	1138	0	0	753	325	540	25	300	0	0	0
Future Volume (veh/h)	403	1138	0	0	753	325	540	25	300	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	438	1237	0	0	818	0	606	0	217			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	515	2471	0	0	2577		700	0	311			
Arrive On Green	0.20	0.92	0.00	0.00	0.50	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	438	1237	0	0	818	0	606	0	217			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	14.7	5.9	0.0	0.0	11.3	0.0	19.8	0.0	15.3			
Cycle Q Clear(g_c), s	14.7	5.9	0.0	0.0	11.3	0.0	19.8	0.0	15.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	515	2471	0	0	2577		700	0	311			
V/C Ratio(X)	0.85	0.50	0.00	0.00	0.32		0.87	0.00	0.70			
Avail Cap(c_a), veh/h	778	2471	0	0	2577		831	0	370			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	0.88	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	46.8	1.6	0.0	0.0	17.5	0.0	46.7	0.0	44.9			
Incr Delay (d2), s/veh	5.1	0.6	0.0	0.0	0.3	0.0	8.4	0.0	4.5			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	1.4	0.0	0.0	4.5	0.0	9.5	0.0	6.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	2.2	0.0	0.0	17.8	0.0	55.1	0.0	49.4			
LnGrp LOS	D	A			B		E		D			
Approach Vol, veh/h		1675			818			823				
Approach Delay, s/veh		15.2			17.8			53.6				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		89.4			22.9	66.6		30.6				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		79.0			27.0	47.0		28.0				
Max Q Clear Time (g_c+I1), s		7.9			16.7	13.3		21.8				
Green Ext Time (p_c), s		13.6			1.2	6.7		1.8				

Intersection Summary	
HCM 7th Control Delay, s/veh	25.4
HCM 7th LOS	C

Notes

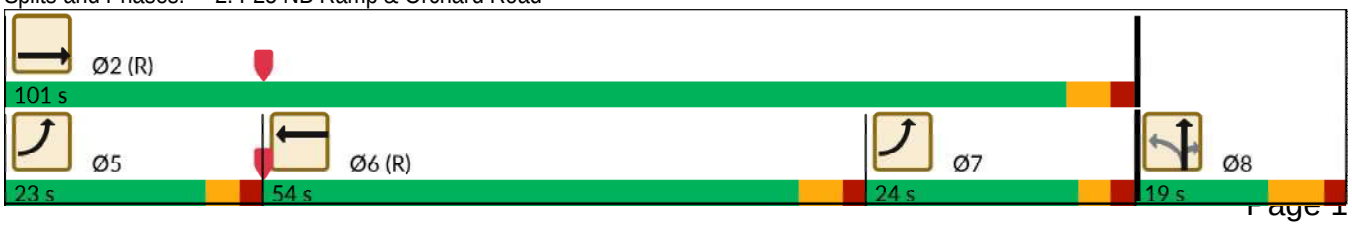
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1076	945	0	0	853	689	206	35	107	0	0	0
Future Volume (vph)	1076	945	0	0	853	689	206	35	107	0	0	0
Satd. Flow (prot)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Flt Permitted	0.950						0.950	0.966				
Satd. Flow (perm)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Satd. Flow (RTOR)						631			127			
Lane Group Flow (vph)	1170	1027	0	0	927	749	130	132	116	0	0	0
Turn Type	Prot	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5 7	2			6			8				
Permitted Phases						Free	8		8			
Detector Phase	5 7	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)		10.0			10.0		5.0	5.0	5.0			
Minimum Split (s)		30.0			22.5		22.5	22.5	22.5			
Total Split (s)		101.0			54.0		19.0	19.0	19.0			
Total Split (%)		84.2%			45.0%		15.8%	15.8%	15.8%			
Yellow Time (s)		4.0			4.0		5.0	5.0	5.0			
All-Red Time (s)		2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		6.0			6.0		7.0	7.0	7.0			
Lead/Lag					Lag							
Lead-Lag Optimize?					Yes							
Recall Mode		C-Max			C-Max		None	None	None			
Act Effct Green (s)	37.4	95.4			48.0	120.0	11.6	11.6	11.6			
Actuated g/C Ratio	0.31	0.80			0.40	1.00	0.10	0.10	0.10			
v/c Ratio	1.09	0.36			0.46	0.47	0.80	0.80	0.43			
Control Delay (s/veh)	69.6	11.8			25.4	1.9	86.6	86.6	12.5			
Queue Delay	0.0	0.4			0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	69.6	12.2			25.4	1.9	86.6	86.6	12.5			
LOS	E	B			C	A	F	F	B			
Approach Delay (s/veh)		42.8			14.9			63.9				
Approach LOS		D			B			E				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 117 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 33.6	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Lane Group	Ø5	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	5	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	10.0	10.0
Total Split (s)	23.0	24.0
Total Split (%)	19%	20%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

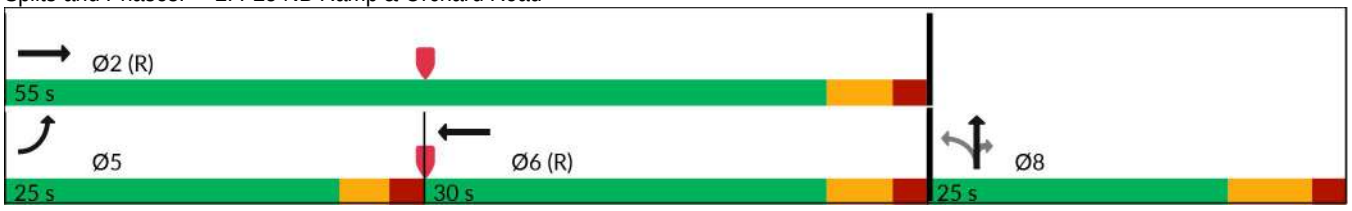
Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	228	345	483	8	90	5	60
Future Volume (vph)	228	345	483	8	90	5	60
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	24.0		25.0	25.0	25.0
Total Split (s)	25.0	55.0	30.0		25.0	25.0	25.0
Total Split (%)	31.3%	68.8%	37.5%		31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	345	0	0	483	8	90	5	60	0	0	0
Future Volume (veh/h)	228	345	0	0	483	8	90	5	60	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	248	375	0	0	525	0	102	0	43			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	353	2763	0	0	3129		214	0	95			
Arrive On Green	0.10	0.78	0.00	0.00	0.61	0.00	0.06	0.00	0.06			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	248	375	0	0	525	0	102	0	43			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	5.6	2.1	0.0	0.0	3.6	0.0	2.2	0.0	2.1			
Cycle Q Clear(g_c), s	5.6	2.1	0.0	0.0	3.6	0.0	2.2	0.0	2.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	353	2763	0	0	3129		214	0	95			
V/C Ratio(X)	0.70	0.14	0.00	0.00	0.17		0.48	0.00	0.45			
Avail Cap(c_a), veh/h	864	2763	0	0	3129		802	0	357			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.7	2.2	0.0	0.0	6.7	0.0	36.4	0.0	36.3			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	0.1	0.0	1.6	0.0	3.3			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.4	0.5	0.0	0.0	1.1	0.0	1.0	0.0	0.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.3	2.3	0.0	0.0	6.8	0.0	38.0	0.0	39.7			
LnGrp LOS	D	A			A		D		D			
Approach Vol, veh/h		623			525			145				
Approach Delay, s/veh		16.2			6.8			38.5				
Approach LOS		B			A			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		68.2			13.2	55.0		11.8				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		49.0			20.0	24.0		18.0				
Max Q Clear Time (g_c+I1), s		4.1			7.6	5.6		4.2				
Green Ext Time (p_c), s		2.8			0.7	3.4		0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			14.9									
HCM 7th LOS			B									

Notes

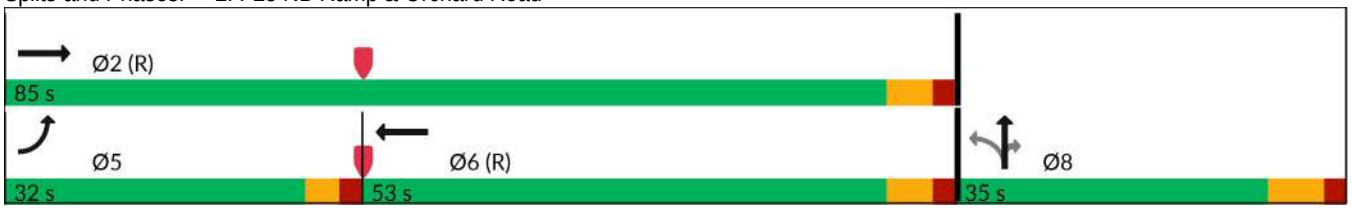
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	403	1155	766	331	540	25	306
Future Volume (vph)	403	1155	766	331	540	25	306
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	22.5		22.5	22.5	22.5
Total Split (s)	32.0	85.0	53.0		35.0	35.0	35.0
Total Split (%)	26.7%	70.8%	44.2%		29.2%	29.2%	29.2%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	1155	0	0	766	331	540	25	306	0	0	0
Future Volume (veh/h)	403	1155	0	0	766	331	540	25	306	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	438	1255	0	0	833	0	606	0	222			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	515	2470	0	0	2576		700	0	312			
Arrive On Green	0.20	0.92	0.00	0.00	0.50	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	438	1255	0	0	833	0	606	0	222			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	14.7	6.0	0.0	0.0	11.6	0.0	19.8	0.0	15.7			
Cycle Q Clear(g_c), s	14.7	6.0	0.0	0.0	11.6	0.0	19.8	0.0	15.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	515	2470	0	0	2576		700	0	312			
V/C Ratio(X)	0.85	0.51	0.00	0.00	0.32		0.87	0.00	0.71			
Avail Cap(c_a), veh/h	778	2470	0	0	2576		831	0	370			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	0.88	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	46.8	1.6	0.0	0.0	17.6	0.0	46.7	0.0	45.0			
Incr Delay (d2), s/veh	5.1	0.7	0.0	0.0	0.3	0.0	8.4	0.0	5.1			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	1.5	0.0	0.0	4.6	0.0	9.5	0.0	6.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	2.3	0.0	0.0	17.9	0.0	55.0	0.0	50.2			
LnGrp LOS	D	A			B		E		D			
Approach Vol, veh/h		1693			833			828				
Approach Delay, s/veh		15.1			17.9			53.7				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		89.4			22.9	66.5		30.6				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		79.0			27.0	47.0		28.0				
Max Q Clear Time (g_c+I1), s		8.0			16.7	13.6		21.8				
Green Ext Time (p_c), s		14.0			1.2	6.8		1.8				

Intersection Summary	
HCM 7th Control Delay, s/veh	25.3
HCM 7th LOS	C

Notes

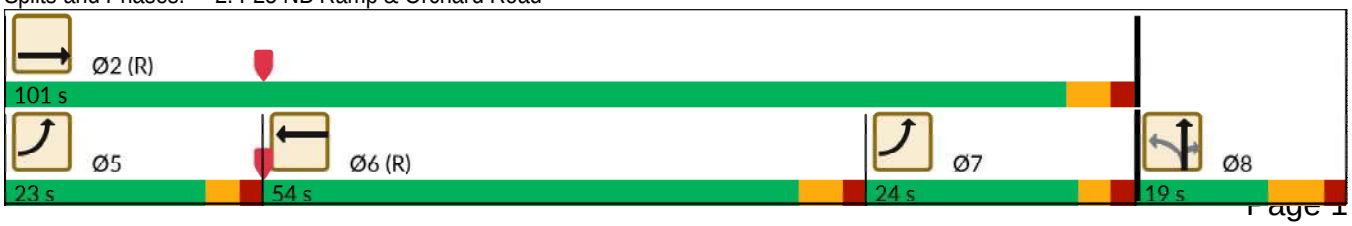
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1076	963	0	0	878	700	206	35	112	0	0	0
Future Volume (vph)	1076	963	0	0	878	700	206	35	112	0	0	0
Satd. Flow (prot)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Flt Permitted	0.950						0.950	0.966				
Satd. Flow (perm)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Satd. Flow (RTOR)						631			127			
Lane Group Flow (vph)	1170	1047	0	0	954	761	130	132	122	0	0	0
Turn Type	Prot	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5 7	2			6			8				
Permitted Phases						Free	8		8			
Detector Phase	5 7	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)		10.0			10.0		5.0	5.0	5.0			
Minimum Split (s)		30.0			22.5		22.5	22.5	22.5			
Total Split (s)		101.0			54.0		19.0	19.0	19.0			
Total Split (%)		84.2%			45.0%		15.8%	15.8%	15.8%			
Yellow Time (s)		4.0			4.0		5.0	5.0	5.0			
All-Red Time (s)		2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		6.0			6.0		7.0	7.0	7.0			
Lead/Lag					Lag							
Lead-Lag Optimize?					Yes							
Recall Mode		C-Max			C-Max		None	None	None			
Act Effct Green (s)	37.4	95.4			48.0	120.0	11.6	11.6	11.6			
Actuated g/C Ratio	0.31	0.80			0.40	1.00	0.10	0.10	0.10			
v/c Ratio	1.09	0.37			0.47	0.48	0.80	0.80	0.46			
Control Delay (s/veh)	69.5	11.8			26.0	1.9	86.6	86.6	13.9			
Queue Delay	0.0	0.4			0.0	0.0	0.3	0.3	0.0			
Total Delay (s/veh)	69.5	12.2			26.0	1.9	86.9	86.9	13.9			
LOS	E	B			C	A	F	F	B			
Approach Delay (s/veh)		42.4			15.3			63.7				
Approach LOS		D			B			E				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 117 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 33.5	Intersection LOS: C
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Lane Group	Ø5	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	5	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	10.0	10.0
Total Split (s)	23.0	24.0
Total Split (%)	19%	20%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

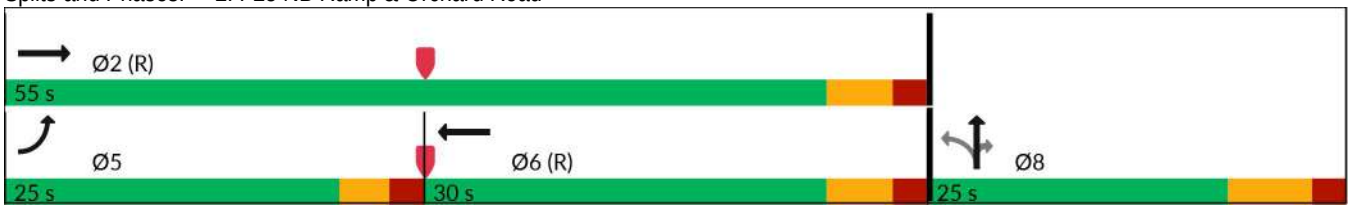
Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	228	451	607	63	90	5	93
Future Volume (vph)	228	451	607	63	90	5	93
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	24.0		25.0	25.0	25.0
Total Split (s)	25.0	55.0	30.0		25.0	25.0	25.0
Total Split (%)	31.3%	68.8%	37.5%		31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	451	0	0	607	63	90	5	93	0	0	0
Future Volume (veh/h)	228	451	0	0	607	63	90	5	93	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	248	490	0	0	660	0	102	0	68			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	353	2727	0	0	3078		250	0	111			
Arrive On Green	0.10	0.77	0.00	0.00	0.60	0.00	0.07	0.00	0.07			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	248	490	0	0	660	0	102	0	68			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	5.6	3.0	0.0	0.0	4.7	0.0	2.2	0.0	3.3			
Cycle Q Clear(g_c), s	5.6	3.0	0.0	0.0	4.7	0.0	2.2	0.0	3.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	353	2727	0	0	3078		250	0	111			
V/C Ratio(X)	0.70	0.18	0.00	0.00	0.21		0.41	0.00	0.61			
Avail Cap(c_a), veh/h	864	2727	0	0	3078		802	0	357			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	0.97	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.7	2.5	0.0	0.0	7.3	0.0	35.6	0.0	36.1			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	0.2	0.0	1.1	0.0	5.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.4	0.7	0.0	0.0	1.5	0.0	1.0	0.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.2	2.7	0.0	0.0	7.4	0.0	36.7	0.0	41.5			
LnGrp LOS	D	A			A		D		D			
Approach Vol, veh/h		738			660			170				
Approach Delay, s/veh		14.3			7.4			38.6				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.4			13.2	54.2		12.6				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		49.0			20.0	24.0		18.0				
Max Q Clear Time (g_c+I1), s		5.0			7.6	6.7		5.3				
Green Ext Time (p_c), s		3.7			0.7	4.3		0.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.0
HCM 7th LOS	B

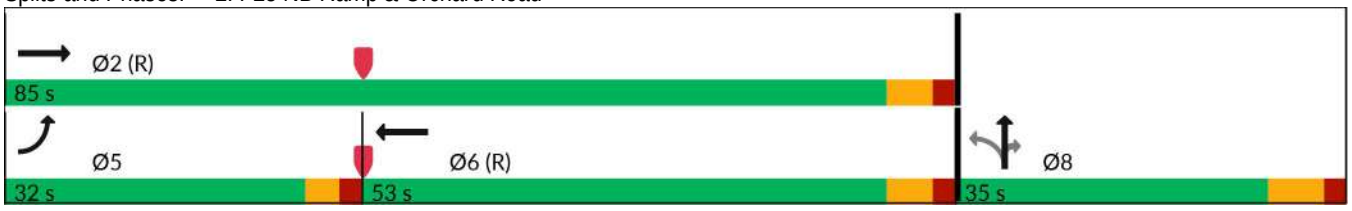
Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	435	1229	813	352	582	28	325
Future Volume (vph)	435	1229	813	352	582	28	325
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	22.5		22.5	22.5	22.5
Total Split (s)	32.0	85.0	53.0		35.0	35.0	35.0
Total Split (%)	26.7%	70.8%	44.2%		29.2%	29.2%	29.2%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	435	1229	0	0	813	352	582	28	325	0	0	0
Future Volume (veh/h)	435	1229	0	0	813	352	582	28	325	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	473	1336	0	0	884	0	654	0	236			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	549	2429	0	0	2466		741	0	330			
Arrive On Green	0.21	0.91	0.00	0.00	0.48	0.00	0.21	0.00	0.21			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	473	1336	0	0	884	0	654	0	236			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	15.8	8.2	0.0	0.0	13.0	0.0	21.4	0.0	16.6			
Cycle Q Clear(g_c), s	15.8	8.2	0.0	0.0	13.0	0.0	21.4	0.0	16.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	549	2429	0	0	2466		741	0	330			
V/C Ratio(X)	0.86	0.55	0.00	0.00	0.36		0.88	0.00	0.72			
Avail Cap(c_a), veh/h	778	2429	0	0	2466		831	0	370			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	0.85	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	46.0	2.1	0.0	0.0	19.4	0.0	46.1	0.0	44.2			
Incr Delay (d2), s/veh	6.1	0.8	0.0	0.0	0.3	0.0	10.2	0.0	5.7			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.0	1.9	0.0	0.0	5.2	0.0	10.5	0.0	7.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.1	2.9	0.0	0.0	19.7	0.0	56.3	0.0	49.9			
LnGrp LOS	D	A			B		E		D			
Approach Vol, veh/h		1809			884			890				
Approach Delay, s/veh		15.7			19.7			54.6				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		88.0			24.1	64.0		32.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		79.0			27.0	47.0		28.0				
Max Q Clear Time (g_c+I1), s		10.2			17.8	15.0		23.4				
Green Ext Time (p_c), s		15.6			1.2	7.3		1.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	26.4
HCM 7th LOS	C

Notes

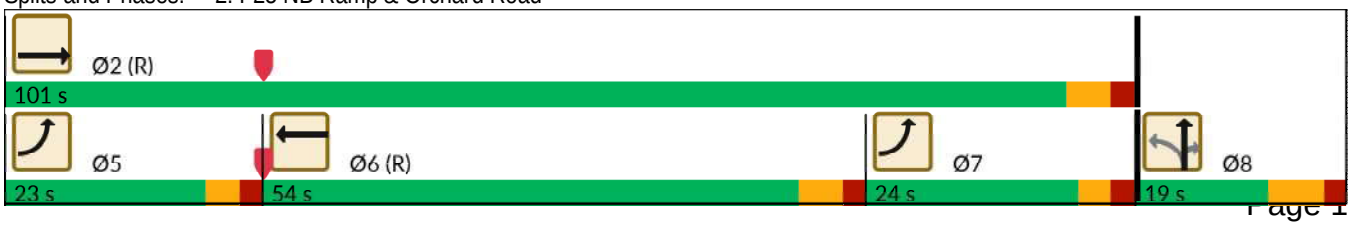
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1160	1018	0	0	919	745	219	37	115	0	0	0
Future Volume (vph)	1160	1018	0	0	919	745	219	37	115	0	0	0
Satd. Flow (prot)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Flt Permitted	0.950						0.950	0.966				
Satd. Flow (perm)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Satd. Flow (RTOR)						628			127			
Lane Group Flow (vph)	1261	1107	0	0	999	810	138	140	125	0	0	0
Turn Type	Prot	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5 7	2			6			8				
Permitted Phases						Free	8		8			
Detector Phase	5 7	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)		10.0			10.0		5.0	5.0	5.0			
Minimum Split (s)		30.0			22.5		22.5	22.5	22.5			
Total Split (s)		101.0			54.0		19.0	19.0	19.0			
Total Split (%)		84.2%			45.0%		15.8%	15.8%	15.8%			
Yellow Time (s)		4.0			4.0		5.0	5.0	5.0			
All-Red Time (s)		2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		6.0			6.0		7.0	7.0	7.0			
Lead/Lag					Lag							
Lead-Lag Optimize?					Yes							
Recall Mode		C-Max			C-Max		None	None	None			
Act Effct Green (s)	37.3	95.3			48.0	120.0	11.7	11.7	11.7			
Actuated g/C Ratio	0.31	0.79			0.40	1.00	0.10	0.10	0.10			
v/c Ratio	1.18	0.39			0.49	0.51	0.84	0.84	0.46			
Control Delay (s/veh)	107.3	12.4			27.5	2.1	91.5	91.3	14.4			
Queue Delay	0.0	0.5			0.0	0.0	3.9	3.9	0.1			
Total Delay (s/veh)	107.3	12.9			27.5	2.1	95.4	95.2	14.5			
LOS	F	B			C	A	F	F	B			
Approach Delay (s/veh)		63.1			16.2			70.2				
Approach LOS		E			B			E				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 117 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 45.2	Intersection LOS: D
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Lane Group	Ø5	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	5	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	10.0	10.0
Total Split (s)	23.0	24.0
Total Split (%)	19%	20%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

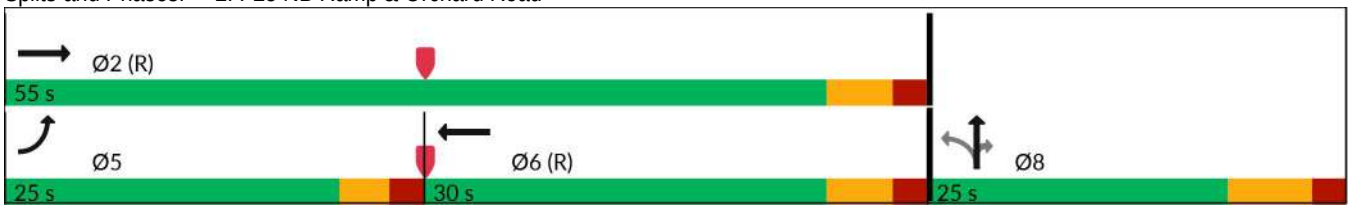
Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	247	373	522	9	97	6	65
Future Volume (vph)	247	373	522	9	97	6	65
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	24.0		25.0	25.0	25.0
Total Split (s)	25.0	55.0	30.0		25.0	25.0	25.0
Total Split (%)	31.3%	68.8%	37.5%		31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	373	0	0	522	9	97	6	65	0	0	0
Future Volume (veh/h)	247	373	0	0	522	9	97	6	65	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	268	405	0	0	567	0	110	0	47			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	375	2761	0	0	3093		216	0	96			
Arrive On Green	0.11	0.78	0.00	0.00	0.61	0.00	0.06	0.00	0.06			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	268	405	0	0	567	0	110	0	47			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	6.0	2.3	0.0	0.0	3.9	0.0	2.4	0.0	2.3			
Cycle Q Clear(g_c), s	6.0	2.3	0.0	0.0	3.9	0.0	2.4	0.0	2.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	375	2761	0	0	3093		216	0	96			
V/C Ratio(X)	0.71	0.15	0.00	0.00	0.18		0.51	0.00	0.49			
Avail Cap(c_a), veh/h	864	2761	0	0	3093		802	0	357			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.5	2.2	0.0	0.0	7.0	0.0	36.4	0.0	36.4			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	0.1	0.0	1.9	0.0	3.8			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	0.5	0.0	0.0	1.3	0.0	1.1	0.0	1.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.0	2.4	0.0	0.0	7.1	0.0	38.3	0.0	40.2			
LnGrp LOS	D	A			A		D		D			
Approach Vol, veh/h		673			567			157				
Approach Delay, s/veh		16.1			7.1			38.9				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		68.2			13.7	54.5		11.8				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		49.0			20.0	24.0		18.0				
Max Q Clear Time (g_c+I1), s		4.3			8.0	5.9		4.4				
Green Ext Time (p_c), s		3.0			0.7	3.7		0.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	15.0
HCM 7th LOS	B

Notes

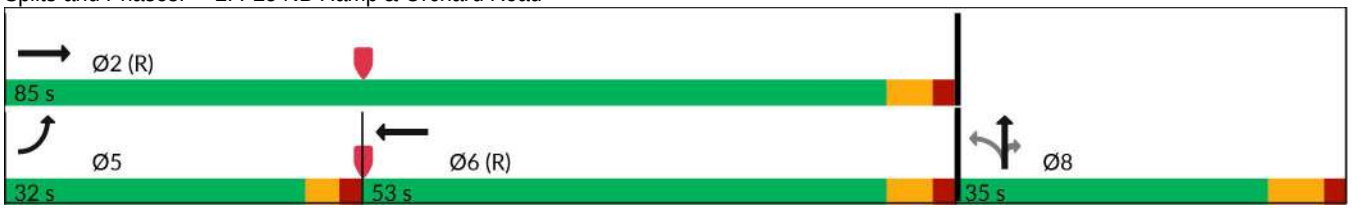
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	435	1246	826	358	582	28	330
Future Volume (vph)	435	1246	826	358	582	28	330
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	22.5		22.5	22.5	22.5
Total Split (s)	32.0	85.0	53.0		35.0	35.0	35.0
Total Split (%)	26.7%	70.8%	44.2%		29.2%	29.2%	29.2%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	435	1246	0	0	826	358	582	28	330	0	0	0
Future Volume (veh/h)	435	1246	0	0	826	358	582	28	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	473	1354	0	0	898	0	654	0	239			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	549	2429	0	0	2466		741	0	330			
Arrive On Green	0.21	0.91	0.00	0.00	0.48	0.00	0.21	0.00	0.21			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	473	1354	0	0	898	0	654	0	239			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	15.8	8.4	0.0	0.0	13.2	0.0	21.4	0.0	16.9			
Cycle Q Clear(g_c), s	15.8	8.4	0.0	0.0	13.2	0.0	21.4	0.0	16.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	549	2429	0	0	2466		741	0	330			
V/C Ratio(X)	0.86	0.56	0.00	0.00	0.36		0.88	0.00	0.72			
Avail Cap(c_a), veh/h	778	2429	0	0	2466		831	0	370			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.84	0.84	0.00	0.00	0.85	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	46.0	2.1	0.0	0.0	19.5	0.0	46.1	0.0	44.3			
Incr Delay (d2), s/veh	6.0	0.8	0.0	0.0	0.4	0.0	10.1	0.0	6.1			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.0	1.9	0.0	0.0	5.3	0.0	10.5	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	2.9	0.0	0.0	19.8	0.0	56.2	0.0	50.4			
LnGrp LOS	D	A			B		E		D			
Approach Vol, veh/h		1827			898			893				
Approach Delay, s/veh		15.6			19.8			54.7				
Approach LOS		B			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		88.0			24.1	64.0		32.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		79.0			27.0	47.0		28.0				
Max Q Clear Time (g_c+I1), s		10.4			17.8	15.2		23.4				
Green Ext Time (p_c), s		16.0			1.2	7.4		1.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	26.3
HCM 7th LOS	C

Notes

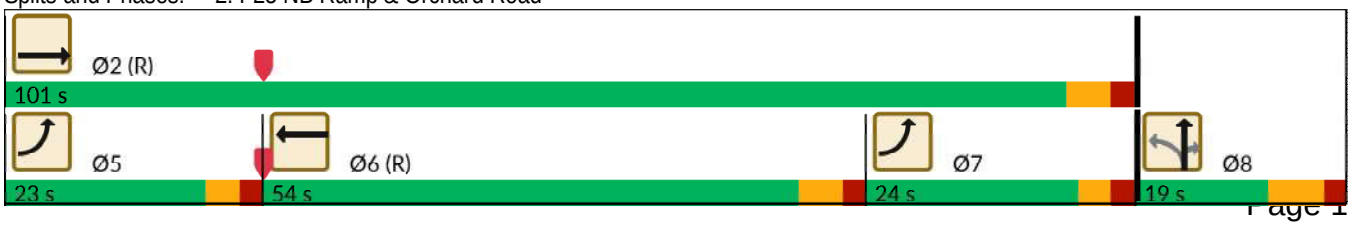
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1160	1036	0	0	944	756	219	37	121	0	0	0
Future Volume (vph)	1160	1036	0	0	944	756	219	37	121	0	0	0
Satd. Flow (prot)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Flt Permitted	0.950						0.950	0.966				
Satd. Flow (perm)	3433	3539	0	0	5085	1583	1681	1709	1583	0	0	0
Satd. Flow (RTOR)						628			132			
Lane Group Flow (vph)	1261	1126	0	0	1026	822	138	140	132	0	0	0
Turn Type	Prot	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5 7	2			6			8				
Permitted Phases						Free	8		8			
Detector Phase	5 7	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)		10.0			10.0		5.0	5.0	5.0			
Minimum Split (s)		30.0			22.5		22.5	22.5	22.5			
Total Split (s)		101.0			54.0		19.0	19.0	19.0			
Total Split (%)		84.2%			45.0%		15.8%	15.8%	15.8%			
Yellow Time (s)		4.0			4.0		5.0	5.0	5.0			
All-Red Time (s)		2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		6.0			6.0		7.0	7.0	7.0			
Lead/Lag					Lag							
Lead-Lag Optimize?					Yes							
Recall Mode		C-Max			C-Max		None	None	None			
Act Effct Green (s)	37.3	95.3			48.0	120.0	11.7	11.7	11.7			
Actuated g/C Ratio	0.31	0.79			0.40	1.00	0.10	0.10	0.10			
v/c Ratio	1.18	0.40			0.50	0.52	0.84	0.84	0.48			
Control Delay (s/veh)	107.2	12.4			28.0	2.1	91.5	91.3	14.8			
Queue Delay	0.0	0.5			0.0	0.0	5.9	6.5	0.1			
Total Delay (s/veh)	107.2	12.9			28.0	2.1	97.4	97.8	14.8			
LOS	F	B			C	A	F	F	B			
Approach Delay (s/veh)		62.7			16.5			71.0				
Approach LOS		E			B			E				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 117 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 45.1	Intersection LOS: D
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



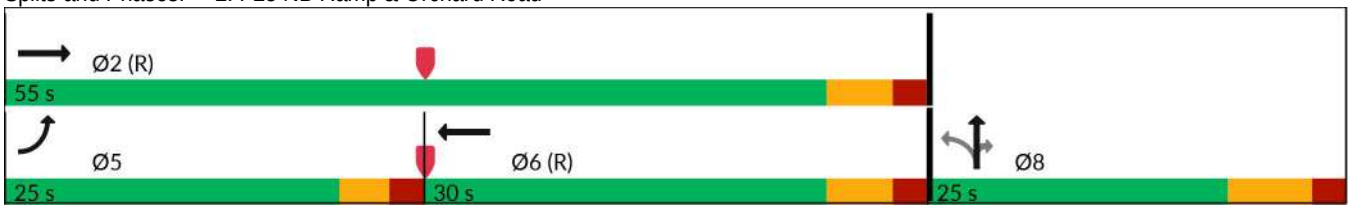
Lane Group	Ø5	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	5	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	10.0	10.0
Total Split (s)	23.0	24.0
Total Split (%)	19%	20%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	247	479	646	64	97	6	98
Future Volume (vph)	247	479	646	64	97	6	98
Turn Type	Prot	NA	NA	Free	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				Free	8		8
Detector Phase	5	2	6		8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0		5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	24.0		25.0	25.0	25.0
Total Split (s)	25.0	55.0	30.0		25.0	25.0	25.0
Total Split (%)	31.3%	68.8%	37.5%		31.3%	31.3%	31.3%
Yellow Time (s)	3.0	4.0	4.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0		7.0	7.0	7.0
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	C-Max	C-Max		None	None	None

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: I-25 NB Ramp & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	479	0	0	646	64	97	6	98	0	0	0
Future Volume (veh/h)	247	479	0	0	646	64	97	6	98	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	268	521	0	0	702	0	110	0	74			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	375	2711	0	0	3022		265	0	118			
Arrive On Green	0.11	0.76	0.00	0.00	0.59	0.00	0.07	0.00	0.07			
Sat Flow, veh/h	3456	3647	0	0	5274	1585	3563	0	1585			
Grp Volume(v), veh/h	268	521	0	0	702	0	110	0	74			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1702	1585	1781	0	1585			
Q Serve(g_s), s	6.0	3.3	0.0	0.0	5.2	0.0	2.4	0.0	3.6			
Cycle Q Clear(g_c), s	6.0	3.3	0.0	0.0	5.2	0.0	2.4	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	375	2711	0	0	3022		265	0	118			
V/C Ratio(X)	0.71	0.19	0.00	0.00	0.23		0.41	0.00	0.63			
Avail Cap(c_a), veh/h	864	2711	0	0	3022		802	0	357			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.97	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.5	2.6	0.0	0.0	7.7	0.0	35.4	0.0	35.9			
Incr Delay (d2), s/veh	2.5	0.2	0.0	0.0	0.2	0.0	1.0	0.0	5.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	0.8	0.0	0.0	1.7	0.0	1.0	0.0	1.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.9	2.8	0.0	0.0	7.9	0.0	36.4	0.0	41.3			
LnGrp LOS	D	A			A		D		D			
Approach Vol, veh/h		789			702			184				
Approach Delay, s/veh		14.4			7.9			38.4				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.0			13.7	53.4		13.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		7.0				
Max Green Setting (Gmax), s		49.0			20.0	24.0		18.0				
Max Q Clear Time (g_c+I1), s		5.3			8.0	7.2		5.6				
Green Ext Time (p_c), s		4.0			0.7	4.5		0.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.3
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

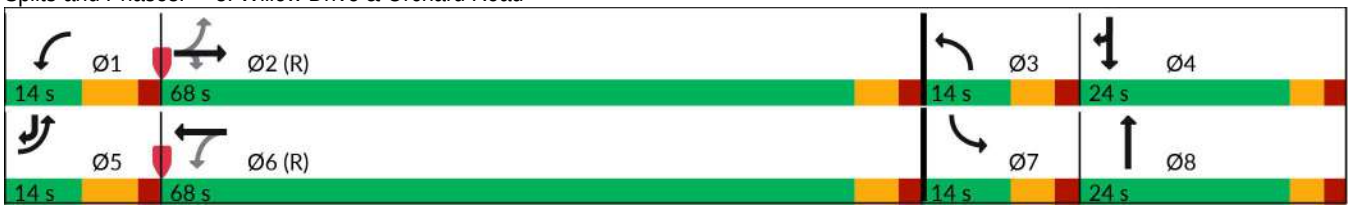
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	597	677	304	45	988	106	71	9	21	119
Future Volume (vph)	597	677	304	45	988	106	71	9	21	119
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	14.0	68.0	68.0	14.0	68.0	14.0	24.0	14.0	24.0	
Total Split (%)	11.7%	56.7%	56.7%	11.7%	56.7%	11.7%	20.0%	11.7%	20.0%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	597	677	304	45	988	152	106	71	32	9	21	119
Future Volume (veh/h)	597	677	304	45	988	152	106	71	32	9	21	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	649	736	0	49	1074	0	115	77	0	10	23	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	781	2328		574	3218		169	186		21	117	337
Arrive On Green	0.10	1.00	0.00	0.01	0.21	0.00	0.05	0.10	0.00	0.01	0.06	0.06
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	649	736	0	49	1074	0	115	77	0	10	23	129
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	7.0	0.0	0.0	1.1	21.5	0.0	3.9	4.6	0.0	0.7	1.4	5.1
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.1	21.5	0.0	3.9	4.6	0.0	0.7	1.4	5.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	781	2328		574	3218		169	186		21	117	337
V/C Ratio(X)	0.83	0.32		0.09	0.33		0.68	0.41		0.48	0.20	0.38
Avail Cap(c_a), veh/h	781	2328		619	3218		230	296		119	296	604
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.00	0.80	0.80	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	0.0	7.1	26.1	0.0	56.2	50.7	0.0	58.9	53.4	48.6
Incr Delay (d2), s/veh	6.2	0.3	0.0	0.1	0.2	0.0	4.8	1.5	0.0	15.7	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.1	0.0	0.4	9.9	0.0	1.8	2.3	0.0	0.4	0.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.3	0.3	0.0	7.2	26.3	0.0	60.9	52.2	0.0	74.6	54.2	49.3
LnGrp LOS	C	A		A	C		E	D		E	D	D
Approach Vol, veh/h		1385			1123			192			162	
Approach Delay, s/veh		11.1			25.5			57.4			51.6	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	84.6	11.9	12.5	14.0	81.6	7.4	17.0
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	7.0	62.0	8.0	19.0	7.0	62.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	2.0	5.9	7.1	9.0	23.5	2.7	6.6
Green Ext Time (p_c), s	0.0	6.2	0.1	0.4	0.0	9.7	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	22.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

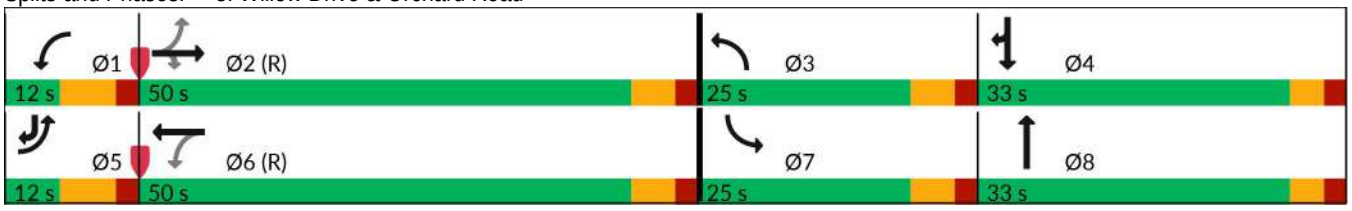
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	131	914	128	41	943	316	59	36	32	533
Future Volume (vph)	131	914	128	41	943	316	59	36	32	533
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	14.5	34.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	25.0	33.0	25.0	33.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	20.8%	27.5%	20.8%	27.5%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	914	128	41	943	27	316	59	145	36	32	533
Future Volume (veh/h)	131	914	128	41	943	27	316	59	145	36	32	533
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	993	0	45	1025	0	343	64	0	39	35	579
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	658	1534		237	2158		410	572		54	407	722
Arrive On Green	0.04	0.43	0.00	0.06	0.85	0.00	0.12	0.31	0.00	0.03	0.22	0.22
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	142	993	0	45	1025	0	343	64	0	39	35	579
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	2.8	26.5	0.0	1.7	6.2	0.0	11.7	3.0	0.0	2.6	1.8	23.3
Cycle Q Clear(g_c), s	2.8	26.5	0.0	1.7	6.2	0.0	11.7	3.0	0.0	2.6	1.8	23.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	658	1534		237	2158		410	572		54	407	722
V/C Ratio(X)	0.22	0.65		0.19	0.48		0.84	0.11		0.72	0.09	0.80
Avail Cap(c_a), veh/h	660	1534		254	2158		547	572		282	436	766
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	0.85	0.85	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	26.9	0.0	20.5	5.8	0.0	51.7	29.9	0.0	57.7	37.5	41.6
Incr Delay (d2), s/veh	0.2	2.0	0.0	0.3	0.6	0.0	8.3	0.1	0.0	16.5	0.1	5.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	11.5	0.0	0.7	1.7	0.0	5.5	1.4	0.0	1.4	0.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	28.9	0.0	20.8	6.5	0.0	60.1	30.0	0.0	74.2	37.5	47.5
LnGrp LOS	B	C		C	A		E	C		E	D	D
Approach Vol, veh/h		1135			1070			407			653	
Approach Delay, s/veh		27.6			7.1			55.4			48.5	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	57.8	20.2	31.1	12.0	56.7	9.6	41.7
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	5.0	44.0	19.0	28.0	5.0	44.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	3.7	28.5	13.7	25.3	4.8	8.2	4.6	5.0
Green Ext Time (p_c), s	0.0	6.4	0.6	0.8	0.0	9.0	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	28.5
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

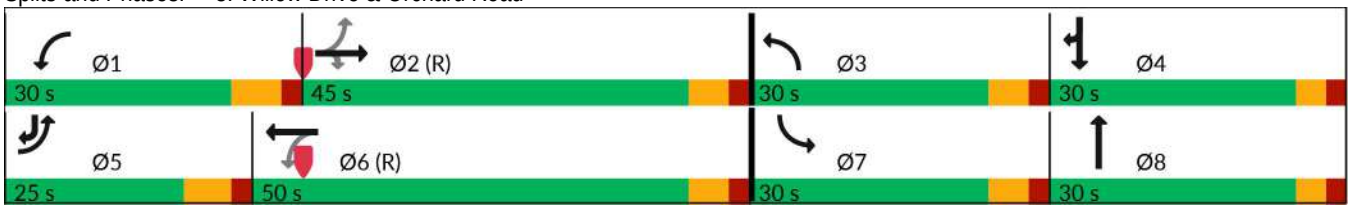
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	400	85	10	420	29	3	3	3	40
Future Volume (vph)	31	400	85	10	420	29	3	3	3	40
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	25.0	45.0	45.0	30.0	50.0	30.0	30.0	30.0	30.0	
Total Split (%)	18.5%	33.3%	33.3%	22.2%	37.0%	22.2%	22.2%	22.2%	22.2%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	400	85	10	420	3	29	3	6	3	3	40
Future Volume (veh/h)	31	400	85	10	420	3	29	3	6	3	3	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	435	0	11	457	0	32	3	0	3	3	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1536	2673		760	3768		89	100		7	59	163
Arrive On Green	0.03	0.75	0.00	0.03	1.00	0.00	0.03	0.05	0.00	0.00	0.03	0.03
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	34	435	0	11	457	0	32	3	0	3	3	43
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	0.3	4.7	0.0	0.2	0.0	0.0	1.2	0.2	0.0	0.2	0.2	2.0
Cycle Q Clear(g_c), s	0.3	4.7	0.0	0.2	0.0	0.0	1.2	0.2	0.0	0.2	0.2	2.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1536	2673		760	3768		89	100		7	59	163
V/C Ratio(X)	0.02	0.16		0.01	0.12		0.36	0.03		0.43	0.05	0.26
Avail Cap(c_a), veh/h	1905	2673		1041	3768		614	346		317	346	591
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.90	0.90	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	4.7	0.0	4.2	0.0	0.0	64.6	60.5	0.0	67.1	63.4	60.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0	2.4	0.1	0.0	36.2	0.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.6	0.0	0.1	0.0	0.0	0.6	0.1	0.0	0.2	0.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.8	4.9	0.0	4.2	0.1	0.0	67.1	60.7	0.0	103.3	63.7	61.6
LnGrp LOS	A	A		A	A		E	E		F	E	E
Approach Vol, veh/h		469			468			35			49	
Approach Delay, s/veh		4.8			0.2			66.5			64.3	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	107.5	9.5	9.3	10.6	105.6	6.5	12.3
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	23.0	39.0	24.0	25.0	18.0	44.0	24.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	6.7	3.2	4.0	2.3	2.0	2.2	2.2
Green Ext Time (p_c), s	0.0	3.1	0.1	0.1	0.0	3.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.6
HCM 7th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

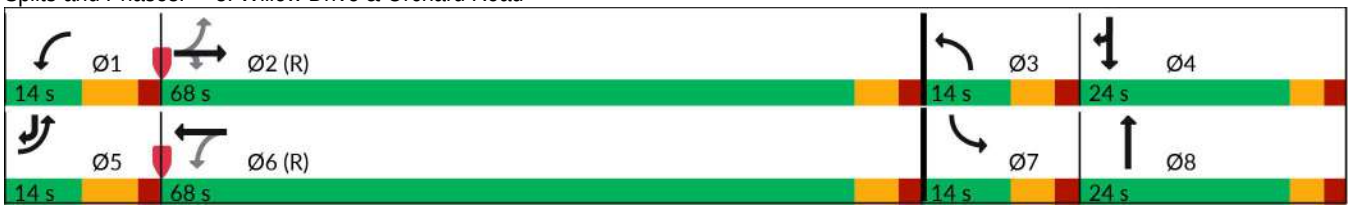
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	610	702	311	46	1019	109	72	9	21	122
Future Volume (vph)	610	702	311	46	1019	109	72	9	21	122
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	14.0	68.0	68.0	14.0	68.0	14.0	24.0	14.0	24.0	
Total Split (%)	11.7%	56.7%	56.7%	11.7%	56.7%	11.7%	20.0%	11.7%	20.0%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	610	702	311	46	1019	155	109	72	33	9	21	122
Future Volume (veh/h)	610	702	311	46	1019	155	109	72	33	9	21	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	663	763	0	50	1108	0	118	78	0	10	23	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	758	2319		562	3206		172	191		21	120	341
Arrive On Green	0.10	1.00	0.00	0.01	0.21	0.00	0.05	0.10	0.00	0.01	0.06	0.06
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	663	763	0	50	1108	0	118	78	0	10	23	133
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	7.0	0.0	0.0	1.2	22.2	0.0	4.0	4.7	0.0	0.7	1.4	5.3
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.2	22.2	0.0	4.0	4.7	0.0	0.7	1.4	5.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	758	2319		562	3206		172	191		21	120	341
V/C Ratio(X)	0.87	0.33		0.09	0.35		0.69	0.41		0.48	0.19	0.39
Avail Cap(c_a), veh/h	758	2319		606	3206		230	296		119	296	604
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	0.78	0.78	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	0.0	7.2	26.5	0.0	56.1	50.5	0.0	58.9	53.2	48.5
Incr Delay (d2), s/veh	9.0	0.3	0.0	0.1	0.2	0.0	5.2	1.4	0.0	15.7	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.1	0.0	0.4	10.2	0.0	1.9	2.3	0.0	0.4	0.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.3	0.3	0.0	7.3	26.7	0.0	61.3	51.9	0.0	74.6	54.0	49.3
LnGrp LOS	C	A		A	C		E	D		E	D	D
Approach Vol, veh/h		1426			1158			196			166	
Approach Delay, s/veh		13.3			25.9			57.6			51.4	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	84.3	12.0	12.7	14.0	81.3	7.4	17.2
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	7.0	62.0	8.0	19.0	7.0	62.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	2.0	6.0	7.3	9.0	24.2	2.7	6.7
Green Ext Time (p_c), s	0.0	6.5	0.1	0.4	0.0	10.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	23.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

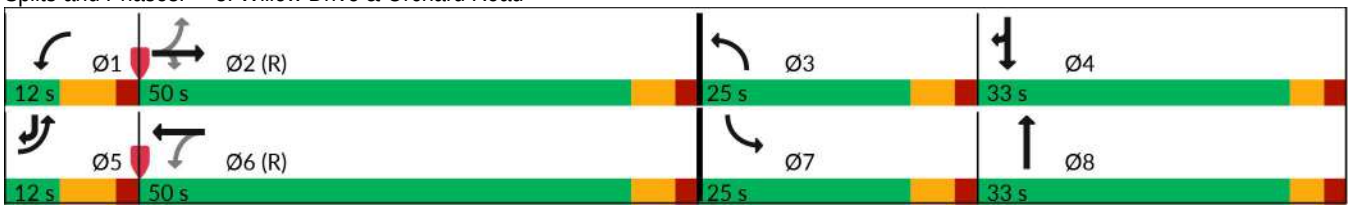
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	137	958	134	42	990	325	60	37	33	546
Future Volume (vph)	137	958	134	42	990	325	60	37	33	546
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	14.5	34.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	25.0	33.0	25.0	33.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	20.8%	27.5%	20.8%	27.5%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	958	134	42	990	28	325	60	148	37	33	546
Future Volume (veh/h)	137	958	134	42	990	28	325	60	148	37	33	546
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	1041	0	46	1076	0	353	65	0	40	36	593
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	624	1509		219	2124		420	584		55	414	732
Arrive On Green	0.04	0.42	0.00	0.07	0.83	0.00	0.12	0.31	0.00	0.03	0.22	0.22
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	149	1041	0	46	1076	0	353	65	0	40	36	593
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	2.9	28.6	0.0	1.7	7.3	0.0	12.0	3.0	0.0	2.7	1.8	23.9
Cycle Q Clear(g_c), s	2.9	28.6	0.0	1.7	7.3	0.0	12.0	3.0	0.0	2.7	1.8	23.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	624	1509		219	2124		420	584		55	414	732
V/C Ratio(X)	0.24	0.69		0.21	0.51		0.84	0.11		0.73	0.09	0.81
Avail Cap(c_a), veh/h	625	1509		235	2124		547	584		282	436	766
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	0.83	0.83	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	28.1	0.0	21.4	6.5	0.0	51.6	29.4	0.0	57.7	37.1	41.4
Incr Delay (d2), s/veh	0.2	2.5	0.0	0.4	0.7	0.0	8.9	0.1	0.0	17.0	0.1	6.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.5	0.0	0.7	2.0	0.0	5.7	1.4	0.0	1.5	0.9	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.9	30.5	0.0	21.8	7.2	0.0	60.5	29.5	0.0	74.7	37.2	47.7
LnGrp LOS	B	C		C	A		E	C		E	D	D
Approach Vol, veh/h		1190			1122			418			669	
Approach Delay, s/veh		29.1			7.8			55.7			48.8	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	57.0	20.6	31.5	12.0	55.9	9.7	42.4
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	5.0	44.0	19.0	28.0	5.0	44.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	3.7	30.6	14.0	25.9	4.9	9.3	4.7	5.0
Green Ext Time (p_c), s	0.0	6.2	0.6	0.7	0.0	9.5	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	29.2
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

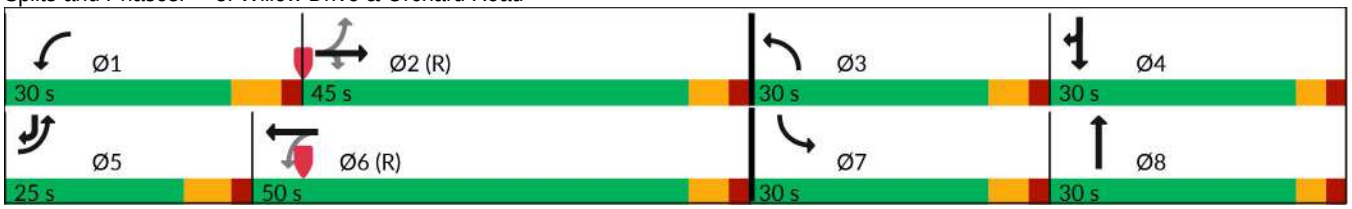
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	32	408	87	10	428	30	3	3	3	41
Future Volume (vph)	32	408	87	10	428	30	3	3	3	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	25.0	45.0	45.0	30.0	50.0	30.0	30.0	30.0	30.0	
Total Split (%)	18.5%	33.3%	33.3%	22.2%	37.0%	22.2%	22.2%	22.2%	22.2%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	408	87	10	428	3	30	3	6	3	3	41
Future Volume (veh/h)	32	408	87	10	428	3	30	3	6	3	3	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	443	0	11	465	0	33	3	0	3	3	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1526	2670		753	3762		91	102		7	60	165
Arrive On Green	0.03	0.75	0.00	0.03	1.00	0.00	0.03	0.05	0.00	0.00	0.03	0.03
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	35	443	0	11	465	0	33	3	0	3	3	45
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	0.3	4.8	0.0	0.2	0.0	0.0	1.3	0.2	0.0	0.2	0.2	2.1
Cycle Q Clear(g_c), s	0.3	4.8	0.0	0.2	0.0	0.0	1.3	0.2	0.0	0.2	0.2	2.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1526	2670		753	3762		91	102		7	60	165
V/C Ratio(X)	0.02	0.17		0.01	0.12		0.36	0.03		0.43	0.05	0.27
Avail Cap(c_a), veh/h	1893	2670		1034	3762		614	346		317	346	592
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.90	0.90	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	4.8	0.0	4.2	0.0	0.0	64.6	60.4	0.0	67.1	63.3	60.7
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0	2.4	0.1	0.0	36.2	0.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.7	0.0	0.1	0.0	0.0	0.6	0.1	0.0	0.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.8	4.9	0.0	4.3	0.1	0.0	67.0	60.6	0.0	103.3	63.7	61.6
LnGrp LOS	A	A		A	A		E	E		F	E	E
Approach Vol, veh/h		478			476			36			51	
Approach Delay, s/veh		4.8			0.2			66.5			64.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	107.4	9.5	9.3	10.7	105.5	6.5	12.4
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	23.0	39.0	24.0	25.0	18.0	44.0	24.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	6.8	3.3	4.1	2.3	2.0	2.2	2.2
Green Ext Time (p_c), s	0.0	3.2	0.1	0.1	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.7
HCM 7th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

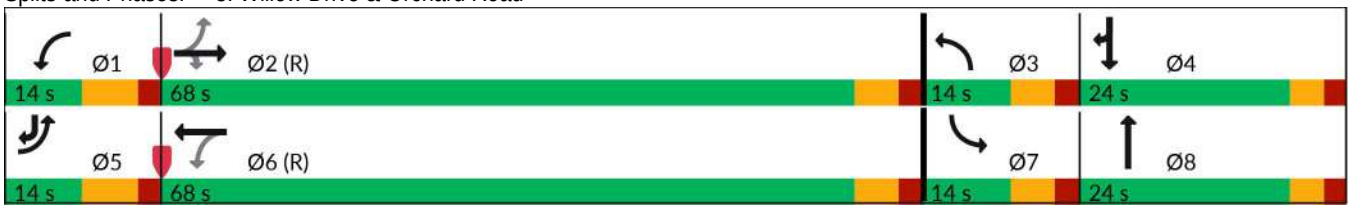
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	610	702	338	52	1019	127	72	9	21	122
Future Volume (vph)	610	702	338	52	1019	127	72	9	21	122
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	14.0	68.0	68.0	14.0	68.0	14.0	24.0	14.0	24.0	
Total Split (%)	11.7%	56.7%	56.7%	11.7%	56.7%	11.7%	20.0%	11.7%	20.0%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	610	702	338	52	1019	155	127	72	37	9	21	122
Future Volume (veh/h)	610	702	338	52	1019	155	127	72	37	9	21	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	663	763	0	57	1108	0	138	78	0	10	23	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	752	2291		561	3175		193	202		21	120	341
Arrive On Green	0.10	1.00	0.00	0.01	0.21	0.00	0.06	0.11	0.00	0.01	0.06	0.06
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	663	763	0	57	1108	0	138	78	0	10	23	133
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	7.0	0.0	0.0	1.4	22.3	0.0	4.7	4.7	0.0	0.7	1.4	5.3
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.4	22.3	0.0	4.7	4.7	0.0	0.7	1.4	5.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	752	2291		561	3175		193	202		21	120	341
V/C Ratio(X)	0.88	0.33		0.10	0.35		0.72	0.39		0.48	0.19	0.39
Avail Cap(c_a), veh/h	752	2291		601	3175		230	296		119	296	604
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.00	0.78	0.78	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	0.0	7.5	26.9	0.0	55.7	49.8	0.0	58.9	53.2	48.5
Incr Delay (d2), s/veh	9.6	0.3	0.0	0.1	0.2	0.0	8.2	1.2	0.0	15.7	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.1	0.0	0.5	10.2	0.0	2.3	2.3	0.0	0.4	0.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.6	0.3	0.0	7.5	27.1	0.0	63.9	51.0	0.0	74.6	54.0	49.3
LnGrp LOS	C	A		A	C		E	D		E	D	D
Approach Vol, veh/h		1426			1165			216			166	
Approach Delay, s/veh		13.9			26.2			59.3			51.4	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	83.4	12.7	12.7	14.0	80.6	7.4	18.0
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	7.0	62.0	8.0	19.0	7.0	62.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	3.4	2.0	6.7	7.3	9.0	24.3	2.7	6.7
Green Ext Time (p_c), s	0.0	6.5	0.0	0.4	0.0	10.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

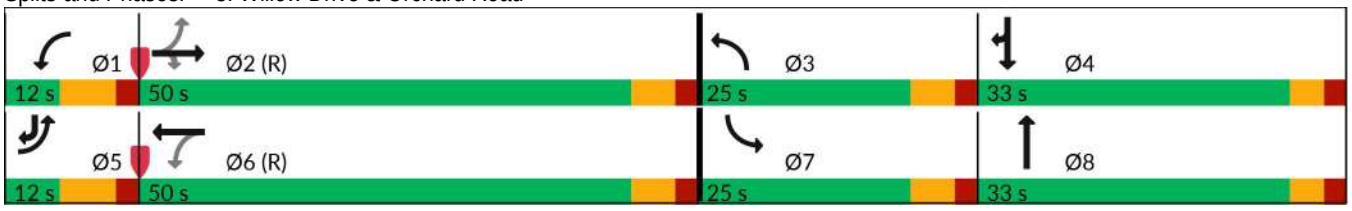
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	137	958	163	49	990	361	60	37	33	546
Future Volume (vph)	137	958	163	49	990	361	60	37	33	546
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	14.5	34.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	25.0	33.0	25.0	33.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	20.8%	27.5%	20.8%	27.5%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	958	163	49	990	28	361	60	156	37	33	546
Future Volume (veh/h)	137	958	163	49	990	28	361	60	156	37	33	546
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	1041	0	53	1076	0	392	65	0	40	36	593
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	605	1465		213	2070		457	603		55	414	732
Arrive On Green	0.04	0.41	0.00	0.07	0.81	0.00	0.13	0.32	0.00	0.03	0.22	0.22
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	149	1041	0	53	1076	0	392	65	0	40	36	593
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	3.0	29.2	0.0	2.1	8.3	0.0	13.3	2.9	0.0	2.7	1.8	23.9
Cycle Q Clear(g_c), s	3.0	29.2	0.0	2.1	8.3	0.0	13.3	2.9	0.0	2.7	1.8	23.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	605	1465		213	2070		457	603		55	414	732
V/C Ratio(X)	0.25	0.71		0.25	0.52		0.86	0.11		0.73	0.09	0.81
Avail Cap(c_a), veh/h	606	1465		226	2070		547	603		282	436	766
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.00	0.83	0.83	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	29.3	0.0	22.3	7.5	0.0	51.0	28.5	0.0	57.7	37.1	41.4
Incr Delay (d2), s/veh	0.2	2.8	0.0	0.5	0.8	0.0	11.3	0.1	0.0	17.0	0.1	6.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.9	0.0	0.9	2.2	0.0	6.5	1.3	0.0	1.5	0.9	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.7	32.1	0.0	22.8	8.3	0.0	62.3	28.6	0.0	74.7	37.2	47.7
LnGrp LOS	B	C		C	A		E	C		E	D	D
Approach Vol, veh/h		1190			1129			457			669	
Approach Delay, s/veh		30.5			9.0			57.5			48.8	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	55.5	21.9	31.5	12.0	54.6	9.7	43.7
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	5.0	44.0	19.0	28.0	5.0	44.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	4.1	31.2	15.3	25.9	5.0	10.3	4.7	4.9
Green Ext Time (p_c), s	0.0	6.0	0.5	0.7	0.0	9.4	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	30.6
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

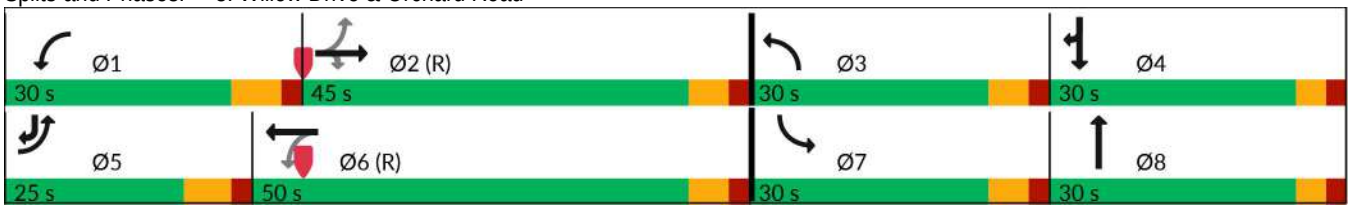
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	32	408	259	50	428	209	3	3	3	41
Future Volume (vph)	32	408	259	50	428	209	3	3	3	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	25.0	45.0	45.0	30.0	50.0	30.0	30.0	30.0	30.0	
Total Split (%)	18.5%	33.3%	33.3%	22.2%	37.0%	22.2%	22.2%	22.2%	22.2%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	408	259	50	428	3	209	3	47	3	3	41
Future Volume (veh/h)	32	408	259	50	428	3	209	3	47	3	3	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	443	0	54	465	0	227	3	0	3	3	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1413	2396		705	3468		289	209		7	60	165
Arrive On Green	0.03	0.67	0.00	0.06	1.00	0.00	0.08	0.11	0.00	0.00	0.03	0.03
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	35	443	0	54	465	0	227	3	0	3	3	45
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	0.4	6.3	0.0	1.2	0.0	0.0	8.7	0.2	0.0	0.2	0.2	2.1
Cycle Q Clear(g_c), s	0.4	6.3	0.0	1.2	0.0	0.0	8.7	0.2	0.0	0.2	0.2	2.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1413	2396		705	3468		289	209		7	60	165
V/C Ratio(X)	0.02	0.18		0.08	0.13		0.78	0.01		0.43	0.05	0.27
Avail Cap(c_a), veh/h	1781	2396		951	3468		614	346		317	346	592
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.89	0.89	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	8.2	0.0	6.0	0.0	0.0	60.7	53.3	0.0	67.1	63.3	60.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0	4.7	0.0	0.0	36.2	0.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	0.0	0.4	0.0	0.0	4.0	0.1	0.0	0.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.1	8.4	0.0	6.0	0.1	0.0	65.3	53.3	0.0	103.3	63.7	61.6
LnGrp LOS	A	A		A	A		E	D		F	E	E
Approach Vol, veh/h		478			519			230			51	
Approach Delay, s/veh		8.2			0.7			65.2			64.2	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	97.0	17.3	9.3	10.7	97.7	6.5	20.1
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	23.0	39.0	24.0	25.0	18.0	44.0	24.0	25.0
Max Q Clear Time (g_c+I1), s	3.2	8.3	10.7	4.1	2.4	2.0	2.2	2.2
Green Ext Time (p_c), s	0.1	3.2	0.6	0.1	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	17.6
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

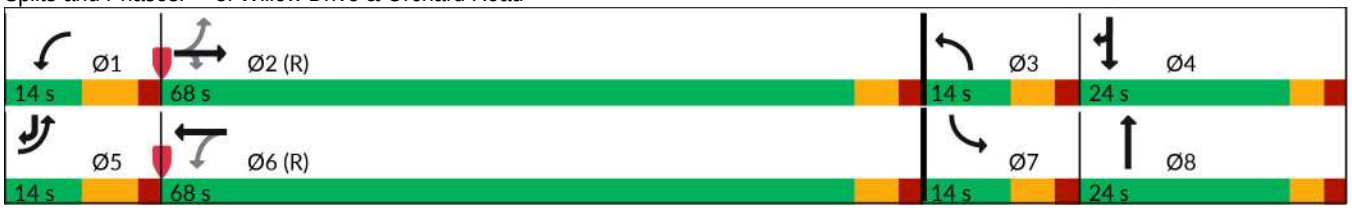
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	659	758	336	50	1101	118	78	10	23	132
Future Volume (vph)	659	758	336	50	1101	118	78	10	23	132
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	14.0	68.0	68.0	14.0	68.0	14.0	24.0	14.0	24.0	
Total Split (%)	11.7%	56.7%	56.7%	11.7%	56.7%	11.7%	20.0%	11.7%	20.0%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	659	758	336	50	1101	168	118	78	35	10	23	132
Future Volume (veh/h)	659	758	336	50	1101	168	118	78	35	10	23	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	716	824	0	54	1197	0	128	85	0	11	25	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	702	2291		535	3172		182	201		23	126	351
Arrive On Green	0.10	1.00	0.00	0.01	0.21	0.00	0.05	0.11	0.00	0.01	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	716	824	0	54	1197	0	128	85	0	11	25	143
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	7.0	0.0	0.0	1.3	24.2	0.0	4.4	5.1	0.0	0.7	1.5	5.7
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.3	24.2	0.0	4.4	5.1	0.0	0.7	1.5	5.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	702	2291		535	3172		182	201		23	126	351
V/C Ratio(X)	1.02	0.36		0.10	0.38		0.70	0.42		0.48	0.20	0.41
Avail Cap(c_a), veh/h	702	2291		577	3172		230	296		119	296	604
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.00	0.73	0.73	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	7.5	27.7	0.0	55.9	50.1	0.0	58.8	52.9	48.3
Incr Delay (d2), s/veh	34.4	0.3	0.0	0.1	0.3	0.0	6.7	1.4	0.0	15.0	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.1	0.0	0.5	11.1	0.0	2.1	2.5	0.0	0.4	0.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.1	0.3	0.0	7.6	28.0	0.0	62.6	51.5	0.0	73.8	53.6	49.1
LnGrp LOS	F	A		A	C		E	D		E	D	D
Approach Vol, veh/h		1540			1251			213			179	
Approach Delay, s/veh		27.7			27.1			58.2			51.2	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	83.4	12.3	13.1	14.0	80.6	7.5	17.9
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	7.0	62.0	8.0	19.0	7.0	62.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	3.3	2.0	6.4	7.7	9.0	26.2	2.7	7.1
Green Ext Time (p_c), s	0.0	7.2	0.1	0.4	0.0	11.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	30.8
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

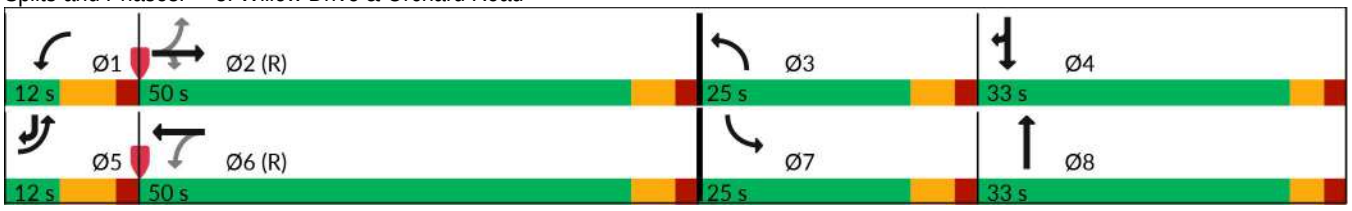
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	1033	144	45	1067	351	65	40	35	590
Future Volume (vph)	147	1033	144	45	1067	351	65	40	35	590
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	14.5	34.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	25.0	33.0	25.0	33.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	20.8%	27.5%	20.8%	27.5%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	1033	144	45	1067	30	351	65	160	40	35	590
Future Volume (veh/h)	147	1033	144	45	1067	30	351	65	160	40	35	590
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	1123	0	49	1160	0	382	71	0	43	38	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	1435		196	2021		447	619		57	436	767
Arrive On Green	0.06	0.54	0.00	0.04	0.53	0.00	0.13	0.33	0.00	0.03	0.23	0.23
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	160	1123	0	49	1160	0	382	71	0	43	38	641
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	3.3	30.3	0.0	1.9	18.5	0.0	13.0	3.2	0.0	2.9	1.9	26.0
Cycle Q Clear(g_c), s	3.3	30.3	0.0	1.9	18.5	0.0	13.0	3.2	0.0	2.9	1.9	26.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	1435		196	2021		447	619		57	436	767
V/C Ratio(X)	0.33	0.78		0.25	0.57		0.85	0.11		0.76	0.09	0.84
Avail Cap(c_a), veh/h	491	1435		210	2021		547	619		282	436	767
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	23.6	0.0	23.8	21.6	0.0	51.1	27.9	0.0	57.6	36.0	41.0
Incr Delay (d2), s/veh	0.4	4.0	0.0	0.5	0.9	0.0	10.7	0.1	0.0	18.7	0.1	8.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	12.0	0.0	0.8	6.8	0.0	6.3	1.4	0.0	1.6	0.9	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.7	27.5	0.0	24.3	22.5	0.0	61.8	28.0	0.0	76.3	36.1	49.0
LnGrp LOS	C	C		C	C		E	C		E	D	D
Approach Vol, veh/h		1283			1209			453			722	
Approach Delay, s/veh		26.8			22.6			56.5			49.9	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	54.5	21.5	33.0	12.0	53.5	9.8	44.7
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	5.0	44.0	19.0	28.0	5.0	44.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	3.9	32.3	15.0	28.0	5.3	20.5	4.9	5.2
Green Ext Time (p_c), s	0.0	6.1	0.5	0.0	0.0	9.1	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	33.6
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

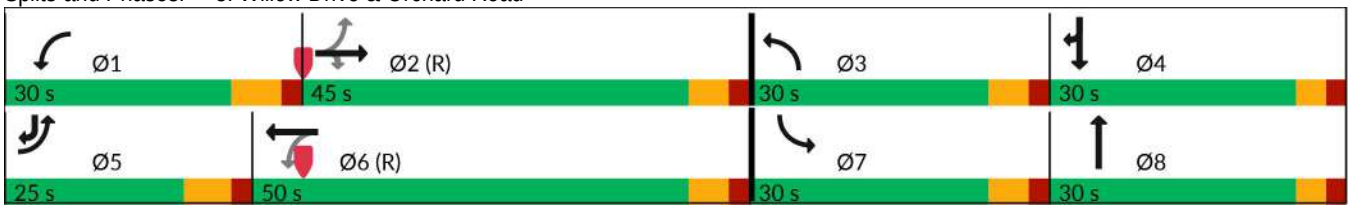
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	34	441	94	11	463	32	3	3	3	44
Future Volume (vph)	34	441	94	11	463	32	3	3	3	44
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	25.0	45.0	45.0	30.0	50.0	30.0	30.0	30.0	30.0	
Total Split (%)	18.5%	33.3%	33.3%	22.2%	37.0%	22.2%	22.2%	22.2%	22.2%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	441	94	11	463	3	32	3	7	3	3	44
Future Volume (veh/h)	34	441	94	11	463	3	32	3	7	3	3	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	479	0	12	503	0	35	3	0	3	3	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1479	2662		727	3751		94	104		7	61	169
Arrive On Green	0.03	0.75	0.00	0.03	1.00	0.00	0.03	0.06	0.00	0.00	0.03	0.03
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	37	479	0	12	503	0	35	3	0	3	3	48
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	0.3	5.3	0.0	0.2	0.0	0.0	1.3	0.2	0.0	0.2	0.2	2.2
Cycle Q Clear(g_c), s	0.3	5.3	0.0	0.2	0.0	0.0	1.3	0.2	0.0	0.2	0.2	2.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1479	2662		727	3751		94	104		7	61	169
V/C Ratio(X)	0.03	0.18		0.02	0.13		0.37	0.03		0.43	0.05	0.28
Avail Cap(c_a), veh/h	1844	2662		1007	3751		614	346		317	346	594
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.89	0.89	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	4.9	0.0	4.3	0.0	0.0	64.5	60.3	0.0	67.1	63.3	60.6
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0	2.5	0.1	0.0	36.2	0.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.9	0.0	0.1	0.0	0.0	0.6	0.1	0.0	0.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.9	5.1	0.0	4.3	0.1	0.0	67.0	60.4	0.0	103.3	63.6	61.5
LnGrp LOS	A	A		A	A		E	E		F	E	E
Approach Vol, veh/h		516			515			38			54	
Approach Delay, s/veh		5.0			0.2			66.5			64.0	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	107.1	9.7	9.4	10.8	105.2	6.5	12.5
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	23.0	39.0	24.0	25.0	18.0	44.0	24.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	7.3	3.3	4.2	2.3	2.0	2.2	2.2
Green Ext Time (p_c), s	0.0	3.5	0.1	0.1	0.1	3.9	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.7
HCM 7th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

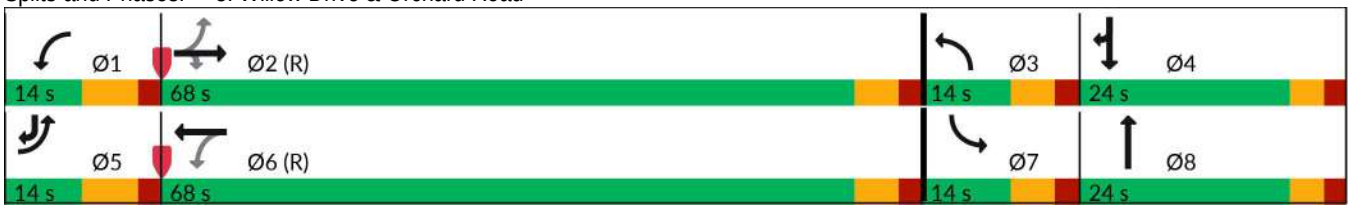
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	659	758	363	56	1101	136	78	10	23	132
Future Volume (vph)	659	758	363	56	1101	136	78	10	23	132
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	14.0	68.0	68.0	14.0	68.0	14.0	24.0	14.0	24.0	
Total Split (%)	11.7%	56.7%	56.7%	11.7%	56.7%	11.7%	20.0%	11.7%	20.0%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	659	758	363	56	1101	168	136	78	39	10	23	132
Future Volume (veh/h)	659	758	363	56	1101	168	136	78	39	10	23	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	716	824	0	61	1197	0	148	85	0	11	25	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	696	2265		533	3142		203	212		23	126	351
Arrive On Green	0.10	1.00	0.00	0.01	0.20	0.00	0.06	0.11	0.00	0.01	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	716	824	0	61	1197	0	148	85	0	11	25	143
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	7.0	0.0	0.0	1.5	24.3	0.0	5.1	5.1	0.0	0.7	1.5	5.7
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.5	24.3	0.0	5.1	5.1	0.0	0.7	1.5	5.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	696	2265		533	3142		203	212		23	126	351
V/C Ratio(X)	1.03	0.36		0.11	0.38		0.73	0.40		0.48	0.20	0.41
Avail Cap(c_a), veh/h	696	2265		573	3142		230	296		119	296	604
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.00	0.73	0.73	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	0.0	7.7	28.1	0.0	55.5	49.4	0.0	58.8	52.9	48.3
Incr Delay (d2), s/veh	36.7	0.3	0.0	0.1	0.3	0.0	9.7	1.2	0.0	15.0	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.1	0.0	0.6	11.2	0.0	2.5	2.4	0.0	0.4	0.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.7	0.3	0.0	7.8	28.3	0.0	65.3	50.6	0.0	73.8	53.6	49.1
LnGrp LOS	F	A		A	C		E	D		E	D	D
Approach Vol, veh/h		1540			1258			233			179	
Approach Delay, s/veh		28.9			27.3			59.9			51.2	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	82.5	13.0	13.1	14.0	79.8	7.5	18.6
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	7.0	62.0	8.0	19.0	7.0	62.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	3.5	2.0	7.1	7.7	9.0	26.3	2.7	7.1
Green Ext Time (p_c), s	0.0	7.2	0.0	0.4	0.0	11.0	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.8
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

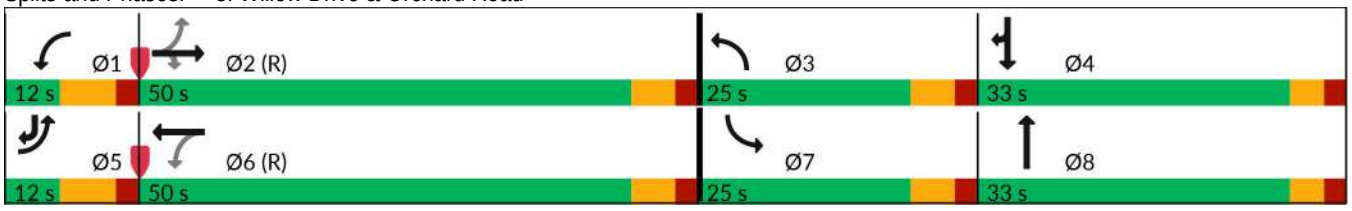
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	147	1033	173	52	1067	387	65	40	35	590
Future Volume (vph)	147	1033	173	52	1067	387	65	40	35	590
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	14.5	34.0	
Total Split (s)	12.0	50.0	50.0	12.0	50.0	25.0	33.0	25.0	33.0	
Total Split (%)	10.0%	41.7%	41.7%	10.0%	41.7%	20.8%	27.5%	20.8%	27.5%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	1033	173	52	1067	30	387	65	168	40	35	590
Future Volume (veh/h)	147	1033	173	52	1067	30	387	65	168	40	35	590
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	1123	0	57	1160	0	421	71	0	43	38	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	1392		189	1968		483	638		57	436	767
Arrive On Green	0.06	0.52	0.00	0.05	0.51	0.00	0.14	0.34	0.00	0.03	0.23	0.23
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	160	1123	0	57	1160	0	421	71	0	43	38	641
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	3.3	31.3	0.0	2.3	19.0	0.0	14.3	3.1	0.0	2.9	1.9	26.0
Cycle Q Clear(g_c), s	3.3	31.3	0.0	2.3	19.0	0.0	14.3	3.1	0.0	2.9	1.9	26.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	477	1392		189	1968		483	638		57	436	767
V/C Ratio(X)	0.34	0.81		0.30	0.59		0.87	0.11		0.76	0.09	0.84
Avail Cap(c_a), veh/h	477	1392		200	1968		547	638		282	436	767
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	25.0	0.0	24.9	22.6	0.0	50.6	27.1	0.0	57.6	36.0	41.0
Incr Delay (d2), s/veh	0.4	4.7	0.0	0.7	1.0	0.0	13.2	0.1	0.0	18.7	0.1	8.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	12.6	0.0	1.0	7.1	0.0	7.1	1.4	0.0	1.6	0.9	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.5	29.7	0.0	25.6	23.6	0.0	63.7	27.1	0.0	76.3	36.1	49.0
LnGrp LOS	C	C		C	C		E	C		E	D	D
Approach Vol, veh/h		1283			1217			492			722	
Approach Delay, s/veh		28.8			23.7			58.5			49.9	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	53.0	22.8	33.0	12.0	52.3	9.8	45.9
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	5.0	44.0	19.0	28.0	5.0	44.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	4.3	33.3	16.3	28.0	5.3	21.0	4.9	5.1
Green Ext Time (p_c), s	0.0	5.7	0.4	0.0	0.0	9.0	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	35.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

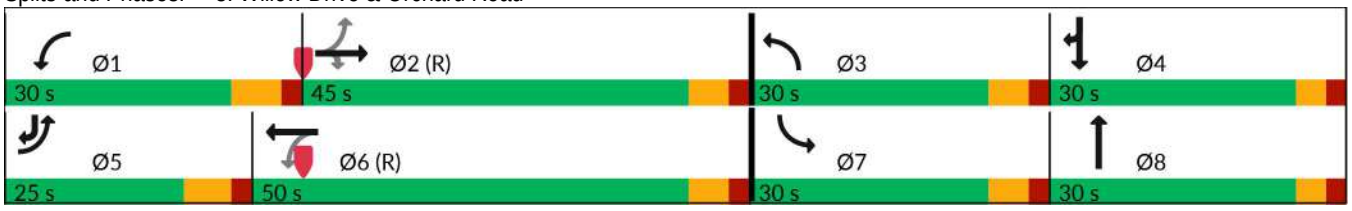
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	34	441	266	51	463	211	3	3	3	44
Future Volume (vph)	34	441	266	51	463	211	3	3	3	44
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Prot	NA	pt+ov
Protected Phases	5	2		1	6	3	8	7	4	4 5
Permitted Phases	2		2	6						
Detector Phase	5	2	2	1	6	3	8	7	4	4 5
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	24.0	24.0	12.0	22.5	11.0	34.0	11.0	34.0	
Total Split (s)	25.0	45.0	45.0	30.0	50.0	30.0	30.0	30.0	30.0	
Total Split (%)	18.5%	33.3%	33.3%	22.2%	37.0%	22.2%	22.2%	22.2%	22.2%	
Yellow Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	3.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.0	6.0	7.0	6.0	6.0	5.0	6.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willow Drive & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	441	266	51	463	3	211	3	48	3	3	44
Future Volume (veh/h)	34	441	266	51	463	3	211	3	48	3	3	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	479	0	55	503	0	229	3	0	3	3	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1372	2391		680	3459		291	211		7	61	169
Arrive On Green	0.03	0.67	0.00	0.06	1.00	0.00	0.08	0.11	0.00	0.00	0.03	0.03
Sat Flow, veh/h	3456	3554	1585	1781	5274	0	3456	1870	0	1781	1870	2790
Grp Volume(v), veh/h	37	479	0	55	503	0	229	3	0	3	3	48
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1702	0	1728	1870	0	1781	1870	1395
Q Serve(g_s), s	0.4	6.9	0.0	1.3	0.0	0.0	8.8	0.2	0.0	0.2	0.2	2.2
Cycle Q Clear(g_c), s	0.4	6.9	0.0	1.3	0.0	0.0	8.8	0.2	0.0	0.2	0.2	2.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1372	2391		680	3459		291	211		7	61	169
V/C Ratio(X)	0.03	0.20		0.08	0.15		0.79	0.01		0.43	0.05	0.28
Avail Cap(c_a), veh/h	1737	2391		926	3459		614	346		317	346	594
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	0.88	0.88	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	8.3	0.0	6.0	0.0	0.0	60.6	53.2	0.0	67.1	63.3	60.6
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0	4.7	0.0	0.0	36.2	0.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	0.0	0.5	0.0	0.0	4.0	0.1	0.0	0.2	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.1	8.5	0.0	6.1	0.1	0.0	65.3	53.2	0.0	103.3	63.6	61.5
LnGrp LOS	A	A		A	A		E	D		F	E	E
Approach Vol, veh/h		516			558			232			54	
Approach Delay, s/veh		8.4			0.7			65.1			64.0	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	96.8	17.4	9.4	10.8	97.5	6.5	20.3
Change Period (Y+Rc), s	7.0	6.0	6.0	5.0	7.0	6.0	6.0	5.0
Max Green Setting (Gmax), s	23.0	39.0	24.0	25.0	18.0	44.0	24.0	25.0
Max Q Clear Time (g_c+I1), s	3.3	8.9	10.8	4.2	2.4	2.0	2.2	2.2
Green Ext Time (p_c), s	0.1	3.5	0.6	0.1	0.1	3.9	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	17.1
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

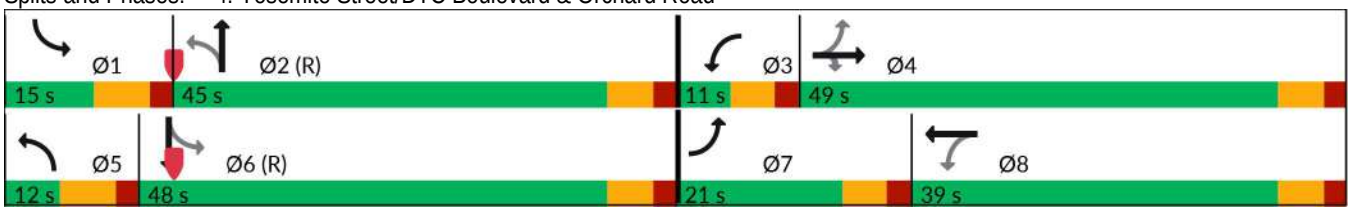
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	476	161	57	60	515	146	288	1112	191	979	493
Future Volume (vph)	476	161	57	60	515	146	288	1112	191	979	493
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	476	161	57	60	515	146	288	1112	36	191	979	493
Future Volume (veh/h)	476	161	57	60	515	146	288	1112	36	191	979	493
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	517	175	0	65	560	0	313	1209	39	208	1064	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	622	987		366	687		458	1429	46	230	1534	
Arrive On Green	0.04	0.09	0.00	0.04	0.19	0.00	0.06	0.54	0.54	0.07	0.43	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3514	113	1781	3554	1585
Grp Volume(v), veh/h	517	175	0	65	560	0	313	611	637	208	1064	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1781	1777	1585
Q Serve(g_s), s	13.8	5.5	0.0	3.5	18.1	0.0	5.0	34.9	35.0	8.0	29.1	0.0
Cycle Q Clear(g_c), s	13.8	5.5	0.0	3.5	18.1	0.0	5.0	34.9	35.0	8.0	29.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	622	987		366	687		458	723	753	230	1534	
V/C Ratio(X)	0.83	0.18		0.18	0.82		0.68	0.85	0.85	0.90	0.69	
Avail Cap(c_a), veh/h	622	1273		368	977		458	723	753	230	1534	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	41.8	0.0	36.6	46.4	0.0	29.4	24.3	24.4	28.1	27.6	0.0
Incr Delay (d2), s/veh	8.9	0.1	0.0	0.2	3.7	0.0	3.7	10.6	10.3	34.7	2.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	2.5	0.0	1.5	8.3	0.0	2.2	15.0	15.6	5.7	12.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	45.6	41.9	0.0	36.8	50.0	0.0	33.1	35.0	34.7	62.8	30.3	0.0
LnGrp LOS	D	D		D	D	A	C	C	C	E	C	A
Approach Vol, veh/h		692			784			1561			1808	
Approach Delay, s/veh		44.7			38.8			34.5			25.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.8	10.9	39.3	12.0	57.8	21.0	29.2
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	37.0	5.5	7.5	7.0	31.1	15.8	20.1
Green Ext Time (p_c), s	0.0	1.5	0.0	1.2	0.0	5.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	33.1
HCM 7th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

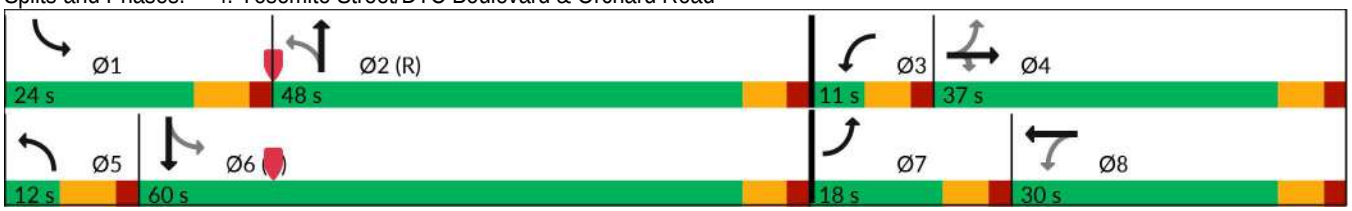
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	463	495	118	47	409	404	128	1347	292	1104	539
Future Volume (vph)	463	495	118	47	409	404	128	1347	292	1104	539
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	495	118	47	409	404	128	1347	150	292	1104	539
Future Volume (veh/h)	463	495	118	47	409	404	128	1347	150	292	1104	539
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	503	538	0	51	445	0	139	1464	163	317	1200	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	775		198	541		482	1284	142	312	1771	
Arrive On Green	0.17	0.36	0.00	0.03	0.15	0.00	0.01	0.13	0.13	0.14	0.50	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3227	356	1781	3554	1585
Grp Volume(v), veh/h	503	538	0	51	445	0	139	800	827	317	1200	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1806	1781	1777	1585
Q Serve(g_s), s	12.0	15.5	0.0	2.9	14.6	0.0	2.8	47.7	47.7	17.0	30.7	0.0
Cycle Q Clear(g_c), s	12.0	15.5	0.0	2.9	14.6	0.0	2.8	47.7	47.7	17.0	30.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	522	775		198	541		482	707	719	312	1771	
V/C Ratio(X)	0.96	0.69		0.26	0.82		0.29	1.13	1.15	1.01	0.68	
Avail Cap(c_a), veh/h	522	918		212	711		483	707	719	312	1771	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.00	1.00	1.00	0.00	0.85	0.85	0.85	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.2	34.7	0.0	41.2	49.3	0.0	22.0	52.1	52.1	39.6	22.8	0.0
Incr Delay (d2), s/veh	24.9	1.3	0.0	0.7	6.0	0.0	0.3	74.4	81.1	54.8	2.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	6.0	0.0	1.3	6.9	0.0	1.2	37.4	39.4	14.1	13.1	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	64.2	36.1	0.0	41.8	55.3	0.0	22.3	126.5	133.3	94.4	24.9	0.0
LnGrp LOS	E	D		D	E	A	C	F	F	F	C	A
Approach Vol, veh/h		1041			935			1766			2103	
Approach Delay, s/veh		49.7			28.6			121.5			28.4	
Approach LOS		D			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	53.7	10.1	32.2	12.0	65.8	18.0	24.3
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	19.0	49.7	4.9	17.5	4.8	32.7	14.0	16.6
Green Ext Time (p_c), s	0.0	0.0	0.0	3.0	0.0	9.4	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	60.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

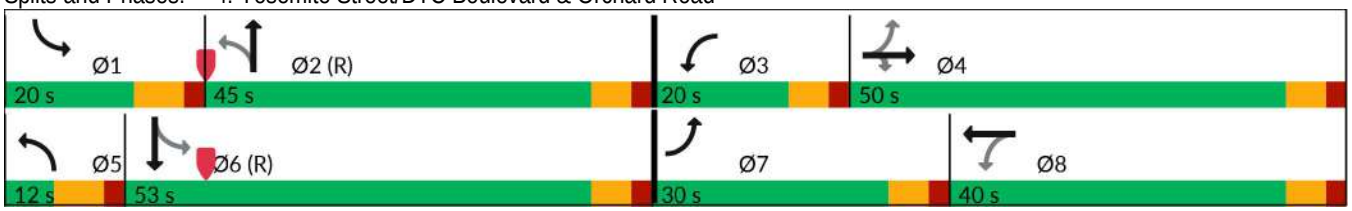
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	93	215	8	37	268	65	66	178	60	225	106
Future Volume (vph)	93	215	8	37	268	65	66	178	60	225	106
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	215	8	37	268	65	66	178	33	60	225	106
Future Volume (veh/h)	93	215	8	37	268	65	66	178	33	60	225	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	234	0	40	291	0	72	193	36	65	245	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	428		169	383		1555	1895	347	811	2242	
Arrive On Green	0.01	0.04	0.00	0.03	0.11	0.00	0.03	0.63	0.63	0.03	0.63	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	2999	549	1781	3554	1585
Grp Volume(v), veh/h	101	234	0	40	291	0	72	113	116	65	245	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1772	1781	1777	1585
Q Serve(g_s), s	3.5	8.7	0.0	2.7	10.7	0.0	1.0	3.4	3.5	1.7	3.7	0.0
Cycle Q Clear(g_c), s	3.5	8.7	0.0	2.7	10.7	0.0	1.0	3.4	3.5	1.7	3.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	310	428		169	383		1555	1123	1119	811	2242	
V/C Ratio(X)	0.33	0.55		0.24	0.76		0.05	0.10	0.10	0.08	0.11	
Avail Cap(c_a), veh/h	780	1158		302	895		1564	1123	1119	923	2242	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.3	61.2	0.0	51.7	58.5	0.0	7.8	9.8	9.8	7.9	9.9	0.0
Incr Delay (d2), s/veh	0.6	1.1	0.0	0.7	3.1	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.2	0.0	1.2	5.0	0.0	0.4	1.4	1.4	0.7	1.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	52.9	62.3	0.0	52.4	61.7	0.0	7.8	10.0	10.0	8.0	10.0	0.0
LnGrp LOS	D	E		D	E	A	A	A	A	A	A	A
Approach Vol, veh/h		335			402			301			425	
Approach Delay, s/veh		59.4			49.9			9.4			7.0	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	91.3	9.9	22.3	11.7	91.2	11.6	20.5
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	3.7	5.5	4.7	10.7	3.0	5.7	5.5	12.7
Green Ext Time (p_c), s	0.1	1.4	0.0	1.6	0.0	1.7	0.3	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C

Notes

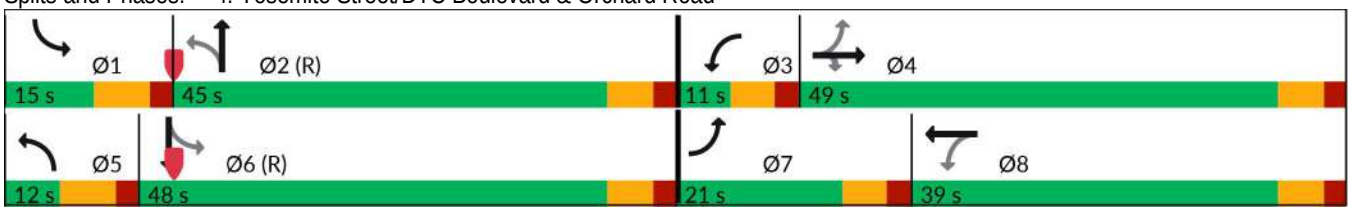
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	489	168	62	61	529	149	298	1134	195	998	507
Future Volume (vph)	489	168	62	61	529	149	298	1134	195	998	507
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	489	168	62	61	529	149	298	1134	37	195	998	507
Future Volume (veh/h)	489	168	62	61	529	149	298	1134	37	195	998	507
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	532	183	0	66	575	0	324	1233	40	212	1085	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	621	1001		370	702		441	1414	46	221	1519	
Arrive On Green	0.04	0.09	0.00	0.04	0.20	0.00	0.06	0.54	0.54	0.07	0.43	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3513	114	1781	3554	1585
Grp Volume(v), veh/h	532	183	0	66	575	0	324	623	650	212	1085	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1781	1777	1585
Q Serve(g_s), s	14.1	5.7	0.0	3.5	18.6	0.0	5.0	36.7	36.7	8.0	30.2	0.0
Cycle Q Clear(g_c), s	14.1	5.7	0.0	3.5	18.6	0.0	5.0	36.7	36.7	8.0	30.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	621	1001		370	702		441	715	745	221	1519	
V/C Ratio(X)	0.86	0.18		0.18	0.82		0.73	0.87	0.87	0.96	0.71	
Avail Cap(c_a), veh/h	621	1273		371	977		441	715	745	221	1519	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.5	41.7	0.0	36.1	46.1	0.0	31.5	25.2	25.2	29.6	28.3	0.0
Incr Delay (d2), s/veh	10.9	0.1	0.0	0.2	3.9	0.0	5.6	12.6	12.3	49.4	2.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.6	0.0	1.6	8.6	0.0	2.7	16.1	16.7	6.6	13.3	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	47.4	41.8	0.0	36.4	50.0	0.0	37.1	37.8	37.4	78.9	31.2	0.0
LnGrp LOS	D	D		D	D	A	D	D	D	E	C	A
Approach Vol, veh/h		715			803			1597			1848	
Approach Delay, s/veh		46.0			38.8			37.5			27.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.3	10.9	39.8	12.0	57.3	21.0	29.7
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	38.7	5.5	7.7	7.0	32.2	16.1	20.6
Green Ext Time (p_c), s	0.0	0.2	0.0	1.2	0.0	5.2	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	35.2
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

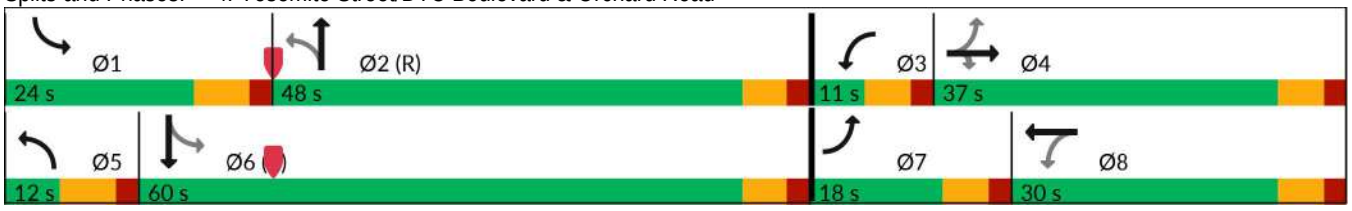
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	482	513	128	48	426	412	140	1373	298	1126	560
Future Volume (vph)	482	513	128	48	426	412	140	1373	298	1126	560
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	482	513	128	48	426	412	140	1373	153	298	1126	560
Future Volume (veh/h)	482	513	128	48	426	412	140	1373	153	298	1126	560
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	524	558	0	52	463	0	152	1492	166	324	1224	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	521	791		197	558		464	1269	140	312	1752	
Arrive On Green	0.17	0.37	0.00	0.03	0.16	0.00	0.01	0.13	0.13	0.14	0.49	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3227	356	1781	3554	1585
Grp Volume(v), veh/h	524	558	0	52	463	0	152	815	843	324	1224	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1806	1781	1777	1585
Q Serve(g_s), s	12.0	16.0	0.0	2.9	15.2	0.0	3.1	47.2	47.2	17.0	32.0	0.0
Cycle Q Clear(g_c), s	12.0	16.0	0.0	2.9	15.2	0.0	3.1	47.2	47.2	17.0	32.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	521	791		197	558		464	698	710	312	1752	
V/C Ratio(X)	1.01	0.71		0.26	0.83		0.33	1.17	1.19	1.04	0.70	
Avail Cap(c_a), veh/h	521	918		210	711		464	698	710	312	1752	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.00	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.5	34.3	0.0	40.7	49.0	0.0	22.7	52.2	52.2	39.5	23.5	0.0
Incr Delay (d2), s/veh	34.1	1.4	0.0	0.7	6.6	0.0	0.3	87.9	95.9	60.9	2.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	6.2	0.0	1.3	7.2	0.0	1.3	39.6	41.8	14.6	13.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	73.6	35.8	0.0	41.4	55.6	0.0	23.0	140.1	148.1	100.5	25.9	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	F	C	A
Approach Vol, veh/h		1082			963			1810			2157	
Approach Delay, s/veh		54.1			29.0			134.0			29.8	
Approach LOS		D			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	53.2	10.1	32.7	12.0	65.2	18.0	24.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	19.0	49.2	4.9	18.0	5.1	34.0	14.0	17.2
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	9.3	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	65.4
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

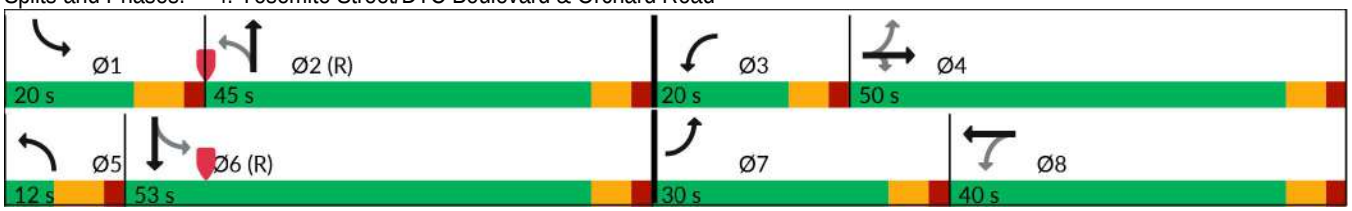
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	95	219	8	38	273	66	67	181	61	229	108
Future Volume (vph)	95	219	8	38	273	66	67	181	61	229	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	219	8	38	273	66	67	181	34	61	229	108
Future Volume (veh/h)	95	219	8	38	273	66	67	181	34	61	229	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	238	0	41	297	0	73	197	37	66	249	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	436		170	389		1544	1885	348	804	2233	
Arrive On Green	0.01	0.04	0.00	0.03	0.11	0.00	0.03	0.63	0.63	0.03	0.63	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	2995	552	1781	3554	1585
Grp Volume(v), veh/h	103	238	0	41	297	0	73	115	119	66	249	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1771	1781	1777	1585
Q Serve(g_s), s	3.5	8.9	0.0	2.7	11.0	0.0	1.0	3.5	3.6	1.8	3.8	0.0
Cycle Q Clear(g_c), s	3.5	8.9	0.0	2.7	11.0	0.0	1.0	3.5	3.6	1.8	3.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	312	436		170	389		1544	1118	1114	804	2233	
V/C Ratio(X)	0.33	0.55		0.24	0.76		0.05	0.10	0.11	0.08	0.11	
Avail Cap(c_a), veh/h	781	1158		303	895		1552	1118	1114	916	2233	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	61.1	0.0	51.5	58.4	0.0	7.9	9.9	9.9	8.0	10.0	0.0
Incr Delay (d2), s/veh	0.6	1.1	0.0	0.7	3.1	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.3	0.0	1.3	5.1	0.0	0.4	1.4	1.5	0.7	1.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	52.6	62.1	0.0	52.2	61.5	0.0	7.9	10.1	10.1	8.1	10.1	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		341			410			307			432	
Approach Delay, s/veh		59.3			49.8			9.6			7.1	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	90.9	9.9	22.6	11.7	90.8	11.7	20.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	3.8	5.6	4.7	10.9	3.0	5.8	5.5	13.0
Green Ext Time (p_c), s	0.1	1.4	0.0	1.6	0.0	1.7	0.3	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C

Notes

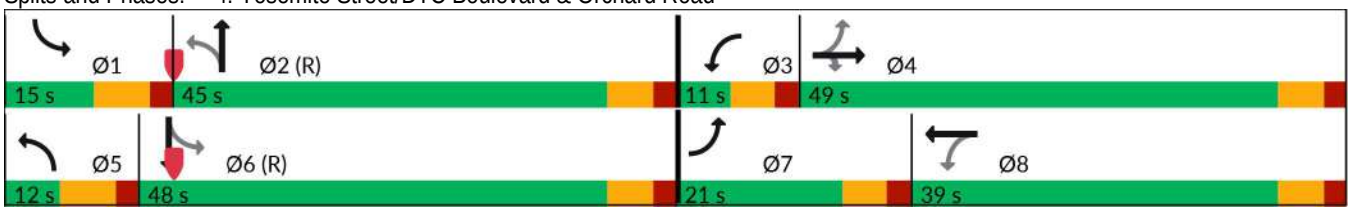
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	489	168	62	61	529	149	298	1134	195	998	507
Future Volume (vph)	489	168	62	61	529	149	298	1134	195	998	507
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	489	168	62	61	529	149	298	1134	37	195	998	507
Future Volume (veh/h)	489	168	62	61	529	149	298	1134	37	195	998	507
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	532	183	0	66	575	0	324	1233	40	212	1085	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	621	1001		370	702		441	1464	47	487	1519	
Arrive On Green	0.04	0.09	0.00	0.04	0.20	0.00	0.08	0.83	0.83	0.05	0.43	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3513	114	3456	3554	1585
Grp Volume(v), veh/h	532	183	0	66	575	0	324	623	650	212	1085	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1728	1777	1585
Q Serve(g_s), s	14.1	5.7	0.0	3.5	18.6	0.0	5.0	23.5	23.5	4.2	30.2	0.0
Cycle Q Clear(g_c), s	14.1	5.7	0.0	3.5	18.6	0.0	5.0	23.5	23.5	4.2	30.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	621	1001		370	702		441	741	771	487	1519	
V/C Ratio(X)	0.86	0.18		0.18	0.82		0.73	0.84	0.84	0.44	0.71	
Avail Cap(c_a), veh/h	621	1273		371	977		441	741	771	537	1519	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.5	41.7	0.0	36.1	46.1	0.0	30.5	7.8	7.8	21.1	28.3	0.0
Incr Delay (d2), s/veh	10.9	0.1	0.0	0.2	3.9	0.0	5.6	10.2	9.9	0.6	2.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.6	0.0	1.6	8.6	0.0	2.7	5.4	5.5	1.7	13.3	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	47.4	41.8	0.0	36.4	50.0	0.0	36.2	17.9	17.6	21.7	31.2	0.0
LnGrp LOS	D	D		D	D	A	D	B	B	C	C	A
Approach Vol, veh/h		715			803			1597			1848	
Approach Delay, s/veh		46.0			38.8			21.5			20.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	56.0	10.9	39.8	12.0	57.3	21.0	29.7
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	6.2	25.5	5.5	7.7	7.0	32.2	16.1	20.6
Green Ext Time (p_c), s	0.1	7.2	0.0	1.2	0.0	5.2	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	27.6
HCM 7th LOS	C

Notes

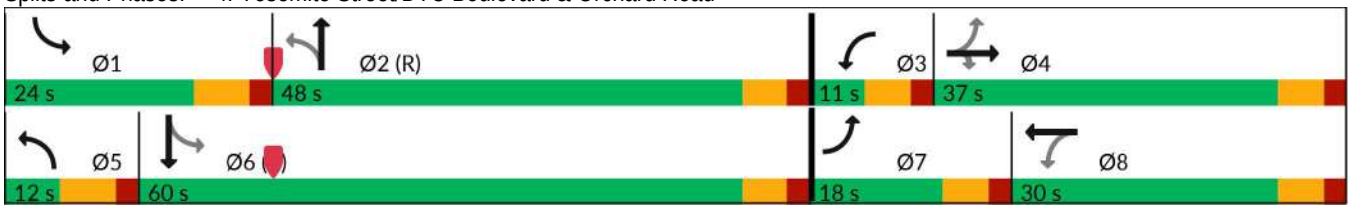
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	482	513	128	48	426	412	140	1373	298	1126	560
Future Volume (vph)	482	513	128	48	426	412	140	1373	298	1126	560
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	482	513	128	48	426	412	140	1373	153	298	1126	560
Future Volume (veh/h)	482	513	128	48	426	412	140	1373	153	298	1126	560
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	524	558	0	52	463	0	152	1492	166	324	1224	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	521	791		197	558		464	1469	162	395	1753	
Arrive On Green	0.17	0.37	0.00	0.03	0.16	0.00	0.01	0.15	0.15	0.08	0.49	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3227	356	3456	3554	1585
Grp Volume(v), veh/h	524	558	0	52	463	0	152	815	843	324	1224	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1806	1728	1777	1585
Q Serve(g_s), s	12.0	16.0	0.0	2.9	15.2	0.0	2.8	54.6	54.6	6.8	31.9	0.0
Cycle Q Clear(g_c), s	12.0	16.0	0.0	2.9	15.2	0.0	2.8	54.6	54.6	6.8	31.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	521	791		197	558		464	809	822	395	1753	
V/C Ratio(X)	1.01	0.71		0.26	0.83		0.33	1.01	1.03	0.82	0.70	
Avail Cap(c_a), veh/h	521	918		210	711		465	809	822	610	1753	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.00	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.5	34.3	0.0	40.7	49.0	0.0	20.3	51.0	51.0	32.0	23.5	0.0
Incr Delay (d2), s/veh	34.1	1.4	0.0	0.7	6.6	0.0	0.3	30.8	35.2	5.2	2.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	6.2	0.0	1.3	7.2	0.0	1.2	33.0	34.5	3.0	13.6	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	73.6	35.8	0.0	41.4	55.6	0.0	20.6	81.8	86.2	37.2	25.8	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	D	C	A
Approach Vol, veh/h		1082			963			1810			2157	
Approach Delay, s/veh		54.1			29.0			78.7			20.2	
Approach LOS		D			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	60.6	10.1	32.7	12.0	65.2	18.0	24.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	8.8	56.6	4.9	18.0	4.8	33.9	14.0	17.2
Green Ext Time (p_c), s	0.7	0.0	0.0	3.1	0.0	9.3	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	45.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

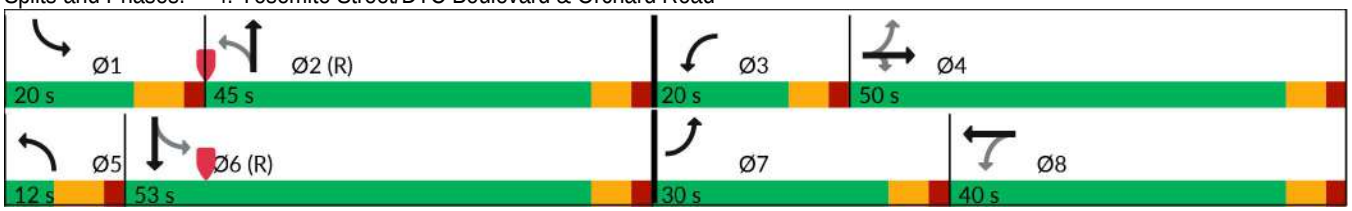
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	95	219	8	38	273	66	67	181	61	229	108
Future Volume (vph)	95	219	8	38	273	66	67	181	61	229	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	219	8	38	273	66	67	181	34	61	229	108
Future Volume (veh/h)	95	219	8	38	273	66	67	181	34	61	229	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	238	0	41	297	0	73	197	37	66	249	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	436		170	389		1544	1885	348	1564	2233	
Arrive On Green	0.01	0.04	0.00	0.03	0.11	0.00	0.03	0.63	0.63	0.03	0.63	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	2995	552	3456	3554	1585
Grp Volume(v), veh/h	103	238	0	41	297	0	73	115	119	66	249	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1771	1728	1777	1585
Q Serve(g_s), s	3.5	8.9	0.0	2.7	11.0	0.0	1.0	3.5	3.6	0.9	3.8	0.0
Cycle Q Clear(g_c), s	3.5	8.9	0.0	2.7	11.0	0.0	1.0	3.5	3.6	0.9	3.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	312	436		170	389		1544	1118	1114	1564	2233	
V/C Ratio(X)	0.33	0.55		0.24	0.76		0.05	0.10	0.11	0.04	0.11	
Avail Cap(c_a), veh/h	781	1158		303	895		1552	1118	1114	1779	2233	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	61.1	0.0	51.5	58.4	0.0	7.9	9.9	9.9	7.9	10.0	0.0
Incr Delay (d2), s/veh	0.6	1.1	0.0	0.7	3.1	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.3	0.0	1.3	5.1	0.0	0.4	1.4	1.5	0.3	1.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	52.6	62.1	0.0	52.2	61.5	0.0	7.9	10.1	10.1	7.9	10.1	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		341			410			307			432	
Approach Delay, s/veh		59.3			49.8			9.6			7.0	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	90.9	9.9	22.6	11.7	90.8	11.7	20.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	2.9	5.6	4.7	10.9	3.0	5.8	5.5	13.0
Green Ext Time (p_c), s	0.1	1.4	0.0	1.6	0.0	1.7	0.3	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C

Notes

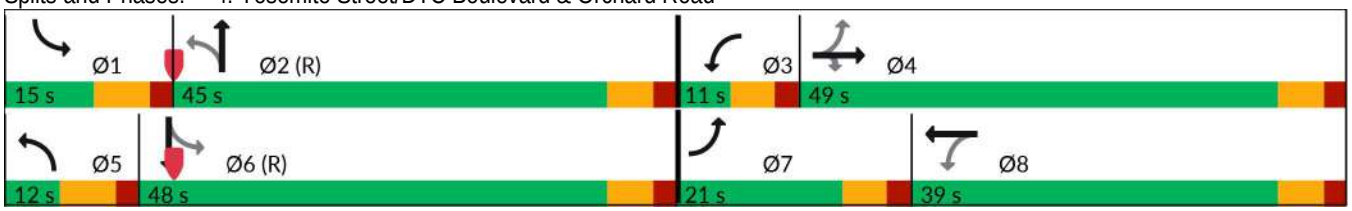
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	490	171	62	61	533	149	298	1134	195	998	509
Future Volume (vph)	490	171	62	61	533	149	298	1134	195	998	509
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	171	62	61	533	149	298	1134	37	195	998	509
Future Volume (veh/h)	490	171	62	61	533	149	298	1134	37	195	998	509
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	533	186	0	66	579	0	324	1233	40	212	1085	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	621	1005		371	706		440	1410	46	220	1515	
Arrive On Green	0.04	0.09	0.00	0.04	0.20	0.00	0.06	0.53	0.53	0.07	0.43	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3513	114	1781	3554	1585
Grp Volume(v), veh/h	533	186	0	66	579	0	324	623	650	212	1085	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1781	1777	1585
Q Serve(g_s), s	14.1	5.8	0.0	3.5	18.7	0.0	5.0	36.8	36.9	8.0	30.3	0.0
Cycle Q Clear(g_c), s	14.1	5.8	0.0	3.5	18.7	0.0	5.0	36.8	36.9	8.0	30.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	621	1005		371	706		440	713	743	220	1515	
V/C Ratio(X)	0.86	0.19		0.18	0.82		0.74	0.87	0.87	0.96	0.72	
Avail Cap(c_a), veh/h	621	1273		372	977		440	713	743	220	1515	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	41.6	0.0	36.0	46.0	0.0	31.7	25.3	25.3	29.7	28.4	0.0
Incr Delay (d2), s/veh	11.1	0.1	0.0	0.2	4.0	0.0	5.8	12.8	12.5	50.6	2.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.7	0.0	1.6	8.6	0.0	2.7	16.2	16.8	6.6	13.3	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	47.5	41.7	0.0	36.3	50.1	0.0	37.4	38.2	37.8	80.2	31.3	0.0
LnGrp LOS	D	D		D	D	A	D	D	D	F	C	A
Approach Vol, veh/h		719			807			1597			1850	
Approach Delay, s/veh		46.0			38.9			37.9			27.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.2	10.9	39.9	12.0	57.2	21.0	29.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	38.9	5.5	7.8	7.0	32.3	16.1	20.7
Green Ext Time (p_c), s	0.0	0.1	0.0	1.2	0.0	5.2	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	35.4
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

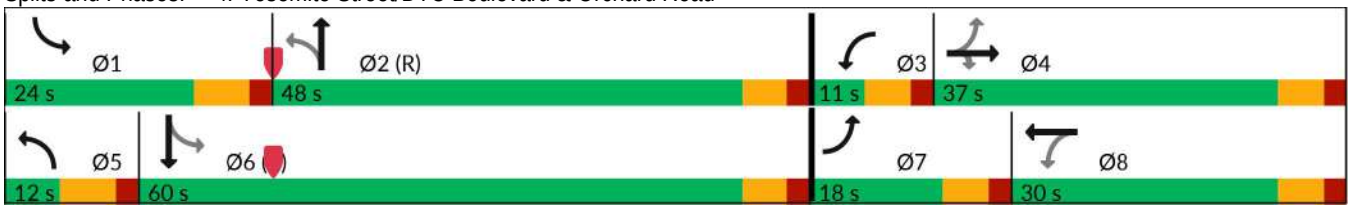
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	485	519	128	48	431	412	140	1373	298	1126	562
Future Volume (vph)	485	519	128	48	431	412	140	1373	298	1126	562
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	485	519	128	48	431	412	140	1373	153	298	1126	562
Future Volume (veh/h)	485	519	128	48	431	412	140	1373	153	298	1126	562
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	527	564	0	52	468	0	152	1492	166	324	1224	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	796		196	562		463	1265	139	312	1748	
Arrive On Green	0.17	0.37	0.00	0.03	0.16	0.00	0.01	0.13	0.13	0.14	0.49	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3227	356	1781	3554	1585
Grp Volume(v), veh/h	527	564	0	52	468	0	152	815	843	324	1224	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1806	1781	1777	1585
Q Serve(g_s), s	12.0	16.2	0.0	2.9	15.3	0.0	3.1	47.0	47.0	17.0	32.0	0.0
Cycle Q Clear(g_c), s	12.0	16.2	0.0	2.9	15.3	0.0	3.1	47.0	47.0	17.0	32.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	520	796		196	562		463	696	708	312	1748	
V/C Ratio(X)	1.01	0.71		0.27	0.83		0.33	1.17	1.19	1.04	0.70	
Avail Cap(c_a), veh/h	520	918		209	711		463	696	708	312	1748	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.00	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.4	34.2	0.0	40.6	49.0	0.0	22.8	52.2	52.2	39.5	23.6	0.0
Incr Delay (d2), s/veh	35.5	1.4	0.0	0.7	6.8	0.0	0.3	89.5	97.6	60.9	2.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	6.3	0.0	1.3	7.3	0.0	1.3	39.8	42.0	14.6	13.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	74.9	35.7	0.0	41.3	55.7	0.0	23.2	141.7	149.8	100.4	26.0	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	F	C	A
Approach Vol, veh/h		1091			968			1810			2159	
Approach Delay, s/veh		54.6			29.2			135.5			29.8	
Approach LOS		D			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	53.0	10.1	32.9	12.0	65.0	18.0	25.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	19.0	49.0	4.9	18.2	5.1	34.0	14.0	17.3
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	9.3	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	65.9
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	109	247	8	38	300	66	67	181	61	229	121
Future Volume (vph)	109	247	8	38	300	66	67	181	61	229	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	247	8	38	300	66	67	181	34	61	229	121
Future Volume (veh/h)	109	247	8	38	300	66	67	181	34	61	229	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	268	0	41	326	0	73	197	37	66	249	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	483		174	422		1512	1845	340	788	2186	
Arrive On Green	0.02	0.04	0.00	0.03	0.12	0.00	0.03	0.62	0.62	0.03	0.62	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	2995	552	1781	3554	1585
Grp Volume(v), veh/h	118	268	0	41	326	0	73	115	119	66	249	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1771	1781	1777	1585
Q Serve(g_s), s	4.0	10.0	0.0	2.7	12.0	0.0	1.0	3.6	3.7	1.8	3.9	0.0
Cycle Q Clear(g_c), s	4.0	10.0	0.0	2.7	12.0	0.0	1.0	3.6	3.7	1.8	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	327	483		174	422		1512	1094	1091	788	2186	
V/C Ratio(X)	0.36	0.55		0.24	0.77		0.05	0.11	0.11	0.08	0.11	
Avail Cap(c_a), veh/h	782	1158		307	895		1521	1094	1091	899	2186	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.9	60.5	0.0	50.4	57.7	0.0	8.5	10.6	10.7	8.7	10.7	0.0
Incr Delay (d2), s/veh	0.7	1.0	0.0	0.7	3.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.8	0.0	1.3	5.6	0.0	0.4	1.5	1.5	0.7	1.6	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	51.6	61.5	0.0	51.1	60.8	0.0	8.5	10.8	10.9	8.7	10.9	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		386			439			307			447	
Approach Delay, s/veh		58.4			49.9			10.3			7.3	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	89.1	9.9	24.3	11.7	89.1	12.3	22.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	3.8	5.7	4.7	12.0	3.0	5.9	6.0	14.0
Green Ext Time (p_c), s	0.1	1.4	0.0	1.8	0.0	1.7	0.3	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	32.2
HCM 7th LOS	C

Notes

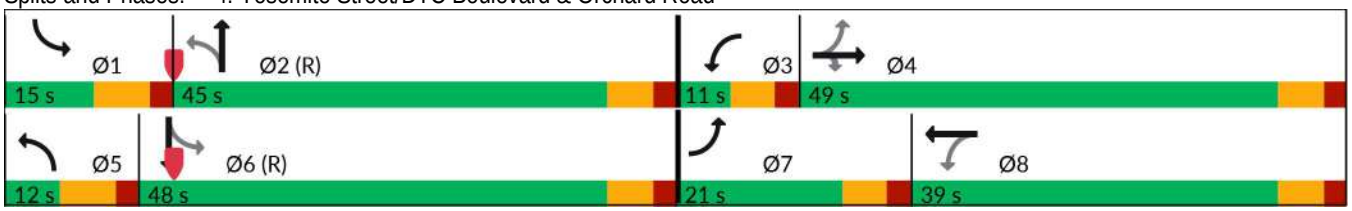
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	490	171	62	61	533	149	298	1134	195	998	509
Future Volume (vph)	490	171	62	61	533	149	298	1134	195	998	509
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	171	62	61	533	149	298	1134	37	195	998	509
Future Volume (veh/h)	490	171	62	61	533	149	298	1134	37	195	998	509
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	533	186	0	66	579	0	324	1233	40	212	1085	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	621	1005		371	706		440	1460	47	484	1515	
Arrive On Green	0.04	0.09	0.00	0.04	0.20	0.00	0.08	0.83	0.83	0.05	0.43	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3513	114	3456	3554	1585
Grp Volume(v), veh/h	533	186	0	66	579	0	324	623	650	212	1085	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1728	1777	1585
Q Serve(g_s), s	14.1	5.8	0.0	3.5	18.7	0.0	5.0	23.8	23.9	4.2	30.3	0.0
Cycle Q Clear(g_c), s	14.1	5.8	0.0	3.5	18.7	0.0	5.0	23.8	23.9	4.2	30.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	621	1005		371	706		440	739	769	484	1515	
V/C Ratio(X)	0.86	0.19		0.18	0.82		0.74	0.84	0.84	0.44	0.72	
Avail Cap(c_a), veh/h	621	1273		372	977		440	739	769	533	1515	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	41.6	0.0	36.0	46.0	0.0	30.7	7.9	7.9	21.3	28.4	0.0
Incr Delay (d2), s/veh	11.1	0.1	0.0	0.2	4.0	0.0	5.8	10.3	10.0	0.6	2.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.7	0.0	1.6	8.6	0.0	2.7	5.4	5.6	1.7	13.3	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	47.5	41.7	0.0	36.3	50.1	0.0	36.5	18.3	18.0	21.9	31.3	0.0
LnGrp LOS	D	D		D	D	A	D	B	B	C	C	A
Approach Vol, veh/h		719			807			1597			1850	
Approach Delay, s/veh		46.0			38.9			21.8			20.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	55.9	10.9	39.9	12.0	57.2	21.0	29.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	6.2	25.9	5.5	7.8	7.0	32.3	16.1	20.7
Green Ext Time (p_c), s	0.1	7.0	0.0	1.2	0.0	5.2	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	27.7
HCM 7th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

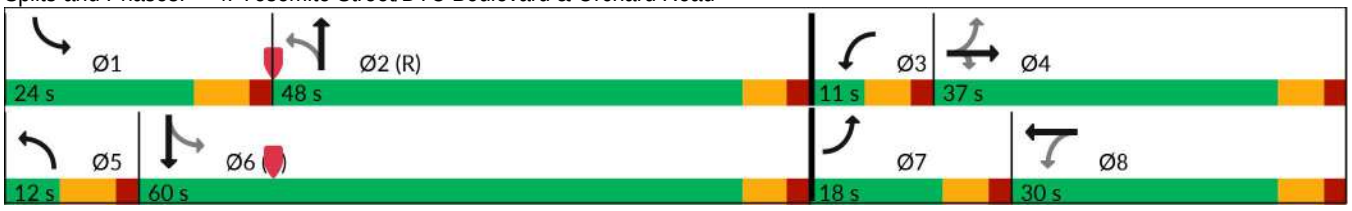
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	485	519	128	48	431	412	140	1373	298	1126	562
Future Volume (vph)	485	519	128	48	431	412	140	1373	298	1126	562
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	485	519	128	48	431	412	140	1373	153	298	1126	562
Future Volume (veh/h)	485	519	128	48	431	412	140	1373	153	298	1126	562
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	527	564	0	52	468	0	152	1492	166	324	1224	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	796		196	562		462	1465	161	395	1749	
Arrive On Green	0.17	0.37	0.00	0.03	0.16	0.00	0.01	0.15	0.15	0.08	0.49	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3227	356	3456	3554	1585
Grp Volume(v), veh/h	527	564	0	52	468	0	152	815	843	324	1224	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1806	1728	1777	1585
Q Serve(g_s), s	12.0	16.2	0.0	2.9	15.3	0.0	2.8	54.5	54.5	6.8	32.0	0.0
Cycle Q Clear(g_c), s	12.0	16.2	0.0	2.9	15.3	0.0	2.8	54.5	54.5	6.8	32.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	520	796		196	562		462	806	820	395	1749	
V/C Ratio(X)	1.01	0.71		0.27	0.83		0.33	1.01	1.03	0.82	0.70	
Avail Cap(c_a), veh/h	520	918		209	711		463	806	820	610	1749	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.00	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.4	34.2	0.0	40.6	49.0	0.0	20.4	51.0	51.0	32.0	23.6	0.0
Incr Delay (d2), s/veh	35.5	1.4	0.0	0.7	6.8	0.0	0.3	31.6	36.1	5.2	2.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	6.3	0.0	1.3	7.3	0.0	1.2	33.1	34.6	3.0	13.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	74.9	35.7	0.0	41.3	55.7	0.0	20.7	82.6	87.1	37.1	26.0	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	D	C	A
Approach Vol, veh/h		1091			968			1810			2159	
Approach Delay, s/veh		54.6			29.2			79.5			20.3	
Approach LOS		D			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	60.5	10.1	32.9	12.0	65.0	18.0	25.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	8.8	56.5	4.9	18.2	4.8	34.0	14.0	17.3
Green Ext Time (p_c), s	0.7	0.0	0.0	3.1	0.0	9.3	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	45.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

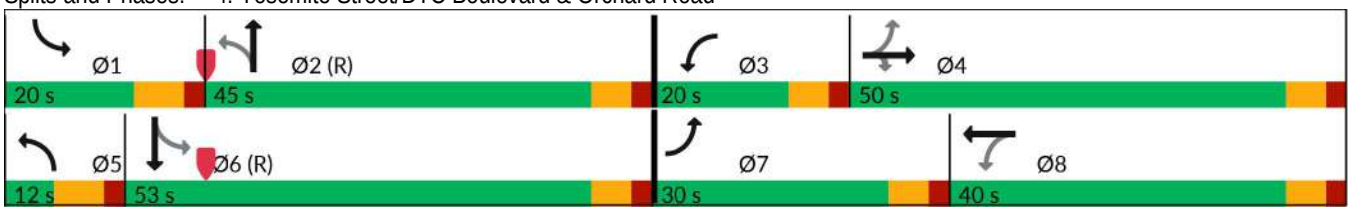
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	109	247	8	38	300	66	67	181	61	229	121
Future Volume (vph)	109	247	8	38	300	66	67	181	61	229	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	247	8	38	300	66	67	181	34	61	229	121
Future Volume (veh/h)	109	247	8	38	300	66	67	181	34	61	229	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	268	0	41	326	0	73	197	37	66	249	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	483		174	422		1512	1845	340	1532	2186	
Arrive On Green	0.02	0.04	0.00	0.03	0.12	0.00	0.03	0.62	0.62	0.03	0.62	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	2995	552	3456	3554	1585
Grp Volume(v), veh/h	118	268	0	41	326	0	73	115	119	66	249	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1771	1728	1777	1585
Q Serve(g_s), s	4.0	10.0	0.0	2.7	12.0	0.0	1.0	3.6	3.7	0.9	3.9	0.0
Cycle Q Clear(g_c), s	4.0	10.0	0.0	2.7	12.0	0.0	1.0	3.6	3.7	0.9	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	327	483		174	422		1512	1094	1091	1532	2186	
V/C Ratio(X)	0.36	0.55		0.24	0.77		0.05	0.11	0.11	0.04	0.11	
Avail Cap(c_a), veh/h	782	1158		307	895		1521	1094	1091	1748	2186	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.9	60.5	0.0	50.4	57.7	0.0	8.5	10.6	10.7	8.5	10.7	0.0
Incr Delay (d2), s/veh	0.7	1.0	0.0	0.7	3.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.8	0.0	1.3	5.6	0.0	0.4	1.5	1.5	0.3	1.6	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	51.6	61.5	0.0	51.1	60.8	0.0	8.5	10.8	10.9	8.5	10.9	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		386			439			307			447	
Approach Delay, s/veh		58.4			49.9			10.3			7.3	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	89.1	9.9	24.3	11.7	89.1	12.3	22.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	2.9	5.7	4.7	12.0	3.0	5.9	6.0	14.0
Green Ext Time (p_c), s	0.1	1.4	0.0	1.8	0.0	1.7	0.3	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	32.2
HCM 7th LOS	C

Notes

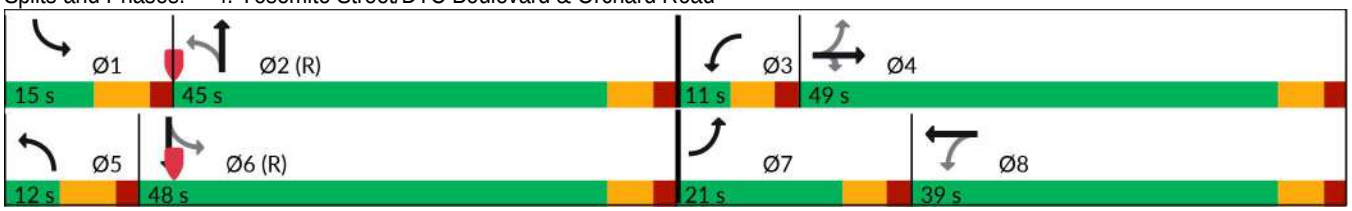
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	529	181	67	66	572	161	321	1226	211	1079	547
Future Volume (vph)	529	181	67	66	572	161	321	1226	211	1079	547
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	529	181	67	66	572	161	321	1226	40	211	1079	547
Future Volume (veh/h)	529	181	67	66	572	161	321	1226	40	211	1079	547
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	575	197	0	72	622	0	349	1333	43	229	1173	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	619	1044		384	748		381	1369	44	187	1473	
Arrive On Green	0.04	0.10	0.00	0.04	0.21	0.00	0.06	0.52	0.52	0.07	0.41	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3514	113	1781	3554	1585
Grp Volume(v), veh/h	575	197	0	72	622	0	349	673	703	229	1173	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1781	1777	1585
Q Serve(g_s), s	15.0	6.1	0.0	3.8	20.1	0.0	5.0	44.2	44.4	8.0	34.6	0.0
Cycle Q Clear(g_c), s	15.0	6.1	0.0	3.8	20.1	0.0	5.0	44.2	44.4	8.0	34.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	619	1044		384	748		381	692	721	187	1473	
V/C Ratio(X)	0.93	0.19		0.19	0.83		0.92	0.97	0.97	1.23	0.80	
Avail Cap(c_a), veh/h	619	1273		384	977		381	692	721	187	1473	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.0	41.0	0.0	35.0	45.3	0.0	37.0	28.3	28.3	30.8	30.7	0.0
Incr Delay (d2), s/veh	19.7	0.1	0.0	0.2	4.8	0.0	23.6	25.8	25.5	140.2	4.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	2.8	0.0	1.7	9.3	0.0	4.2	21.6	22.4	10.6	15.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	55.8	41.1	0.0	35.2	50.2	0.0	60.6	54.1	53.9	171.0	35.2	0.0
LnGrp LOS	E	D		D	D	A	E	D	D	F	D	A
Approach Vol, veh/h		772			869			1725			1997	
Approach Delay, s/veh		52.0			38.8			55.3			40.3	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	52.8	11.0	41.2	12.0	55.8	21.0	31.2
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	46.4	5.8	8.1	7.0	36.6	17.0	22.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	3.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	46.6
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

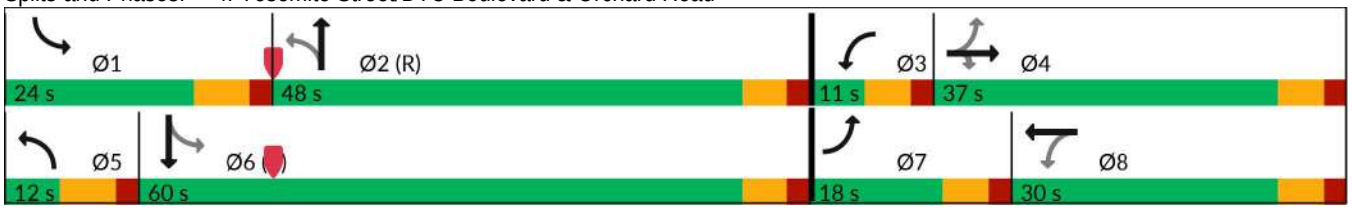
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	520	554	138	52	460	445	150	1485	322	1217	604
Future Volume (vph)	520	554	138	52	460	445	150	1485	322	1217	604
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	554	138	52	460	445	150	1485	165	322	1217	604
Future Volume (veh/h)	520	554	138	52	460	445	150	1485	165	322	1217	604
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	565	602	0	57	500	0	163	1614	179	350	1323	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	517	816		194	591		407	1239	136	312	1719	
Arrive On Green	0.17	0.38	0.00	0.04	0.17	0.00	0.01	0.13	0.13	0.14	0.48	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3230	353	1781	3554	1585
Grp Volume(v), veh/h	565	602	0	57	500	0	163	878	915	350	1323	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1807	1781	1777	1585
Q Serve(g_s), s	12.0	17.5	0.0	3.2	16.4	0.0	3.4	46.0	46.0	17.0	36.7	0.0
Cycle Q Clear(g_c), s	12.0	17.5	0.0	3.2	16.4	0.0	3.4	46.0	46.0	17.0	36.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	517	816		194	591		407	682	693	312	1719	
V/C Ratio(X)	1.09	0.74		0.29	0.85		0.40	1.29	1.32	1.12	0.77	
Avail Cap(c_a), veh/h	517	918		203	711		407	682	693	312	1719	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.8	33.9	0.0	39.8	48.5	0.0	24.7	52.4	52.4	39.3	25.5	0.0
Incr Delay (d2), s/veh	58.3	1.6	0.0	0.8	8.0	0.0	0.5	138.3	151.9	87.5	3.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	6.8	0.0	1.4	7.9	0.0	1.5	48.2	51.6	16.9	15.9	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	97.1	35.5	0.0	40.7	56.6	0.0	25.2	190.7	204.3	126.8	28.9	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	F	C	A
Approach Vol, veh/h		1167			1041			1956			2330	
Approach Delay, s/veh		65.3			29.4			183.3			35.4	
Approach LOS		E			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	52.0	10.4	33.6	12.0	64.0	18.0	26.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	19.0	48.0	5.2	19.5	5.4	38.7	14.0	18.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	8.6	0.0	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	84.4
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

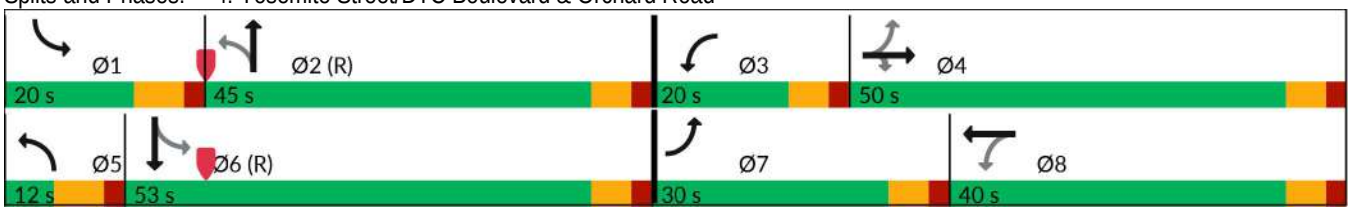
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	103	237	9	41	295	72	73	196	66	248	117
Future Volume (vph)	103	237	9	41	295	72	73	196	66	248	117
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	237	9	41	295	72	73	196	36	66	248	117
Future Volume (veh/h)	103	237	9	41	295	72	73	196	36	66	248	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	258	0	45	321	0	79	213	39	72	270	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	467		175	416		1490	1861	335	779	2196	
Arrive On Green	0.01	0.04	0.00	0.03	0.12	0.00	0.04	0.62	0.62	0.03	0.62	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3008	541	1781	3554	1585
Grp Volume(v), veh/h	112	258	0	45	321	0	79	124	128	72	270	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1773	1781	1777	1585
Q Serve(g_s), s	3.8	9.6	0.0	3.0	11.8	0.0	1.1	3.9	4.0	2.0	4.2	0.0
Cycle Q Clear(g_c), s	3.8	9.6	0.0	3.0	11.8	0.0	1.1	3.9	4.0	2.0	4.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	321	467		175	416		1490	1099	1097	779	2196	
V/C Ratio(X)	0.35	0.55		0.26	0.77		0.05	0.11	0.12	0.09	0.12	
Avail Cap(c_a), veh/h	781	1158		306	895		1497	1099	1097	889	2196	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.1	60.7	0.0	50.6	57.8	0.0	8.4	10.6	10.6	8.6	10.7	0.0
Incr Delay (d2), s/veh	0.6	1.0	0.0	0.8	3.1	0.0	0.0	0.2	0.2	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.6	0.0	1.4	5.5	0.0	0.4	1.6	1.6	0.8	1.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	51.8	61.7	0.0	51.3	60.9	0.0	8.4	10.8	10.8	8.6	10.8	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		370			444			331			469	
Approach Delay, s/veh		58.7			49.2			10.2			7.5	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	89.5	10.1	23.7	11.7	89.4	12.0	21.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	4.0	6.0	5.0	11.6	3.1	6.2	5.8	13.8
Green Ext Time (p_c), s	0.1	1.5	0.0	1.8	0.0	1.9	0.3	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C

Notes

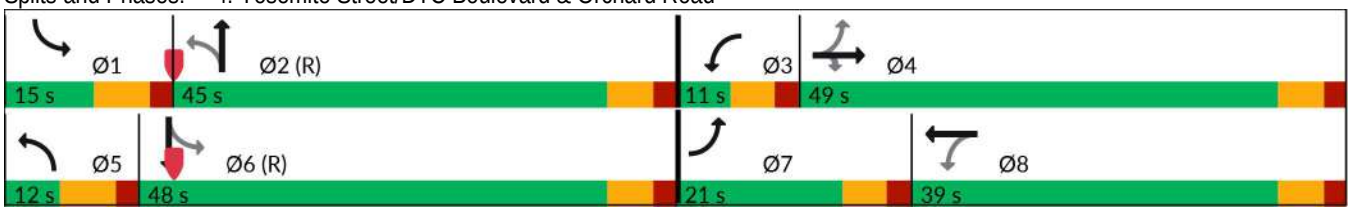
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	529	181	67	66	572	161	321	1226	211	1079	547
Future Volume (vph)	529	181	67	66	572	161	321	1226	211	1079	547
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	529	181	67	66	572	161	321	1226	40	211	1079	547
Future Volume (veh/h)	529	181	67	66	572	161	321	1226	40	211	1079	547
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	575	197	0	72	622	0	349	1333	43	229	1173	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	619	1044		384	748		381	1406	45	379	1473	
Arrive On Green	0.04	0.10	0.00	0.04	0.21	0.00	0.08	0.80	0.80	0.06	0.41	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3514	113	3456	3554	1585
Grp Volume(v), veh/h	575	197	0	72	622	0	349	673	703	229	1173	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1728	1777	1585
Q Serve(g_s), s	15.0	6.1	0.0	3.8	20.1	0.0	5.0	37.5	37.8	4.6	34.6	0.0
Cycle Q Clear(g_c), s	15.0	6.1	0.0	3.8	20.1	0.0	5.0	37.5	37.8	4.6	34.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	619	1044		384	748		381	711	740	379	1473	
V/C Ratio(X)	0.93	0.19		0.19	0.83		0.92	0.95	0.95	0.60	0.80	
Avail Cap(c_a), veh/h	619	1273		384	977		381	711	740	415	1473	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.0	41.0	0.0	35.0	45.3	0.0	36.2	10.9	11.0	27.2	30.7	0.0
Incr Delay (d2), s/veh	19.7	0.1	0.0	0.2	4.8	0.0	23.6	20.8	20.5	2.1	4.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	2.8	0.0	1.7	9.3	0.0	4.2	8.5	8.8	2.0	15.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	55.8	41.1	0.0	35.2	50.2	0.0	59.8	31.8	31.5	29.3	35.2	0.0
LnGrp LOS	E	D		D	D	A	E	C	C	C	D	A
Approach Vol, veh/h		772			869			1725			1997	
Approach Delay, s/veh		52.0			38.8			37.3			24.1	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	54.0	11.0	41.2	12.0	55.8	21.0	31.2
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	6.6	39.8	5.8	8.1	7.0	36.6	17.0	22.1
Green Ext Time (p_c), s	0.1	0.0	0.0	1.3	0.0	3.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	34.7
HCM 7th LOS	C

Notes

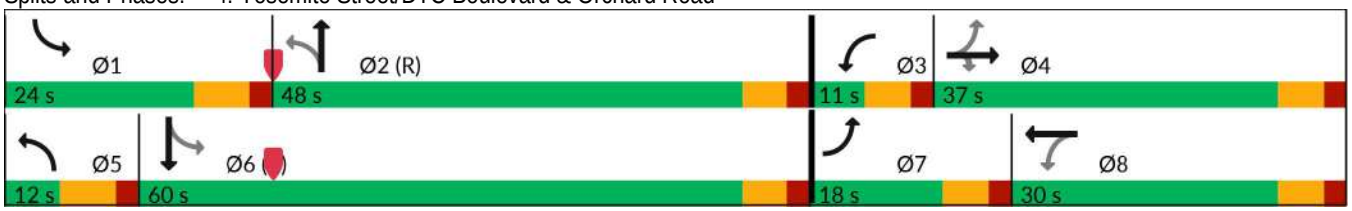
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	520	554	138	52	460	445	150	1485	322	1217	604
Future Volume (vph)	520	554	138	52	460	445	150	1485	322	1217	604
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	554	138	52	460	445	150	1485	165	322	1217	604
Future Volume (veh/h)	520	554	138	52	460	445	150	1485	165	322	1217	604
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	565	602	0	57	500	0	163	1614	179	350	1323	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	517	816		194	591		407	1415	155	421	1719	
Arrive On Green	0.17	0.38	0.00	0.04	0.17	0.00	0.01	0.14	0.14	0.09	0.48	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3230	353	3456	3554	1585
Grp Volume(v), veh/h	565	602	0	57	500	0	163	878	915	350	1323	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1807	1728	1777	1585
Q Serve(g_s), s	12.0	17.5	0.0	3.2	16.4	0.0	3.1	52.6	52.6	7.7	36.7	0.0
Cycle Q Clear(g_c), s	12.0	17.5	0.0	3.2	16.4	0.0	3.1	52.6	52.6	7.7	36.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	517	816		194	591		407	779	792	421	1719	
V/C Ratio(X)	1.09	0.74		0.29	0.85		0.40	1.13	1.16	0.83	0.77	
Avail Cap(c_a), veh/h	517	918		203	711		407	779	792	610	1719	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.8	33.9	0.0	39.8	48.5	0.0	22.8	51.3	51.3	32.8	25.5	0.0
Incr Delay (d2), s/veh	58.3	1.6	0.0	0.8	8.0	0.0	0.5	70.6	81.5	6.4	3.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	6.8	0.0	1.4	7.9	0.0	1.3	40.4	43.5	5.5	15.9	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	97.1	35.5	0.0	40.7	56.6	0.0	23.3	121.9	132.8	39.3	28.9	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	D	C	A
Approach Vol, veh/h		1167			1041			1956			2330	
Approach Delay, s/veh		65.3			29.4			118.8			22.3	
Approach LOS		E			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	58.6	10.4	33.6	12.0	64.0	18.0	26.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	9.7	54.6	5.2	19.5	5.1	38.7	14.0	18.4
Green Ext Time (p_c), s	0.8	0.0	0.0	3.1	0.0	8.6	0.0	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	60.2
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

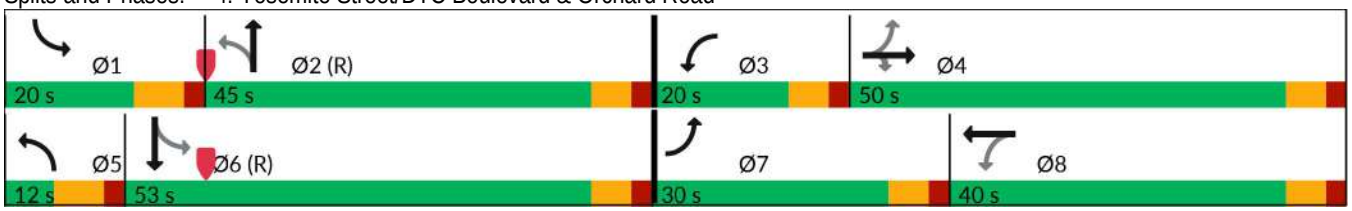
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	103	237	9	41	295	72	73	196	66	248	117
Future Volume (vph)	103	237	9	41	295	72	73	196	66	248	117
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	237	9	41	295	72	73	196	36	66	248	117
Future Volume (veh/h)	103	237	9	41	295	72	73	196	36	66	248	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	258	0	45	321	0	79	213	39	72	270	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	467		175	416		1490	1861	335	1514	2196	
Arrive On Green	0.01	0.04	0.00	0.03	0.12	0.00	0.04	0.62	0.62	0.03	0.62	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3008	541	3456	3554	1585
Grp Volume(v), veh/h	112	258	0	45	321	0	79	124	128	72	270	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1773	1728	1777	1585
Q Serve(g_s), s	3.8	9.6	0.0	3.0	11.8	0.0	1.1	3.9	4.0	1.0	4.2	0.0
Cycle Q Clear(g_c), s	3.8	9.6	0.0	3.0	11.8	0.0	1.1	3.9	4.0	1.0	4.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	321	467		175	416		1490	1099	1097	1514	2196	
V/C Ratio(X)	0.35	0.55		0.26	0.77		0.05	0.11	0.12	0.05	0.12	
Avail Cap(c_a), veh/h	781	1158		306	895		1497	1099	1097	1728	2196	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.1	60.7	0.0	50.6	57.8	0.0	8.4	10.6	10.6	8.4	10.7	0.0
Incr Delay (d2), s/veh	0.6	1.0	0.0	0.8	3.1	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.6	0.0	1.4	5.5	0.0	0.4	1.6	1.6	0.4	1.7	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	51.8	61.7	0.0	51.3	60.9	0.0	8.4	10.8	10.8	8.4	10.8	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		370			444			331			469	
Approach Delay, s/veh		58.7			49.2			10.2			7.5	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	89.5	10.1	23.7	11.7	89.4	12.0	21.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	3.0	6.0	5.0	11.6	3.1	6.2	5.8	13.8
Green Ext Time (p_c), s	0.1	1.5	0.0	1.8	0.0	1.9	0.3	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C

Notes

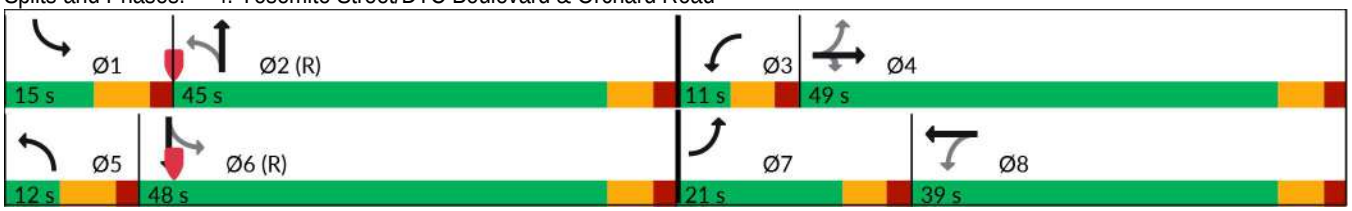
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	530	184	67	66	576	161	321	1226	211	1079	549
Future Volume (vph)	530	184	67	66	576	161	321	1226	211	1079	549
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	184	67	66	576	161	321	1226	40	211	1079	549
Future Volume (veh/h)	530	184	67	66	576	161	321	1226	40	211	1079	549
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	576	200	0	72	626	0	349	1333	43	229	1173	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	618	1048		384	752		380	1365	44	186	1470	
Arrive On Green	0.04	0.10	0.00	0.04	0.21	0.00	0.06	0.52	0.52	0.07	0.41	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3514	113	1781	3554	1585
Grp Volume(v), veh/h	576	200	0	72	626	0	349	673	703	229	1173	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1781	1777	1585
Q Serve(g_s), s	15.0	6.2	0.0	3.8	20.2	0.0	5.0	44.3	44.5	8.0	34.7	0.0
Cycle Q Clear(g_c), s	15.0	6.2	0.0	3.8	20.2	0.0	5.0	44.3	44.5	8.0	34.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	618	1048		384	752		380	690	719	186	1470	
V/C Ratio(X)	0.93	0.19		0.19	0.83		0.92	0.98	0.98	1.23	0.80	
Avail Cap(c_a), veh/h	618	1273		384	977		380	690	719	186	1470	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.0	41.0	0.0	34.9	45.3	0.0	37.1	28.4	28.5	30.9	30.8	0.0
Incr Delay (d2), s/veh	20.1	0.1	0.0	0.2	4.9	0.0	24.3	26.4	26.1	142.5	4.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	2.9	0.0	1.7	9.4	0.0	4.2	21.7	22.6	10.7	15.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	56.0	41.1	0.0	35.1	50.2	0.0	61.4	54.8	54.6	173.5	35.4	0.0
LnGrp LOS	E	D		D	D	A	E	D	D	F	D	A
Approach Vol, veh/h		776			873			1725			1999	
Approach Delay, s/veh		52.2			38.9			56.1			40.7	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	52.6	11.0	41.4	12.0	55.6	21.0	31.4
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	46.5	5.8	8.2	7.0	36.7	17.0	22.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	3.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	47.0
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

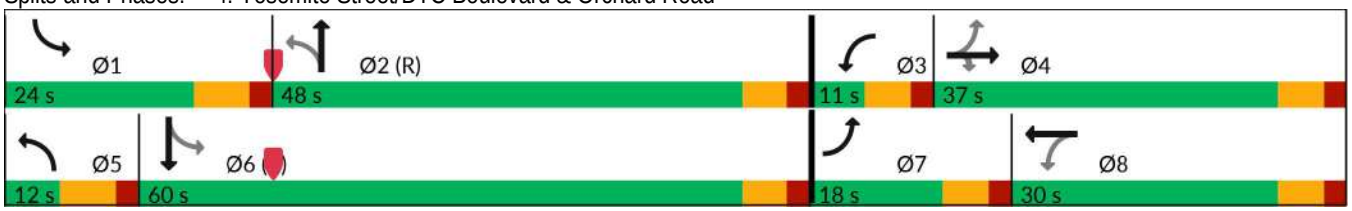
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	523	560	138	52	465	445	150	1485	322	1217	606
Future Volume (vph)	523	560	138	52	465	445	150	1485	322	1217	606
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	523	560	138	52	465	445	150	1485	165	322	1217	606
Future Volume (veh/h)	523	560	138	52	465	445	150	1485	165	322	1217	606
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	568	609	0	57	505	0	163	1614	179	350	1323	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	517	821		193	595		405	1235	135	312	1715	
Arrive On Green	0.17	0.39	0.00	0.04	0.17	0.00	0.01	0.13	0.13	0.14	0.48	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3230	353	1781	3554	1585
Grp Volume(v), veh/h	568	609	0	57	505	0	163	878	915	350	1323	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1807	1781	1777	1585
Q Serve(g_s), s	12.0	17.7	0.0	3.2	16.5	0.0	3.4	45.9	45.9	17.0	36.8	0.0
Cycle Q Clear(g_c), s	12.0	17.7	0.0	3.2	16.5	0.0	3.4	45.9	45.9	17.0	36.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	517	821		193	595		405	680	691	312	1715	
V/C Ratio(X)	1.10	0.74		0.30	0.85		0.40	1.29	1.32	1.12	0.77	
Avail Cap(c_a), veh/h	517	918		202	711		405	680	691	312	1715	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.7	33.8	0.0	39.7	48.5	0.0	24.8	52.4	52.4	39.3	25.6	0.0
Incr Delay (d2), s/veh	60.6	1.7	0.0	0.8	8.2	0.0	0.5	140.1	153.8	87.5	3.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.9	0.0	1.4	8.0	0.0	1.5	48.4	51.8	16.9	16.0	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	99.3	35.4	0.0	40.6	56.7	0.0	25.3	192.5	206.2	126.7	29.0	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	F	C	A
Approach Vol, veh/h		1177			1046			1956			2332	
Approach Delay, s/veh		66.2			29.6			185.0			35.5	
Approach LOS		E			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	51.9	10.4	33.7	12.0	63.9	18.0	26.1
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	19.0	47.9	5.2	19.7	5.4	38.8	14.0	18.5
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	8.5	0.0	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	85.0
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

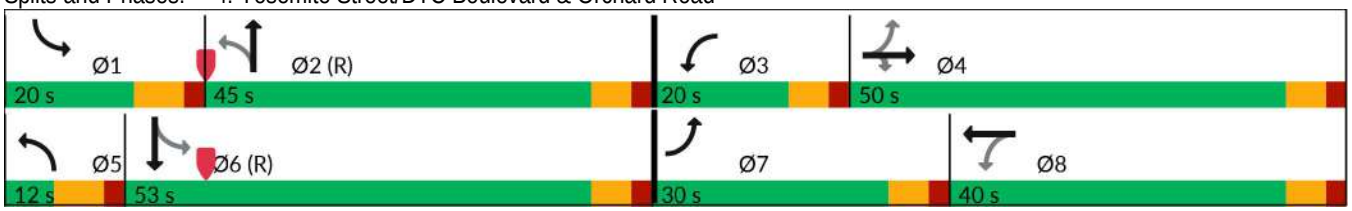
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	265	9	41	322	72	73	196	66	248	130
Future Volume (vph)	117	265	9	41	322	72	73	196	66	248	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	265	9	41	322	72	73	196	36	66	248	130
Future Volume (veh/h)	117	265	9	41	322	72	73	196	36	66	248	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	288	0	45	350	0	79	213	39	72	270	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	514		178	448		1460	1822	328	763	2150	
Arrive On Green	0.02	0.05	0.00	0.03	0.13	0.00	0.04	0.61	0.61	0.03	0.60	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3008	541	1781	3554	1585
Grp Volume(v), veh/h	127	288	0	45	350	0	79	124	128	72	270	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1773	1781	1777	1585
Q Serve(g_s), s	4.3	10.7	0.0	3.0	12.9	0.0	1.1	4.0	4.1	2.1	4.4	0.0
Cycle Q Clear(g_c), s	4.3	10.7	0.0	3.0	12.9	0.0	1.1	4.0	4.1	2.1	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	336	514		178	448		1460	1076	1073	763	2150	
V/C Ratio(X)	0.38	0.56		0.25	0.78		0.05	0.12	0.12	0.09	0.13	
Avail Cap(c_a), veh/h	782	1158		309	895		1467	1076	1073	873	2150	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.1	60.1	0.0	49.6	57.2	0.0	9.0	11.3	11.3	9.2	11.4	0.0
Incr Delay (d2), s/veh	0.7	1.0	0.0	0.7	3.0	0.0	0.0	0.2	0.2	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.2	0.0	1.4	6.0	0.0	0.4	1.7	1.7	0.8	1.8	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	50.7	61.0	0.0	50.3	60.2	0.0	9.0	11.5	11.5	9.3	11.5	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		415			473			331			483	
Approach Delay, s/veh		57.9			49.3			10.9			7.8	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	87.7	10.1	25.5	11.7	87.7	12.6	23.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	4.1	6.1	5.0	12.7	3.1	6.4	6.3	14.9
Green Ext Time (p_c), s	0.1	1.5	0.0	2.0	0.0	1.9	0.3	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	32.2
HCM 7th LOS	C

Notes

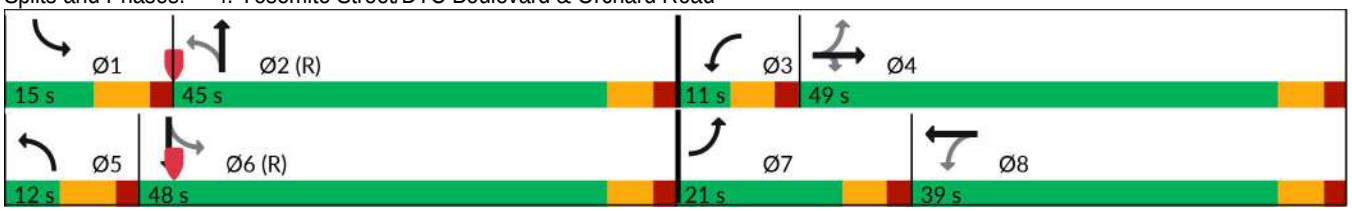
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	530	184	67	66	576	161	321	1226	211	1079	549
Future Volume (vph)	530	184	67	66	576	161	321	1226	211	1079	549
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	21.0	49.0	49.0	11.0	39.0		12.0	45.0	15.0	48.0	
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.5%		10.0%	37.5%	12.5%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	184	67	66	576	161	321	1226	40	211	1079	549
Future Volume (veh/h)	530	184	67	66	576	161	321	1226	40	211	1079	549
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	576	200	0	72	626	0	349	1333	43	229	1173	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	618	1048		384	752		380	1402	45	375	1470	
Arrive On Green	0.04	0.10	0.00	0.04	0.21	0.00	0.08	0.80	0.80	0.06	0.41	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3514	113	3456	3554	1585
Grp Volume(v), veh/h	576	200	0	72	626	0	349	673	703	229	1173	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1850	1728	1777	1585
Q Serve(g_s), s	15.0	6.2	0.0	3.8	20.2	0.0	5.0	38.0	38.3	4.6	34.7	0.0
Cycle Q Clear(g_c), s	15.0	6.2	0.0	3.8	20.2	0.0	5.0	38.0	38.3	4.6	34.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	618	1048		384	752		380	709	738	375	1470	
V/C Ratio(X)	0.93	0.19		0.19	0.83		0.92	0.95	0.95	0.61	0.80	
Avail Cap(c_a), veh/h	618	1273		384	977		380	709	738	412	1470	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.0	41.0	0.0	34.9	45.3	0.0	36.3	11.1	11.2	27.3	30.8	0.0
Incr Delay (d2), s/veh	20.1	0.1	0.0	0.2	4.9	0.0	24.3	21.3	21.0	2.3	4.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	2.9	0.0	1.7	9.4	0.0	4.2	8.6	9.0	2.0	15.5	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	56.0	41.1	0.0	35.1	50.2	0.0	60.7	32.4	32.2	29.6	35.4	0.0
LnGrp LOS	E	D		D	D	A	E	C	C	C	D	A
Approach Vol, veh/h		776			873			1725			1999	
Approach Delay, s/veh		52.2			38.9			38.0			24.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	53.9	11.0	41.4	12.0	55.6	21.0	31.4
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	39.0	5.0	43.0	5.0	42.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	6.6	40.3	5.8	8.2	7.0	36.7	17.0	22.2
Green Ext Time (p_c), s	0.1	0.0	0.0	1.3	0.0	3.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	35.1
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

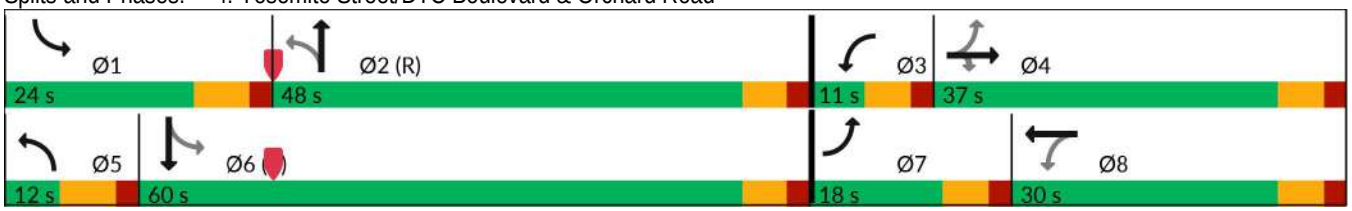
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	523	560	138	52	465	445	150	1485	322	1217	606
Future Volume (vph)	523	560	138	52	465	445	150	1485	322	1217	606
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	18.0	37.0	37.0	11.0	30.0		12.0	48.0	24.0	60.0	
Total Split (%)	15.0%	30.8%	30.8%	9.2%	25.0%		10.0%	40.0%	20.0%	50.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	523	560	138	52	465	445	150	1485	165	322	1217	606
Future Volume (veh/h)	523	560	138	52	465	445	150	1485	165	322	1217	606
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	568	609	0	57	505	0	163	1614	179	350	1323	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	517	821		193	595		405	1411	154	421	1715	
Arrive On Green	0.17	0.39	0.00	0.04	0.17	0.00	0.01	0.14	0.14	0.09	0.48	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3230	353	3456	3554	1585
Grp Volume(v), veh/h	568	609	0	57	505	0	163	878	915	350	1323	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1807	1728	1777	1585
Q Serve(g_s), s	12.0	17.7	0.0	3.2	16.5	0.0	3.1	52.4	52.4	7.7	36.8	0.0
Cycle Q Clear(g_c), s	12.0	17.7	0.0	3.2	16.5	0.0	3.1	52.4	52.4	7.7	36.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	517	821		193	595		405	776	789	421	1715	
V/C Ratio(X)	1.10	0.74		0.30	0.85		0.40	1.13	1.16	0.83	0.77	
Avail Cap(c_a), veh/h	517	918		202	711		405	776	789	610	1715	
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.7	33.8	0.0	39.7	48.5	0.0	22.9	51.3	51.3	32.8	25.6	0.0
Incr Delay (d2), s/veh	60.6	1.7	0.0	0.8	8.2	0.0	0.5	71.9	82.8	6.4	3.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.9	0.0	1.4	8.0	0.0	1.3	40.5	43.6	5.5	16.0	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	99.3	35.4	0.0	40.6	56.7	0.0	23.5	123.2	134.2	39.2	29.0	0.0
LnGrp LOS	F	D		D	E	A	C	F	F	D	C	A
Approach Vol, veh/h		1177			1046			1956			2332	
Approach Delay, s/veh		66.2			29.6			120.0			22.4	
Approach LOS		E			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	58.4	10.4	33.7	12.0	63.9	18.0	26.1
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	42.0	5.0	31.0	5.0	54.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	9.7	54.4	5.2	19.7	5.1	38.8	14.0	18.5
Green Ext Time (p_c), s	0.8	0.0	0.0	3.1	0.0	8.5	0.0	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	60.8
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

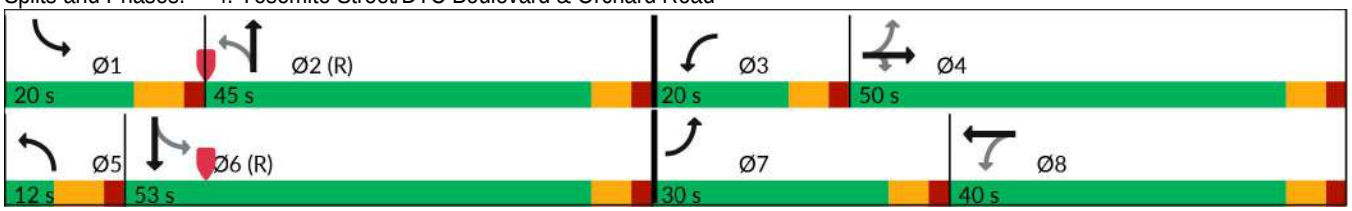
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	265	9	41	322	72	73	196	66	248	130
Future Volume (vph)	117	265	9	41	322	72	73	196	66	248	130
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		Free	2		6		Free
Detector Phase	7	4	4	3	8		5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	5.0	10.0	
Minimum Split (s)	11.0	31.0	31.0	11.0	31.0		12.0	32.0	12.0	30.0	
Total Split (s)	30.0	50.0	50.0	20.0	40.0		12.0	45.0	20.0	53.0	
Total Split (%)	22.2%	37.0%	37.0%	14.8%	29.6%		8.9%	33.3%	14.8%	39.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	4.0	5.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 54.5 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Yosemite Street/DTC Boulevard & Orchard Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	265	9	41	322	72	73	196	36	66	248	130
Future Volume (veh/h)	117	265	9	41	322	72	73	196	36	66	248	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	288	0	45	350	0	79	213	39	72	270	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	514		178	448		1460	1822	328	1484	2150	
Arrive On Green	0.02	0.05	0.00	0.03	0.13	0.00	0.04	0.61	0.61	0.03	0.60	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3008	541	3456	3554	1585
Grp Volume(v), veh/h	127	288	0	45	350	0	79	124	128	72	270	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1773	1728	1777	1585
Q Serve(g_s), s	4.3	10.7	0.0	3.0	12.9	0.0	1.1	4.0	4.1	1.0	4.4	0.0
Cycle Q Clear(g_c), s	4.3	10.7	0.0	3.0	12.9	0.0	1.1	4.0	4.1	1.0	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	336	514		178	448		1460	1076	1073	1484	2150	
V/C Ratio(X)	0.38	0.56		0.25	0.78		0.05	0.12	0.12	0.05	0.13	
Avail Cap(c_a), veh/h	782	1158		309	895		1467	1076	1073	1697	2150	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.1	60.1	0.0	49.6	57.2	0.0	9.0	11.3	11.3	9.0	11.4	0.0
Incr Delay (d2), s/veh	0.7	1.0	0.0	0.7	3.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.2	0.0	1.4	6.0	0.0	0.4	1.7	1.7	0.4	1.8	0.0
Unsig. Movement Delay, s/veh						0.00						0.00
LnGrp Delay(d), s/veh	50.7	61.0	0.0	50.3	60.2	0.0	9.0	11.5	11.5	9.0	11.5	0.0
LnGrp LOS	D	E		D	E	A	A	B	B	A	B	A
Approach Vol, veh/h		415			473			331			483	
Approach Delay, s/veh		57.9			49.3			10.9			7.8	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	87.7	10.1	25.5	11.7	87.7	12.6	23.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	39.0	14.0	44.0	5.0	47.0	24.0	34.0
Max Q Clear Time (g_c+I1), s	3.0	6.1	5.0	12.7	3.1	6.4	6.3	14.9
Green Ext Time (p_c), s	0.1	1.5	0.0	2.0	0.0	1.9	0.3	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	32.2
HCM 7th LOS	C

Notes

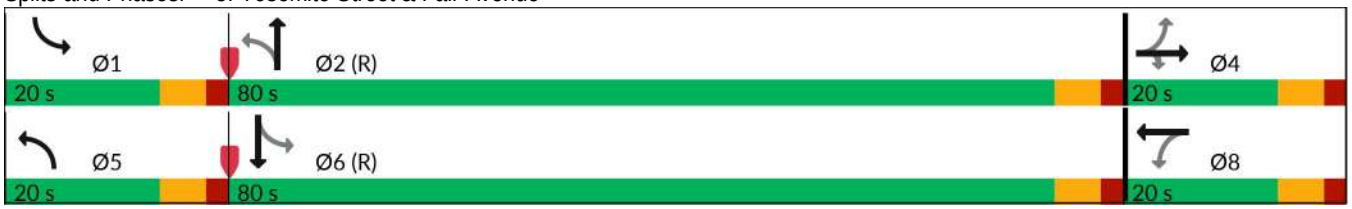
Unsignalized Delay for [WBR, SBR] is included in calculations of the approach delay and intersection delay.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	17	16	1	126	1240	17	938
Future Volume (vph)	17	16	1	126	1240	17	938
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	17	16	1	3	126	1240	10	17	938	40
Future Volume (veh/h)	0	0	17	16	1	3	126	1240	10	17	938	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	18	17	1	3	137	1348	11	18	1020	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	57	48	102	12	37	546	2811	23	446	2705	114
Arrive On Green	0.00	0.00	0.03	0.03	0.03	0.03	0.08	1.00	1.00	0.08	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1395	412	1236	1781	3612	29	1781	3474	146
Grp Volume(v), veh/h	0	0	18	17	0	4	137	663	696	18	522	541
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1395	0	1648	1781	1777	1865	1781	1777	1844
Q Serve(g_s), s	0.0	0.0	1.3	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.3	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.75	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	0	57	48	102	0	50	546	1382	1451	446	1383	1435
V/C Ratio(X)	0.00	0.00	0.37	0.17	0.00	0.08	0.25	0.48	0.48	0.04	0.38	0.38
Avail Cap(c_a), veh/h	0	218	185	223	0	192	681	1382	1451	579	1383	1435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91	0.53	0.53	0.53
Uniform Delay (d), s/veh	0.0	0.0	57.1	57.1	0.0	56.6	2.0	0.0	0.0	1.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.8	0.8	0.0	0.7	0.2	1.1	1.0	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.5	0.0	0.1	0.5	0.4	0.4	0.1	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	61.8	57.9	0.0	57.2	2.3	1.1	1.0	1.9	0.4	0.4
LnGrp LOS			E	E		E	A	A	A	A	A	A
Approach Vol, veh/h		18			21			1496			1081	
Approach Delay, s/veh		61.8			57.7			1.2			0.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.4		9.6	10.9	99.4		9.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		3.3	3.9	2.0		3.4				
Green Ext Time (p_c), s	0.0	14.4		0.0	0.2	9.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	1.7
HCM 7th LOS	A

Notes

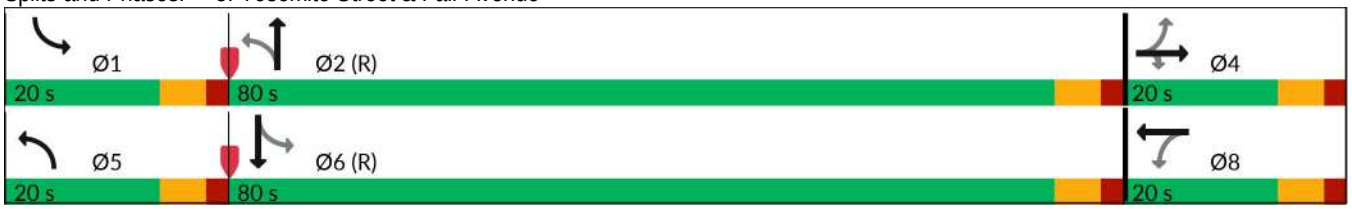
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	79	41	2	42	1331	14	1196
Future Volume (vph)	79	41	2	42	1331	14	1196
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	79	41	2	4	42	1331	12	14	1196	10
Future Volume (veh/h)	0	0	79	41	2	4	42	1331	12	14	1196	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	86	45	2	4	46	1447	13	15	1300	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	131	111	152	39	78	432	2756	25	309	2699	23
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.03	0.76	0.76	0.03	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1311	557	1113	1781	3609	32	1781	3611	31
Grp Volume(v), veh/h	0	0	86	45	0	6	46	712	748	15	640	671
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1311	0	1670	1781	1777	1865	1781	1777	1865
Q Serve(g_s), s	0.0	0.0	6.4	4.0	0.0	0.4	0.7	19.0	19.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.4	4.0	0.0	0.4	0.7	19.0	19.0	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.67	1.00		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	0	131	111	152	0	117	432	1357	1424	309	1328	1394
V/C Ratio(X)	0.00	0.00	0.78	0.30	0.00	0.05	0.11	0.52	0.53	0.05	0.48	0.48
Avail Cap(c_a), veh/h	0	218	185	213	0	195	581	1357	1424	488	1328	1394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.74	0.74	0.74	0.70	0.70	0.70
Uniform Delay (d), s/veh	0.0	0.0	54.9	53.7	0.0	52.1	3.0	5.6	5.6	4.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.1	0.0	0.2	0.1	1.1	1.0	0.0	0.9	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.9	1.4	0.0	0.2	0.2	6.3	6.6	0.1	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	65.8	54.8	0.0	52.3	3.1	6.7	6.6	4.6	0.9	0.8
LnGrp LOS			E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		86			51			1506			1326	
Approach Delay, s/veh		65.8			54.5			6.5			0.9	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	97.6		14.4	9.9	95.7		14.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	21.0		8.4	2.7	2.0		6.0				
Green Ext Time (p_c), s	0.0	15.9		0.1	0.0	13.4		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.6
HCM 7th LOS	A

Notes

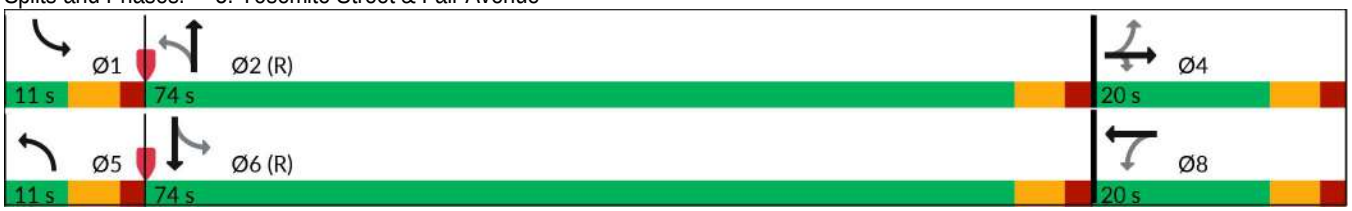
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	6	2	1	8	265	283	
Future Volume (vph)	6	2	1	8	265	283	
Turn Type	Perm	Perm	NA	pm+pt	NA	NA	
Protected Phases			8	5	2	6	1
Permitted Phases	4	8		2			
Detector Phase	4	8	8	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	15.0	5.0
Minimum Split (s)	22.5	24.0	24.0	11.0	22.5	24.0	11.0
Total Split (s)	20.0	20.0	20.0	11.0	74.0	74.0	11.0
Total Split (%)	19.0%	19.0%	19.0%	10.5%	70.5%	70.5%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag				Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 54.5 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	6	2	1	1	8	265	4	0	283	1
Future Volume (veh/h)	0	0	6	2	1	1	8	265	4	0	283	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	7	2	1	1	9	288	4	0	308	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	24	21	87	11	11	930	3131	43	945	2923	9
Arrive On Green	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.87	0.87	0.00	0.80	0.80
Sat Flow, veh/h	0	1870	1585	1409	858	858	1781	3588	50	1781	3633	12
Grp Volume(v), veh/h	0	0	7	2	0	2	9	142	150	0	151	158
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1409	0	1716	1781	1777	1861	1781	1777	1868
Q Serve(g_s), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.2	1.2	0.0	1.9	1.9
Cycle Q Clear(g_c), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.2	1.2	0.0	1.9	1.9
Prop In Lane	0.00		1.00	1.00		0.50	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	0	24	21	87	0	22	930	1551	1624	945	1429	1503
V/C Ratio(X)	0.00	0.00	0.34	0.02	0.00	0.09	0.01	0.09	0.09	0.00	0.11	0.11
Avail Cap(c_a), veh/h	0	249	211	256	0	229	995	1551	1624	1028	1429	1503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	51.4	51.2	0.0	51.2	1.5	0.9	0.9	0.0	2.2	2.2
Incr Delay (d2), s/veh	0.0	0.0	9.3	0.1	0.0	1.7	0.0	0.1	0.1	0.0	0.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	60.7	51.3	0.0	52.9	1.5	1.0	1.0	0.0	2.3	2.3
LnGrp LOS			E	D		D	A	A	A		A	A
Approach Vol, veh/h		7			4			301			309	
Approach Delay, s/veh		60.7			52.1			1.1			2.3	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	97.6		7.4	7.2	90.5		7.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		14.0	5.0	68.0		14.0				
Max Q Clear Time (g_c+I1), s	0.0	3.2		2.5	2.1	3.9		2.1				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	2.7
HCM 7th LOS	A

Notes

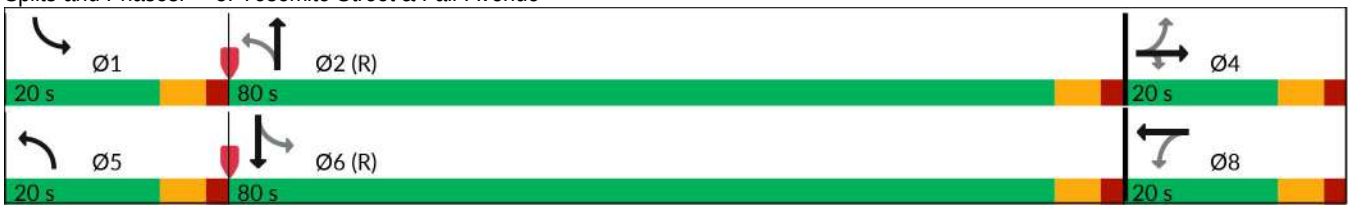
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	17	16	1	128	1264	17	956
Future Volume (vph)	17	16	1	128	1264	17	956
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	17	16	1	3	128	1264	10	17	956	41
Future Volume (veh/h)	0	0	17	16	1	3	128	1264	10	17	956	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	18	17	1	3	139	1374	11	18	1039	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	57	48	102	12	37	538	2811	22	438	2701	117
Arrive On Green	0.00	0.00	0.03	0.03	0.03	0.03	0.08	1.00	1.00	0.08	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1395	412	1236	1781	3613	29	1781	3470	150
Grp Volume(v), veh/h	0	0	18	17	0	4	139	676	709	18	532	552
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1395	0	1648	1781	1777	1865	1781	1777	1843
Q Serve(g_s), s	0.0	0.0	1.3	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.3	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.75	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	0	57	48	102	0	50	538	1382	1451	438	1383	1435
V/C Ratio(X)	0.00	0.00	0.37	0.17	0.00	0.08	0.26	0.49	0.49	0.04	0.38	0.38
Avail Cap(c_a), veh/h	0	218	185	223	0	192	673	1382	1451	572	1383	1435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91	0.50	0.50	0.50
Uniform Delay (d), s/veh	0.0	0.0	57.1	57.1	0.0	56.6	2.0	0.0	0.0	1.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.8	0.8	0.0	0.7	0.2	1.1	1.1	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.5	0.0	0.1	0.5	0.4	0.4	0.1	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	61.8	57.9	0.0	57.2	2.3	1.1	1.1	1.9	0.4	0.4
LnGrp LOS			E	E		E	A	A	A	A	A	A
Approach Vol, veh/h		18			21			1524			1102	
Approach Delay, s/veh		61.8			57.7			1.2			0.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.4		9.6	11.0	99.4		9.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		3.3	3.9	2.0		3.4				
Green Ext Time (p_c), s	0.0	15.0		0.0	0.2	9.6		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	1.7
HCM 7th LOS	A

Notes

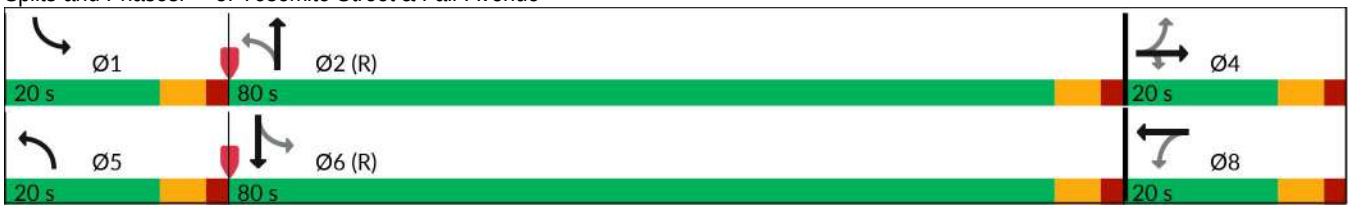
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	81	42	2	43	1357	14	1220
Future Volume (vph)	81	42	2	43	1357	14	1220
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	81	42	2	4	43	1357	12	14	1220	10
Future Volume (veh/h)	0	0	81	42	2	4	43	1357	12	14	1220	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	88	46	2	4	47	1475	13	15	1326	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	133	113	153	40	79	424	2752	24	301	2694	22
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.03	0.76	0.76	0.03	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1309	557	1113	1781	3610	32	1781	3612	30
Grp Volume(v), veh/h	0	0	88	46	0	6	47	726	762	15	652	685
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1309	0	1670	1781	1777	1865	1781	1777	1865
Q Serve(g_s), s	0.0	0.0	6.6	4.1	0.0	0.4	0.7	19.7	19.7	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.6	4.1	0.0	0.4	0.7	19.7	19.7	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.67	1.00		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	0	133	113	153	0	119	424	1355	1421	301	1325	1391
V/C Ratio(X)	0.00	0.00	0.78	0.30	0.00	0.05	0.11	0.54	0.54	0.05	0.49	0.49
Avail Cap(c_a), veh/h	0	218	185	213	0	195	573	1355	1421	479	1325	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.72	0.72	0.72	0.68	0.68	0.68
Uniform Delay (d), s/veh	0.0	0.0	54.8	53.6	0.0	51.9	3.0	5.7	5.7	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.1	0.0	0.2	0.1	1.1	1.0	0.0	0.9	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.0	1.4	0.0	0.2	0.2	6.6	6.9	0.1	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	65.7	54.7	0.0	52.1	3.1	6.8	6.8	4.8	0.9	0.9
LnGrp LOS			E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		88			52			1535			1352	
Approach Delay, s/veh		65.7			54.4			6.7			0.9	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	97.5		14.6	10.0	95.5		14.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	21.7		8.6	2.7	2.0		6.1				
Green Ext Time (p_c), s	0.0	16.5		0.1	0.1	14.0		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.6
HCM 7th LOS	A

Notes

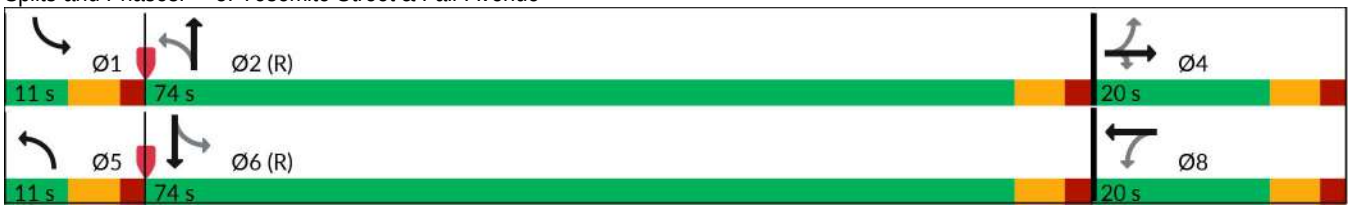
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	6	2	1	8	270	289	
Future Volume (vph)	6	2	1	8	270	289	
Turn Type	Perm	Perm	NA	pm+pt	NA	NA	
Protected Phases			8	5	2	6	1
Permitted Phases	4	8		2			
Detector Phase	4	8	8	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	15.0	5.0
Minimum Split (s)	22.5	24.0	24.0	11.0	22.5	24.0	11.0
Total Split (s)	20.0	20.0	20.0	11.0	74.0	74.0	11.0
Total Split (%)	19.0%	19.0%	19.0%	10.5%	70.5%	70.5%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag				Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 54.5 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	6	2	1	1	8	270	4	0	289	1
Future Volume (veh/h)	0	0	6	2	1	1	8	270	4	0	289	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	7	2	1	1	9	293	4	0	314	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	24	21	87	11	11	925	3132	43	941	2923	9
Arrive On Green	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.87	0.87	0.00	0.80	0.80
Sat Flow, veh/h	0	1870	1585	1409	858	858	1781	3589	49	1781	3634	12
Grp Volume(v), veh/h	0	0	7	2	0	2	9	145	152	0	154	161
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1409	0	1716	1781	1777	1862	1781	1777	1868
Q Serve(g_s), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.2	1.2	0.0	1.9	1.9
Cycle Q Clear(g_c), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.2	1.2	0.0	1.9	1.9
Prop In Lane	0.00		1.00	1.00		0.50	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	0	24	21	87	0	22	925	1551	1624	941	1429	1503
V/C Ratio(X)	0.00	0.00	0.34	0.02	0.00	0.09	0.01	0.09	0.09	0.00	0.11	0.11
Avail Cap(c_a), veh/h	0	249	211	256	0	229	990	1551	1624	1024	1429	1503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	51.4	51.2	0.0	51.2	1.5	0.9	0.9	0.0	2.2	2.2
Incr Delay (d2), s/veh	0.0	0.0	9.3	0.1	0.0	1.7	0.0	0.1	0.1	0.0	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	60.7	51.3	0.0	52.9	1.5	1.0	1.0	0.0	2.3	2.3
LnGrp LOS			E	D		D	A	A	A		A	A
Approach Vol, veh/h		7			4			306			315	
Approach Delay, s/veh		60.7			52.1			1.1			2.3	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	97.6		7.4	7.2	90.5		7.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		14.0	5.0	68.0		14.0				
Max Q Clear Time (g_c+I1), s	0.0	3.2		2.5	2.1	3.9		2.1				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	2.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	2.7
HCM 7th LOS	A

Notes

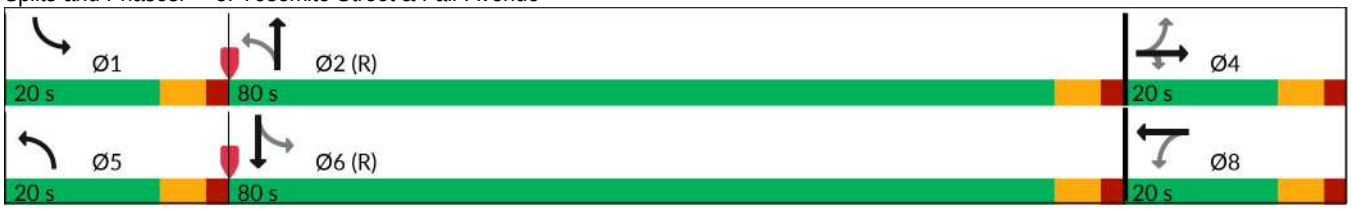
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	18	16	1	129	1264	17	956
Future Volume (vph)	18	16	1	129	1264	17	956
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	18	16	1	3	129	1264	10	17	956	41
Future Volume (veh/h)	0	0	18	16	1	3	129	1264	10	17	956	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	20	17	1	3	140	1374	11	18	1039	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	58	49	103	13	38	538	2808	22	438	2698	117
Arrive On Green	0.00	0.00	0.03	0.03	0.03	0.03	0.08	1.00	1.00	0.08	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1392	412	1236	1781	3613	29	1781	3470	150
Grp Volume(v), veh/h	0	0	20	17	0	4	140	676	709	18	532	552
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1392	0	1648	1781	1777	1865	1781	1777	1843
Q Serve(g_s), s	0.0	0.0	1.5	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.5	1.4	0.0	0.3	1.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.75	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	0	58	49	103	0	51	538	1381	1450	438	1382	1434
V/C Ratio(X)	0.00	0.00	0.41	0.16	0.00	0.08	0.26	0.49	0.49	0.04	0.38	0.39
Avail Cap(c_a), veh/h	0	218	185	222	0	192	672	1381	1450	572	1382	1434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91	0.50	0.50	0.50
Uniform Delay (d), s/veh	0.0	0.0	57.1	57.0	0.0	56.5	2.1	0.0	0.0	1.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.3	0.7	0.0	0.6	0.2	1.1	1.1	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	0.5	0.0	0.1	0.5	0.4	0.4	0.1	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	62.4	57.8	0.0	57.1	2.3	1.1	1.1	1.9	0.4	0.4
LnGrp LOS			E	E		E	A	A	A	A	A	A
Approach Vol, veh/h		20			21			1525			1102	
Approach Delay, s/veh		62.4			57.6			1.2			0.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.3		9.7	11.0	99.3		9.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0		3.5	3.9	2.0		3.4				
Green Ext Time (p_c), s	0.0	15.0		0.0	0.2	9.6		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	1.8
HCM 7th LOS	A

Notes

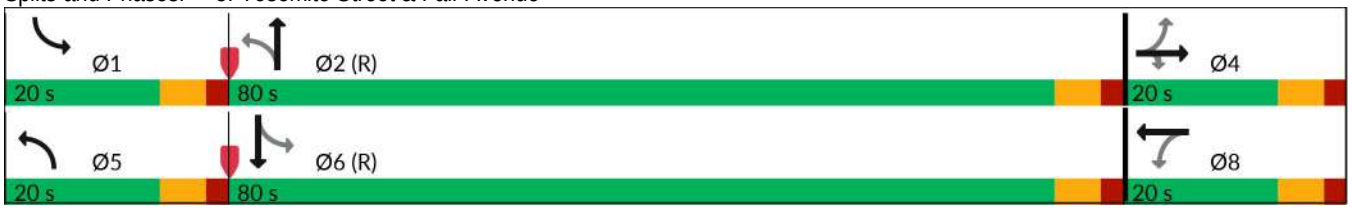
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	82	42	2	44	1357	14	1220
Future Volume (vph)	82	42	2	44	1357	14	1220
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	82	42	2	4	44	1357	12	14	1220	10
Future Volume (veh/h)	0	0	82	42	2	4	44	1357	12	14	1220	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	89	46	2	4	48	1475	13	15	1326	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	135	114	154	40	80	424	2749	24	300	2690	22
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.03	0.76	0.76	0.03	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1308	557	1113	1781	3610	32	1781	3612	30
Grp Volume(v), veh/h	0	0	89	46	0	6	48	726	762	15	652	685
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1308	0	1670	1781	1777	1865	1781	1777	1865
Q Serve(g_s), s	0.0	0.0	6.6	4.1	0.0	0.4	0.7	19.7	19.8	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.6	4.1	0.0	0.4	0.7	19.7	19.8	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.67	1.00		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	0	135	114	154	0	120	424	1353	1420	300	1323	1389
V/C Ratio(X)	0.00	0.00	0.78	0.30	0.00	0.05	0.11	0.54	0.54	0.05	0.49	0.49
Avail Cap(c_a), veh/h	0	218	185	213	0	195	573	1353	1420	479	1323	1389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.71	0.71	0.71	0.68	0.68	0.68
Uniform Delay (d), s/veh	0.0	0.0	54.8	53.6	0.0	51.9	3.0	5.8	5.8	4.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.1	0.0	0.2	0.1	1.1	1.0	0.0	0.9	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.0	1.4	0.0	0.2	0.2	6.6	6.9	0.1	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	65.7	54.6	0.0	52.0	3.1	6.8	6.8	4.8	0.9	0.9
LnGrp LOS			E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		89			52			1536			1352	
Approach Delay, s/veh		65.7			54.3			6.7			0.9	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	97.4		14.6	10.0	95.4		14.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.2	21.8		8.6	2.7	2.0		6.1				
Green Ext Time (p_c), s	0.0	16.5		0.1	0.1	14.0		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.7
HCM 7th LOS	A

Notes

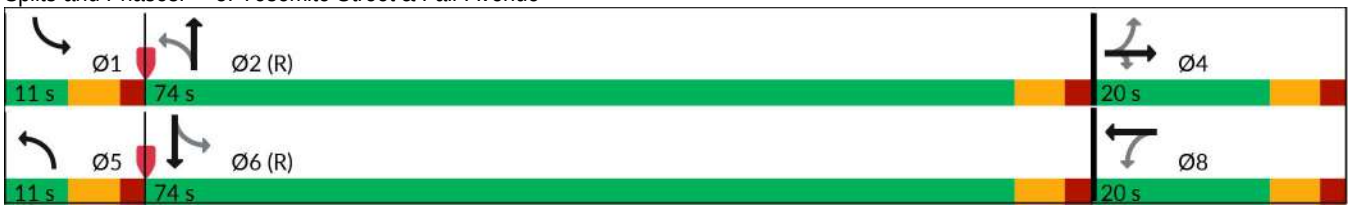
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	12	2	1	13	270	289	
Future Volume (vph)	12	2	1	13	270	289	
Turn Type	Perm	Perm	NA	pm+pt	NA	NA	
Protected Phases			8	5	2	6	1
Permitted Phases	4	8		2			
Detector Phase	4	8	8	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	15.0	5.0
Minimum Split (s)	22.5	24.0	24.0	11.0	22.5	24.0	11.0
Total Split (s)	20.0	20.0	20.0	11.0	74.0	74.0	11.0
Total Split (%)	19.0%	19.0%	19.0%	10.5%	70.5%	70.5%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag				Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 54.5 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	12	2	1	1	13	270	4	0	289	1
Future Volume (veh/h)	0	0	12	2	1	1	13	270	4	0	289	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	13	2	1	1	14	293	4	0	314	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	35	30	95	16	16	922	3112	42	930	2885	9
Arrive On Green	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.87	0.87	0.00	0.79	0.79
Sat Flow, veh/h	0	1870	1585	1401	858	858	1781	3589	49	1781	3634	12
Grp Volume(v), veh/h	0	0	13	2	0	2	14	145	152	0	154	161
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1401	0	1716	1781	1777	1862	1781	1777	1868
Q Serve(g_s), s	0.0	0.0	0.9	0.1	0.0	0.1	0.1	1.2	1.2	0.0	2.0	2.0
Cycle Q Clear(g_c), s	0.0	0.0	0.9	0.1	0.0	0.1	0.1	1.2	1.2	0.0	2.0	2.0
Prop In Lane	0.00		1.00	1.00		0.50	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	0	35	30	95	0	32	922	1541	1614	930	1411	1483
V/C Ratio(X)	0.00	0.00	0.44	0.02	0.00	0.06	0.02	0.09	0.09	0.00	0.11	0.11
Avail Cap(c_a), veh/h	0	249	211	255	0	229	978	1541	1614	1013	1411	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	51.0	50.6	0.0	50.6	1.6	1.0	1.0	0.0	2.4	2.4
Incr Delay (d2), s/veh	0.0	0.0	10.0	0.1	0.0	0.8	0.0	0.1	0.1	0.0	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	61.0	50.7	0.0	51.4	1.6	1.1	1.1	0.0	2.6	2.6
LnGrp LOS			E	D		D	A	A	A		A	A
Approach Vol, veh/h		13			4			311			315	
Approach Delay, s/veh		61.0			51.1			1.2			2.6	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	97.0		8.0	7.7	89.4		8.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		14.0	5.0	68.0		14.0				
Max Q Clear Time (g_c+I1), s	0.0	3.2		2.9	2.1	4.0		2.1				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	2.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	3.4
HCM 7th LOS	A

Notes

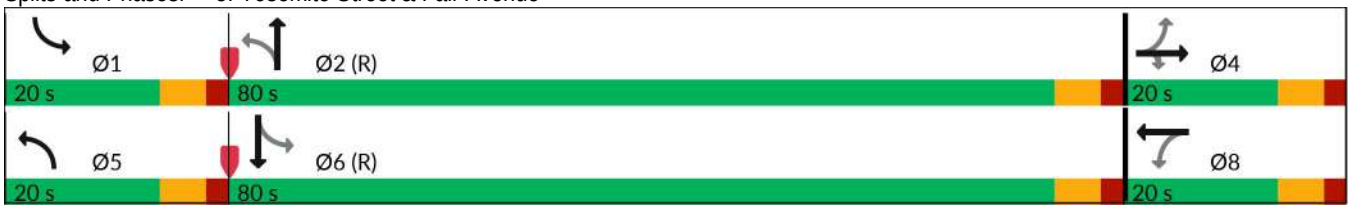
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	19	18	1	139	1367	19	1034
Future Volume (vph)	19	18	1	139	1367	19	1034
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	19	18	1	3	139	1367	11	19	1034	44
Future Volume (veh/h)	0	0	19	18	1	3	139	1367	11	19	1034	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	21	20	1	3	151	1486	12	21	1124	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	61	51	105	13	40	505	2803	23	406	2695	115
Arrive On Green	0.00	0.00	0.03	0.03	0.03	0.03	0.08	1.00	1.00	0.08	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1391	412	1236	1781	3613	29	1781	3472	148
Grp Volume(v), veh/h	0	0	21	20	0	4	151	731	767	21	575	597
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1391	0	1648	1781	1777	1865	1781	1777	1844
Q Serve(g_s), s	0.0	0.0	1.6	1.7	0.0	0.3	2.1	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.6	1.7	0.0	0.3	2.1	0.0	0.0	0.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.75	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	0	61	51	105	0	53	505	1379	1447	406	1379	1431
V/C Ratio(X)	0.00	0.00	0.41	0.19	0.00	0.07	0.30	0.53	0.53	0.05	0.42	0.42
Avail Cap(c_a), veh/h	0	218	185	222	0	192	639	1379	1447	540	1379	1431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.39	0.39	0.39
Uniform Delay (d), s/veh	0.0	0.0	56.9	57.0	0.0	56.3	2.1	0.0	0.0	1.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.2	0.9	0.0	0.6	0.3	1.3	1.2	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	0.6	0.0	0.1	0.5	0.5	0.5	0.1	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	62.1	57.9	0.0	56.9	2.4	1.3	1.2	2.0	0.4	0.4
LnGrp LOS			E	E		E	A	A	A	A	A	A
Approach Vol, veh/h		21			24			1649			1193	
Approach Delay, s/veh		62.1			57.7			1.4			0.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.1		9.9	11.0	99.1		9.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.6	4.1	2.0		3.7				
Green Ext Time (p_c), s	0.0	17.6		0.0	0.3	11.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	1.9
HCM 7th LOS	A

Notes

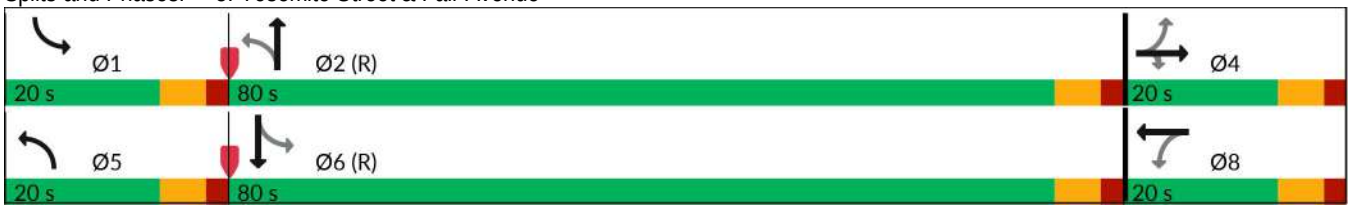
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	87	45	2	46	1467	15	1318
Future Volume (vph)	87	45	2	46	1467	15	1318
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	87	45	2	4	46	1467	13	15	1318	11
Future Volume (veh/h)	0	0	87	45	2	4	46	1467	13	15	1318	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	95	49	2	4	50	1595	14	16	1433	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	142	120	159	42	84	393	2733	24	268	2674	22
Arrive On Green	0.00	0.00	0.08	0.08	0.08	0.08	0.03	0.76	0.76	0.03	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1301	557	1113	1781	3610	32	1781	3612	30
Grp Volume(v), veh/h	0	0	95	49	0	6	50	785	824	16	705	740
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1301	0	1670	1781	1777	1865	1781	1777	1865
Q Serve(g_s), s	0.0	0.0	7.1	4.3	0.0	0.4	0.8	23.1	23.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.1	4.3	0.0	0.4	0.8	23.1	23.1	0.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.67	1.00		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	0	142	120	159	0	127	393	1345	1411	268	1316	1381
V/C Ratio(X)	0.00	0.00	0.79	0.31	0.00	0.05	0.13	0.58	0.58	0.06	0.54	0.54
Avail Cap(c_a), veh/h	0	218	185	212	0	195	541	1345	1411	446	1316	1381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	0.60	0.60	0.60
Uniform Delay (d), s/veh	0.0	0.0	54.5	53.3	0.0	51.4	3.1	6.3	6.4	5.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	11.9	1.1	0.0	0.2	0.1	1.0	1.0	0.1	0.9	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.2	1.5	0.0	0.2	0.2	7.7	8.1	0.1	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	66.4	54.3	0.0	51.6	3.2	7.4	7.3	5.5	0.9	0.9
LnGrp LOS			E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		95			55			1659			1461	
Approach Delay, s/veh		66.4			54.0			7.2			1.0	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	96.8		15.1	10.1	94.8		15.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.3	25.1		9.1	2.8	2.0		6.3				
Green Ext Time (p_c), s	0.0	18.8		0.1	0.1	16.3		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.9
HCM 7th LOS	A

Notes

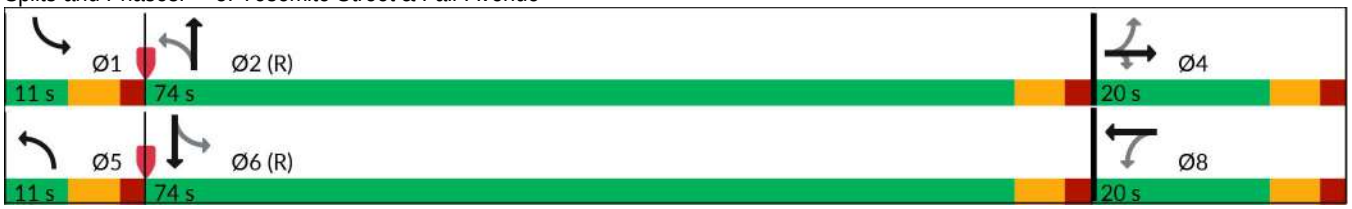
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	7	2	1	9	292	312	
Future Volume (vph)	7	2	1	9	292	312	
Turn Type	Perm	Perm	NA	pm+pt	NA	NA	
Protected Phases			8	5	2	6	1
Permitted Phases	4	8		2			
Detector Phase	4	8	8	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	15.0	5.0
Minimum Split (s)	22.5	24.0	24.0	11.0	22.5	24.0	11.0
Total Split (s)	20.0	20.0	20.0	11.0	74.0	74.0	11.0
Total Split (%)	19.0%	19.0%	19.0%	10.5%	70.5%	70.5%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag				Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 54.5 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	2	1	1	9	292	4	0	312	1
Future Volume (veh/h)	0	0	7	2	1	1	9	292	4	0	312	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	8	2	1	1	10	317	4	0	339	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	26	22	88	12	12	904	3132	39	920	2917	9
Arrive On Green	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.87	0.87	0.00	0.80	0.80
Sat Flow, veh/h	0	1870	1585	1407	858	858	1781	3594	45	1781	3635	11
Grp Volume(v), veh/h	0	0	8	2	0	2	10	157	164	0	166	174
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1407	0	1716	1781	1777	1862	1781	1777	1868
Q Serve(g_s), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.3	1.3	0.0	2.1	2.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	0.1	0.0	0.1	0.1	1.3	1.3	0.0	2.1	2.1
Prop In Lane	0.00		1.00	1.00		0.50	1.00		0.02	1.00		0.01
Lane Grp Cap(c), veh/h	0	26	22	88	0	24	904	1549	1623	920	1426	1499
V/C Ratio(X)	0.00	0.00	0.36	0.02	0.00	0.08	0.01	0.10	0.10	0.00	0.12	0.12
Avail Cap(c_a), veh/h	0	249	211	256	0	229	967	1549	1623	1003	1426	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	51.3	51.1	0.0	51.1	1.5	0.9	0.9	0.0	2.3	2.3
Incr Delay (d2), s/veh	0.0	0.0	9.5	0.1	0.0	1.5	0.0	0.1	0.1	0.0	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	60.8	51.2	0.0	52.5	1.5	1.1	1.1	0.0	2.4	2.4
LnGrp LOS			E	D		D	A	A	A		A	A
Approach Vol, veh/h		8			4			331			340	
Approach Delay, s/veh		60.8			51.9			1.1			2.4	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	97.5		7.5	7.3	90.3		7.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		14.0	5.0	68.0		14.0				
Max Q Clear Time (g_c+I1), s	0.0	3.3		2.5	2.1	4.1		2.1				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	2.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	2.7
HCM 7th LOS	A

Notes

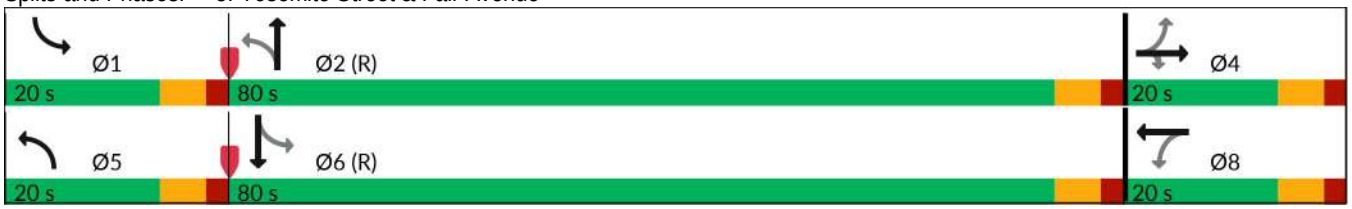
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	20	18	1	140	1367	19	1034
Future Volume (vph)	20	18	1	140	1367	19	1034
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	18	1	3	140	1367	11	19	1034	44
Future Volume (veh/h)	0	0	20	18	1	3	140	1367	11	19	1034	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	22	20	1	3	152	1486	12	21	1124	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	61	52	105	13	40	505	2802	23	406	2694	115
Arrive On Green	0.00	0.00	0.03	0.03	0.03	0.03	0.08	1.00	1.00	0.08	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1390	412	1236	1781	3613	29	1781	3472	148
Grp Volume(v), veh/h	0	0	22	20	0	4	152	731	767	21	575	597
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1390	0	1648	1781	1777	1865	1781	1777	1844
Q Serve(g_s), s	0.0	0.0	1.6	1.7	0.0	0.3	2.2	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.6	1.7	0.0	0.3	2.2	0.0	0.0	0.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.75	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	0	61	52	105	0	54	505	1378	1447	406	1379	1431
V/C Ratio(X)	0.00	0.00	0.42	0.19	0.00	0.07	0.30	0.53	0.53	0.05	0.42	0.42
Avail Cap(c_a), veh/h	0	218	185	222	0	192	639	1378	1447	540	1379	1431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.39	0.39	0.39
Uniform Delay (d), s/veh	0.0	0.0	56.9	57.0	0.0	56.3	2.1	0.0	0.0	1.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.4	0.9	0.0	0.6	0.3	1.3	1.2	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	0.6	0.0	0.1	0.5	0.5	0.5	0.1	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	62.4	57.8	0.0	56.9	2.4	1.3	1.2	2.0	0.4	0.4
LnGrp LOS			E	E		E	A	A	A	A	A	A
Approach Vol, veh/h		22			24			1650			1193	
Approach Delay, s/veh		62.4			57.7			1.4			0.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.1		9.9	11.0	99.1		9.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.6	4.2	2.0		3.7				
Green Ext Time (p_c), s	0.0	17.6		0.0	0.3	11.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	1.9
HCM 7th LOS	A

Notes

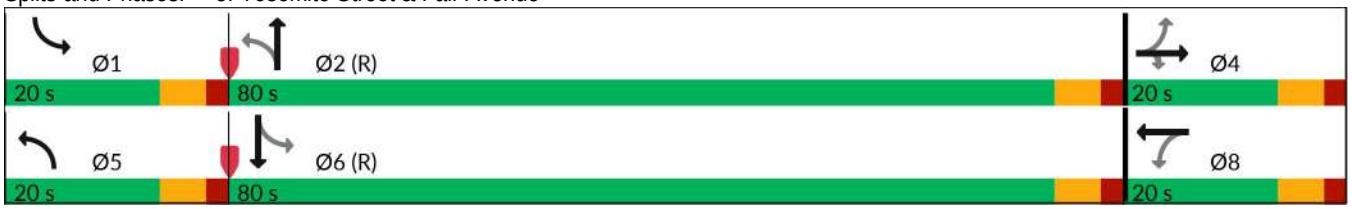
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	88	45	2	47	1467	15	1318
Future Volume (vph)	88	45	2	47	1467	15	1318
Turn Type	Perm	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases			8	5	2	1	6
Permitted Phases	4	8		2		6	
Detector Phase	4	8	8	5	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	22.0	24.0	24.0	11.0	21.0	11.0	24.0
Total Split (s)	20.0	20.0	20.0	20.0	80.0	20.0	80.0
Total Split (%)	16.7%	16.7%	16.7%	16.7%	66.7%	16.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag				Lead	Lag	Lead	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	88	45	2	4	47	1467	13	15	1318	11
Future Volume (veh/h)	0	0	88	45	2	4	47	1467	13	15	1318	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	96	49	2	4	51	1595	14	16	1433	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	143	121	159	43	85	393	2730	24	268	2671	22
Arrive On Green	0.00	0.00	0.08	0.08	0.08	0.08	0.03	0.76	0.76	0.03	1.00	1.00
Sat Flow, veh/h	0	1870	1585	1300	557	1113	1781	3610	32	1781	3612	30
Grp Volume(v), veh/h	0	0	96	49	0	6	51	785	824	16	705	740
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1300	0	1670	1781	1777	1865	1781	1777	1865
Q Serve(g_s), s	0.0	0.0	7.1	4.3	0.0	0.4	0.8	23.1	23.2	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.1	4.3	0.0	0.4	0.8	23.1	23.2	0.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.67	1.00		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	0	143	121	159	0	128	393	1344	1410	268	1314	1379
V/C Ratio(X)	0.00	0.00	0.79	0.31	0.00	0.05	0.13	0.58	0.58	0.06	0.54	0.54
Avail Cap(c_a), veh/h	0	218	185	212	0	195	541	1344	1410	445	1314	1379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	0.60	0.60	0.60
Uniform Delay (d), s/veh	0.0	0.0	54.5	53.2	0.0	51.4	3.2	6.4	6.4	5.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	12.3	1.1	0.0	0.2	0.1	1.0	1.0	0.1	0.9	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.3	1.5	0.0	0.2	0.3	7.8	8.1	0.1	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	66.8	54.3	0.0	51.5	3.2	7.4	7.4	5.5	0.9	0.9
LnGrp LOS			E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		96			55			1660			1461	
Approach Delay, s/veh		66.8			54.0			7.3			1.0	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	96.8		15.2	10.1	94.7		15.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	14.0	74.0		14.0	14.0	74.0		14.0				
Max Q Clear Time (g_c+I1), s	2.3	25.2		9.1	2.8	2.0		6.3				
Green Ext Time (p_c), s	0.0	18.8		0.1	0.1	16.3		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	7.0
HCM 7th LOS	A

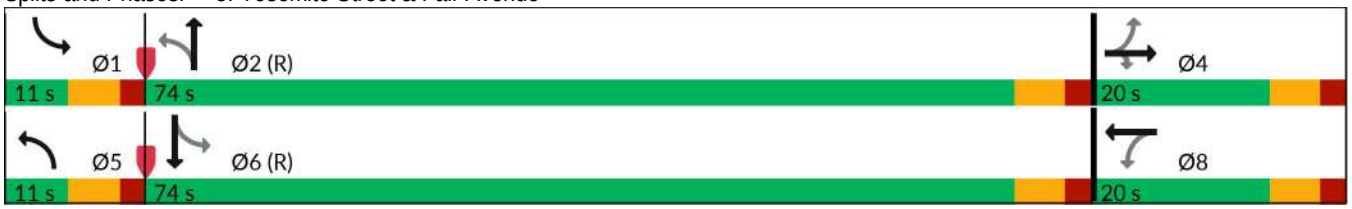
Notes
User approved pedestrian interval to be less than phase max green.

Lane Group	EBR	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	13	2	1	14	292	312	
Future Volume (vph)	13	2	1	14	292	312	
Turn Type	Perm	Perm	NA	pm+pt	NA	NA	
Protected Phases			8	5	2	6	1
Permitted Phases	4	8		2			
Detector Phase	4	8	8	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	15.0	15.0	5.0
Minimum Split (s)	22.5	24.0	24.0	11.0	22.5	24.0	11.0
Total Split (s)	20.0	20.0	20.0	11.0	74.0	74.0	11.0
Total Split (%)	19.0%	19.0%	19.0%	10.5%	70.5%	70.5%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag				Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 54.5 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Yosemite Street & Fair Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	13	2	1	1	14	292	4	0	312	1
Future Volume (veh/h)	0	0	13	2	1	1	14	292	4	0	312	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	14	2	1	1	15	317	4	0	339	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	36	31	96	17	17	901	3113	39	909	2879	8
Arrive On Green	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.87	0.87	0.00	0.79	0.79
Sat Flow, veh/h	0	1870	1585	1400	858	858	1781	3594	45	1781	3635	11
Grp Volume(v), veh/h	0	0	14	2	0	2	15	157	164	0	166	174
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1400	0	1716	1781	1777	1862	1781	1777	1868
Q Serve(g_s), s	0.0	0.0	0.9	0.1	0.0	0.1	0.2	1.4	1.4	0.0	2.2	2.2
Cycle Q Clear(g_c), s	0.0	0.0	0.9	0.1	0.0	0.1	0.2	1.4	1.4	0.0	2.2	2.2
Prop In Lane	0.00		1.00	1.00		0.50	1.00		0.02	1.00		0.01
Lane Grp Cap(c), veh/h	0	36	31	96	0	33	901	1539	1613	909	1408	1480
V/C Ratio(X)	0.00	0.00	0.45	0.02	0.00	0.06	0.02	0.10	0.10	0.00	0.12	0.12
Avail Cap(c_a), veh/h	0	249	211	255	0	229	955	1539	1613	992	1408	1480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	50.9	50.5	0.0	50.5	1.7	1.0	1.0	0.0	2.5	2.5
Incr Delay (d2), s/veh	0.0	0.0	10.1	0.1	0.0	0.7	0.0	0.1	0.1	0.0	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	61.0	50.6	0.0	51.3	1.7	1.2	1.2	0.0	2.7	2.7
LnGrp LOS			E	D		D	A	A	A		A	A
Approach Vol, veh/h		14			4			336			340	
Approach Delay, s/veh		61.0			51.0			1.2			2.7	
Approach LOS		E			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	97.0		8.0	7.8	89.2		8.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		14.0	5.0	68.0		14.0				
Max Q Clear Time (g_c+I1), s	0.0	3.4		2.9	2.2	4.2		2.1				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	2.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	3.4
HCM 7th LOS	A

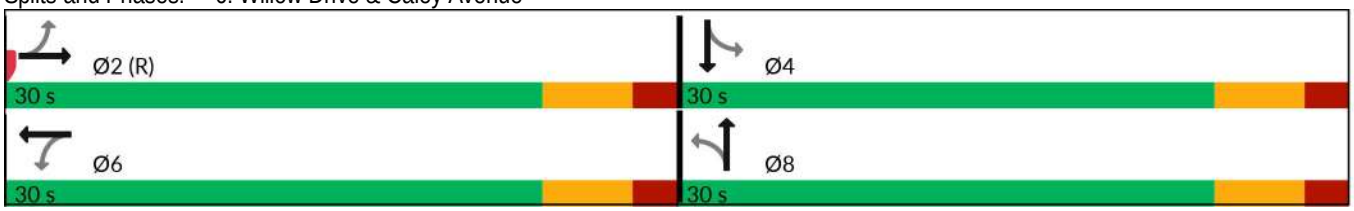
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	27	160	37	11	114	29	54
Future Volume (vph)	6	27	160	37	11	114	29	54
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	27	9	160	37	208	11	114	22	29	54	31
Future Volume (veh/h)	6	27	9	160	37	208	11	114	22	29	54	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	29	10	174	40	226	12	124	24	32	59	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	795	1766	578	1033	164	925	74	188	35	115	124	61
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1113	2632	861	1368	244	1378	70	1455	269	307	958	473
Grp Volume(v), veh/h	7	19	20	174	0	266	160	0	0	125	0	0
Grp Sat Flow(s),veh/h/ln	1113	1777	1715	1368	0	1622	1794	0	0	1738	0	0
Q Serve(g_s), s	0.1	0.2	0.2	2.9	0.0	3.9	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.2	0.2	3.1	0.0	3.9	5.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.50	1.00		0.85	0.07		0.15	0.26		0.27
Lane Grp Cap(c), veh/h	795	1192	1151	1033	0	1089	296	0	0	299	0	0
V/C Ratio(X)	0.01	0.02	0.02	0.17	0.00	0.24	0.54	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	795	1192	1151	1033	0	1089	774	0	0	729	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.00	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	3.3	3.3	3.8	0.0	3.9	25.0	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.5	1.5	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.6	0.0	1.0	2.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.7	3.3	3.3	4.1	0.0	4.4	26.5	0.0	0.0	25.4	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		46			440			160			125	
Approach Delay, s/veh		3.5			4.3			26.5			25.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	46.3	13.7	46.3	13.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	24.0	24.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	6.0	5.9	5.9	7.1
Green Ext Time (p_c), s	0.1	0.6	2.1	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

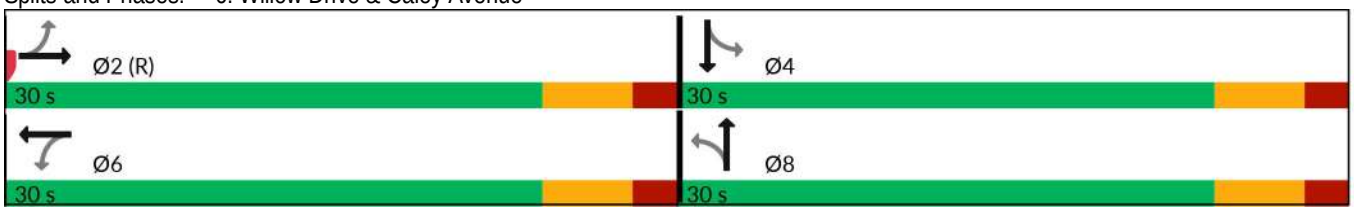
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	77	67	11	18	102	169	175
Future Volume (vph)	10	77	67	11	18	102	169	175
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	77	15	67	11	76	18	102	79	169	175	6
Future Volume (veh/h)	10	77	15	67	11	76	18	102	79	169	175	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	84	16	73	12	83	20	111	86	184	190	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	741	1521	282	759	104	718	88	287	203	287	238	8
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1301	2992	555	1295	204	1412	75	983	695	680	815	28
Grp Volume(v), veh/h	11	49	51	73	0	95	217	0	0	381	0	0
Grp Sat Flow(s),veh/h/ln	1301	1777	1770	1295	0	1616	1754	0	0	1523	0	0
Q Serve(g_s), s	0.3	0.8	0.9	1.8	0.0	1.8	0.0	0.0	0.0	7.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.8	0.9	2.7	0.0	1.8	6.0	0.0	0.0	14.0	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.87	0.09		0.40	0.48		0.02
Lane Grp Cap(c), veh/h	741	903	900	759	0	821	577	0	0	533	0	0
V/C Ratio(X)	0.01	0.05	0.06	0.10	0.00	0.12	0.38	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	741	903	900	759	0	821	757	0	0	691	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	7.5	7.5	8.1	0.0	7.7	17.2	0.0	0.0	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.2	0.0	0.3	0.4	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3	0.5	0.0	0.6	2.3	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.3	7.6	7.6	8.4	0.0	8.0	17.6	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	B			C		
Approach Vol, veh/h		111			168			217			381	
Approach Delay, s/veh		7.7			8.2			17.6			22.2	
Approach LOS		A			A			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	36.5	23.5	36.5	23.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	24.0	24.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	4.1	16.0	4.7	8.0
Green Ext Time (p_c), s	0.5	1.5	0.7	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	16.5
HCM 7th LOS	B

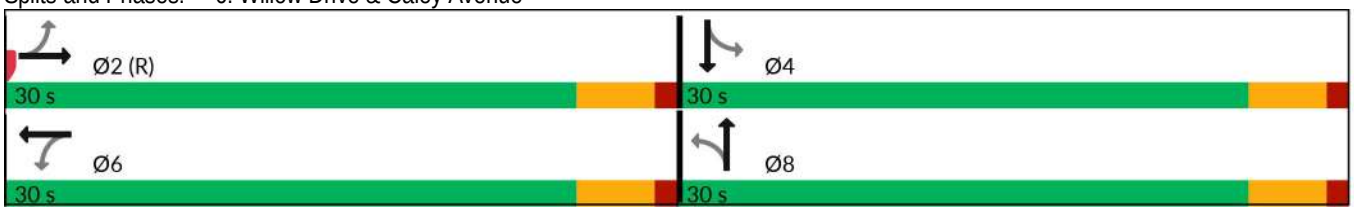
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	13	32	12	8	6	12	24
Future Volume (vph)	1	13	32	12	8	6	12	24
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	25.5	25.5	29.5	29.5	31.5	31.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	13	2	32	12	3	8	6	10	12	24	12
Future Volume (veh/h)	1	13	2	32	12	3	8	6	10	12	24	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	14	2	35	13	3	9	7	11	13	26	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1220	2471	345	1221	1160	268	106	34	42	96	56	26
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1397	3131	437	1397	1470	339	428	564	682	345	923	423
Grp Volume(v), veh/h	1	8	8	35	0	16	27	0	0	52	0	0
Grp Sat Flow(s),veh/h/ln	1397	1777	1792	1397	0	1809	1674	0	0	1691	0	0
Q Serve(g_s), s	0.0	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.1	0.4	0.0	0.1	0.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.24	1.00		0.19	0.33		0.41	0.25		0.25
Lane Grp Cap(c), veh/h	1220	1402	1414	1221	0	1428	182	0	0	178	0	0
V/C Ratio(X)	0.00	0.01	0.01	0.03	0.00	0.01	0.15	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1220	1402	1414	1221	0	1428	752	0	0	781	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.4	1.3	1.3	1.4	0.0	1.3	26.9	0.0	0.0	27.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1.4	1.3	1.3	1.4	0.0	1.4	27.2	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		17			51			27			52	
Approach Delay, s/veh		1.3			1.4			27.2			28.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.8		8.2		51.8		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5				
Max Q Clear Time (g_c+I1), s		2.1		3.7		2.4		2.9				
Green Ext Time (p_c), s		0.0		0.2		0.1		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

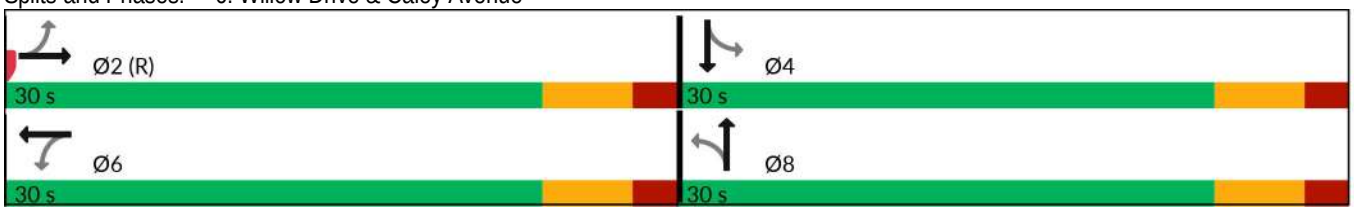
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	28	163	38	11	116	30	55
Future Volume (vph)	6	28	163	38	11	116	30	55
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	28	9	163	38	212	11	116	22	30	55	32
Future Volume (veh/h)	6	28	9	163	38	212	11	116	22	30	55	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	30	10	177	41	230	12	126	24	33	60	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	789	1778	563	1030	164	922	73	190	35	116	124	62
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1108	2655	841	1367	245	1377	69	1461	266	311	951	475
Grp Volume(v), veh/h	7	20	20	177	0	271	162	0	0	128	0	0
Grp Sat Flow(s),veh/h/ln	1108	1777	1719	1367	0	1622	1796	0	0	1737	0	0
Q Serve(g_s), s	0.2	0.2	0.2	3.0	0.0	4.0	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.2	0.2	3.2	0.0	4.0	5.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.49	1.00		0.85	0.07		0.15	0.26		0.27
Lane Grp Cap(c), veh/h	789	1190	1151	1030	0	1087	298	0	0	302	0	0
V/C Ratio(X)	0.01	0.02	0.02	0.17	0.00	0.25	0.54	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	789	1190	1151	1030	0	1087	775	0	0	729	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.00	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	3.3	3.3	3.8	0.0	3.9	24.9	0.0	0.0	24.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.5	1.5	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.6	0.0	1.0	2.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.8	3.3	3.3	4.2	0.0	4.4	26.5	0.0	0.0	25.4	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		47			448			162			128	
Approach Delay, s/veh		3.5			4.3			26.5			25.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.2		13.8		46.2		13.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		6.1		6.0		6.0		7.1				
Green Ext Time (p_c), s		0.1		0.6		2.1		0.7				

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

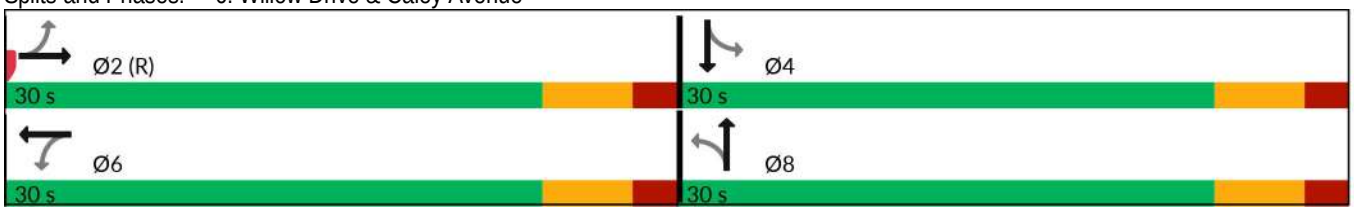
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	79	68	11	18	104	172	178
Future Volume (vph)	10	79	68	11	18	104	172	178
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	79	15	68	11	77	18	104	81	172	178	6
Future Volume (veh/h)	10	79	15	68	11	77	18	104	81	172	178	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	86	16	74	12	84	20	113	88	187	193	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	734	1512	274	751	102	712	87	291	207	290	240	8
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1300	3004	545	1293	202	1414	74	982	698	678	810	27
Grp Volume(v), veh/h	11	50	52	74	0	96	221	0	0	387	0	0
Grp Sat Flow(s),veh/h/ln	1300	1777	1772	1293	0	1616	1754	0	0	1516	0	0
Q Serve(g_s), s	0.3	0.9	0.9	1.9	0.0	1.9	0.0	0.0	0.0	8.2	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.9	0.9	2.8	0.0	1.9	6.1	0.0	0.0	14.3	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.88	0.09		0.40	0.48		0.02
Lane Grp Cap(c), veh/h	734	895	892	751	0	813	585	0	0	539	0	0
V/C Ratio(X)	0.01	0.06	0.06	0.10	0.00	0.12	0.38	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	734	895	892	751	0	813	758	0	0	689	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	7.6	7.6	8.3	0.0	7.9	17.0	0.0	0.0	19.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.3	0.0	0.3	0.4	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3	0.5	0.0	0.6	2.3	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.5	7.7	7.7	8.6	0.0	8.2	17.4	0.0	0.0	22.3	0.0	0.0
LnGrp LOS	A	A	A	A		A	B			C		
Approach Vol, veh/h		113			170			221			387	
Approach Delay, s/veh		7.8			8.3			17.4			22.3	
Approach LOS		A			A			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.2		23.8		36.2		23.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		4.2		16.3		4.8		8.1				
Green Ext Time (p_c), s		0.5		1.5		0.7		1.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			16.6									
HCM 7th LOS			B									

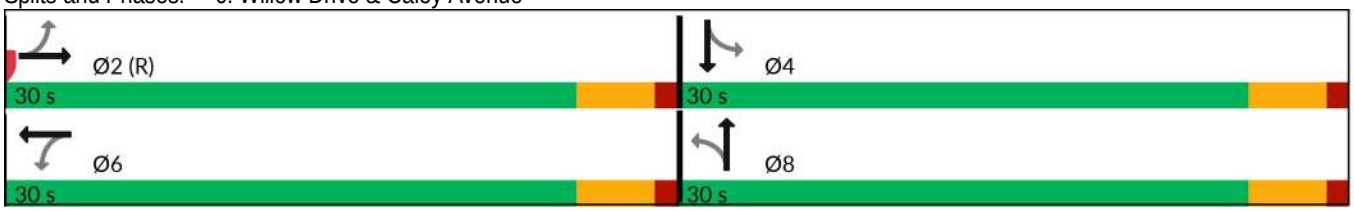
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	13	33	12	8	6	12	24
Future Volume (vph)	1	13	33	12	8	6	12	24
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	25.5	25.5	29.5	29.5	31.5	31.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	13	2	33	12	3	8	6	10	12	24	12
Future Volume (veh/h)	1	13	2	33	12	3	8	6	10	12	24	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	14	2	36	13	3	9	7	11	13	26	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1220	2471	345	1221	1160	268	106	34	42	96	56	26
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1397	3131	437	1397	1470	339	428	564	682	345	923	423
Grp Volume(v), veh/h	1	8	8	36	0	16	27	0	0	52	0	0
Grp Sat Flow(s),veh/h/ln	1397	1777	1792	1397	0	1809	1674	0	0	1691	0	0
Q Serve(g_s), s	0.0	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.1	0.4	0.0	0.1	0.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.24	1.00		0.19	0.33		0.41	0.25		0.25
Lane Grp Cap(c), veh/h	1220	1402	1414	1221	0	1428	182	0	0	178	0	0
V/C Ratio(X)	0.00	0.01	0.01	0.03	0.00	0.01	0.15	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1220	1402	1414	1221	0	1428	752	0	0	781	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.4	1.3	1.3	1.4	0.0	1.3	26.9	0.0	0.0	27.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1.4	1.3	1.3	1.4	0.0	1.4	27.2	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		17			52			27			52	
Approach Delay, s/veh		1.3			1.4			27.2			28.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.8		8.2		51.8		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5				
Max Q Clear Time (g_c+I1), s		2.1		3.7		2.4		2.9				
Green Ext Time (p_c), s		0.0		0.2		0.1		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	15.5
HCM 7th LOS	B

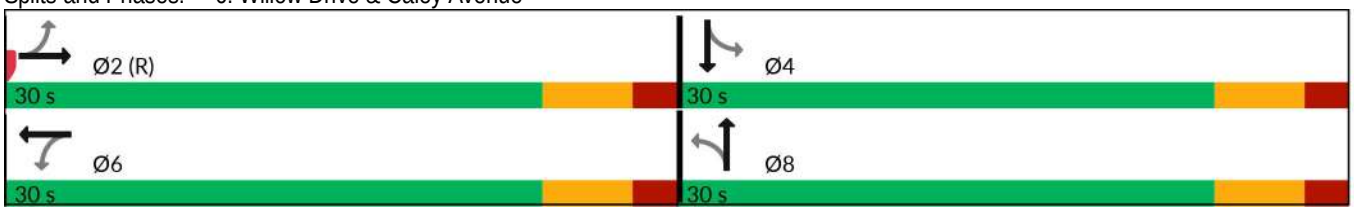
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	32	163	44	11	116	31	55
Future Volume (vph)	6	32	163	44	11	116	31	55
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	32	9	163	44	213	11	116	22	31	55	32
Future Volume (veh/h)	6	32	9	163	44	213	11	116	22	31	55	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	35	10	177	48	232	12	126	24	34	60	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	781	1847	505	1026	187	903	73	190	35	118	123	61
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1099	2757	754	1361	279	1349	69	1461	266	320	945	471
Grp Volume(v), veh/h	7	22	23	177	0	280	162	0	0	129	0	0
Grp Sat Flow(s),veh/h/ln	1099	1777	1735	1361	0	1628	1796	0	0	1736	0	0
Q Serve(g_s), s	0.2	0.2	0.3	3.0	0.0	4.1	1.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.2	0.3	3.3	0.0	4.1	5.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.43	1.00		0.83	0.07		0.15	0.26		0.27
Lane Grp Cap(c), veh/h	781	1190	1162	1026	0	1090	298	0	0	302	0	0
V/C Ratio(X)	0.01	0.02	0.02	0.17	0.00	0.26	0.54	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	781	1190	1162	1026	0	1090	775	0	0	728	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.00	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	3.3	3.3	3.9	0.0	3.9	24.9	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.5	1.5	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.6	0.0	1.0	2.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.8	3.3	3.3	4.2	0.0	4.5	26.5	0.0	0.0	25.4	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		52			457			162			129	
Approach Delay, s/veh		3.5			4.4			26.5			25.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.2		13.8		46.2		13.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		6.3		6.0		6.1		7.1				
Green Ext Time (p_c), s		0.2		0.6		2.2		0.7				

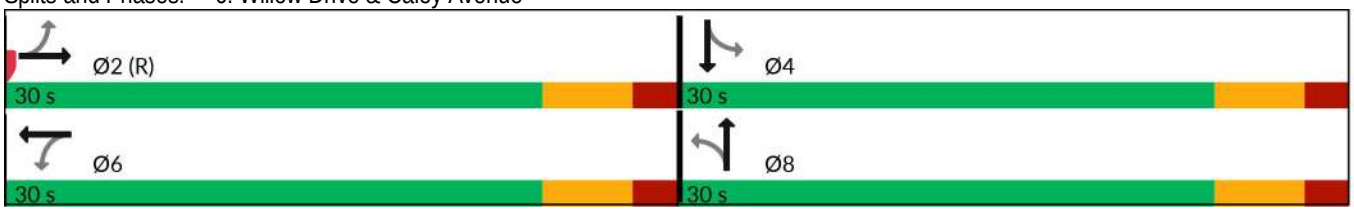
Intersection Summary	
HCM 7th Control Delay, s/veh	12.2
HCM 7th LOS	B

Notes
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	10	87	68	18	18	104	174	178
Future Volume (vph)	10	87	68	18	18	104	174	178
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	87	15	68	18	78	18	104	81	174	178	6
Future Volume (veh/h)	10	87	15	68	18	78	18	104	81	174	178	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	95	16	74	20	85	20	113	88	189	193	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	723	1532	252	742	156	663	87	293	208	293	240	8
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1289	3054	503	1282	311	1322	74	982	698	682	804	27
Grp Volume(v), veh/h	11	54	57	74	0	105	221	0	0	389	0	0
Grp Sat Flow(s),veh/h/ln	1289	1777	1780	1282	0	1632	1753	0	0	1513	0	0
Q Serve(g_s), s	0.3	0.9	1.0	1.9	0.0	2.1	0.0	0.0	0.0	8.3	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.9	1.0	2.9	0.0	2.1	6.1	0.0	0.0	14.4	0.0	0.0
Prop In Lane	1.00		0.28	1.00		0.81	0.09		0.40	0.49		0.02
Lane Grp Cap(c), veh/h	723	892	893	742	0	819	588	0	0	540	0	0
V/C Ratio(X)	0.02	0.06	0.06	0.10	0.00	0.13	0.38	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	723	892	893	742	0	819	758	0	0	688	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	7.7	7.7	8.4	0.0	8.0	16.9	0.0	0.0	19.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.3	0.0	0.3	0.4	0.0	0.0	2.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3	0.5	0.0	0.7	2.3	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.6	7.8	7.8	8.7	0.0	8.3	17.3	0.0	0.0	22.3	0.0	0.0
LnGrp LOS	A	A	A	A		A	B			C		
Approach Vol, veh/h		122			179			221			389	
Approach Delay, s/veh		7.9			8.4			17.3			22.3	
Approach LOS		A			A			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	36.1	23.9	36.1	23.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	24.0	24.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	4.3	16.4	4.9	8.1
Green Ext Time (p_c), s	0.5	1.5	0.7	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	16.4
HCM 7th LOS	B

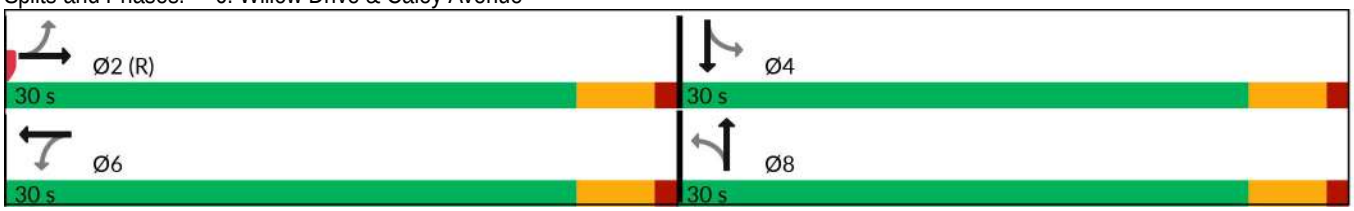
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	54	33	52	8	6	20	24
Future Volume (vph)	1	54	33	52	8	6	20	24
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	25.5	25.5	29.5	29.5	31.5	31.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	54	2	33	52	11	8	6	10	20	24	12
Future Volume (veh/h)	1	54	2	33	52	11	8	6	10	20	24	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	59	2	36	57	12	9	7	11	22	26	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1155	2757	93	1169	1177	248	107	37	44	115	50	23
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1332	3508	118	1341	1498	315	418	584	688	525	780	353
Grp Volume(v), veh/h	1	30	31	36	0	69	27	0	0	61	0	0
Grp Sat Flow(s),veh/h/ln	1332	1777	1849	1341	0	1814	1690	0	0	1659	0	0
Q Serve(g_s), s	0.0	0.2	0.2	0.4	0.0	0.5	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.2	0.2	0.6	0.0	0.5	0.9	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.17	0.33		0.41	0.36		0.21
Lane Grp Cap(c), veh/h	1155	1396	1453	1169	0	1425	188	0	0	188	0	0
V/C Ratio(X)	0.00	0.02	0.02	0.03	0.00	0.05	0.14	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	1155	1396	1453	1169	0	1425	753	0	0	769	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.5	1.4	1.4	1.5	0.0	1.4	26.7	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1.5	1.4	1.4	1.5	0.0	1.5	27.0	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		62			105			27			61	
Approach Delay, s/veh		1.4			1.5			27.0			28.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	51.7	8.3	51.7	8.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	25.5	25.5	25.5
Max Q Clear Time (g_c+I1), s	2.5	4.1	2.6	2.9
Green Ext Time (p_c), s	0.2	0.2	0.4	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	10.6
HCM 7th LOS	B

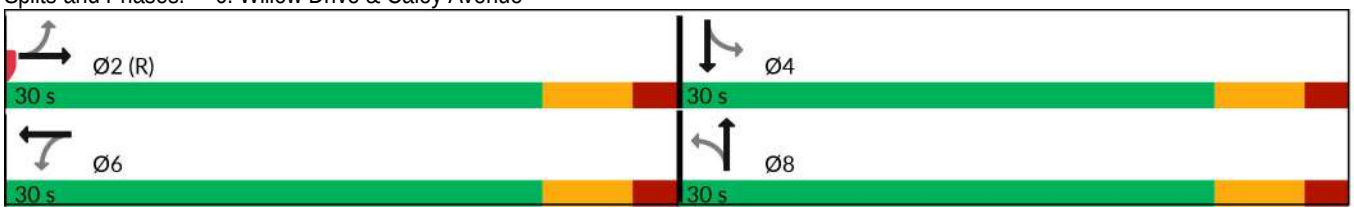
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	7	30	176	41	12	126	32	60
Future Volume (vph)	7	30	176	41	12	126	32	60
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	30	10	176	41	229	12	126	24	32	60	34
Future Volume (veh/h)	7	30	10	176	41	229	12	126	24	32	60	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	33	11	191	45	249	13	137	26	35	65	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	1755	556	1014	164	909	74	203	37	118	134	65
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1085	2655	841	1362	248	1375	68	1462	265	307	963	470
Grp Volume(v), veh/h	8	22	22	191	0	294	176	0	0	137	0	0
Grp Sat Flow(s),veh/h/ln	1085	1777	1719	1362	0	1623	1795	0	0	1739	0	0
Q Serve(g_s), s	0.2	0.2	0.3	3.4	0.0	4.5	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.7	0.2	0.3	3.6	0.0	4.5	5.6	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.49	1.00		0.85	0.07		0.15	0.26		0.27
Lane Grp Cap(c), veh/h	756	1175	1136	1014	0	1073	314	0	0	317	0	0
V/C Ratio(X)	0.01	0.02	0.02	0.19	0.00	0.27	0.56	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	756	1175	1136	1014	0	1073	775	0	0	729	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.00	0.89	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.2	3.5	3.5	4.1	0.0	4.2	24.6	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.6	1.6	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	0.7	0.0	1.2	2.4	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.2	3.5	3.5	4.5	0.0	4.8	26.2	0.0	0.0	25.0	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		52			485			176			137	
Approach Delay, s/veh		3.8			4.7			26.2			25.0	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		45.7		14.3		45.7		14.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		6.7		6.2		6.5		7.6				
Green Ext Time (p_c), s		0.2		0.6		2.3		0.8				

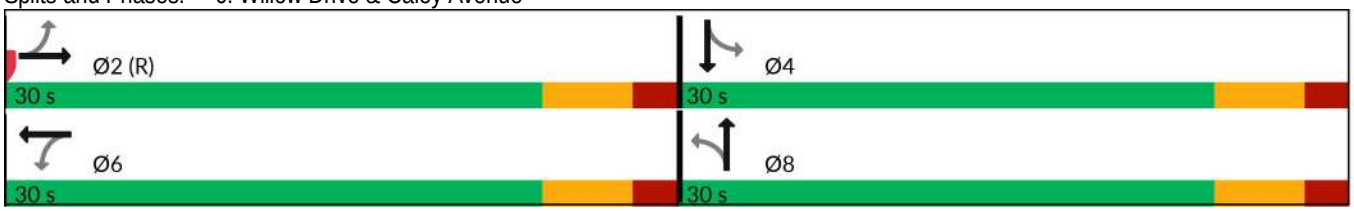
Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

Notes
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	11	85	74	12	20	112	186	193
Future Volume (vph)	11	85	74	12	20	112	186	193
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	85	17	74	12	84	20	112	87	186	193	7
Future Volume (veh/h)	11	85	17	74	12	84	20	112	87	186	193	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	92	18	80	13	91	22	122	95	202	210	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	691	1425	272	712	97	677	90	314	223	303	255	9
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1290	2977	568	1283	202	1414	76	978	696	668	794	28
Grp Volume(v), veh/h	12	54	56	80	0	104	239	0	0	420	0	0
Grp Sat Flow(s),veh/h/ln	1290	1777	1768	1283	0	1616	1750	0	0	1490	0	0
Q Serve(g_s), s	0.3	1.0	1.0	2.1	0.0	2.2	0.0	0.0	0.0	9.4	0.0	0.0
Cycle Q Clear(g_c), s	2.5	1.0	1.0	3.2	0.0	2.2	6.5	0.0	0.0	15.8	0.0	0.0
Prop In Lane	1.00		0.32	1.00		0.88	0.09		0.40	0.48		0.02
Lane Grp Cap(c), veh/h	691	851	847	712	0	774	628	0	0	567	0	0
V/C Ratio(X)	0.02	0.06	0.07	0.11	0.00	0.13	0.38	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	691	851	847	712	0	774	758	0	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	8.4	8.4	9.3	0.0	8.7	16.0	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.3	0.0	0.4	0.4	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.6	0.0	0.7	2.4	0.0	0.0	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.4	8.5	8.6	9.6	0.0	9.1	16.4	0.0	0.0	22.5	0.0	0.0
LnGrp LOS	A	A	A	A		A	B			C		
Approach Vol, veh/h		122			184			239			420	
Approach Delay, s/veh		8.6			9.3			16.4			22.5	
Approach LOS		A			A			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.7		25.3		34.7		25.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		4.5		17.8		5.2		8.5				
Green Ext Time (p_c), s		0.5		1.4		0.8		1.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	16.7
HCM 7th LOS	B

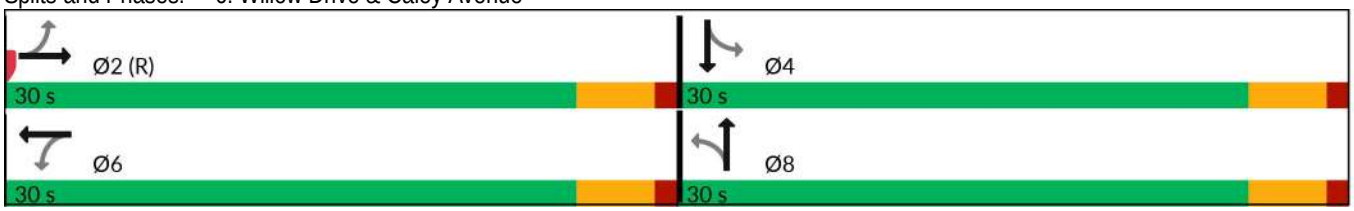
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	14	35	13	9	7	13	26
Future Volume (vph)	1	14	35	13	9	7	13	26
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	25.5	25.5	29.5	29.5	31.5	31.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	14	2	35	13	3	9	7	11	13	26	13
Future Volume (veh/h)	1	14	2	35	13	3	9	7	11	13	26	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	15	2	38	14	3	10	8	12	14	28	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1215	2486	324	1217	1174	252	107	37	43	97	59	27
Arrive On Green	0.79	0.79	0.79	0.79	0.79	0.79	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1396	3161	412	1396	1493	320	425	582	671	341	929	423
Grp Volume(v), veh/h	1	8	9	38	0	17	30	0	0	56	0	0
Grp Sat Flow(s),veh/h/ln	1396	1777	1796	1396	0	1813	1678	0	0	1693	0	0
Q Serve(g_s), s	0.0	0.1	0.1	0.4	0.0	0.1	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.1	0.4	0.0	0.1	1.0	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.18	0.33		0.40	0.25		0.25
Lane Grp Cap(c), veh/h	1215	1398	1413	1217	0	1426	186	0	0	182	0	0
V/C Ratio(X)	0.00	0.01	0.01	0.03	0.00	0.01	0.16	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	1215	1398	1413	1217	0	1426	752	0	0	780	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.4	1.4	1.4	1.4	0.0	1.4	26.8	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1.4	1.4	1.4	1.5	0.0	1.4	27.2	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		18			55			30			56	
Approach Delay, s/veh		1.4			1.4			27.2			28.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	51.7	8.3	51.7	8.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	25.5	25.5	25.5
Max Q Clear Time (g_c+I1), s	2.1	3.9	2.4	3.0
Green Ext Time (p_c), s	0.0	0.2	0.1	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	15.7
HCM 7th LOS	B

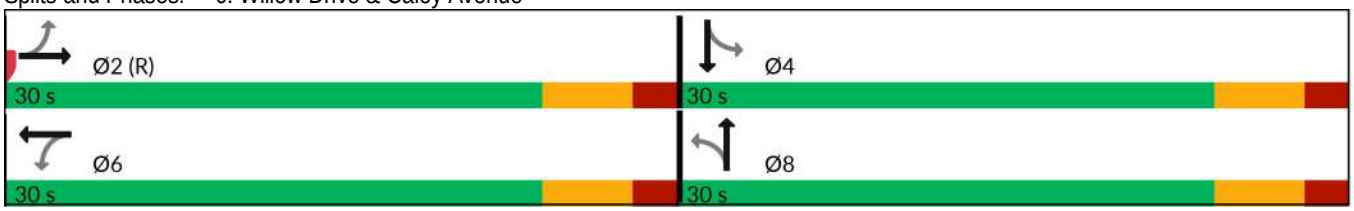
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	7	34	176	47	12	126	33	60
Future Volume (vph)	7	34	176	47	12	126	33	60
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	34	10	176	47	230	12	126	24	33	60	34
Future Volume (veh/h)	7	34	10	176	47	230	12	126	24	33	60	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	37	11	191	51	250	13	137	26	36	65	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	667	1805	513	1011	182	893	74	203	37	120	133	65
Arrive On Green	0.66	0.66	0.66	0.22	0.22	0.22	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1078	2731	776	1357	276	1351	68	1462	265	316	957	466
Grp Volume(v), veh/h	8	23	25	191	0	301	176	0	0	138	0	0
Grp Sat Flow(s),veh/h/ln	1078	1777	1731	1357	0	1627	1795	0	0	1738	0	0
Q Serve(g_s), s	0.2	0.3	0.3	6.9	0.0	9.2	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	0.3	0.3	7.2	0.0	9.2	5.6	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		0.45	1.00		0.83	0.07		0.15	0.26		0.27
Lane Grp Cap(c), veh/h	667	1175	1144	1011	0	1076	314	0	0	317	0	0
V/C Ratio(X)	0.01	0.02	0.02	0.19	0.00	0.28	0.56	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	667	1175	1144	1011	0	1076	775	0	0	729	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.00	0.89	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	3.5	3.5	10.9	0.0	11.6	24.6	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.6	1.6	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.1	2.0	0.0	3.5	2.4	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.4	3.5	3.5	11.3	0.0	12.1	26.2	0.0	0.0	25.0	0.0	0.0
LnGrp LOS	A	A	A	B		B	C			C		
Approach Vol, veh/h		56			492			176			138	
Approach Delay, s/veh		4.1			11.8			26.2			25.0	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		45.7		14.3		45.7		14.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		24.0		24.0		24.0				
Max Q Clear Time (g_c+I1), s		11.5		6.3		11.2		7.6				
Green Ext Time (p_c), s		0.1		0.7		2.1		0.8				

Intersection Summary		
HCM 7th Control Delay, s/veh	16.4	
HCM 7th LOS	B	

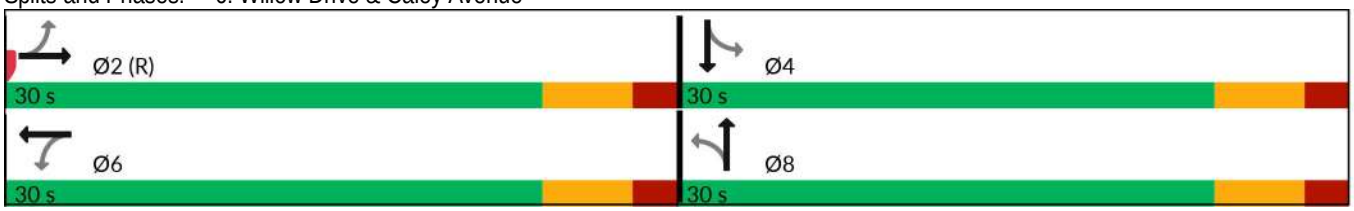
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	11	93	74	19	20	112	188	193
Future Volume (vph)	11	93	74	19	20	112	188	193
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	27.0	27.0	31.0	31.0	33.0	33.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	93	17	74	19	85	20	112	87	188	193	7
Future Volume (veh/h)	11	93	17	74	19	85	20	112	87	188	193	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	101	18	80	21	92	22	122	95	204	210	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	681	1444	251	704	145	634	90	316	225	306	254	9
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1280	3026	527	1273	303	1328	76	978	696	671	788	28
Grp Volume(v), veh/h	12	58	61	80	0	113	239	0	0	422	0	0
Grp Sat Flow(s),veh/h/ln	1280	1777	1776	1273	0	1631	1750	0	0	1488	0	0
Q Serve(g_s), s	0.3	1.1	1.1	2.2	0.0	2.3	0.0	0.0	0.0	9.5	0.0	0.0
Cycle Q Clear(g_c), s	2.7	1.1	1.1	3.3	0.0	2.3	6.4	0.0	0.0	15.9	0.0	0.0
Prop In Lane	1.00		0.30	1.00		0.81	0.09		0.40	0.48		0.02
Lane Grp Cap(c), veh/h	681	848	847	704	0	778	631	0	0	569	0	0
V/C Ratio(X)	0.02	0.07	0.07	0.11	0.00	0.15	0.38	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	681	848	847	704	0	778	759	0	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.6	8.5	8.5	9.4	0.0	8.8	15.9	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.0	0.4	0.4	0.0	0.0	3.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.6	0.0	0.8	2.4	0.0	0.0	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.6	8.6	8.7	9.7	0.0	9.2	16.3	0.0	0.0	22.5	0.0	0.0
LnGrp LOS	A	A	A	A		A	B			C		
Approach Vol, veh/h		131			193			239			422	
Approach Delay, s/veh		8.7			9.4			16.3			22.5	
Approach LOS		A			A			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	34.6	25.4	34.6	25.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	24.0	24.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	4.7	17.9	5.3	8.4
Green Ext Time (p_c), s	0.6	1.4	0.8	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	16.6
HCM 7th LOS	B

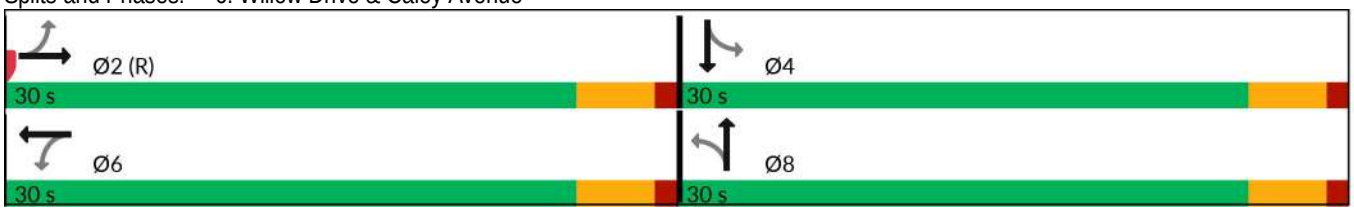
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	55	35	53	9	7	21	26
Future Volume (vph)	1	55	35	53	9	7	21	26
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	25.5	25.5	29.5	29.5	31.5	31.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	Max	Max	None	None	None	None

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Willow Drive & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	55	2	35	53	11	9	7	11	21	26	13
Future Volume (veh/h)	1	55	2	35	53	11	9	7	11	21	26	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	60	2	38	58	12	10	8	12	23	28	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1151	2751	91	1165	1178	244	108	40	45	115	53	24
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1331	3510	116	1340	1503	311	417	599	678	511	794	358
Grp Volume(v), veh/h	1	30	32	38	0	70	30	0	0	65	0	0
Grp Sat Flow(s),veh/h/ln	1331	1777	1849	1340	0	1814	1694	0	0	1663	0	0
Q Serve(g_s), s	0.0	0.2	0.2	0.4	0.0	0.5	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.2	0.2	0.6	0.0	0.5	1.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.17	0.33		0.40	0.35		0.22
Lane Grp Cap(c), veh/h	1151	1393	1450	1165	0	1422	192	0	0	191	0	0
V/C Ratio(X)	0.00	0.02	0.02	0.03	0.00	0.05	0.16	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1151	1393	1450	1165	0	1422	754	0	0	770	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.5	1.4	1.4	1.5	0.0	1.5	26.6	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1.5	1.5	1.5	1.5	0.0	1.5	27.0	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	C			C		
Approach Vol, veh/h		63			108			30			65	
Approach Delay, s/veh		1.5			1.5			27.0			28.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.5		8.5		51.5		8.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5				
Max Q Clear Time (g_c+I1), s		2.5		4.2		2.6		3.0				
Green Ext Time (p_c), s		0.2		0.3		0.4		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	10.9
HCM 7th LOS	B

Notes

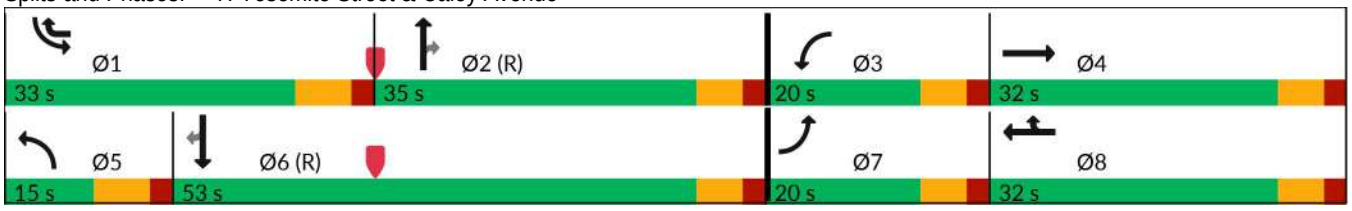
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	13	21	252	155	618	192	561	59	300	684	92
Future Volume (vph)	13	21	252	155	618	192	561	59	300	684	92
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		15.0	35.0	35.0	33.0	53.0	53.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		12.5%	29.2%	29.2%	27.5%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	21	45	252	155	618	192	561	59	300	684	92
Future Volume (veh/h)	13	21	45	252	155	618	192	561	59	300	684	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	23	49	274	168	672	209	610	64	326	743	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	241	215	334	405	923	230	1582	706	395	1751	
Arrive On Green	0.02	0.14	0.14	0.10	0.22	0.22	0.07	0.45	0.45	0.23	0.99	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	14	23	49	274	168	672	209	610	64	326	743	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	1.4	3.3	9.3	9.3	25.5	7.2	13.8	2.8	10.8	0.6	0.0
Cycle Q Clear(g_c), s	0.5	1.4	3.3	9.3	9.3	25.5	7.2	13.8	2.8	10.8	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	241	215	334	405	923	230	1582	706	395	1751	
V/C Ratio(X)	0.26	0.10	0.23	0.82	0.41	0.73	0.91	0.39	0.09	0.83	0.42	
Avail Cap(c_a), veh/h	403	385	343	403	405	923	230	1582	706	749	1751	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	58.4	45.4	46.3	53.2	40.4	35.4	55.6	22.3	19.2	45.2	0.4	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.5	10.9	0.7	2.9	35.3	0.7	0.3	4.2	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	1.3	4.6	4.4	9.0	4.3	5.9	1.1	4.3	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.9	45.6	46.8	64.1	41.1	38.3	91.0	23.0	19.5	49.3	1.2	0.0
LnGrp LOS	E	D	D	E	D	D	F	C	B	D	A	
Approach Vol, veh/h		86			1114			883			1069	
Approach Delay, s/veh		48.8			45.1			38.8			15.8	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	59.4	17.6	22.3	15.0	65.1	7.9	32.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	8.0	47.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	12.8	15.8	11.3	5.3	9.2	2.6	2.5	27.5
Green Ext Time (p_c), s	0.9	3.6	0.3	0.3	0.0	6.2	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	33.5
HCM 7th LOS	C

Notes

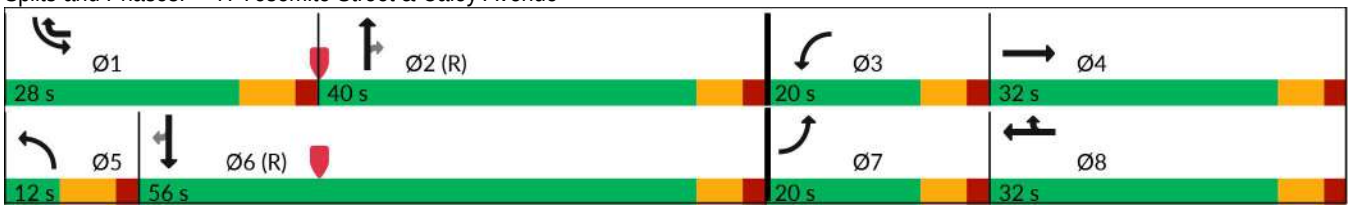
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	43	167	85	42	524	82	889	318	575	683	22
Future Volume (vph)	43	167	85	42	524	82	889	318	575	683	22
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	40.0	40.0	28.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	33.3%	33.3%	23.3%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	167	99	85	42	524	82	889	318	575	683	22
Future Volume (veh/h)	43	167	99	85	42	524	82	889	318	575	683	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	182	108	92	46	570	89	966	346	625	742	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	395	223	145	355	1017	138	1400	625	605	1881	
Arrive On Green	0.03	0.18	0.18	0.04	0.19	0.19	0.04	0.39	0.39	0.06	0.17	0.00
Sat Flow, veh/h	3456	2188	1237	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	47	146	144	92	46	570	89	966	346	625	742	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1648	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.6	8.8	9.4	3.1	2.5	19.6	3.0	27.1	20.3	21.0	22.2	0.0
Cycle Q Clear(g_c), s	1.6	8.8	9.4	3.1	2.5	19.6	3.0	27.1	20.3	21.0	22.2	0.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	321	298	145	355	1017	138	1400	625	605	1881	
V/C Ratio(X)	0.41	0.46	0.48	0.63	0.13	0.56	0.65	0.69	0.55	1.03	0.39	
Avail Cap(c_a), veh/h	403	385	357	403	405	1093	144	1400	625	605	1881	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.9	43.9	44.1	56.6	40.4	30.4	56.8	30.3	28.2	56.5	32.5	0.0
Incr Delay (d2), s/veh	2.4	1.0	1.2	4.5	0.2	0.6	9.0	2.8	3.5	45.5	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.0	4.0	1.5	1.2	6.6	1.5	12.0	8.3	13.6	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	44.9	45.4	61.1	40.6	31.0	65.8	33.1	31.7	102.0	33.1	0.0
LnGrp LOS	E	D	D	E	D	C	E	C	C	F	C	
Approach Vol, veh/h		337			708			1401			1367	
Approach Delay, s/veh		47.1			35.5			34.8			64.6	
Approach LOS		D			D			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	53.3	11.0	27.7	11.8	69.5	10.0	28.8
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	34.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	23.0	29.1	5.1	11.4	5.0	24.2	3.6	21.6
Green Ext Time (p_c), s	0.0	3.2	0.1	1.4	0.0	5.6	0.1	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	46.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	7	12	37	12	127	22	164	68	139	191	8
Future Volume (vph)	7	12	37	12	127	22	164	68	139	191	8
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	30.0	30.0	30.0	30.0		35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%		23.3%	36.7%	36.7%	23.3%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54.5 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	12	10	37	12	127	22	164	68	139	191	8
Future Volume (veh/h)	7	12	10	37	12	127	22	164	68	139	191	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	13	11	40	13	138	24	178	74	151	208	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	86	64	93	116	338	73	2497	1114	204	2632	
Arrive On Green	0.01	0.04	0.04	0.03	0.06	0.06	0.02	0.70	0.70	0.06	0.74	0.00
Sat Flow, veh/h	3456	1942	1445	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	8	12	12	40	13	138	24	178	74	151	208	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1610	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	1.0	1.1	1.7	1.0	6.9	1.0	2.4	2.2	6.4	2.4	0.0
Cycle Q Clear(g_c), s	0.3	1.0	1.1	1.7	1.0	6.9	1.0	2.4	2.2	6.4	2.4	0.0
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	79	72	93	116	338	73	2497	1114	204	2632	
V/C Ratio(X)	0.25	0.15	0.17	0.43	0.11	0.41	0.33	0.07	0.07	0.74	0.08	
Avail Cap(c_a), veh/h	553	284	258	553	299	611	645	2497	1114	645	2632	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.8	68.9	69.0	71.8	66.4	60.9	72.4	7.0	7.0	69.4	5.4	0.0
Incr Delay (d2), s/veh	3.8	0.9	1.1	3.1	0.4	0.8	2.6	0.1	0.1	5.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.5	0.8	0.5	2.5	0.5	0.9	0.8	3.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	69.8	70.1	74.9	66.9	61.7	75.0	7.0	7.1	74.6	5.4	0.0
LnGrp LOS	E	E	E	E	E	E	E	A	A	E	A	
Approach Vol, veh/h		32			191			276			359	
Approach Delay, s/veh		71.9			64.8			13.0			34.5	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	111.4	10.1	12.7	10.2	117.1	7.4	15.3
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	49.0	24.0	24.0	28.0	49.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	8.4	4.4	3.7	3.1	3.0	4.4	2.3	8.9
Green Ext Time (p_c), s	0.4	1.5	0.1	0.1	0.0	1.4	0.0	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	35.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

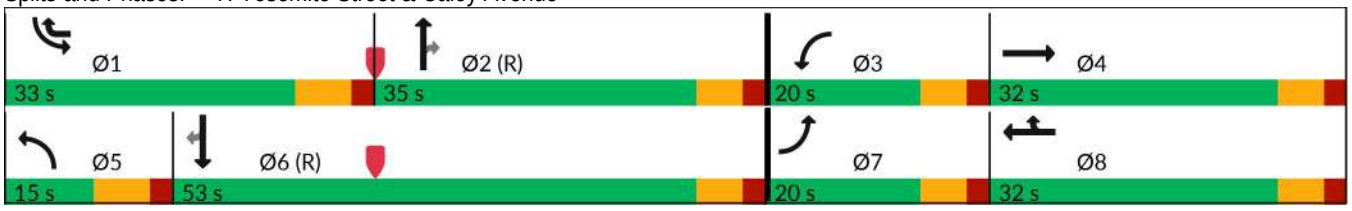
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	13	21	257	158	630	196	572	60	306	697	94
Future Volume (vph)	13	21	257	158	630	196	572	60	306	697	94
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		15.0	35.0	35.0	33.0	53.0	53.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		12.5%	29.2%	29.2%	27.5%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	21	46	257	158	630	196	572	60	306	697	94
Future Volume (veh/h)	13	21	46	257	158	630	196	572	60	306	697	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	23	50	279	172	685	213	622	65	333	758	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	239	213	338	405	929	230	1575	702	402	1751	
Arrive On Green	0.02	0.13	0.13	0.10	0.22	0.22	0.07	0.44	0.44	0.23	0.99	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	14	23	50	279	172	685	213	622	65	333	758	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	1.4	3.4	9.5	9.5	26.0	7.4	14.2	2.9	11.0	0.6	0.0
Cycle Q Clear(g_c), s	0.5	1.4	3.4	9.5	9.5	26.0	7.4	14.2	2.9	11.0	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	239	213	338	405	929	230	1575	702	402	1751	
V/C Ratio(X)	0.26	0.10	0.23	0.82	0.42	0.74	0.92	0.39	0.09	0.83	0.43	
Avail Cap(c_a), veh/h	403	385	343	403	405	929	230	1575	702	749	1751	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	58.4	45.6	46.4	53.1	40.5	35.4	55.7	22.6	19.4	44.9	0.4	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.6	11.3	0.7	3.1	39.2	0.7	0.3	4.1	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	1.4	4.7	4.5	9.2	4.5	6.1	1.1	4.4	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.9	45.7	47.0	64.4	41.3	38.5	94.9	23.3	19.7	49.0	1.2	0.0
LnGrp LOS	E	D	D	E	D	D	F	C	B	D	A	
Approach Vol, veh/h		87			1136			900			1091	
Approach Delay, s/veh		48.9			45.3			40.0			15.8	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	59.2	17.8	22.1	15.0	65.1	7.9	32.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	8.0	47.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	13.0	16.2	11.5	5.4	9.4	2.6	2.5	28.0
Green Ext Time (p_c), s	1.0	3.6	0.2	0.3	0.0	6.3	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	33.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

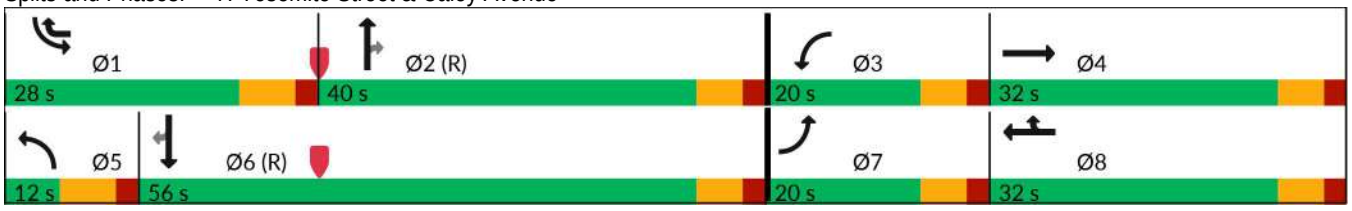
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	44	170	87	43	534	84	906	324	586	696	22
Future Volume (vph)	44	170	87	43	534	84	906	324	586	696	22
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	40.0	40.0	28.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	33.3%	33.3%	23.3%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	170	101	87	43	534	84	906	324	586	696	22
Future Volume (veh/h)	44	170	101	87	43	534	84	906	324	586	696	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	185	110	95	47	580	91	985	352	637	757	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	399	226	149	359	1024	140	1390	620	605	1868	
Arrive On Green	0.03	0.18	0.18	0.04	0.19	0.19	0.04	0.39	0.39	0.06	0.17	0.00
Sat Flow, veh/h	3456	2186	1239	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	48	149	146	95	47	580	91	985	352	637	757	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1647	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.6	9.0	9.6	3.2	2.5	19.9	3.1	28.0	20.9	21.0	22.7	0.0
Cycle Q Clear(g_c), s	1.6	9.0	9.6	3.2	2.5	19.9	3.1	28.0	20.9	21.0	22.7	0.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	324	300	149	359	1024	140	1390	620	605	1868	
V/C Ratio(X)	0.42	0.46	0.49	0.64	0.13	0.57	0.65	0.71	0.57	1.05	0.41	
Avail Cap(c_a), veh/h	403	385	357	403	405	1093	144	1390	620	605	1868	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.9	43.8	44.0	56.5	40.2	30.3	56.7	30.8	28.6	56.5	32.9	0.0
Incr Delay (d2), s/veh	2.4	1.0	1.2	4.5	0.2	0.6	9.5	3.1	3.7	51.4	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.0	4.0	1.5	1.2	6.8	1.5	12.5	8.5	14.1	11.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	44.8	45.2	61.0	40.3	30.9	66.2	33.8	32.3	108.0	33.6	0.0
LnGrp LOS	E	D	D	E	D	C	E	C	C	F	C	
Approach Vol, veh/h		343			722			1428			1394	
Approach Delay, s/veh		47.0			35.5			35.5			67.6	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	52.9	11.2	27.9	11.9	69.1	10.0	29.1
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	34.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	23.0	30.0	5.2	11.6	5.1	24.7	3.6	21.9
Green Ext Time (p_c), s	0.0	2.7	0.1	1.4	0.0	5.7	0.1	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	48.0
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	7	12	38	12	129	22	167	69	142	195	8
Future Volume (vph)	7	12	38	12	129	22	167	69	142	195	8
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	30.0	30.0	30.0	30.0		35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%		23.3%	36.7%	36.7%	23.3%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54.5 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	12	10	38	12	129	22	167	69	142	195	8
Future Volume (veh/h)	7	12	10	38	12	129	22	167	69	142	195	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	13	11	41	13	140	24	182	75	154	212	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	87	65	94	117	342	73	2492	1111	207	2630	
Arrive On Green	0.01	0.04	0.04	0.03	0.06	0.06	0.02	0.70	0.70	0.06	0.74	0.00
Sat Flow, veh/h	3456	1942	1445	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	8	12	12	41	13	140	24	182	75	154	212	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1610	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	1.0	1.1	1.8	1.0	7.0	1.0	2.4	2.2	6.6	2.5	0.0
Cycle Q Clear(g_c), s	0.3	1.0	1.1	1.8	1.0	7.0	1.0	2.4	2.2	6.6	2.5	0.0
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	80	72	94	117	342	73	2492	1111	207	2630	
V/C Ratio(X)	0.25	0.15	0.17	0.43	0.11	0.41	0.33	0.07	0.07	0.74	0.08	
Avail Cap(c_a), veh/h	553	284	258	553	299	614	645	2492	1111	645	2630	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.8	68.9	68.9	71.8	66.3	60.8	72.4	7.1	7.0	69.4	5.4	0.0
Incr Delay (d2), s/veh	3.8	0.8	1.1	3.1	0.4	0.8	2.6	0.1	0.1	5.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.5	0.8	0.5	2.5	0.5	0.9	0.8	3.1	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	69.7	70.0	74.9	66.8	61.6	75.0	7.1	7.1	74.5	5.4	0.0
LnGrp LOS	E	E	E	E	E	E	E	A	A	E	A	
Approach Vol, veh/h		32			194			281			366	
Approach Delay, s/veh		71.8			64.7			12.9			34.5	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	111.2	10.1	12.7	10.2	117.0	7.4	15.4
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	49.0	24.0	24.0	28.0	49.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	8.6	4.4	3.8	3.1	3.0	4.5	2.3	9.0
Green Ext Time (p_c), s	0.4	1.5	0.1	0.1	0.0	1.5	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.6
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

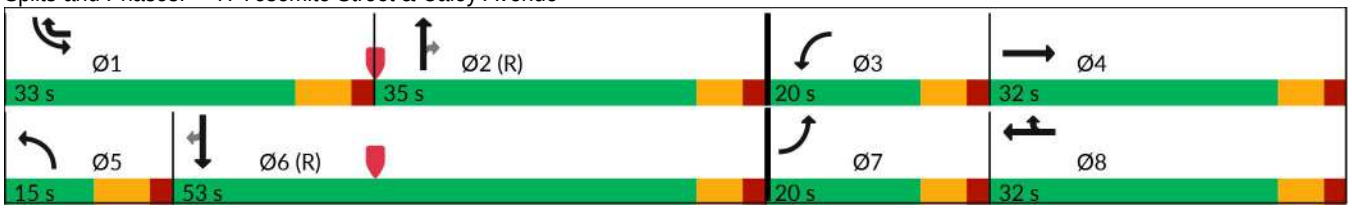
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	13	22	257	160	630	201	573	60	306	698	94
Future Volume (vph)	13	22	257	160	630	201	573	60	306	698	94
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		15.0	35.0	35.0	33.0	53.0	53.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		12.5%	29.2%	29.2%	27.5%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	22	50	257	160	630	201	573	60	306	698	94
Future Volume (veh/h)	13	22	50	257	160	630	201	573	60	306	698	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	24	54	279	174	685	218	623	65	333	759	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	239	213	338	405	929	230	1575	702	402	1751	
Arrive On Green	0.02	0.13	0.13	0.10	0.22	0.22	0.07	0.44	0.44	0.23	0.99	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	14	24	54	279	174	685	218	623	65	333	759	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	1.4	3.7	9.5	9.6	26.0	7.5	14.2	2.9	11.0	0.6	0.0
Cycle Q Clear(g_c), s	0.5	1.4	3.7	9.5	9.6	26.0	7.5	14.2	2.9	11.0	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	239	213	338	405	929	230	1575	702	402	1751	
V/C Ratio(X)	0.26	0.10	0.25	0.82	0.43	0.74	0.95	0.40	0.09	0.83	0.43	
Avail Cap(c_a), veh/h	403	385	343	403	405	929	230	1575	702	749	1751	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	58.4	45.6	46.6	53.1	40.6	35.4	55.8	22.6	19.4	44.9	0.4	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.6	11.3	0.7	3.1	44.4	0.7	0.3	4.1	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	1.5	4.7	4.5	9.2	4.7	6.1	1.1	4.4	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.9	45.8	47.2	64.4	41.3	38.5	100.2	23.3	19.7	49.0	1.2	0.0
LnGrp LOS	E	D	D	E	D	D	F	C	B	D	A	
Approach Vol, veh/h		92			1138			906			1092	
Approach Delay, s/veh		48.9			45.3			41.5			15.8	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	59.2	17.8	22.1	15.0	65.1	7.9	32.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	8.0	47.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	13.0	16.2	11.5	5.7	9.5	2.6	2.5	28.0
Green Ext Time (p_c), s	1.0	3.6	0.2	0.3	0.0	6.3	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	34.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

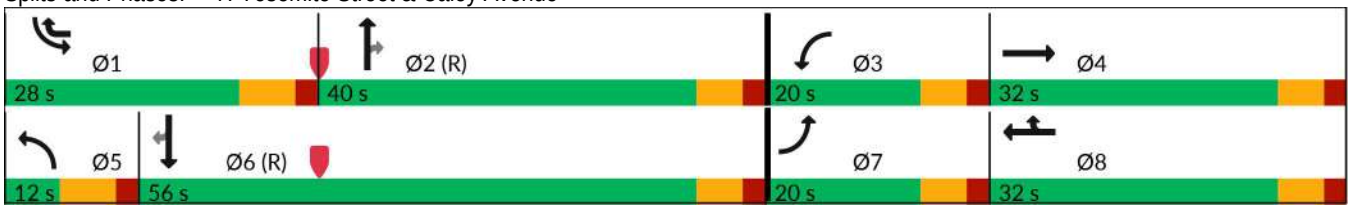
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	44	173	87	45	534	90	907	324	586	697	22
Future Volume (vph)	44	173	87	45	534	90	907	324	586	697	22
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	40.0	40.0	28.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	33.3%	33.3%	23.3%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	173	108	87	45	534	90	907	324	586	697	22
Future Volume (veh/h)	44	173	108	87	45	534	90	907	324	586	697	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	188	117	95	49	580	98	986	352	637	758	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	392	232	149	359	1024	144	1390	620	605	1864	
Arrive On Green	0.03	0.18	0.18	0.04	0.19	0.19	0.04	0.39	0.39	0.06	0.17	0.00
Sat Flow, veh/h	3456	2146	1272	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	48	154	151	95	49	580	98	986	352	637	758	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1641	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.6	9.3	9.9	3.2	2.6	19.9	3.4	28.1	20.9	21.0	22.8	0.0
Cycle Q Clear(g_c), s	1.6	9.3	9.9	3.2	2.6	19.9	3.4	28.1	20.9	21.0	22.8	0.0
Prop In Lane	1.00		0.77	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	324	299	149	359	1024	144	1390	620	605	1864	
V/C Ratio(X)	0.42	0.48	0.50	0.64	0.14	0.57	0.68	0.71	0.57	1.05	0.41	
Avail Cap(c_a), veh/h	403	385	356	403	405	1093	144	1390	620	605	1864	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.9	43.9	44.2	56.5	40.2	30.3	56.7	30.8	28.6	56.5	33.0	0.0
Incr Delay (d2), s/veh	2.4	1.1	1.3	4.5	0.2	0.6	12.3	3.1	3.7	51.4	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.2	4.2	1.5	1.2	6.8	1.7	12.5	8.5	14.1	11.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	45.0	45.5	61.0	40.4	30.9	69.0	33.9	32.3	108.0	33.7	0.0
LnGrp LOS	E	D	D	E	D	C	E	C	C	F	C	
Approach Vol, veh/h		353			724			1436			1395	
Approach Delay, s/veh		47.1			35.5			35.9			67.6	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	52.9	11.2	27.9	12.0	68.9	10.0	29.1
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	34.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	23.0	30.1	5.2	11.9	5.4	24.8	3.6	21.9
Green Ext Time (p_c), s	0.0	2.7	0.1	1.5	0.0	5.7	0.1	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	48.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	7	26	38	25	129	56	172	69	142	201	8
Future Volume (vph)	7	26	38	25	129	56	172	69	142	201	8
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	30.0	30.0	30.0	30.0		35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%		23.3%	36.7%	36.7%	23.3%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54.5 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	26	46	38	25	129	56	172	69	142	201	8
Future Volume (veh/h)	7	26	46	38	25	129	56	172	69	142	201	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	28	50	41	27	140	61	187	75	154	218	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	82	74	94	120	347	106	2486	1109	207	2590	
Arrive On Green	0.01	0.05	0.05	0.03	0.06	0.06	0.03	0.70	0.70	0.06	0.73	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	8	28	50	41	27	140	61	187	75	154	218	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.3	2.3	4.7	1.8	2.1	6.9	2.6	2.5	2.2	6.6	2.7	0.0
Cycle Q Clear(g_c), s	0.3	2.3	4.7	1.8	2.1	6.9	2.6	2.5	2.2	6.6	2.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	82	74	94	120	347	106	2486	1109	207	2590	
V/C Ratio(X)	0.25	0.34	0.68	0.43	0.22	0.40	0.57	0.08	0.07	0.74	0.08	
Avail Cap(c_a), veh/h	553	284	254	553	299	614	645	2486	1109	645	2590	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.8	69.3	70.4	71.8	66.6	60.6	71.7	7.1	7.1	69.4	5.9	0.0
Incr Delay (d2), s/veh	3.8	2.4	10.5	3.1	0.9	0.8	4.8	0.1	0.1	5.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.1	2.1	0.8	1.0	2.5	1.2	1.0	0.8	3.1	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	71.7	80.9	74.9	67.6	61.3	76.6	7.2	7.2	74.5	5.9	0.0
LnGrp LOS	E	E	F	E	E	E	E	A	A	E	A	
Approach Vol, veh/h		86			208			323			372	
Approach Delay, s/veh		77.6			64.8			20.3			34.3	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	110.9	10.1	13.0	11.6	115.3	7.4	15.6
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	49.0	24.0	24.0	28.0	49.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	8.6	4.5	3.8	6.7	4.6	4.7	2.3	8.9
Green Ext Time (p_c), s	0.4	1.5	0.1	0.3	0.1	1.5	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	39.9
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

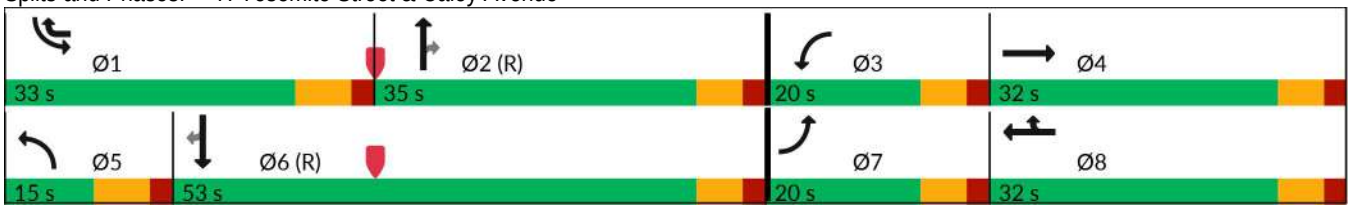
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	14	23	278	171	681	212	618	65	331	754	101
Future Volume (vph)	14	23	278	171	681	212	618	65	331	754	101
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		15.0	35.0	35.0	33.0	53.0	53.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		12.5%	29.2%	29.2%	27.5%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	23	50	278	171	681	212	618	65	331	754	101
Future Volume (veh/h)	14	23	50	278	171	681	212	618	65	331	754	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	25	54	302	186	740	230	672	71	360	820	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	229	204	360	405	951	230	1544	689	429	1748	
Arrive On Green	0.02	0.13	0.13	0.10	0.22	0.22	0.07	0.43	0.43	0.25	0.98	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	15	25	54	302	186	740	230	672	71	360	820	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	1.5	3.7	10.3	10.4	26.0	8.0	15.8	3.2	11.9	0.8	0.0
Cycle Q Clear(g_c), s	0.5	1.5	3.7	10.3	10.4	26.0	8.0	15.8	3.2	11.9	0.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	229	204	360	405	951	230	1544	689	429	1748	
V/C Ratio(X)	0.26	0.11	0.26	0.84	0.46	0.78	1.00	0.44	0.10	0.84	0.47	
Avail Cap(c_a), veh/h	403	385	343	403	405	951	230	1544	689	749	1748	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	58.3	46.2	47.1	52.8	40.9	35.5	56.0	23.7	20.1	44.0	0.5	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.7	13.4	0.8	4.2	58.8	0.9	0.3	4.1	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	1.5	5.1	4.9	10.2	5.4	6.8	1.2	4.7	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	46.4	47.8	66.2	41.7	39.6	114.8	24.6	20.4	48.0	1.3	0.0
LnGrp LOS	E	D	D	E	D	D	F	C	C	D	A	
Approach Vol, veh/h		94			1228			973			1180	
Approach Delay, s/veh		49.5			46.5			45.6			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	58.1	18.5	21.5	15.0	65.0	8.0	32.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	8.0	47.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	13.9	17.8	12.3	5.7	10.0	2.8	2.5	28.0
Green Ext Time (p_c), s	1.0	3.7	0.2	0.3	0.0	7.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	35.8
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

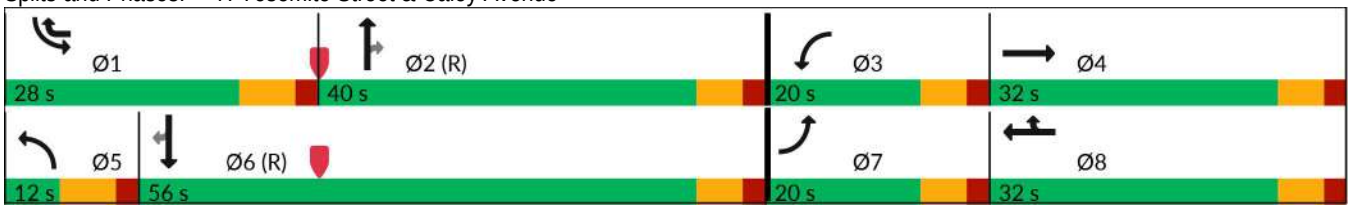
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	184	94	46	578	90	980	351	634	753	24
Future Volume (vph)	47	184	94	46	578	90	980	351	634	753	24
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	40.0	40.0	28.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	33.3%	33.3%	23.3%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	184	109	94	46	578	90	980	351	634	753	24
Future Volume (veh/h)	47	184	109	94	46	578	90	980	351	634	753	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	200	118	102	50	628	98	1065	382	689	818	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	421	238	157	381	1056	144	1347	601	605	1820	
Arrive On Green	0.01	0.06	0.06	0.05	0.20	0.20	0.04	0.38	0.38	0.06	0.17	0.00
Sat Flow, veh/h	3456	2190	1235	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	51	161	157	102	50	628	98	1065	382	689	818	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1648	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.8	10.5	11.1	3.5	2.6	21.7	3.4	31.9	23.7	21.0	24.8	0.0
Cycle Q Clear(g_c), s	1.8	10.5	11.1	3.5	2.6	21.7	3.4	31.9	23.7	21.0	24.8	0.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	342	317	157	381	1056	144	1347	601	605	1820	
V/C Ratio(X)	0.43	0.47	0.50	0.65	0.13	0.59	0.68	0.79	0.64	1.14	0.45	
Avail Cap(c_a), veh/h	403	385	357	403	405	1093	144	1347	601	605	1820	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	50.3	50.6	56.3	39.1	29.9	56.7	33.0	30.5	56.5	34.6	0.0
Incr Delay (d2), s/veh	2.5	1.0	1.2	4.5	0.2	0.8	12.3	4.8	5.1	81.4	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.1	5.0	1.6	1.2	7.3	1.7	14.4	9.8	16.6	12.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.7	51.3	51.8	60.8	39.2	30.7	69.0	37.9	35.6	138.0	35.4	0.0
LnGrp LOS	E	D	D	E	D	C	E	D	D	F	D	
Approach Vol, veh/h		369			780			1545			1507	
Approach Delay, s/veh		52.8			35.2			39.3			82.3	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	51.5	11.5	29.1	12.0	67.5	10.1	30.4
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	34.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	23.0	33.9	5.5	13.1	5.4	26.8	3.8	23.7
Green Ext Time (p_c), s	0.0	0.1	0.2	1.5	0.0	6.1	0.1	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	55.1
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	13	41	13	140	24	181	75	153	211	9
Future Volume (vph)	8	13	41	13	140	24	181	75	153	211	9
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	30.0	30.0	30.0	30.0		35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%		23.3%	36.7%	36.7%	23.3%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54.5 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	13	11	41	13	140	24	181	75	153	211	9
Future Volume (veh/h)	8	13	11	41	13	140	24	181	75	153	211	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	14	12	45	14	152	26	197	82	166	229	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	95	71	98	125	364	76	2461	1098	220	2609	
Arrive On Green	0.01	0.05	0.05	0.03	0.07	0.07	0.02	0.69	0.69	0.06	0.73	0.00
Sat Flow, veh/h	3456	1932	1454	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	9	13	13	45	14	152	26	197	82	166	229	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1609	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.4	1.0	1.2	1.9	1.1	7.5	1.1	2.7	2.5	7.1	2.7	0.0
Cycle Q Clear(g_c), s	0.4	1.0	1.2	1.9	1.1	7.5	1.1	2.7	2.5	7.1	2.7	0.0
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	36	87	79	98	125	364	76	2461	1098	220	2609	
V/C Ratio(X)	0.25	0.15	0.17	0.46	0.11	0.42	0.34	0.08	0.07	0.75	0.09	
Avail Cap(c_a), veh/h	553	284	257	553	299	624	645	2461	1098	645	2609	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.6	68.3	68.4	71.8	65.8	60.0	72.3	7.5	7.5	69.1	5.7	0.0
Incr Delay (d2), s/veh	3.6	0.8	1.0	3.4	0.4	0.8	2.6	0.1	0.1	5.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.5	0.9	0.5	2.7	0.5	1.1	0.9	3.3	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.2	69.1	69.4	75.1	66.2	60.7	74.9	7.6	7.6	74.2	5.7	0.0
LnGrp LOS	E	E	E	E	E	E	E	A	A	E	A	
Approach Vol, veh/h		35			211			305			395	
Approach Delay, s/veh		71.3			64.2			13.3			34.5	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	109.9	10.2	13.3	10.3	116.1	7.6	16.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	49.0	24.0	24.0	28.0	49.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	9.1	4.7	3.9	3.2	3.1	4.7	2.4	9.5
Green Ext Time (p_c), s	0.5	1.6	0.1	0.1	0.0	1.6	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

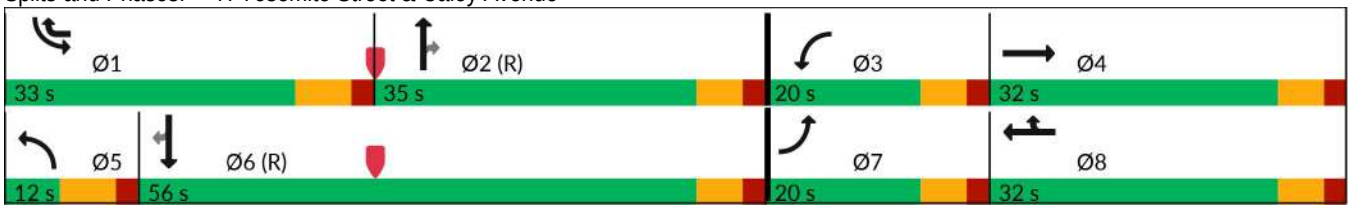
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	184	94	46	578	90	980	351	634	753	24
Future Volume (vph)	47	184	94	46	578	90	980	351	634	753	24
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	35.0	35.0	33.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	29.2%	29.2%	27.5%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	184	109	94	46	578	90	980	351	634	753	24
Future Volume (veh/h)	47	184	109	94	46	578	90	980	351	634	753	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	200	118	102	50	628	98	1065	382	689	818	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	405	229	157	368	1150	144	1228	548	745	1846	
Arrive On Green	0.01	0.06	0.06	0.05	0.20	0.20	0.04	0.35	0.35	0.07	0.17	0.00
Sat Flow, veh/h	3456	2190	1235	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	51	161	157	102	50	628	98	1065	382	689	818	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1648	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.8	10.5	11.1	3.5	2.6	20.5	3.4	33.6	24.9	23.8	24.8	0.0
Cycle Q Clear(g_c), s	1.8	10.5	11.1	3.5	2.6	20.5	3.4	33.6	24.9	23.8	24.8	0.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	329	305	157	368	1150	144	1228	548	745	1846	
V/C Ratio(X)	0.43	0.49	0.52	0.65	0.14	0.55	0.68	0.87	0.70	0.93	0.44	
Avail Cap(c_a), veh/h	403	385	357	403	405	1206	144	1228	548	749	1846	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	50.8	51.1	56.3	39.8	26.8	56.7	36.7	33.9	54.8	34.2	0.0
Incr Delay (d2), s/veh	2.5	1.1	1.3	4.5	0.2	0.5	12.3	8.4	7.2	17.3	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.1	5.0	1.6	1.2	6.8	1.7	15.8	10.6	12.9	12.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.7	51.9	52.5	60.8	40.0	27.2	69.0	45.1	41.1	72.0	34.9	0.0
LnGrp LOS	E	D	D	E	D	C	E	D	D	E	C	
Approach Vol, veh/h		369			780			1545			1507	
Approach Delay, s/veh		53.4			32.4			45.6			51.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.9	47.5	11.5	28.2	12.0	68.3	10.1	29.6
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	25.8	35.6	5.5	13.1	5.4	26.8	3.8	22.5
Green Ext Time (p_c), s	0.1	0.0	0.2	1.5	0.0	6.1	0.1	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	46.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

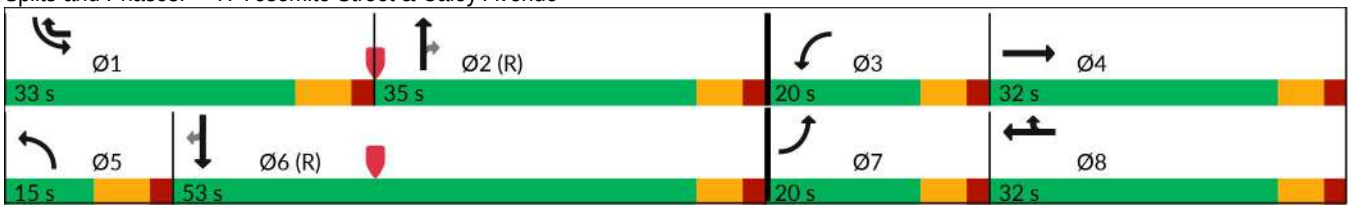
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	14	24	278	173	681	217	619	65	331	755	101
Future Volume (vph)	14	24	278	173	681	217	619	65	331	755	101
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		15.0	35.0	35.0	33.0	53.0	53.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		12.5%	29.2%	29.2%	27.5%	44.2%	44.2%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	24	54	278	173	681	217	619	65	331	755	101
Future Volume (veh/h)	14	24	54	278	173	681	217	619	65	331	755	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	26	59	302	188	740	236	673	71	360	821	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	229	204	360	405	951	230	1544	689	429	1748	
Arrive On Green	0.02	0.13	0.13	0.10	0.22	0.22	0.07	0.43	0.43	0.25	0.98	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	15	26	59	302	188	740	236	673	71	360	821	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	1.6	4.0	10.3	10.5	26.0	8.0	15.9	3.2	11.9	0.8	0.0
Cycle Q Clear(g_c), s	0.5	1.6	4.0	10.3	10.5	26.0	8.0	15.9	3.2	11.9	0.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	229	204	360	405	951	230	1544	689	429	1748	
V/C Ratio(X)	0.26	0.11	0.29	0.84	0.46	0.78	1.02	0.44	0.10	0.84	0.47	
Avail Cap(c_a), veh/h	403	385	343	403	405	951	230	1544	689	749	1748	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	58.3	46.2	47.3	52.8	40.9	35.5	56.0	23.7	20.1	44.0	0.5	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.8	13.4	0.8	4.2	65.8	0.9	0.3	4.1	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	1.6	5.1	4.9	10.2	5.6	6.8	1.2	4.7	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	46.4	48.0	66.2	41.8	39.6	121.8	24.6	20.4	48.0	1.3	0.0
LnGrp LOS	E	D	D	E	D	D	F	C	C	D	A	
Approach Vol, veh/h		100			1230			980			1181	
Approach Delay, s/veh		49.5			46.5			47.7			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	58.1	18.5	21.5	15.0	65.0	8.0	32.0
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	8.0	47.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	13.9	17.9	12.3	6.0	10.0	2.8	2.5	28.0
Green Ext Time (p_c), s	1.0	3.7	0.2	0.4	0.0	7.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	36.4
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

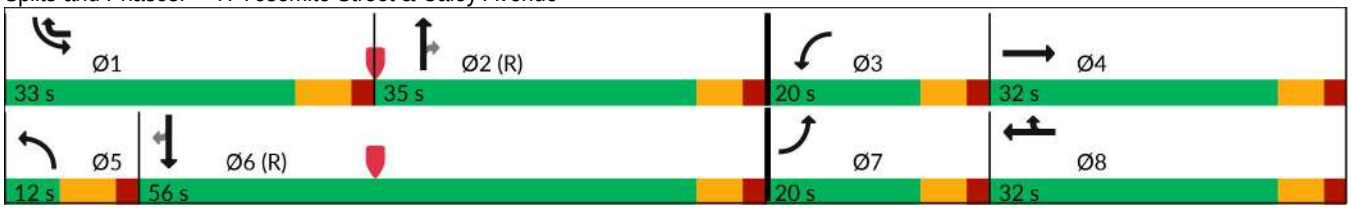
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	47	187	94	48	578	96	981	351	634	754	24
Future Volume (vph)	47	187	94	48	578	96	981	351	634	754	24
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	20.0	32.0	20.0	32.0		12.0	35.0	35.0	33.0	56.0	56.0
Total Split (%)	16.7%	26.7%	16.7%	26.7%		10.0%	29.2%	29.2%	27.5%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 54.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	187	116	94	48	578	96	981	351	634	754	24
Future Volume (veh/h)	47	187	116	94	48	578	96	981	351	634	754	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	203	126	102	52	628	104	1066	382	689	820	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	397	236	157	368	1150	144	1228	548	745	1846	
Arrive On Green	0.01	0.06	0.06	0.05	0.20	0.20	0.04	0.35	0.35	0.07	0.17	0.00
Sat Flow, veh/h	3456	2146	1273	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	51	166	163	102	52	628	104	1066	382	689	820	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1641	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.8	10.9	11.5	3.5	2.8	20.5	3.6	33.7	24.9	23.8	24.8	0.0
Cycle Q Clear(g_c), s	1.8	10.9	11.5	3.5	2.8	20.5	3.6	33.7	24.9	23.8	24.8	0.0
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	329	304	157	368	1150	144	1228	548	745	1846	
V/C Ratio(X)	0.43	0.51	0.53	0.65	0.14	0.55	0.72	0.87	0.70	0.93	0.44	
Avail Cap(c_a), veh/h	403	385	356	403	405	1206	144	1228	548	749	1846	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	51.0	51.3	56.3	39.8	26.8	56.8	36.7	33.9	54.8	34.2	0.0
Incr Delay (d2), s/veh	2.5	1.2	1.5	4.5	0.2	0.5	16.2	8.5	7.2	17.3	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.3	5.2	1.6	1.3	6.8	1.9	15.9	10.6	12.9	12.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.7	52.2	52.8	60.8	40.0	27.2	73.1	45.2	41.1	72.0	35.0	0.0
LnGrp LOS	E	D	D	E	D	C	E	D	D	E	C	
Approach Vol, veh/h		380			782			1552			1509	
Approach Delay, s/veh		53.6			32.5			46.0			51.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.9	47.5	11.5	28.2	12.0	68.3	10.1	29.6
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	14.0	26.0	5.0	50.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	25.8	35.7	5.5	13.5	5.6	26.8	3.8	22.5
Green Ext Time (p_c), s	0.1	0.0	0.2	1.5	0.0	6.1	0.1	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	46.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	8	27	41	26	140	58	186	75	153	217	9
Future Volume (vph)	8	27	41	26	140	58	186	75	153	217	9
Turn Type	Prot	NA	Prot	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	8 1	5	2		1	6	
Permitted Phases								2			6
Detector Phase	7	4	3	8	8 1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	28.0		12.0	28.0	28.0	12.0	31.0	31.0
Total Split (s)	30.0	30.0	30.0	30.0		35.0	55.0	55.0	35.0	55.0	55.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%		23.3%	36.7%	36.7%	23.3%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0		5.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		7.0	6.0	6.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54.5 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 7: Yosemite Street & Caley Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	27	47	41	26	140	58	186	75	153	217	9
Future Volume (veh/h)	8	27	47	41	26	140	58	186	75	153	217	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	29	51	45	28	152	63	202	82	166	236	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	88	78	98	126	365	107	2459	1097	220	2576	
Arrive On Green	0.01	0.05	0.05	0.03	0.07	0.07	0.03	0.69	0.69	0.06	0.72	0.00
Sat Flow, veh/h	3456	1777	1585	3456	1870	2790	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	9	29	51	45	28	152	63	202	82	166	236	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1395	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.4	2.4	4.7	1.9	2.1	7.5	2.7	2.8	2.5	7.1	2.9	0.0
Cycle Q Clear(g_c), s	0.4	2.4	4.7	1.9	2.1	7.5	2.7	2.8	2.5	7.1	2.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	36	88	78	98	126	365	107	2459	1097	220	2576	
V/C Ratio(X)	0.25	0.33	0.65	0.46	0.22	0.42	0.59	0.08	0.07	0.75	0.09	
Avail Cap(c_a), veh/h	553	284	254	553	299	624	645	2459	1097	645	2576	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.6	68.9	70.0	71.8	66.3	59.9	71.7	7.5	7.5	69.1	6.1	0.0
Incr Delay (d2), s/veh	3.6	2.2	8.8	3.4	0.9	0.8	5.1	0.1	0.1	5.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.1	2.1	0.9	1.1	2.7	1.3	1.1	0.9	3.3	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.2	71.1	78.8	75.1	67.1	60.7	76.8	7.6	7.6	74.2	6.2	0.0
LnGrp LOS	E	E	E	E	E	E	E	A	A	E	A	
Approach Vol, veh/h		89			225			347			402	
Approach Delay, s/veh		76.1			64.4			20.2			34.3	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	109.8	10.2	13.4	11.6	114.7	7.6	16.1
Change Period (Y+Rc), s	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	49.0	24.0	24.0	28.0	49.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	9.1	4.8	3.9	6.7	4.7	4.9	2.4	9.5
Green Ext Time (p_c), s	0.5	1.7	0.1	0.3	0.2	1.7	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	39.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	5	13	124	423	85
Future Vol, veh/h	20	5	13	124	423	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	6	14	138	470	94

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	637	470	564	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	167	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	442	594	1007	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	435	594	1007	-	-	-
Mov Cap-2 Maneuver	435	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.2	0.82	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1007	-	435	594	-	-
HCM Lane V/C Ratio	0.014	-	0.051	0.009	-	-
HCM Ctrl Dly (s/v)	8.6	-	13.7	11.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	87	21	12	373	150	26
Future Vol, veh/h	87	21	12	373	150	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	28	16	491	197	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	720	197	232	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	395	844	1336	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	390	844	1336	-	-	-
Mov Cap-2 Maneuver	390	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	595	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.34	0.24	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1336	-	390	844	-	-
HCM Lane V/C Ratio	0.012	-	0.293	0.033	-	-
HCM Ctrl Dly (s/v)	7.7	-	18	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	1.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	4	3	36	71	26
Future Vol, veh/h	13	4	3	36	71	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	4	3	40	79	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	126	79	108	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	869	982	1483	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	867	982	1483	-	-	-
Mov Cap-2 Maneuver	867	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	976	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.09	0.57	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1483	-	867	982	-	-
HCM Lane V/C Ratio	0.002	-	0.017	0.005	-	-
HCM Ctrl Dly (s/v)	7.4	-	9.2	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	5	13	126	431	87
Future Vol, veh/h	20	5	13	126	431	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	6	14	140	479	97

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	648	479	576	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	435	587	998	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	429	587	998	-	-	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.32	0.81	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	998	-	429	587	-	-
HCM Lane V/C Ratio	0.014	-	0.052	0.009	-	-
HCM Ctrl Dly (s/v)	8.7	-	13.9	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	21	12	380	153	27
Future Vol, veh/h	89	21	12	380	153	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	28	16	500	201	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	733	201	237	0	-	0
Stage 1	201	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	388	840	1330	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	383	840	1330	-	-	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	589	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.75	0.24	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1330	-	383	840	-	-
HCM Lane V/C Ratio	0.012	-	0.306	0.033	-	-
HCM Ctrl Dly (s/v)	7.7	-	18.5	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	1.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	4	3	37	72	27
Future Vol, veh/h	13	4	3	37	72	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	4	3	41	80	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	128	80	110	0	-	0
Stage 1	80	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	867	980	1480	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	865	980	1480	-	-	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.11	0.56	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1480	-	865	980	-	-
HCM Lane V/C Ratio	0.002	-	0.017	0.005	-	-
HCM Ctrl Dly (s/v)	7.4	-	9.2	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	6	15	126	431	121
Future Vol, veh/h	42	6	15	126	431	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	7	17	140	479	134

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	652	479	613	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	432	587	966	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	425	587	966	-	-	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.1	0.94	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	966	-	425	587	-	-
HCM Lane V/C Ratio	0.017	-	0.11	0.011	-	-
HCM Ctrl Dly (s/v)	8.8	-	14.5	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	24	14	380	153	63
Future Vol, veh/h	133	24	14	380	153	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	32	18	500	201	83

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	738	201	284	0	-	0
Stage 1	201	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	385	840	1278	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	840	1278	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.37	0.28	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1278	-	380	840	-	-
HCM Lane V/C Ratio	0.014	-	0.461	0.038	-	-
HCM Ctrl Dly (s/v)	7.9	-	22.3	9.5	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	2.4	0.1	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	233	18	16	37	72	239
Future Vol, veh/h	233	18	16	37	72	239
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	259	20	18	41	80	266

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	157	80	346	0	-	0
Stage 1	80	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	835	980	1213	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	980	1213	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.19	2.42	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1213	-	822	980	-	-
HCM Lane V/C Ratio	0.015	-	0.315	0.02	-	-
HCM Ctrl Dly (s/v)	8	-	11.4	8.7	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	6	14	137	466	94
Future Vol, veh/h	22	6	14	137	466	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	7	16	152	518	104

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	701	518	622	0	-	0
Stage 1	518	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	405	558	959	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	398	558	959	-	-	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.97	0.82	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	959	-	398	558	-	-
HCM Lane V/C Ratio	0.016	-	0.061	0.012	-	-
HCM Ctrl Dly (s/v)	8.8	-	14.6	11.5	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	96	23	13	411	165	29
Future Vol, veh/h	96	23	13	411	165	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	30	17	541	217	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	792	217	255	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	358	823	1310	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	353	823	1310	-	-	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.59	0.24	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1310	-	353	823	-	-
HCM Lane V/C Ratio	0.013	-	0.358	0.037	-	-
HCM Ctrl Dly (s/v)	7.8	-	20.8	9.5	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	4	3	40	78	29
Future Vol, veh/h	14	4	3	40	78	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	4	3	44	87	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	138	87	119	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	855	972	1469	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	854	972	1469	-	-	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	971	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.17	0.52	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1469	-	854	972	-	-
HCM Lane V/C Ratio	0.002	-	0.018	0.005	-	-
HCM Ctrl Dly (s/v)	7.5	-	9.3	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	7	16	137	466	128
Future Vol, veh/h	44	7	16	137	466	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	8	18	152	518	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	706	518	660	0	-	0
Stage 1	518	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	402	558	928	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	395	558	928	-	-	-
Mov Cap-2 Maneuver	395	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.88	0.94	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	928	-	395	558	-	-
HCM Lane V/C Ratio	0.019	-	0.124	0.014	-	-
HCM Ctrl Dly (s/v)	9	-	15.4	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	26	15	411	165	65
Future Vol, veh/h	140	26	15	411	165	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	34	20	541	217	86

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	797	217	303	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	823	1258	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	350	823	1258	-	-	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.58	0.28	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1258	-	350	823	-	-
HCM Lane V/C Ratio	0.016	-	0.527	0.042	-	-
HCM Ctrl Dly (s/v)	7.9	-	26.2	9.6	-	-
HCM Lane LOS	A	-	D	A	-	-
HCM 95th %tile Q(veh)	0	-	2.9	0.1	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	234	18	16	40	78	241
Future Vol, veh/h	234	18	16	40	78	241
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	75	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	260	20	18	44	87	268

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	167	87	354	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	824	972	1204	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	812	972	1204	-	-	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.32	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1204	-	812	972	-	-
HCM Lane V/C Ratio	0.015	-	0.32	0.021	-	-
HCM Ctrl Dly (s/v)	8	-	11.5	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1.4	0.1	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	74	64	7	17	229
Future Vol, veh/h	61	74	64	7	17	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	89	77	8	20	276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	398	81	0	0	86	0
Stage 1	81	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	607	979	-	-	1511	-
Stage 1	942	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	599	979	-	-	1511	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.31	0	0.51
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	599	979	1511	-
HCM Lane V/C Ratio	-	-	0.123	0.091	0.014	-
HCM Ctrl Dly (s/v)	-	-	11.8	9	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	38	159	65	39	112
Future Vol, veh/h	4	38	159	65	39	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	48	201	82	49	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	483	242	0	0	284	0
Stage 1	242	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	543	796	-	-	1279	-
Stage 1	798	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	522	796	-	-	1279	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.02	0	2.05
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	522	796	1279	-
HCM Lane V/C Ratio	-	-	0.01	0.06	0.039	-
HCM Ctrl Dly (s/v)	-	-	12	9.8	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	17	2	8	56
Future Vol, veh/h	0	8	17	2	8	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	20	2	10	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	108	22	0	0	23	0
Stage 1	22	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	889	1056	-	-	1592	-
Stage 1	1001	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	883	1056	-	-	1592	-
Mov Cap-2 Maneuver	883	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.44	0	0.91
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1056	1592	-
HCM Lane V/C Ratio	-	-	-	0.009	0.006	-
HCM Ctrl Dly (s/v)	-	-	0	8.4	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	75	65	7	17	234
Future Vol, veh/h	62	75	65	7	17	234
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	90	78	8	20	282

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	405	83	0	0	87	0
Stage 1	83	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	601	977	-	-	1509	-
Stage 1	941	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	593	977	-	-	1509	-
Mov Cap-2 Maneuver	593	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.36	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	593	977	1509	-
HCM Lane V/C Ratio	-	-	0.126	0.092	0.014	-
HCM Ctrl Dly (s/v)	-	-	11.9	9.1	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	39	162	66	40	114
Future Vol, veh/h	4	39	162	66	40	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	49	205	84	51	144

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	492	247	0	0	289	0
Stage 1	247	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	536	792	-	-	1273	-
Stage 1	794	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	514	792	-	-	1273	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	764	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.05	0	2.06
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	514	792	1273	-
HCM Lane V/C Ratio	-	-	0.01	0.062	0.04	-
HCM Ctrl Dly (s/v)	-	-	12.1	9.8	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	17	2	8	57
Future Vol, veh/h	0	8	17	2	8	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	20	2	10	69

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	110	22	0	0	23	0
Stage 1	22	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	887	1056	-	-	1592	-
Stage 1	1001	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	882	1056	-	-	1592	-
Mov Cap-2 Maneuver	882	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.44	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1056	1592	-
HCM Lane V/C Ratio	-	-	-	0.009	0.006	-
HCM Ctrl Dly (s/v)	-	-	0	8.4	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	76	66	7	18	235
Future Vol, veh/h	62	76	66	7	18	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	92	80	8	22	283

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	410	84	0	0	88	0
Stage 1	84	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	598	976	-	-	1508	-
Stage 1	940	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	589	976	-	-	1508	-
Mov Cap-2 Maneuver	589	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.39	0	0.53
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	589	976	1508	-
HCM Lane V/C Ratio	-	-	0.127	0.094	0.014	-
HCM Ctrl Dly (s/v)	-	-	12	9.1	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	40	163	66	41	116
Future Vol, veh/h	4	40	163	66	41	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	51	206	84	52	147

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	499	248	0	0	290	0
Stage 1	248	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	531	791	-	-	1272	-
Stage 1	793	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	510	791	-	-	1272	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.07	0	2.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	510	791	1272	-
HCM Lane V/C Ratio	-	-	0.01	0.064	0.041	-
HCM Ctrl Dly (s/v)	-	-	12.1	9.9	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	25	2	14	65
Future Vol, veh/h	0	13	25	2	14	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	30	2	17	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	143	31	0	0	33	0
Stage 1	31	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	849	1043	-	-	1579	-
Stage 1	991	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	840	1043	-	-	1579	-
Mov Cap-2 Maneuver	840	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.51	0	1.29
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1043	1579	-
HCM Lane V/C Ratio	-	-	-	0.015	0.011	-
HCM Ctrl Dly (s/v)	-	-	0	8.5	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	82	71	8	19	252
Future Vol, veh/h	67	82	71	8	19	252
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	81	99	86	10	23	304

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	440	90	0	0	95	0
Stage 1	90	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	575	967	-	-	1499	-
Stage 1	933	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	967	-	-	1499	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.62	0	0.52
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	566	967	1499	-
HCM Lane V/C Ratio	-	-	0.143	0.102	0.015	-
HCM Ctrl Dly (s/v)	-	-	12.4	9.1	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	42	175	72	43	123
Future Vol, veh/h	4	42	175	72	43	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	53	222	91	54	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	532	267	0	0	313	0
Stage 1	267	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	508	772	-	-	1248	-
Stage 1	778	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	486	772	-	-	1248	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.23	0	2.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	486	772	1248	-
HCM Lane V/C Ratio	-	-	0.01	0.069	0.044	-
HCM Ctrl Dly (s/v)	-	-	12.5	10	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	19	2	9	62
Future Vol, veh/h	0	9	19	2	9	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	23	2	11	75

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	24	0	0	25	0
Stage 1	24	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	875	1052	-	-	1589	-
Stage 1	999	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	869	1052	-	-	1589	-
Mov Cap-2 Maneuver	869	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.46	0	0.92
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1052	1589	-
HCM Lane V/C Ratio	-	-	-	0.01	0.007	-
HCM Ctrl Dly (s/v)	-	-	0	8.5	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	83	72	8	20	253
Future Vol, veh/h	67	83	72	8	20	253
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	81	100	87	10	24	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	445	92	0	0	96	0
Stage 1	92	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	571	966	-	-	1497	-
Stage 1	932	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	562	966	-	-	1497	-
Mov Cap-2 Maneuver	562	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.64	0	0.55
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	562	966	1497	-
HCM Lane V/C Ratio	-	-	0.144	0.104	0.016	-
HCM Ctrl Dly (s/v)	-	-	12.5	9.2	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.3	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	43	176	72	44	125
Future Vol, veh/h	4	43	176	72	44	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	54	223	91	56	158

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	538	268	0	0	314	0
Stage 1	268	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	504	770	-	-	1246	-
Stage 1	777	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	482	770	-	-	1246	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.24	0	2.09
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	482	770	1246	-
HCM Lane V/C Ratio	-	-	0.011	0.071	0.045	-
HCM Ctrl Dly (s/v)	-	-	12.6	10	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	27	2	15	70
Future Vol, veh/h	0	14	27	2	15	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	33	2	18	84

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	154	34	0	0	35	0
Stage 1	34	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	837	1040	-	-	1576	-
Stage 1	989	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	828	1040	-	-	1576	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.52	0	1.29
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1040	1576	-
HCM Lane V/C Ratio	-	-	-	0.016	0.011	-
HCM Ctrl Dly (s/v)	-	-	0	8.5	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	94	3	2	46
Future Vol, veh/h	2	1	94	3	2	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	102	3	2	50

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	158	104	0	0	105	0
Stage 1	104	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	833	951	-	-	1486	-
Stage 1	920	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	832	951	-	-	1486	-
Mov Cap-2 Maneuver	832	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	967	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.16	0	0.31
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	75	-
HCM Lane V/C Ratio	-	-	0.004	0.001	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	268	3	2	109
Future Vol, veh/h	3	2	268	3	2	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	291	3	2	118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	416	293	0	0	295	0
Stage 1	293	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	593	746	-	-	1267	-
Stage 1	757	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	592	746	-	-	1267	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.62	0	0.14
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	646	32	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	11	55	16	11	41
Future Vol, veh/h	17	11	55	16	11	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	12	60	17	12	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	137	68	0	0	77	0
Stage 1	68	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	856	995	-	-	1521	-
Stage 1	954	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	849	995	-	-	1521	-
Mov Cap-2 Maneuver	849	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.13	0	1.56
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	381	-
HCM Lane V/C Ratio	-	-	0.034	0.008	-
HCM Ctrl Dly (s/v)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	101	3	2	49
Future Vol, veh/h	2	1	101	3	2	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	110	3	2	53

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	111	0	0	113	0
Stage 1	111	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	821	942	-	-	1476	-
Stage 1	913	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	942	-	-	1476	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.22	0	0.29
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	71	-
HCM Lane V/C Ratio	-	-	0.004	0.001	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	289	3	2	117
Future Vol, veh/h	3	2	289	3	2	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	314	3	2	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	447	316	0	0	317	0
Stage 1	316	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	569	725	-	-	1243	-
Stage 1	739	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	568	725	-	-	1243	-
Mov Cap-2 Maneuver	568	-	-	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.84	0	0.13
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	622	30	-
HCM Lane V/C Ratio	-	-	0.009	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.8	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	11	57	16	11	43
Future Vol, veh/h	17	11	57	16	11	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	12	62	17	12	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	141	71	0	0	79	0
Stage 1	71	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	852	992	-	-	1519	-
Stage 1	952	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	845	992	-	-	1519	-
Mov Cap-2 Maneuver	845	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.15	0	1.51
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	897	367	-
HCM Lane V/C Ratio	-	-	0.034	0.008	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	92	3	2	46
Future Vol, veh/h	2	1	92	3	2	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	100	3	2	50

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	156	102	0	0	103	0
Stage 1	102	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	835	954	-	-	1489	-
Stage 1	922	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	834	954	-	-	1489	-
Mov Cap-2 Maneuver	834	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	967	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.15	0	0.31
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	870	75	-
HCM Lane V/C Ratio	-	-	0.004	0.001	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	267	3	2	108
Future Vol, veh/h	3	2	267	3	2	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	290	3	2	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	414	292	0	0	293	0
Stage 1	292	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	595	747	-	-	1268	-
Stage 1	758	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	594	747	-	-	1268	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.61	0	0.14
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	647	33	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	11	50	16	11	35
Future Vol, veh/h	17	11	50	16	11	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	12	54	17	12	38

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	125	63	0	0	72	0
Stage 1	63	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	870	1002	-	-	1528	-
Stage 1	960	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	863	1002	-	-	1528	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	953	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.08	0	1.76
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	913	1528	-
HCM Lane V/C Ratio	-	-	0.033	0.008	-
HCM Ctrl Dly (s/v)	-	-	9.1	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	99	3	2	49
Future Vol, veh/h	2	1	99	3	2	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	108	3	2	53

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	167	109	0	0	111	0
Stage 1	109	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	824	944	-	-	1479	-
Stage 1	915	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	822	944	-	-	1479	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.21	0	0.29
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	71	-
HCM Lane V/C Ratio	-	-	0.004	0.001	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	288	3	2	116
Future Vol, veh/h	3	2	288	3	2	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	313	3	2	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	445	315	0	0	316	0
Stage 1	315	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	571	726	-	-	1244	-
Stage 1	740	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	569	726	-	-	1244	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.83	0	0.13
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	31	-
HCM Lane V/C Ratio	-	-	0.009	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.8	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	11	52	16	11	37
Future Vol, veh/h	17	11	52	16	11	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	12	57	17	12	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	65	0	0	74	0
Stage 1	65	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	865	999	-	-	1526	-
Stage 1	957	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	858	999	-	-	1526	-
Mov Cap-2 Maneuver	858	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.1	0	1.69
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	908	1526	-
HCM Lane V/C Ratio	-	-	0.034	0.008	-
HCM Ctrl Dly (s/v)	-	-	9.1	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	0	16	104	0	11
Future Vol, veh/h	28	0	16	104	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	17	113	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	178	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1582	-	811	1044
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	802	1044
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	870	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.97	8.49
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1044	-	-	1582	-
HCM Lane V/C Ratio	0.011	-	-	0.011	-
HCM Ctrl Dly (s/v)	8.5	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	115	0	18	44	1	21
Future Vol, veh/h	115	0	18	44	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	0	20	48	1	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	125	0	212	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	87	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1462	-	776	926
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1462	-	766	926
Mov Cap-2 Maneuver	-	-	-	-	765	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.18	9.03
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	917	-	-	1462	-
HCM Lane V/C Ratio	0.026	-	-	0.013	-
HCM Ctrl Dly (s/v)	9	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	3	103	57	3	107
Future Vol, veh/h	44	3	103	57	3	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	3	112	62	3	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	51	0	335	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	286	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1555	-	660	1019
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1555	-	612	1019
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	708	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	4.82	9.08
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1002	-	-	1555	-
HCM Lane V/C Ratio	0.119	-	-	0.072	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	0	16	112	0	11
Future Vol, veh/h	31	0	16	112	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	0	17	122	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	190	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	157	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1578	-	799	1040
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1578	-	790	1040
Mov Cap-2 Maneuver	-	-	-	-	769	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	862	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.91	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1040	-	-	1578	-
HCM Lane V/C Ratio	0.012	-	-	0.011	-
HCM Ctrl Dly (s/v)	8.5	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	124	0	18	47	1	21
Future Vol, veh/h	124	0	18	47	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	20	51	1	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	135	0	225	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	90	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1450	-	763	914
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1450	-	753	914
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.08	9.08
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	906	-	-	1450	-
HCM Lane V/C Ratio	0.026	-	-	0.013	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	3	103	59	3	107
Future Vol, veh/h	46	3	103	59	3	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	3	112	64	3	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	53	0	340	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1552	-	656	1016
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1552	-	609	1016
Mov Cap-2 Maneuver	-	-	-	-	626	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	706	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	4.77	9.09
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	999	-	-	1552	-
HCM Lane V/C Ratio	0.12	-	-	0.072	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	1	16	120	1	11
Future Vol, veh/h	38	1	16	120	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	1	17	130	1	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	42	0	207	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1567	-	781	1029
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	864	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	772	1029
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.86	8.65
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	999	-	-	212	-
HCM Lane V/C Ratio	0.013	-	-	0.011	-
HCM Ctrl Dly (s/v)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	136	1	17	60	1	21
Future Vol, veh/h	136	1	17	60	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	1	18	65	1	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	149	0	251	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1433	-	738	898
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1433	-	728	898
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	910	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.67	9.16
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	890	-	-	397	-
HCM Lane V/C Ratio	0.027	-	-	0.013	-
HCM Ctrl Dly (s/v)	9.2	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	5	101	155	6	105
Future Vol, veh/h	146	5	101	155	6	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	5	110	168	7	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	549	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	388	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1414	-	496	884
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1414	-	454	884
Mov Cap-2 Maneuver	-	-	-	-	526	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.06	9.92
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	852	-	-	710	-
HCM Lane V/C Ratio	0.142	-	-	0.078	-
HCM Ctrl Dly (s/v)	9.9	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	1	16	128	1	11
Future Vol, veh/h	41	1	16	128	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	1	17	139	1	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	46	0	219	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1562	-	769	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	856	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1562	-	760	1025
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.81	8.67
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	994	-	-	200	-
HCM Lane V/C Ratio	0.013	-	-	0.011	-
HCM Ctrl Dly (s/v)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	1	17	63	1	21
Future Vol, veh/h	145	1	17	63	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	1	18	68	1	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	159	0	264	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1421	-	725	887
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1421	-	716	887
Mov Cap-2 Maneuver	-	-	-	-	731	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	906	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.61	9.21
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	879	-	-	382	-
HCM Lane V/C Ratio	0.027	-	-	0.013	-
HCM Ctrl Dly (s/v)	9.2	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	5	101	157	6	105
Future Vol, veh/h	148	5	101	157	6	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	161	5	110	171	7	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	554	164
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	390	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1412	-	494	881
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	451	881
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.04	9.94
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	850	-	-	705	-
HCM Lane V/C Ratio	0.142	-	-	0.078	-
HCM Ctrl Dly (s/v)	9.9	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

Appendix F: Signal Timing Worksheets

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X	X		
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	P	P	P	P	O	O	O	O
Phase/Overlap	1	2	3	4	5	6	7	8	2	4	6	8	1	2	3	4

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	W	E	N	S	N	W	N	N	N	N	N	N	N	N	N	N
Movement	L	T		LTR		T										
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.107
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	240
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	3
Port 3B(C22S) Priority:	2

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	No
Data Rate (BPS)	9600	9600	9600
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Duplex - Half or Full	Half	Full	Full
Protocol	NTCIP	NTCIP	NTCIP
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	10
Single Flag Enable	Yes	Yes	Yes

Peer to Peer Setup (MM) 1-2-6

Local Port: 503

Peer	Port	IP Address	Timeout	Peer Name
1	503	172.22.1.108	1	

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	812C
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World

Sign On Message Line 2:

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
11	E
12	E

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	1	F	VEH GREEN ON PH	8	IS On

Then:

Assignment	#	State
CTR SET ALARM	3	On

Logic #: 11 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

Logic #: 12 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	62	On

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	0	10	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	3.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	22	30	22	45	0	30	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0

Ped Clear	0	4	0	26	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	5.0	5.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	0	10	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	3.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	22	30	22	45	0	30	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	4	0	26	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	5.0	5.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	0	10	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	3.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	22	30	22	45	0	30	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															

DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	4	0	26	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	5.0	5.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																

No Rest															

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	0	10	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	3.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	15	89	15	15	0	89	0	0	0	0	0	0	0	0	0	0

Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	4	0	26	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	5.0	5.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																

Ped Recall															
Max Recall															
Soft Recall															
No Rest															

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2
Overlap - A - Type - Overlap

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Included Phase	X		X													
Protected Phase																
Inhibit with Ped																
Inhibit With Phase																
Inhibit With Green																
Trailing When Exit																
Trailing When Next																
Trailing Phase Allow																
Green When Next																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Inhibit With Overlap																

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	0	5.0	2.0	0
B02	10	4	4	4.0	2.0	0
C03	5	0	0	5.0	2.0	0
D04	5	4	26	5.0	2.0	0
E05	0	0	0	0.0	0.0	0
F06	10	0	0	4.0	2.0	0
G07	0	0	0	0.0	0.0	0
H08	0	0	0	0.0	0.0	0
I09	0	0	0	0.0	0.0	0

J10	0	0	0	0.0	0.0	0
K11	0	0	0	0.0	0.0	0
L12	0	0	0	0.0	0.0	0
M13	0	0	0	0.0	0.0	0
N14	0	0	0	0.0	0.0	0
O15	0	0	0	0.0	0.0	0
P16	0	0	0	0.0	0.0	0

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X		X										
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: On
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
		B			B	B											
Sequence 1																	
Ring 1	|	2	1	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	|	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.
Sequence 2																	
Ring 1	|	1	2	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	|	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.
Sequence 3																	
Ring 1	|	2	1	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	|	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Lead	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	0
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 82s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	35	49	0	36	0	84	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase			X						X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
0 0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)	
Override Sys:	No	Ped Det Diag Plan:	0		
Backup Prevent Plan:	0	Det Log:	None		
Exit Option:	Off	:			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 34s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	34	54	0	32	0	88	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase			X						X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 41s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	21	48	30	21	0	99	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off																
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 16 - "Concrt Flsh" - Event Type: "Coord"

Cycle Length: 135 Offset Value: 41s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	20	115	0	20	0	135	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall		X				X										
Max 2																
Max 3																
CS Inhibit																
Omit Phase			X						X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 4
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	155s	155s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

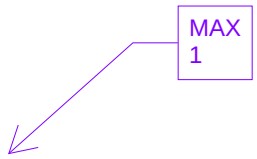
Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 20 - "20" - Event Type: "Free"

Timing Plan:	1	Veh Detector Plan:	0
Sequence:	2	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No
Backup Prevent Plan:	0	Exit Option:	Off



Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 119 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 104s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	25	46	17	32	0	88	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 120 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 97s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	W-L	E-T	N	S-LTR	N	W-T	N	N	N	N	N	N	N	N	N	N
Split	12	52	24	32	0	88	0	0	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Greenwood Village, CO

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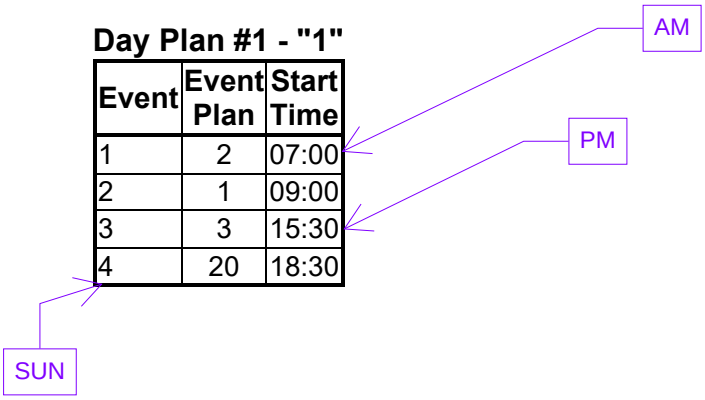
MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30



Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

107 Orchard & I-25 SB - Orchard @ I-25 SB - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X	X		
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	P	P	P	P	O	O	O	O
Phase/Overlap	1	2	3	4	5	6	7	8	2	4	6	8	1	2	3	4

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	N	E	N	N	E	W	N	N	N	N	N	N	N	N	N	N
Movement		T			L	T		LTR								
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.108
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	240
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	2
Port 3B(C22S) Priority:	3

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	No
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Duplex - Half or Full	Half	Full	Full
Protocol	TERMINAL	NTCIP	RESERVED
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	10
Single Flag Enable	Yes	Yes	Yes

Peer to Peer Setup (MM) 1-2-6

Local Port: 503

Peer	Port	IP Address	Timeout	Peer Name
1	503	172.22.1.107	1	

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	EBEA
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	Yes
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
1	E

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	10	0	0	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	0	30	0	0	25	30	25	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ped Clear	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	10	0	0	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	0	30	0	0	25	30	25	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	10	0	0	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	0	30	0	0	25	30	25	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															

DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																

No Rest															

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	10	0	0	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	0	89	0	0	89	15	5	15	0	0	0	0	0	0	0	0

Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																

Ped Recall															
Max Recall															
Soft Recall															
No Rest															

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2
Overlap - A - Type - Overlap

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Included Phase					X		X									
Protected Phase																
Inhibit with Ped																
Inhibit With Phase																
Inhibit With Green																
Trailing When Exit																
Trailing When Next																
Trailing Phase Allow																
Green When Next																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Inhibit With Overlap																

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	0	0	0	0.0	0.0	0
B02	5	4	20	4.0	2.0	0
C03	0	0	0	0.0	0.0	0
D04	0	0	0	0.0	0.0	0
E05	5	0	0	3.0	2.0	0
F06	5	0	0	4.0	2.0	0
G07	5	0	0	3.0	2.0	0
H08	5	0	0	5.0	2.0	0
I09	0	0	0	0.0	0.0	0

J10	0	0	0	0.0	0.0	0
K11	0	0	0	0.0	0.0	0
L12	0	0	0	0.0	0.0	0
M13	0	0	0	0.0	0.0	0
N14	0	0	0	0.0	0.0	0
O15	0	0	0	0.0	0.0	0
P16	0	0	0	0.0	0.0	0

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use		X			X	X	X	X								
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: On
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

		01		02		03		04		05		06		07		08		09		10		11		12		13		14		15		16
	B					B		B																								
Sequence 1																																
Ring 1	|	**1**		**2**		**3**	|	**4**	|	.		.		.		.		.		.		.		.		.		.		.		.
Ring 2	|	**6**		**5**		**7**	|	**8**	|	.		.		.		.		.		.		.		.		.		.		.		.
Sequence 2																																
Ring 1	|	**1**		**2**		**3**	|	**4**	|	.		.		.		.		.		.		.		.		.		.		.		.
Ring 2	|	**5**		**6**		**7**	|	**8**	|	.		.		.		.		.		.		.		.		.		.		.		.
Sequence 3																																
Ring 1	|	**1**		**2**		**3**	|	**4**	|	.		.		.		.		.		.		.		.		.		.		.		.
Ring 2	|	**6**		**5**		**7**	|	**8**	|	.		.		.		.		.		.		.		.		.		.		.		.

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Lead	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	0
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 84s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	90	0	0	51	39	0	30	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase							X		X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
0 0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)
Override Sys:	No	Ped Det Diag Plan:	0	
Backup Prevent Plan:	0	Det Log:	None	
Exit Option:	Off	:		

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 72s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	85	0	0	32	53	0	35	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase							X		X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 1
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 117s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	101	0	0	23	54	24	19	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off																
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 16 - "Concrt Flsh" - Event Type: "Coord"

Cycle Length: 135 Offset Value: 117s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	135	0	0	115	20	0	20	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X			X											
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall		X			X											
Max 2																
Max 3																
CS Inhibit																
Omit Phase							X		X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 4
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	155s	155s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 20 - "20" - Event Type: "Free"

Timing Plan:	1	Veh Detector Plan:	0
Sequence:	2	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No
Backup Prevent Plan:	0	Exit Option:	Off

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 119 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 117s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	96	0	0	26	57	13	24	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 120 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 117s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	E-L	W-T	N	N-LTR	N	N	N	N	N	N	N	N
Split	0	96	0	0	26	52	18	24	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 2
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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ECONOLITE

MOVING TRAFFIC FORWARD

108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30
5	0	00:30

Day Plan #3 - "3"

Event	Event Plan	Start Time
1	1	10:00
2	20	17:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

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108 Orchard & I-25 NB - Orchard @ I-25 NB - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

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021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X			
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	O	O	O	O	P	P	P	P
Phase/Overlap	1	2	3	4	5	6	7	8	1	2	3	4	2	4	6	8

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

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021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.21
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	240
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	2
Port 3B(C22S) Priority:	3

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	Yes
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 O 1
Duplex - Half or Full	Half	Full	Full
Protocol	TERMINAL	NTCIP	RESERVED
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	300
Single Flag Enable	Yes	Yes	Yes

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

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021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	8B54
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World

Sign On Message Line 2:

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
11	E
12	E
13	E
14	E

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021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	5	IS On
AND	--	F	DET	9	IS On
AND	--	F	DET	4	IS On

Then:

Assignment	#	State
CTR CALL PHASE	4	On

Logic #: 2 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	5	IS On
AND	--	F	DET	9	IS On
AND	--	F	DET	4	IS Off

Then:

Assignment	#	State
CTR CALL PHASE	5	On

Logic #: 3 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	5	IS Off
AND	--	F	DET	9	IS On
AND	--	F	DET	4	IS Off

Then:

Assignment	#	State
CTR CALL PHASE	4	On

Logic #: 4 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	5	IS Off
AND	--	F	DET	9	IS On
AND	--	F	DET	4	IS On

Then:

Assignment	#	State
CTR CALL PHASE	4	On

Logic #: 5 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	5	IS Off
AND	--	F	DET	4	IS Off
AND	--	F	DET	9	IS On
AND	--	F	DET PED	8	IS On

Then:

Assignment	#	State
CTR CALL PHASE	4	On

Logic #: 6 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	7	IS On
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	4	Off

Logic #: 11 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 33-48	40	On

Logic #: 12 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 33-48	41	On

Logic #: 13 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	6	IS On

Then:

Assignment	#	State
DET SET VEH 33-48	42	On

Logic #: 14 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	8	IS On

Then:

Assignment	#	State
DET SET VEH 33-48	43	On

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	45	30	30	25	45	30	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	14	0	25	0	12	0	25	0	0	0	0	0	0	0	0

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	3.0	5.0	4.0	4.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															

Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	0	5	5	10	0	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	0.0	2.0	2.0	3.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	45	0	30	25	45	0	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
	0	14	0	25	0	12	0	25	0	0	0	0	0	0	0	0

Ped Clear																
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	0.0	3.0	5.0	4.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	0	5	5	10	0	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	0.0	2.0	2.0	3.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	45	0	30	25	45	0	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	14	0	25	0	12	0	25	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	0.0	3.0	5.0	4.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	0	5	5	10	0	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	0.0	2.0	2.0	3.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	45	0	30	25	45	0	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Delay Walk																
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	14	0	25	0	12	0	25	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	0.0	3.0	5.0	4.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2
Overlap - A - Type - Overlap

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Included Phase				X	X											
Protected Phase																
Inhibit with Ped																
Inhibit With Phase																
Inhibit With Green																
Trailing When Exit																
Trailing When Next																
Trailing Phase Allow																
Green When Next																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Inhibit With Overlap																

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	0	5.0	2.0	0
B02	10	4	14	4.0	2.0	0
C03	0	0	0	4.0	0.0	0
D04	5	4	25	3.0	2.0	0
E05	5	0	0	5.0	2.0	0
F06	10	4	12	4.0	2.0	0
G07	0	0	0	4.0	0.0	0
H08	5	4	25	3.0	2.0	0
I09	0	0	0	0.0	0.0	0

J10	0	0	0	0.0	0.0	0
K11	0	0	0	0.0	0.0	0
L12	0	0	0	0.0	0.0	0
M13	0	0	0	0.0	0.0	0
N14	0	0	0	0.0	0.0	0
O15	0	0	0	0.0	0.0	0
P16	0	0	0	0.0	0.0	0

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: On
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

Backup Prevent Plan 1

Rest Phase	Backup Phase(s)																Prevent Method	Call Phase
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
2	X																Inhibit	0
6					X												Inhibit	0

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Lead	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	0
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 17s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Split	14	48	22	36	16	46	35	23	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
0 0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)	
Override Sys:	No	Ped Det Diag Plan:	0		
Backup Prevent Plan:	0	Det Log:	None		
Exit Option:	Off	:			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 40s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Split	14	68	14	24	14	68	14	24	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 1
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 17s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Split	11	51	25	33	11	51	25	33	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 20 - "20" - Event Type: "Free"

Timing Plan:	1	Veh Detector Plan:	0
Sequence:	1	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No
Backup Prevent Plan:	0	Exit Option:	Off

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 119 - Event Type: "Coord"

Cycle Length:	120	Offset Value:	0s	Actuated Coord:	No	Splits In:	Seconds	Offsets In:	Seconds							

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Split	12	56	20	32	14	54	28	24	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																

Dwell/Add Time:	0
Timing Plan:	0
Sequence:	1
Actuated Walk Rest:	No
Phase Reservice:	No
Max Select:	MAXINH 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Max Transition:

Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0

Veh Perm 2 Disp: 0

Veh Perm 2: 0

SCP Strategy Plan: 0

Veh Detector Plan: 0

SCP Detector Plan: 0

Veh Det Diag Plan: 0

Override Sys: No

Ped Det Diag Plan: 0

Backup Prevent Plan: 0

Det Log: None

Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 120 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 93s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Split	13	43	24	40	21	35	42	22	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30

Day Plan #3 - "3"

Event	Event Plan	Start Time
1	1	10:00
2	20	17:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

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MOVING TRAFFIC FORWARD

021 Orchard & Willow - Orchard @ Willow - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X	X	X	X
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	P	P	P	P	O	O	O	O
Phase/Overlap	1	2	3	4	5	6	7	8	2	4	6	8	1	2	3	4

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	S	N	W	E	N	S	E	W	N	N	N	N	N	N	N	N
Movement	L	T	L	T	L	T	L	T								
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.22
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	240
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	2
Port 3B(C22S) Priority:	3

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	No
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Duplex - Half or Full	Half	Full	Full
Protocol	TERMINAL	NTCIP	RESERVED
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	10
Single Flag Enable	Yes	Yes	Yes

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	E2D0
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World

Sign On Message Line 2:

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
1	E
2	E
3	E
4	E

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

Logic #: 2 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	62	On

Logic #: 3 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	6	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	63	On

Logic #: 4 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	8	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	64	On

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	10	5	10	5	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	20	45	20	40	10	45	30	40	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	22	0	21	0	20	0	21	0	0	0	0	0	0	0	0

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															

Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	10	5	10	5	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	20	45	20	40	10	45	30	40	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
	0	22	0	21	0	20	0	21	0	0	0	0	0	0	0	0

Ped Clear																
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	10	5	10	5	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	20	45	20	40	10	45	30	40	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	22	0	21	0	20	0	21	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	10	5	10	5	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	20	45	20	40	10	45	30	40	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Delay Walk																
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	22	0	21	0	20	0	21	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	0	5.0	2.0	0
B02	5	4	22	4.0	2.0	0
C03	5	0	0	4.0	2.0	0
D04	5	4	21	4.0	2.0	0
E05	5	0	0	5.0	2.0	0
F06	5	4	20	4.0	2.0	0
G07	5	0	0	4.0	2.0	0
H08	5	4	21	4.0	2.0	0
I09	0	0	0	0.0	0.0	0
J10	0	0	0	0.0	0.0	0
K11	0	0	0	0.0	0.0	0
L12	0	0	0	0.0	0.0	0
M13	0	0	0	0.0	0.0	0
N14	0	0	0	0.0	0.0	0
O15	0	0	0	0.0	0.0	0
P16	0	0	0	0.0	0.0	0

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan: 1	Clear Flashing Yellow: No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash: W
Mimimum Recall:	No	Minimum Flash:	8	

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: On
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.

Sequence 13
Ring 1 | 1 2 | 3 4 | 9 10 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 14
Ring 1 | 2 1 | 3 4 | 10 9 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 15
Ring 1 | 1 2 | 4 3 | 9 10 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 16
Ring 1 | 2 1 | 4 3 | 10 9 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

Backup Prevent Plan 1

Rest Phase	Backup Phase(s)																Prevent Method	Call Phase
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
2	X																Inhibit	0
4			X														Inhibit	0
6					X												Inhibit	0
8							X										Inhibit	0

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Lead	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	-7
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 100 Offset Value: 38s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	14	42	14	30	11	45	14	30	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	100s	100s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
0 0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)	
Override Sys:	No	Ped Det Diag Plan:	0		
Backup Prevent Plan:	0	Det Log:	None		
Exit Option:	Off	:			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 60s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	15	45	11	49	12	48	21	39	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 1
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 86s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	24	48	10	38	12	60	18	30	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off																
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 1
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 1
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 20 - "20" - Event Type: "Free"

Timing Plan:	1	Veh Detector Plan:	0
Sequence:	1	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No
Backup Prevent Plan:	0	Exit Option:	Off

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 119 - Event Type: "Coord"

Cycle Length:	120	Offset Value:	50s	Actuated Coord:	No	Splits In:	Seconds	Offsets In:	Seconds							

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	29	39	15	37	16	52	21	31	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																

Dwell/Add Time:	0
Timing Plan:	0
Sequence:	1
Actuated Walk Rest:	No
Phase Reservice:	No
Max Select:	MAXINH 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Max Transition:

Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0

Veh Perm 2 Disp: 0

Veh Perm 2: 0

SCP Strategy Plan: 0

Veh Detector Plan: 0

SCP Detector Plan: 0

Veh Det Diag Plan: 0

Override Sys: No

Ped Det Diag Plan: 0

Backup Prevent Plan: 0

Det Log: None

Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 120 - Event Type: "Coord"

Cycle Length: 120 Offset Value: 19s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	26	40	12	42	17	49	22	32	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall																
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 1
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30

Day Plan #3 - "3"

Event	Event Plan	Start Time
1	1	10:00
2	20	17:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

022 DTC & Orchard - DTC Blvd @ Orchard - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X			
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	P	P	P	P	O	O	O	O
Phase/Overlap	1	2	3	4	5	6	7	8	2	4	6	8	1	2	3	4

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	S	N	W	E	N	S	E	W	N	N	N	N	N	N	N	N
Movement	L	T	L	T	L	T	L	T								
Associated PED																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.48
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	3
Port 3B(C22S) Priority:	2

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	No
Data Rate (BPS)	9600	9600	9600
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Duplex - Half or Full	Half	Full	Full
Protocol	NTCIP	NTCIP	NTCIP
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	10
Single Flag Enable	Yes	Yes	Yes

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	1 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	3542
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	No

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World

Sign On Message Line 2:

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
1	E
2	E
3	E
4	E

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048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

Logic #: 2 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	62	On

Logic #: 3 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	6	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	63	On

Logic #: 4 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	8	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	64	On

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	0	5	5	15	0	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	3.0	5.0	0.0	3.0	3.0	5.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	10	75	0	20	10	75	0	20	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	7	0	12	0	14	0	14	0	0	0	0	0	0	0	0

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	4.0	4.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															

Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
	0	7	0	16	0	14	0	14	0	16	0	16	0	16	0	16

Ped Clear																
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	4.0	4.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clear	0	7	0	16	0	14	0	14	0	16	0	16	0	16	0	16
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	4.0	4.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Delay Walk																
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clear	0	7	0	16	0	14	0	14	0	16	0	16	0	16	0	16
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	4.0	4.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	0	4.0	0.0	5
B02	5	0	7	4.0	0.0	5
C03	5	0	0	4.0	0.0	5
D04	5	0	12	4.0	0.0	5
E05	5	0	0	4.0	0.0	5
F06	5	0	14	4.0	0.0	5
G07	5	0	0	4.0	0.0	5
H08	5	0	14	4.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	Y	.	.	.	Y	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	6	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X		X	X	X		X								
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: Off
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.

Sequence 13
Ring 1 | 1 2 | 3 4 | 9 10 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 14
Ring 1 | 2 1 | 3 4 | 10 9 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 15
Ring 1 | 1 2 | 4 3 | 9 10 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 16
Ring 1 | 2 1 | 4 3 | 10 9 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences													
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Yellow	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	0
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 100 Offset Value: 21s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	15	70	0	15	15	70	0	15	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	100s	100s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
0

Veh Detector Plan: 0
0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)	
Override Sys:	No	Ped Det Diag Plan:	0		
Backup Prevent Plan:	0	Det Log:	None		
Exit Option:	Off	:			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 31s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	20	80	0	20	20	80	0	20	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 98s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	N	N	N
Split	20	80	0	20	20	80	0	20	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

048 Yosemite & Fair - Yosemite @ Fair - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X	X		
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	.	.	.	.	P	P	P	P
Phase/Overlap	1	2	3	4	5	6	7	8	0	0	0	0	2	4	6	8

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	N	E	N	S	N	W	N	N	N	N	N	N	N	N	N	N
Movement		LTR		LTR		LTR		LTR								
Associated PED		X		X		X		X								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.47
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	3
Port 3B(C22S) Priority:	2

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	No
Data Rate (BPS)	9600	9600	9600
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Duplex - Half or Full	Half	Full	Full
Protocol	NTCIP	NTCIP	NTCIP
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	10
Single Flag Enable	Yes	Yes	Yes

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	E534
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: City of Greenwood Village - Traffic
Sign On Message Line 2: 047 Caley & Willow

Software Modules (MM) 8-7

Application Version: 03.02.20
OS (Boot) Version: 06.17.00

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
1	E
2	E
3	E
4	E

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

Logic #: 2 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	62	On

Logic #: 3 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	6	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	63	On

Logic #: 4 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	8	IS On

Then:

Assignment	#	State

Then:

Assignment	#	State
DET SET VEH 49-64	64	On

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-LTR	N	S-LTR	N	W-LTR	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	10	0	5	0	10	0	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	0	30	0	30	0	30	0	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Ped Clear	0	12	0	20	0	14	0	18	0	0	0	0	0	0	0	0

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-LTR	N	S-LTR	N	W-LTR	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clear	0	12	0	20	0	14	0	18	0	16	0	16	0	16	0	16

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-LTR	N	S-LTR	N	W-LTR	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clear	0	12	0	20	0	14	0	18	0	16	0	16	0	16	0	16

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-LTR	N	S-LTR	N	W-LTR	N	N-LTR	N	N	N	N	N	N	N	N
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clear	0	12	0	20	0	14	0	18	0	16	0	16	0	16	0	16

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	0	0	0	0.0	0.0	5
B02	10	7	12	4.0	2.0	5
C03	0	0	0	0.0	0.0	5
D04	5	7	20	4.0	2.0	5
E05	0	0	0	0.0	0.0	5
F06	10	7	14	4.0	2.0	5
G07	0	0	0	0.0	0.0	5
H08	5	7	18	4.0	2.0	5
I09	0	0	0	0.0	0.0	5
J10	0	0	0	0.0	0.0	5
K11	0	0	0	0.0	0.0	5
L12	0	0	0	0.0	0.0	5
M13	0	0	0	0.0	0.0	5
N14	0	0	0	0.0	0.0	5
O15	0	0	0	0.0	0.0	5
P16	0	0	0	0.0	0.0	5

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Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use		X		X		X		X								
Dual Entry																
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: Off
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.

Ring 2	|	**6**	**5**	|	**8**	**7**	|	**12**	**11**	|	**16**	**15**	|	.	.	.	.	.	.	.	.
Sequence 14																			
Ring 1	|	**2**	**1**	|	**3**	**4**	|	**10**	**9**	|	**13**	**14**	|	.	.	.	.	.	.	.	.
Ring 2	|	**6**	**5**	|	**8**	**7**	|	**12**	**11**	|	**16**	**15**	|	.	.	.	.	.	.	.	.
Sequence 15																			
Ring 1	|	**1**	**2**	|	**4**	**3**	|	**9**	**10**	|	**14**	**13**	|	.	.	.	.	.	.	.	.
Ring 2	|	**6**	**5**	|	**8**	**7**	|	**12**	**11**	|	**16**	**15**	|	.	.	.	.	.	.	.	.
Sequence 16																			
Ring 1	|	**2**	**1**	|	**4**	**3**	|	**10**	**9**	|	**14**	**13**	|	.	.	.	.	.	.	.	.
Ring 2	|	**6**	**5**	|	**8**	**7**	|	**12**	**11**	|	**16**	**15**	|	.	.	.	.	.	.	.	.

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Lead	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	0
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Free"

Timing Plan:	0	Veh Detector Plan:	1
Sequence:	0	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No
Backup Prevent Plan:	0	Exit Option:	Off

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Free"

Timing Plan:	0	Veh Detector Plan:	2
Sequence:	0	Veh Det Diag Plan:	0
SCP Strategy Plan:	0	Ped Det Diag Plan:	0
SCP Detector Plan:	0	Det Log:	None
Override Sys:	No	Red Rest:	No

Backup Prevent 0 Exit Option: Off
Plan:

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

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MOVING TRAFFIC FORWARD

047 Caley & Willow - Caley @ Willow - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Configuration Cabinet Settings

Cabinet Type (MM) 1-1-1

Cabinet Type: 33x

Channel	1	2	3	4
BIU Detector	X			X
Critical BIU				

Load Switch Configuration (MM) 1-1-2

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Channel Type	V	V	V	V	V	V	V	V	P	P	P	P	O	O	O	O
Phase/Overlap	1	2	3	4	5	6	7	8	2	4	6	8	1	2	3	4

Color Check Enable (MM) 1-1-3

The Cabinet Type does not support this feature.

Monitor Programming (MM) 1-1-4

The Cabinet Type does not support this feature.

Secondary Stations/Tests (MM) 1-1-6

The Cabinet Type does not support this feature.

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	S	N	W	E	N	S	E	W	N	N	N	N	N	E	S	W
Movement	L	T	L	T	L	T	L	T								
Associated PED													X	X	X	X
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Approach	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement	R															

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Configuration Communications

Ethernet Port Configuration (MM) 1-2-1

DHCP Enable:	No
Controller IP:	172.22.1.34
Subnet Mask:	255.255.255.0
Default Gateway IP:	172.22.1.254
Server IP:	172.22.50.13

NTCIP (MM) 1-2-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2(C50S) Priority:	4
Port 3A(C21S) Priority:	2
Port 3B(C22S) Priority:	3

Port Configuration (MM) 1-2-2 to 1-2-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	n/a	Auto	Auto
Enable	No	No	Yes
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 O 1
Duplex - Half or Full	Half	Full	Full
Protocol	TERMINAL	NTCIP	RESERVED
Address	0	0	0
Group Address	0	0	0
Dropout Time	10	10	300
Single Flag Enable	Yes	Yes	Yes

V2I / Connected Veh (MM) 1-2-7

SPAT/MAP Destinations

	IP Address	Port

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Configuration Logging / Display

Event Logging (MM) 1-3

Critical RFE's (MMU/TF):	Yes	Access:	Yes
MMU Flash Faults:	Yes	Data Change:	Yes
3 Critical Errors Within 24 Hours:	Yes	Low Battery:	Yes
Non-Critical RFE's (Det/Test):	Yes	Controller Download:	Yes
Detector Errors:	Yes	Power On/Off:	Yes
SCP (TSP/EVP):	Yes	Local Flash Fault:	Yes
Preemption Events:	Yes	Online / Offline:	Yes
Coordination Errors:	Yes	Hi-Res MOE:	15 min

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NTCIP SCP MSG: No

Database (MM) 1-6

Enable Controller/Cabinet Interlock CRC:	No
CRC (16 bit):	E493
Map I/O CRC:	1022
Enable Automatic Backup to Datakey:	Yes

Display Options (MM) 1-4

Key Click Enable:	No
Switch to Graphics Mode:	No
Trans Mode Pop-Up Disable:	No
Display Mode:	Basic
LED Mode:	Auto

Sign On (MM) 8-5

Sign On Message Line 1: 34 Yosemite & Caley
Sign On Message Line 2: City of Greenwood Village, CO

Software Modules (MM) 8-7
Application Version: 03.02.20
OS (Boot) Version: 06.17.00

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Logic Processor Page 1

Logic Statement Control (MM) 1-5-1

Logic #	Statement Control
1	E
2	E
3	E
4	E
5	E
6	E
11	E
12	E
13	E
14	E

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Logic Processor Page 2

Logic Processor Statements (MM) 1-5-2

Logic #: 1 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	1	IS On
AND	--	F	DET	8	IS On
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 2 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	1	IS On
AND	--	F	DET	8	IS Off
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	1	On

Logic #: 3 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	1	IS Off
AND	--	F	DET	8	IS Off
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 4 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	1	IS Off
AND	--	F	DET	8	IS On
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 5 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	1	IS Off
AND	--	F	DET	8	IS Off
AND	--	F	DET	9	IS On
AND	--	F	DET PED	4	IS On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 6 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	DET	3	IS On
AND	--	F	DET	9	IS On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 11 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	2	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	61	On

Logic #: 12 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	4	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	62	On

Logic #: 13 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	6	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	63	On

Logic #: 14 - ""

If:

	Peer	T/F	Assignment	#	State
IF	--	F	CTR PED CALL ON PH	8	IS On

Then:

Assignment	#	State
DET SET VEH 49-64	64	On

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	5	10	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	35	55	30	30	15	55	30	30	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	23	0	21	0	18	0	0	0	0	0	0	0	0

	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 1 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trailing															

Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**E**	**S**	**W**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	5	5	15	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	35	20	25	15	35	15	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
	0	18	0	23	0	21	0	18	0	0	0	0	0	0	0	0

Ped Clear																
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 2 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**E**	**S**	**W**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	5	5	15	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	35	20	25	15	35	15	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
Delay Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	23	0	21	0	18	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 3 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Leading															
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**S-L**	**N-T**	**W-L**	**E-T**	**N-L**	**S-T**	**E-L**	**W-T**	**N**	**N**	**N**	**N**	**N**	**E**	**S**	**W**
2-1-1	Minimum Green															
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	5	5	15	5	5	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Variable Initial															
Lane	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-2	Vehicle Passage															
Vehicle Ext	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Volume Occupancy															
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-3	Max Green Data															
Max1	30	35	20	25	15	35	15	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Dynamic Max															
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-1-4	Pedestrian															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Delay Walk																
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	23	0	21	0	18	0	0	0	0	0	0	0	0
	Alternate															
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrian Carry Over															
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max Extension															
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hawk															
Ingress Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-1-5	Clearance															
Pre-Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Extension															
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hawk Flash															
Yellow	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Red Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan 4 - ""Continued

Phase Recall (MM) 2-1-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle Recall																
Ped Recall																
Max Recall																
Soft Recall																
No Rest																

Overlap (MM) 2-1-7

Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Leading																
Adv. Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv. Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trailing																
Lag Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Outputs (MM) 2-1-8

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Double Serve																
Dbl Serv Ph.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Controller Overlaps

Vehicle Overlaps (MM) 2-2
Overlap - A - Type - Overlap

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Included Phase	X							X								
Protected Phase																
Inhibit with Ped																
Inhibit With Phase																
Inhibit With Green																
Trailing When Exit																
Trailing When Next																
Trailing Phase Allow																
Green When Next																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Inhibit With Overlap																

Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	0	5.0	2.0	0
B02	15	4	18	4.0	2.0	0
C03	5	0	0	4.0	2.0	0
D04	5	4	23	4.0	2.0	0
E05	5	0	0	5.0	2.0	0
F06	15	4	21	4.0	2.0	0
G07	5	0	0	4.0	2.0	0
H08	5	4	18	4.0	2.0	0
I09	0	0	0	0.0	0.0	0

J10	0	0	0	0.0	0.0	0
K11	0	0	0	0.0	0.0	0
L12	0	0	0	0.0	0.0	0
M13	0	0	0	0.0	0.0	0
N14	0	0	0	0.0	0.0	0
O15	0	0	0	0.0	0.0	0
P16	0	0	0	0.0	0.0	0

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ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Controller Start / Flash Data (MM) 2-5

Power Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Yellow Phase																
Flashing Yellow Overlap																
Start Phase	.	G	.	.	.	G	.	.	.	.	.	.	.	.	.	.
Start Overlap	A	B	C	D												
Cycle Phases Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash Minimum Time:	0	All Red Time:	2	Sequence Plan:	1	Clear Flashing Yellow:	No

Automatic Flash

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry Phase		X				X										
Wig / Wag		X		X		X		X								
Phase Color	R	R	R	R	R	R	R	R	.	.	.	.	.	.	.	.
Exit Phase		X				X										
Olp Wig / Wag																
Exit Overlap	A	B	C	D												
Overlap Color	Y	Y	Y	Y	.	.	.	.	.	.	.	.	.	.	.	.

Flash Thru CVM:	No	Cycle Thru Phase:	No	Exit Flash:	W
Mimimum Recall:	No	Minimum Flash:	8		

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Controller Options

Controller Options (MM) 2-6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Dual Entry			X	X			X	X								
Simultaneous Gap																
Lock Phase Next	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Passage After Init																
Guaranteed Passage																
Cond Service From																
Cond Service To																
LRT/RBT Phase																
Pre Green Clear																
2 Section Signal																
Adv Warning Wig/Wag																
Hawk Phase																
Dark Signal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-Actuated I		X				X										
Non-Actuated II																
Pre-Timed																
Exclusive Ped																
Rest In Walk																
Ped Re-Service																
Flashing Walk																
Ped Clear Thru Yellow																
Ped Clear Thru Red																
Flash Green	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ped Omit																

Unit Red Revert: 2.0
Ped Clear Protect: On
MUTCD 3 Seconds Don't Walk: No
Enable Pre-Timed Mode: No
Free Input Disables Pre-Timed: No

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Configuration Controller Sequence

Controller Sequence (MM) 2-7-1

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	4	3	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Serve																

Independent Ring Group: No
Hardware Alternate Sequence Enable: No

Backup Prevent (MM) 2-7-2

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

No Serve (MM) 2-7-3

Phase	No Serve Phases																Sequences															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

Greenwood Village, CO

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Coordination Options

Options (MM) 3-1

System Source:	SYS	ECPI Coord:	Yes
Splits In:	Seconds	Offsets In:	Seconds
Transition:	Smooth	Calc Min Cycle Using Ped Time:	No
Dwell / Add Time:	0	Ped Reservice:	No
Delay Coord Wk-LZ:	No	FO Added Ini Green:	No
Offset Reference:	Yellow	Re-sync Count:	0
Local Zero Override:	No	Early Return:	Inhibit

Auto Perm Min Green (Sec) (MM) 3-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Event Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Standard Time From GMT:	-7
Day Light Savings:	USDLS
Time Reset Input Set Time:	3:30:00

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MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Time Base Event Plan
Event Plan (MM) 5-2

Event Plan - 1 - "1" - Event Type: "Coord"

Cycle Length: 100 Offset Value: 16s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	23	39	11	27	11	50	11	28	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 0
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	100s	100s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
0 0

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								

SCP Detector Plan:		Veh Det Diag Plan:		Aux Func (1-3)			
Override Sys:	No	Ped Det Diag Plan:	0				
Backup Prevent Plan:	0	Det Log:	None				
Exit Option:	Off	:					

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 2 - "2" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 61s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	33	35	20	32	15	53	20	32	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 0
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 3 - "3" - Event Type: "Coord"

Cycle Length: 120 Offset Value: 22s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	28	40	20	32	11	57	20	32	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 0
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	120s	120s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 4 - "1" - Event Type: "Coord"

Cycle Length: 60 Offset Value: 37s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	13	25	9	13	9	29	9	13	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	60s	60s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 5 - "2" - Event Type: "Coord"

Cycle Length: 60 Offset Value: 39s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	13	24	11	12	9	28	11	12	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	60s	60s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0 Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0 Veh Detector Plan: 0
SCP Detector Plan: 0 Veh Det Diag Plan: 0
Override Sys: No Ped Det Diag Plan: 0
Backup Prevent Plan: 0 Det Log: None

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Exit Option: Off :

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Event Plan - 6 - Event Type: "Coord"

Cycle Length: 60 Offset Value: 1s Actuated Coord: No Splits In: Seconds Offsets In: Seconds

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	S-L	N-T	W-L	E-T	N-L	S-T	E-L	W-T	N	N	N	N	N	E	S	W
Split	12	24	10	14	10	26	10	14	0	0	0	0	0	0	0	0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase																
Fixed Force Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptive Split																
Veh Ext 2																
Vehicle Recall		X				X										
Walk 2																
Pedestrian Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit Phase									X	X	X	X	X	X	X	X

Dwell/Add Time: 0
Timing Plan: 0
Sequence: 0
Actuated Walk Rest: No
Phase Reservice: No
Max Select: MAXINH
Max Transition: 4
Ring Group Offset Disp: 0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Split Sum	60s	60s	0s	0s

	1	2	3	4
Ring Manual Permissive Period	0	0	0	0

Veh Perm 1: 0
Veh Perm 2 Disp: 0
Veh Perm 2: 0

SCP Strategy Plan: 0
Veh Detector Plan: 0
SCP Detector Plan: 0
Veh Det Diag Plan: 0
Override Sys: No
Ped Det Diag Plan: 0
Backup Prevent Plan: 0
Det Log: None
Exit Option: Off :

Outputs	1	2	3	4	5	6	7	8
Coord Patt Spec Func Outputs								
Spec Func (1-8)								
Aux Func (1-3)								

Statement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LP 1-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

LP 26-50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 51-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Event Plan	Start Time
1	2	07:00
2	1	09:00
3	3	15:30
4	20	18:30

Day Plan #3 - "3"

Event	Event Plan	Start Time
1	20	00:01

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Greenwood Village, CO

ECONOLITE

MOVING TRAFFIC FORWARD

034 Yosemite & Caley - Yosemite @ Caley - Econolite Type - EOS

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

Appendix G: Queue Analysis Worksheets



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1138	188	252	1240	275	275	521
v/c Ratio	0.40	0.12	0.79	0.51	0.79	0.78	1.28
Control Delay (s/veh)	23.7	0.2	68.2	18.4	61.9	61.7	176.0
Queue Delay	0.0	0.0	0.0	3.1	0.0	0.0	0.0
Total Delay (s/veh)	23.7	0.2	68.2	21.5	61.9	61.7	176.0
Queue Length 50th (ft)	174	0	195	271	216	216	~457
Queue Length 95th (ft)	220	0	m251	475	#356	#355	#679
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2845	1583	398	2418	350	351	407
Starvation Cap Reductn	0	0	0	1042	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.12	0.63	0.90	0.79	0.78	1.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2007	633	622	953	153	152	261
v/c Ratio	0.90	0.40	1.12	0.35	0.82	0.81	0.70
Control Delay (s/veh)	43.2	0.8	105.0	5.8	83.7	82.3	21.9
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay (s/veh)	43.2	0.8	105.0	6.5	83.7	82.3	21.9
Queue Length 50th (ft)	431	0	~413	214	125	124	31
Queue Length 95th (ft)	484	0	#678	271	#241	#238	123
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2242	1583	554	2760	196	197	378
Starvation Cap Reductn	0	0	0	1334	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.40	1.12	0.67	0.78	0.77	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	513	113	224	338	131	129	120
v/c Ratio	0.17	0.07	0.68	0.13	0.56	0.55	0.37
Control Delay (s/veh)	16.6	0.1	46.9	4.7	47.3	46.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	0.1	46.9	4.7	47.3	46.7	9.9
Queue Length 50th (ft)	52	0	131	27	82	81	0
Queue Length 95th (ft)	86	0	199	54	134	132	46
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2997	1583	339	2572	658	662	693
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.07	0.66	0.13	0.20	0.19	0.17

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1227	202	273	1337	298	297	562
v/c Ratio	0.44	0.13	0.81	0.55	0.85	0.85	1.40
Control Delay (s/veh)	24.8	0.2	67.5	20.6	68.6	67.9	226.1
Queue Delay	0.0	0.0	0.0	9.5	0.0	0.0	0.0
Total Delay (s/veh)	24.8	0.2	67.5	30.1	68.6	67.9	226.1
Queue Length 50th (ft)	195	0	207	317	238	237	~535
Queue Length 95th (ft)	240	0	m262	604	#403	#398	#761
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2790	1583	398	2418	350	351	401
Starvation Cap Reductn	0	0	0	1056	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.13	0.69	0.98	0.85	0.85	1.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2162	680	671	1023	165	163	283
v/c Ratio	0.96	0.43	1.22	0.37	0.86	0.85	0.80
Control Delay (s/veh)	50.8	0.9	142.2	6.2	90.1	87.6	35.1
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay (s/veh)	50.8	0.9	142.2	7.0	90.1	87.6	35.1
Queue Length 50th (ft)	482	0	~503	238	135	133	67
Queue Length 95th (ft)	#572	0	#768	297	#267	#261	#206
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2242	1583	550	2753	196	197	356
Starvation Cap Reductn	0	0	0	1325	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.43	1.22	0.72	0.84	0.83	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	550	122	236	361	139	138	129
v/c Ratio	0.19	0.08	0.68	0.14	0.58	0.57	0.38
Control Delay (s/veh)	17.6	0.1	45.8	4.8	47.3	46.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.6	0.1	45.8	4.8	47.3	46.9	9.6
Queue Length 50th (ft)	57	0	137	30	87	86	0
Queue Length 95th (ft)	95	0	208	59	140	138	47
Internal Link Dist (ft)	892			478		274	
Turn Bay Length (ft)			385		325		
Base Capacity (vph)	2904	1583	354	2555	658	662	698
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.08	0.67	0.14	0.21	0.21	0.18

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	438	1255	833	360	305	309	333
v/c Ratio	0.75	0.53	0.36	0.23	0.83	0.84	0.81
Control Delay (s/veh)	42.2	3.9	14.5	0.3	64.6	65.2	48.2
Queue Delay	0.0	0.2	0.0	0.0	3.8	4.1	0.0
Total Delay (s/veh)	42.2	4.1	14.5	0.3	68.4	69.3	48.2
Queue Length 50th (ft)	99	59	163	0	237	241	184
Queue Length 95th (ft)	m124	63	234	0	#378	#384	#319
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	772	2385	2346	1583	392	394	436
Starvation Cap Reductn	0	360	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	38	39	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.62	0.36	0.23	0.86	0.87	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1170	1047	954	761	130	132	122
v/c Ratio	1.09	0.37	0.47	0.48	0.80	0.80	0.46
Control Delay (s/veh)	69.5	11.8	26.0	1.9	86.6	86.6	13.9
Queue Delay	0.0	0.4	0.0	0.0	0.3	0.3	0.0
Total Delay (s/veh)	69.5	12.2	26.0	1.9	86.9	86.9	13.9
Queue Length 50th (ft)	~301	241	200	41	106	108	0
Queue Length 95th (ft)	m#415	m290	243	48	#216	#217	55
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	1071	2814	2034	1583	168	170	272
Starvation Cap Reductn	0	1141	0	0	0	0	0
Spillback Cap Reductn	0	0	20	0	1	1	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.63	0.47	0.48	0.78	0.78	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	248	490	660	68	51	52	101
v/c Ratio	0.52	0.18	0.23	0.04	0.31	0.31	0.40
Control Delay (s/veh)	35.7	3.3	10.2	0.0	37.6	37.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.7	3.3	10.2	0.0	37.6	37.6	11.2
Queue Length 50th (ft)	61	31	60	0	26	26	0
Queue Length 95th (ft)	93	53	96	0	58	60	39
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	858	2776	2892	1583	378	381	440
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.18	0.23	0.04	0.13	0.14	0.23

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	473	1354	898	389	329	334	359
v/c Ratio	0.76	0.57	0.40	0.25	0.87	0.88	0.87
Control Delay (s/veh)	42.3	4.6	16.1	0.3	68.1	69.2	57.3
Queue Delay	0.0	0.3	0.0	0.0	28.4	30.7	0.0
Total Delay (s/veh)	42.3	4.9	16.1	0.3	96.5	99.9	57.3
Queue Length 50th (ft)	105	72	191	0	261	266	221
Queue Length 95th (ft)	m130	71	256	0	#425	#433	#387
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	772	2359	2259	1583	392	394	425
Starvation Cap Reductn	0	360	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	72	72	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.68	0.40	0.25	1.03	1.04	0.84

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1261	1126	1026	822	138	140	132
v/c Ratio	1.18	0.40	0.50	0.52	0.84	0.84	0.48
Control Delay (s/veh)	107.2	12.4	28.0	2.1	91.5	91.3	14.8
Queue Delay	0.0	0.5	0.0	0.0	5.9	6.5	0.1
Total Delay (s/veh)	107.2	12.9	28.0	2.1	97.4	97.8	14.8
Queue Length 50th (ft)	~375	272	222	46	113	115	0
Queue Length 95th (ft)	m#424	m292	264	51	#234	#235	61
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	1065	2809	2034	1583	168	170	277
Starvation Cap Reductn	0	1141	0	0	0	0	0
Spillback Cap Reductn	0	131	50	0	11	12	4
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.68	0.52	0.52	0.88	0.89	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

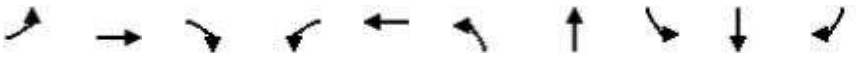
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	268	521	702	70	56	56	107
v/c Ratio	0.54	0.19	0.25	0.04	0.33	0.33	0.41
Control Delay (s/veh)	35.7	3.4	10.6	0.0	37.9	37.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.7	3.4	10.6	0.0	37.9	37.8	12.0
Queue Length 50th (ft)	65	34	66	0	28	28	0
Queue Length 95th (ft)	98	57	105	0	63	63	42
Internal Link Dist (ft)		478	558			380	
Turn Bay Length (ft)	385			300			
Base Capacity (vph)	858	2769	2854	1583	378	381	440
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.19	0.25	0.04	0.15	0.15	0.24

Intersection Summary

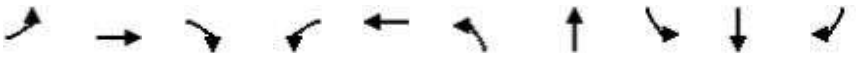


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	663	763	367	57	1276	138	118	10	23	133
v/c Ratio	0.87	0.34	0.32	0.13	0.49	0.61	0.39	0.11	0.17	0.16
Control Delay (s/veh)	37.7	10.1	2.2	4.9	12.4	65.7	40.9	56.2	53.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.7	10.1	2.2	4.9	12.4	65.7	40.9	56.2	53.0	9.3
Queue Length 50th (ft)	157	133	20	6	234	56	73	8	18	7
Queue Length 95th (ft)	#364	168	m23	m16	249	91	135	26	42	34
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	766	2222	1130	449	2591	228	311	118	294	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.34	0.32	0.13	0.49	0.61	0.38	0.08	0.08	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

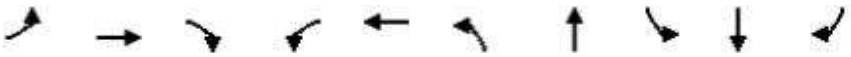
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	149	1041	177	53	1106	392	235	40	36	593
v/c Ratio	0.36	0.70	0.23	0.29	0.55	0.78	0.41	0.33	0.09	0.63
Control Delay (s/veh)	23.1	42.9	12.6	36.8	50.0	60.7	19.8	60.0	37.7	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.1	42.9	12.6	36.8	50.0	60.7	19.8	60.0	37.7	33.0
Queue Length 50th (ft)	40	448	42	32	302	150	71	31	23	189
Queue Length 95th (ft)	68	525	108	m60	354	211	154	67	51	258
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	412	1491	764	182	2009	543	571	280	434	926
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.70	0.23	0.29	0.55	0.72	0.41	0.14	0.08	0.64

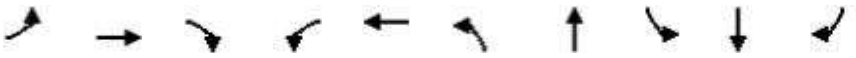
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	443	282	54	468	227	54	3	3	45
v/c Ratio	0.03	0.19	0.25	0.08	0.14	0.63	0.18	0.04	0.04	0.11
Control Delay (s/veh)	6.4	10.8	1.9	3.4	4.3	65.5	15.6	62.7	62.7	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.4	10.8	1.9	3.4	4.3	65.5	15.6	62.7	62.7	4.1
Queue Length 50th (ft)	4	83	0	5	21	101	2	3	3	0
Queue Length 95th (ft)	10	125	39	16	41	142	43	14	14	8
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	1486	2328	1138	805	3374	610	345	314	345	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.19	0.25	0.07	0.14	0.37	0.16	0.01	0.01	0.07

Intersection Summary

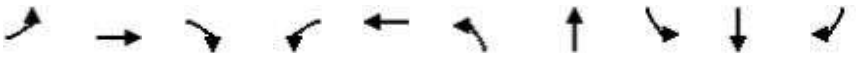


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	716	824	395	61	1380	148	127	11	25	143
v/c Ratio	1.01	0.37	0.35	0.14	0.53	0.65	0.41	0.12	0.18	0.17
Control Delay (s/veh)	64.6	10.1	2.0	5.2	13.2	68.3	41.4	56.4	52.4	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.6	10.1	2.0	5.2	13.2	68.3	41.4	56.4	52.4	14.6
Queue Length 50th (ft)	195	136	17	7	276	60	79	8	19	18
Queue Length 95th (ft)	m#458	186	m23	m16	289	#100	144	28	44	47
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	710	2206	1135	430	2591	228	315	118	294	814
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.37	0.35	0.14	0.53	0.65	0.40	0.09	0.09	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

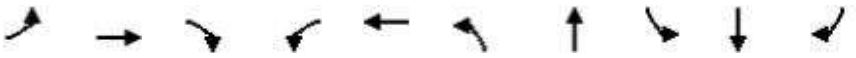


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	160	1123	188	57	1193	421	254	43	38	641
v/c Ratio	0.46	0.77	0.25	0.39	0.61	0.82	0.43	0.35	0.10	0.67
Control Delay (s/veh)	25.6	45.1	13.1	40.5	51.5	63.2	21.2	60.2	37.2	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.6	45.1	13.1	40.5	51.5	63.2	21.2	60.2	37.2	34.3
Queue Length 50th (ft)	45	488	50	35	331	165	82	33	24	213
Queue Length 95th (ft)	70	565	118	m61	383	#227	171	70	54	286
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	351	1456	748	147	1963	543	590	280	434	944
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.77	0.25	0.39	0.61	0.78	0.43	0.15	0.09	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	37	479	289	55	506	229	55	3	3	48
v/c Ratio	0.03	0.21	0.25	0.09	0.15	0.63	0.18	0.04	0.04	0.12
Control Delay (s/veh)	6.4	10.9	1.9	3.5	4.3	65.5	15.4	62.7	62.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.4	10.9	1.9	3.5	4.3	65.5	15.4	62.7	62.7	4.9
Queue Length 50th (ft)	4	92	0	5	23	102	2	3	3	0
Queue Length 95th (ft)	10	135	39	16	44	143	44	14	14	10
Internal Link Dist (ft)		558			1210		166		389	
Turn Bay Length (ft)	290			200		125		125		
Base Capacity (vph)	1446	2326	1139	782	3370	610	347	314	345	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.21	0.25	0.07	0.15	0.38	0.16	0.01	0.01	0.07

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	533	186	67	66	579	162	324	1273	212	1085	553
v/c Ratio	0.88	0.17	0.11	0.20	0.76	0.10	0.69	1.11	0.74	0.88	0.35
Control Delay (s/veh)	47.1	32.4	7.6	24.4	50.8	0.1	38.0	100.9	44.0	45.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.1	32.4	7.6	24.4	50.8	0.1	38.0	100.9	44.0	45.9	0.6
Queue Length 50th (ft)	201	71	6	33	226	0	90	~580	108	418	0
Queue Length 95th (ft)	#276	110	37	58	273	0	#198	#753	#295	#516	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	606	1268	660	328	973	1583	470	1146	286	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.15	0.10	0.20	0.60	0.10	0.69	1.11	0.74	0.88	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	527	564	139	52	468	448	152	1658	324	1224	611
v/c Ratio	1.02	0.64	0.25	0.27	0.76	0.28	0.44	1.35	0.90	0.74	0.39
Control Delay (s/veh)	95.8	56.2	12.9	31.6	55.8	0.4	28.1	203.5	61.2	30.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	95.8	56.2	12.9	31.6	55.8	0.4	28.1	203.5	61.2	30.0	0.7
Queue Length 50th (ft)	~210	204	33	28	186	0	43	~876	199	416	0
Queue Length 95th (ft)	#313	251	m63	57	240	0	75	#1069	#410	507	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	516	932	570	191	707	1583	348	1227	361	1648	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.61	0.24	0.27	0.66	0.28	0.44	1.35	0.90	0.74	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	118	268	9	41	326	72	73	234	66	249	132
v/c Ratio	0.29	0.48	0.02	0.17	0.70	0.05	0.05	0.12	0.09	0.12	0.08
Control Delay (s/veh)	36.3	46.1	0.1	39.3	64.2	0.1	9.3	13.7	9.6	14.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.3	46.1	0.1	39.3	64.2	0.1	9.3	13.7	9.6	14.2	0.1
Queue Length 50th (ft)	31	75	0	29	148	0	10	45	19	52	0
Queue Length 95th (ft)	47	96	0	57	194	0	23	78	43	85	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	689	1153	641	316	891	1583	1381	2007	795	2072	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.23	0.01	0.13	0.37	0.05	0.05	0.12	0.08	0.12	0.08

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	533	186	67	66	579	162	324	1273	212	1085	553
v/c Ratio	0.88	0.17	0.11	0.20	0.76	0.10	0.69	0.96	0.56	0.88	0.35
Control Delay (s/veh)	59.6	44.4	8.7	24.4	50.8	0.1	39.3	54.1	23.8	45.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.6	44.4	8.7	24.4	50.8	0.1	39.3	54.1	23.8	45.9	0.6
Queue Length 50th (ft)	219	77	5	33	226	0	85	492	44	418	0
Queue Length 95th (ft)	#289	116	32	58	273	0	#213	#753	74	#516	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	606	1268	660	328	973	1583	467	1330	380	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.15	0.10	0.20	0.60	0.10	0.69	0.96	0.56	0.88	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	527	564	139	52	468	448	152	1658	324	1224	611
v/c Ratio	1.02	0.64	0.25	0.27	0.76	0.28	0.43	1.13	0.70	0.74	0.39
Control Delay (s/veh)	95.8	56.2	12.9	31.6	55.8	0.4	27.2	112.3	30.8	30.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	95.8	56.2	12.9	31.6	55.8	0.4	27.2	112.3	30.8	30.0	0.7
Queue Length 50th (ft)	~210	204	33	28	186	0	39	~773	76	416	0
Queue Length 95th (ft)	#313	251	m63	57	240	0	75	#1062	124	507	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	516	932	570	191	707	1583	350	1462	598	1648	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.61	0.24	0.27	0.66	0.28	0.43	1.13	0.54	0.74	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	118	268	9	41	326	72	73	234	66	249	132
v/c Ratio	0.29	0.48	0.02	0.17	0.70	0.05	0.05	0.12	0.05	0.12	0.08
Control Delay (s/veh)	36.3	46.1	0.1	39.3	64.2	0.1	9.2	13.2	9.2	14.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.3	46.1	0.1	39.3	64.2	0.1	9.2	13.2	9.2	14.2	0.1
Queue Length 50th (ft)	31	75	0	29	148	0	10	45	9	52	0
Queue Length 95th (ft)	47	96	0	57	194	0	23	76	21	85	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	689	1153	641	316	891	1583	1396	2031	1554	2072	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.23	0.01	0.13	0.37	0.05	0.05	0.12	0.04	0.12	0.08

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	576	200	73	72	626	175	349	1376	229	1173	597
v/c Ratio	0.97	0.17	0.12	0.21	0.78	0.11	0.81	1.20	0.86	0.95	0.38
Control Delay (s/veh)	60.5	31.4	8.0	24.0	50.5	0.1	47.8	135.1	59.6	54.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.5	31.4	8.0	24.0	50.5	0.1	47.8	135.1	59.6	54.1	0.7
Queue Length 50th (ft)	220	77	7	35	244	0	96	~671	125	469	0
Queue Length 95th (ft)	#328	113	41	61	294	0	#236	#845	#342	#615	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	596	1268	660	338	973	1583	429	1146	265	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.16	0.11	0.21	0.64	0.11	0.81	1.20	0.86	0.95	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	568	609	150	57	505	484	163	1793	350	1323	659
v/c Ratio	1.13	0.67	0.27	0.31	0.79	0.31	0.56	1.46	1.01	0.81	0.42
Control Delay (s/veh)	126.0	56.5	14.2	32.5	56.7	0.5	32.7	249.3	85.4	33.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	126.0	56.5	14.2	32.5	56.7	0.5	32.7	249.3	85.4	33.0	0.8
Queue Length 50th (ft)	~248	217	36	30	198	0	48	~996	~252	471	0
Queue Length 95th (ft)	#311	271	m61	61	258	0	74	#1189	#460	571	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	504	938	572	182	707	1583	291	1227	348	1633	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.65	0.26	0.31	0.71	0.31	0.56	1.46	1.01	0.81	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	127	288	10	45	350	78	79	252	72	270	141
v/c Ratio	0.31	0.49	0.02	0.19	0.71	0.05	0.06	0.13	0.10	0.14	0.09
Control Delay (s/veh)	35.4	45.0	0.1	38.4	63.3	0.1	9.9	14.7	10.3	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.4	45.0	0.1	38.4	63.3	0.1	9.9	14.7	10.3	15.6	0.1
Queue Length 50th (ft)	34	80	0	31	158	0	12	51	22	58	0
Queue Length 95th (ft)	48	98	0	60	204	0	25	87	48	95	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	695	1153	641	318	891	1583	1333	1969	778	1966	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.25	0.02	0.14	0.39	0.05	0.06	0.13	0.09	0.14	0.09

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	576	200	73	72	626	175	349	1376	229	1173	597
v/c Ratio	0.97	0.17	0.12	0.21	0.78	0.11	0.82	1.07	0.61	0.95	0.38
Control Delay (s/veh)	73.1	43.7	9.9	24.0	50.5	0.1	49.1	82.6	26.0	54.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.1	43.7	9.9	24.0	50.5	0.1	49.1	82.6	26.0	54.1	0.7
Queue Length 50th (ft)	237	84	6	35	244	0	97	~620	49	469	0
Queue Length 95th (ft)	#335	123	40	61	294	0	#248	#845	81	#615	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	596	1268	660	338	973	1583	427	1287	380	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.16	0.11	0.21	0.64	0.11	0.82	1.07	0.60	0.95	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	568	609	150	57	505	484	163	1793	350	1323	659
v/c Ratio	1.13	0.67	0.27	0.31	0.79	0.31	0.56	1.27	0.72	0.81	0.42
Control Delay (s/veh)	126.0	56.5	14.2	32.5	56.7	0.5	32.6	164.7	32.7	33.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	126.0	56.5	14.2	32.5	56.7	0.5	32.6	164.7	32.7	33.0	0.8
Queue Length 50th (ft)	~248	217	36	30	198	0	48	~928	86	471	0
Queue Length 95th (ft)	#311	271	m61	61	258	0	#75	#1189	136	571	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	504	938	572	182	707	1583	291	1416	598	1633	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.65	0.26	0.31	0.71	0.31	0.56	1.27	0.59	0.81	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	127	288	10	45	350	78	79	252	72	270	141
v/c Ratio	0.31	0.49	0.02	0.19	0.71	0.05	0.06	0.13	0.05	0.14	0.09
Control Delay (s/veh)	35.4	45.0	0.1	38.4	63.3	0.1	9.8	14.0	9.8	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.4	45.0	0.1	38.4	63.3	0.1	9.8	14.0	9.8	15.6	0.1
Queue Length 50th (ft)	34	80	0	31	158	0	12	50	10	58	0
Queue Length 95th (ft)	48	98	0	60	204	0	25	85	24	95	0
Internal Link Dist (ft)		1210			946			1924		310	
Turn Bay Length (ft)	250			300		300	210		200		275
Base Capacity (vph)	695	1153	641	318	891	1583	1333	1995	1510	1966	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.25	0.02	0.14	0.39	0.05	0.06	0.13	0.05	0.14	0.09

Intersection Summary



Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	17	4	140	1385	18	1084
v/c Ratio	0.06	0.15	0.04	0.31	0.44	0.05	0.39
Control Delay (s/veh)	0.3	55.9	38.0	2.9	3.0	5.2	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.3	55.9	38.0	2.9	3.0	5.2	21.4
Queue Length 50th (ft)	0	13	1	0	13	0	416
Queue Length 95th (ft)	0	37	13	20	183	m7	m512
Internal Link Dist (ft)			713		576		1924
Turn Bay Length (ft)	100	75		125		50	
Base Capacity (vph)	424	217	195	547	3153	472	2804
Starvation Cap Reductn	0	0	0	0	53	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.08	0.02	0.26	0.45	0.04	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	46	6	48	1488	15	1337
v/c Ratio	0.27	0.42	0.05	0.15	0.54	0.05	0.51
Control Delay (s/veh)	2.5	63.3	35.5	2.9	14.0	1.1	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	2.5	63.3	35.5	2.9	14.3	1.1	1.8
Queue Length 50th (ft)	1	35	1	5	466	0	26
Queue Length 95th (ft)	8	73	15	m6	596	m1	45
Internal Link Dist (ft)			713		576		1924
Turn Bay Length (ft)	100	75		125		50	
Base Capacity (vph)	383	164	199	423	2767	399	2618
Starvation Cap Reductn	0	0	0	0	639	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.28	0.03	0.11	0.70	0.04	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	13	2	2	14	297	315
v/c Ratio	0.02	0.02	0.02	0.01	0.09	0.10
Control Delay (s/veh)	0.1	47.0	40.5	0.9	0.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.1	47.0	40.5	0.9	0.6	1.9
Queue Length 50th (ft)	0	1	1	1	0	0
Queue Length 95th (ft)	0	9	9	4	21	44
Internal Link Dist (ft)			713		576	1924
Turn Bay Length (ft)	100	75		125		
Base Capacity (vph)	749	248	230	938	3408	3217
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.01	0.01	0.01	0.09	0.10

Intersection Summary



Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	20	4	152	1498	21	1172
v/c Ratio	0.07	0.22	0.04	0.37	0.49	0.07	0.43
Control Delay (s/veh)	0.4	58.7	37.8	4.8	3.9	6.1	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.4	58.7	37.8	4.8	4.0	6.1	24.9
Queue Length 50th (ft)	0	15	1	16	105	6	475
Queue Length 95th (ft)	0	41	13	24	211	m8	m516
Internal Link Dist (ft)			713		576		1924
Turn Bay Length (ft)	100	75		125		50	
Base Capacity (vph)	409	173	195	497	3036	427	2711
Starvation Cap Reductn	0	0	0	0	194	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.12	0.02	0.31	0.53	0.05	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	49	6	51	1609	16	1445
v/c Ratio	0.30	0.44	0.04	0.18	0.58	0.06	0.55
Control Delay (s/veh)	3.0	63.8	35.2	2.9	12.9	1.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay (s/veh)	3.0	63.8	35.2	2.9	13.3	1.3	2.0
Queue Length 50th (ft)	1	37	1	2	508	1	28
Queue Length 95th (ft)	11	77	15	m6	m595	m1	55
Internal Link Dist (ft)			713		576		1924
Turn Bay Length (ft)	100	75		125		50	
Base Capacity (vph)	373	164	199	393	2760	367	2611
Starvation Cap Reductn	0	0	0	0	606	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.03	0.13	0.75	0.04	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	14	2	2	15	321	340
v/c Ratio	0.02	0.02	0.02	0.02	0.10	0.11
Control Delay (s/veh)	0.1	47.0	40.5	1.4	1.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.1	47.0	40.5	1.4	1.0	2.6
Queue Length 50th (ft)	0	1	1	1	0	0
Queue Length 95th (ft)	0	9	9	4	23	48
Internal Link Dist (ft)			713		576	1924
Turn Bay Length (ft)	100	75		125		
Base Capacity (vph)	725	248	230	895	3288	3135
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.01	0.01	0.02	0.10	0.11

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	7	45	177	280	162	129
v/c Ratio	0.01	0.02	0.19	0.23	0.51	0.44
Control Delay (s/veh)	6.7	5.3	6.4	4.7	25.2	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.7	5.3	6.4	4.7	25.2	19.7
Queue Length 50th (ft)	1	3	12	13	49	37
Queue Length 95th (ft)	m5	8	111	129	91	71
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	754	2362	932	1197	718	646
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.19	0.23	0.23	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	11	111	74	105	221	389
v/c Ratio	0.02	0.07	0.13	0.13	0.36	0.82
Control Delay (s/veh)	12.1	9.8	11.7	7.8	11.1	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.1	9.8	11.7	7.8	11.1	32.0
Queue Length 50th (ft)	3	12	4	0	39	149
Queue Length 95th (ft)	11	27	0	80	79	222
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	591	1603	585	799	704	562
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.13	0.13	0.31	0.69

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	1	61	36	69	27	61
v/c Ratio	0.00	0.02	0.03	0.05	0.14	0.30
Control Delay (s/veh)	3.0	2.4	2.7	2.3	18.4	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.0	2.4	2.7	2.3	18.4	23.3
Queue Length 50th (ft)	0	2	3	4	5	16
Queue Length 95th (ft)	1	7	10	15	24	45
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	1095	2909	1100	1500	659	676
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.02	0.03	0.05	0.04	0.09

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	8	48	191	301	176	138
v/c Ratio	0.01	0.02	0.21	0.25	0.53	0.46
Control Delay (s/veh)	6.9	5.5	6.9	5.0	25.4	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.9	5.5	6.9	5.0	25.4	19.8
Queue Length 50th (ft)	1	3	16	18	53	40
Queue Length 95th (ft)	m5	9	118	135	97	73
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	733	2336	920	1191	718	636
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.21	0.25	0.25	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	12	119	80	113	239	422
v/c Ratio	0.02	0.08	0.14	0.15	0.38	0.85
Control Delay (s/veh)	12.4	10.0	13.1	8.8	11.3	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.4	10.0	13.1	8.8	11.3	35.4
Queue Length 50th (ft)	3	15	5	0	42	164
Queue Length 95th (ft)	m11	29	79	84	87	248
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	564	1540	558	775	702	554
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.08	0.14	0.15	0.34	0.76

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	1	62	38	70	30	65
v/c Ratio	0.00	0.02	0.03	0.05	0.15	0.31
Control Delay (s/veh)	3.0	2.5	2.7	2.4	18.3	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.0	2.5	2.7	2.4	18.3	23.4
Queue Length 50th (ft)	0	2	3	4	6	17
Queue Length 95th (ft)	1	7	11	15	26	47
Internal Link Dist (ft)		359		347	495	574
Turn Bay Length (ft)	125					
Base Capacity (vph)	1092	2905	1096	1498	675	677
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.02	0.03	0.05	0.04	0.10

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	78	279	174	685	218	623	65	333	759	102
v/c Ratio	0.08	0.24	0.73	0.50	0.47	0.56	0.38	0.08	0.64	0.43	0.12
Control Delay (s/veh)	66.7	19.3	63.4	48.0	4.7	56.0	25.0	0.2	78.8	6.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.7	19.3	63.4	48.0	4.7	56.0	25.0	0.2	78.8	6.2	0.4
Queue Length 50th (ft)	5	6	110	119	27	84	163	0	131	118	0
Queue Length 95th (ft)	18	33	158	188	61	126	277	0	178	57	0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	400	729	400	408	1572	391	1628	841	743	1764	861
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.11	0.70	0.43	0.44	0.56	0.38	0.08	0.45	0.43	0.12

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	48	305	95	49	580	98	986	352	637	758	24
v/c Ratio	0.24	0.67	0.38	0.19	0.39	0.38	0.82	0.52	0.68	0.40	0.03
Control Delay (s/veh)	65.7	35.5	57.2	47.3	8.6	56.7	43.9	16.4	33.5	9.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.7	35.5	57.2	47.3	8.6	56.7	43.9	16.4	33.5	9.9	0.0
Queue Length 50th (ft)	19	76	37	35	62	38	372	84	126	130	0
Queue Length 95th (ft)	m33	126	64	70	100	65	#552	196	229	295	m0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	400	802	400	403	1486	256	1200	675	930	1895	914
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	77	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.38	0.24	0.12	0.41	0.38	0.82	0.52	0.68	0.40	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	8	78	41	27	140	61	187	75	154	218	9
v/c Ratio	0.06	0.40	0.25	0.14	0.19	0.33	0.08	0.07	0.56	0.09	0.01
Control Delay (s/veh)	70.0	35.1	72.0	62.2	7.1	72.7	9.7	0.5	73.8	7.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.0	35.1	72.0	62.2	7.1	72.7	9.7	0.5	73.8	7.9	0.0
Queue Length 50th (ft)	4	14	20	24	0	30	33	0	77	35	0
Queue Length 95th (ft)	13	43	42	60	32	56	56	6	114	58	0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	549	553	549	298	1008	640	2382	1103	640	2538	1168
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.14	0.07	0.09	0.14	0.10	0.08	0.07	0.24	0.09	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	15	85	302	188	740	236	673	71	360	821	110
v/c Ratio	0.09	0.24	0.76	0.51	0.50	0.57	0.43	0.09	0.64	0.48	0.13
Control Delay (s/veh)	66.0	18.8	64.9	47.3	5.9	55.8	27.7	0.2	75.9	6.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.0	18.8	64.9	47.3	5.9	55.8	27.7	0.2	75.9	6.3	0.4
Queue Length 50th (ft)	5	7	120	129	47	90	182	0	155	47	0
Queue Length 95th (ft)	19	34	#179	198	80	138	317	0	179	61	0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	400	733	400	414	1575	417	1550	811	743	1701	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.12	0.76	0.45	0.47	0.57	0.43	0.09	0.48	0.48	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	329	102	52	628	104	1066	382	689	820	26
v/c Ratio	0.25	0.69	0.40	0.19	0.42	0.40	0.89	0.57	0.76	0.44	0.03
Control Delay (s/veh)	69.0	34.0	57.2	46.3	8.7	56.8	49.3	19.7	47.6	17.9	0.0
Queue Delay	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.2	34.0	57.2	46.3	8.7	56.8	49.3	19.7	47.6	17.9	0.0
Queue Length 50th (ft)	21	73	40	37	70	40	420	108	250	183	0
Queue Length 95th (ft)	m36	m125	68	72	101	69	#686	245	312	289	0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	400	803	400	403	1490	263	1197	674	905	1855	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	114	0	0	0	140	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.41	0.26	0.13	0.47	0.40	0.89	0.57	0.76	0.44	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	9	80	45	28	152	63	202	82	166	236	10
v/c Ratio	0.07	0.40	0.27	0.15	0.20	0.34	0.09	0.07	0.58	0.09	0.01
Control Delay (s/veh)	70.1	35.3	72.1	62.0	6.8	72.8	10.0	0.8	73.9	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.1	35.3	72.1	62.0	6.8	72.8	10.0	0.8	73.9	8.1	0.0
Queue Length 50th (ft)	4	14	22	25	0	31	36	0	83	38	0
Queue Length 95th (ft)	14	44	44	62	33	57	62	9	121	63	0
Internal Link Dist (ft)		347		781			425			576	
Turn Bay Length (ft)	200		150			275		150	290		125
Base Capacity (vph)	549	554	549	298	1017	640	2365	1096	640	2531	1165
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.08	0.09	0.15	0.10	0.09	0.07	0.26	0.09	0.01

Intersection Summary

DRAINAGE CONFORMANCE LETTER

Grace Chapel

8500 East Orchard Road
Greenwood Village, Colorado

Prepared for:

Grace Chapel, Inc.

8505 S. Valley Highway

Englewood, CO 80122

Prepared by:

Kimley-Horn and Associates, Inc.

6200 South Syracuse Way, Suite 300

Greenwood Village, Colorado 80111

KH Project No.: 096328011

Prepared: May 19, 2026

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GRACE CHAPEL – 8500 E. ORCHARD

DRAINAGE CONFORMANCE LETTER



May 19, 2026

Prepared By:

Kimley»Horn

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DEVELOPER'S CERTIFICATION

"I hereby certify that the drainage facilities proposed for Grace Chapel at 8500 E. Orchard Road shall be constructed and maintained in accordance with the design presented in this Drainage Conformance Letter. I understand that the City of Greenwood Village does not and will not assume liability for the proposed drainage facilities.

Grace Chapel, Inc.

ENGINEER'S STATEMENT

"I hereby affirm that this Drainage Conformance Letter for Grace Chapel at 8500 E. Orchard Road was prepared by me or under my direct supervision in accordance with the Greenwood Village Drainage Criteria Manual."

Coy Williams, P.E.

Registered Professional Engineer

State of Colorado No. 62131

PROJECT DESCRIPTION

The purpose of this letter is to outline the drainage design of the proposed Grace Chapel renovation project ("the Project") located at 8500 East Orchard Road in Greenwood Village, Colorado (the "Site").

The Site consists of approximately 4.812-acres and is anticipated to consist of a major renovation to the existing building exterior and interior, a change of use from a retail store to a religious assembly building, and less than 1-acre of total exterior renovation work which will include parking lot island additions, full depth asphalt removal and replacement, trash enclosure additions, ADA improvements, and green space renovations. Existing utility services will be utilized for the Project, new utilities are not proposed as part of the Project.

The purpose of the Drainage Conformance Letter is to describe the existing conditions related to drainage and imperviousness, the proposed reduction in imperviousness across the Site, and conformance to the *Goldsmith Metropolitan District Master Drainage Plan for the Denver Technological Center* prepared by Gingery Associates, Inc. dated March 1981 (the "Master Report").

GENERAL LOCATION AND DESCRIPTION OF PROPERTY

PROPERTY LOCATION

The Project Site is located in Section 21, Township 5 South, Range 67 West of the Sixth Principle Meridian, City of Greenwood Village, Colorado. More specifically the Site is located at 8500 East Orchard Road.

The Site is generally bounded by the following:

North: Existing Commercial Office Building – Orchard Pointe – M-C Zoning
South: Existing Commercial Office Building – Atrium at DTC – M-C Zoning
East: Existing Commercial Office Building – M-C Zoning
West: South Wabash Way and Interstate 25 – M-C Zoning (T.C. Zoning west of I-25)

Access to the property will be obtained via one existing curb cut on South Wabash Way on the north side of the Property and two existing curb cuts on South Wabash Way on the west side of the Property. The northwest curb cut will be removed as part of the Project.

SITE DESCRIPTION OF PROPERTY

The Site consists of approximately 4.812-acres and is anticipated to consist of a major renovation to the existing building exterior and interior, a change of use from a retail store to a religious assembly building, and less than 1-acre of total exterior renovation work which will include parking lot island additions, full depth asphalt removal and replacement, trash enclosure additions, ADA improvements, and green space renovations. Existing utility services will be utilized for the Project, new utilities are not proposed as part of the Project.

The Site is currently developed and is made up of an asphalt parking lot and an existing +/-60,178 square foot building with associated minor landscaping areas that contain turf grass, trees, and shrubs. The existing imperviousness within the site boundary is approximately 87%. Based upon review of aerial imagery and discussions with the current property owner, no development has occurred on the property since at least

1993 therefore the 1998 impervious area is assumed to be 87%, matching the current impervious area. Per the FHAD, the 1989 impervious percentage was 35%.

There is no existing storm sewer located on-site. A review of the Natural Resource Conservation Service (NRCS) Web Soil Survey determined that the Site is made up of predominantly Urban land-Globeville-Southplatte complex soils, which have an NRCS Soil Type of C. Soil Type C/D has been utilized for calculations included within this letter. The NRCS study is found in **Appendix A** of the letter.

The overall site varies in elevation from a low of approximately 5717 feet to a high of approximately 5734 feet. The Property varies in slopes from 1% to 25% generally.

No geologic hazards have been identified within the proposed project site. The improvements associated with this project are limited to minor excavation and subgrade preparation for the new parking lot pavement, parking lot islands, and minor foundations for the new trash enclosure. A geotechnical report has not been provided; however, dewatering is not anticipated for this project.

Existing private irrigation facilities are present on site. Irrigation facilities serve the existing landscaping throughout the site and are understood to all be privately owned and maintained. There are no major drainageways, facilities, trails, or wetlands near the development.

The existing topography generally drains from southwest to northeast to one of two locations. The majority of the site discharges into an existing river rock area located along the eastern property line where the existing retaining wall terminates and there is no curb and gutter. This discharge enters the property to the east, 6001 South Willow Drive, where it is conveyed via overland flow to an existing concrete valley pan where it is ultimately conveyed into South Willow Drive into a 10-foot Type R inlet located at the southern curb return of the northern curb cut of 6001 South Willow Drive. The remainder of the stormwater on-site is conveyed to South Wabash Way via overland flow where discharge is conveyed via curb and gutter to the same 10-foot Type R inlet located at the curb cut for 6001 South Willow Drive. Based upon visual observation of the inlet, it appears to be in acceptable and operating condition. The Property generally does not accept offsite drainage flows onto the Project area, with the exception of a minor landscape island located at the southeast corner of the Site. This offsite drainage area follows the drainage patterns described above. Right-of-way flows are maintained within the right-of-way by existing cross pan gutters and vertical curb and gutter. The drainage system downstream of the project is within the public right-of-way and maintained by the City of Greenwood Village.

The Site is shown on Flood Insurance Rate Map (FIRM) 08005C0457K revised December 17, 2010. The site is shown to be in Zone X on this FIRM, areas determined to be outside the 0.2% annual chance floodplain. A copy of the FIRM is included in **Appendix A.**

The drainage designs presented herein will focus on the stormwater conveyance for the Project.

PREVIOUS DRAINAGE REPORTS

MAJOR BASIN DESCRIPTION

The project is located within the Goldsmith Gulch Basin and is tributary to Temple Pond. Per the *Goldsmith Metropolitan District Master Drainage Plan for the Denver Technological Center* prepared by Gingery Associates, Inc. dated March 1981 (the “Master Report”) the Temple Pond is located approximately 1.6 miles north of the site and has been sized for flood attenuation for the Denver Tech Center development.

Per the Master Report and the *Goldsmith Gulch Major Drainageway Planning Report*, the project site is located within sub-basin G-14 which is assumed to have an impervious value of 65%. Excerpts from the Master Plan have been included in **Appendix D**.

In addition to the Master Plan, a Flood Hazard Delineation Plan for Upper Goldsmith Gulch prepared by Moser and Associates Engineering dated April 2005 (the "FHAD") includes the Site in Sub-Basin 53 with an existing imperviousness of 85%. Excerpts from the FHAD have been included in **Appendix D** for reference.

As the FHAD is the latest report and completed detailed calculations regarding runoff from the Site, the FHAD has been relied upon in preparation of this Drainage Conformance Letter. As the FHAD identifies the site to have a proposed developed imperviousness of 85% the existing Property, 87%, is not in conformance with the FHAD. The proposed project will reduce the imperviousness of the Property to 74%, in conformance with the FHAD. The FHAD described downstream improvements sized for the Property at 85%; therefore, improvements are not required as part of the proposed development.

The intent of this project is to maintain the historic drainage patterns of the site and demonstrate compliance with the anticipated imperviousness of the basin as described in the Master Plan and FHAD.

PROJECT DRAINAGE

As described herein, there are two existing master drainage plans, the Master Report and the FHAD. There are no previously prepared site-specific drainage studies. Offsite runoff, with the exception of the minor landscape area on the southeast corner of the site, is not anticipated to enter the site. As there is only minor landscape offsite runoff entering the site, and the runoff will continue to follow existing drainage patterns, negative impacts are not anticipated.

DRAINAGE DESIGN

PROPOSED DRAINAGE PLAN

The Project is classified as a Tier 1 redevelopment as classified by 1.2.1 of the *City of Greenwood Village Storm Drainage Criteria Manual* (the "Manual") dated October 2022 and is located outside of the Cherry Creek Reservoir Basin per Figure 1-1 of the Manual. The Project meets all criteria of Tier 1 redevelopment including:

- Land disturbance is less than one acre
    - Land disturbance for the project, as shown in the Site Plan, is 42,136 square feet (0.97 Acres)
- The Project is developed independently of a larger common plan of development or sale
    - The Project will be a stand alone redevelopment Project, there are no other scopes of work proposed as part of the SUP/SDP Project
- The Project results in less than 500 square feet of increased imperviousness for redevelopment
    - The Project results in a net reduction of approximately 36,100 square feet of impervious area across the Property within the 0.97 acre disturbed area

As there are no existing wetlands located on the Property or are lost as part of the Project, and the entire Property is located outside of the 0.2% chance annual floodplain, no wetlands and/or floodplain remediation is proposed as part of the Project.

Per Table 1-1 of the Manual, for Tier 1 Redevelopment, flood attenuation is not required. Flood attenuation is provided for the Property by the previously constructed Temple Pond per the Master Report in compliance with Section 15.3.2 of the Manual. As a result, the existing pond will not be adversely affected by the proposed development of this Project. As the proposed redevelopment reduces the impervious area, and is classified as Tier 1 redevelopment, additional flood attenuation is not proposed as part of the Project.

Per Table 1-1 and per the City of Greenwood Village MS4 Post-Construction Stormwater Quality Requirements, Tier 1 redevelopment is not required as part of the Project. No post-construction stormwater quality measures are proposed as part of the Project.

As the Project is classified as a Tier 1 redevelopment, the four step process as identified in Section 15.3.1 and the Base Design Standards in the MS4 permit identified in Section 15.3.3 of the Manual are not applicable to the Project. In general, stormwater quality will be increased due to the addition of pervious area proposed as part of the Project.

HYDROLOGICAL CRITERIA

Hydrologic design criteria utilized to analyze runoff conditions consists of the Rational Method as approved by the Manual. An overview of the Rational Method is outlined below with a brief synopsis of the relevant criteria which was utilized in design calculations.

Rainfall intensity is per Table 5-1 of the Manual and outlined in **Appendix B**.

Rational Method Discharge Equation:

$$Q = CIA$$

Q = Discharge in Cubic Feet per Second (CFS)
C = Runoff Coefficient (Calculated on an individual basin weighted basis utilizing Runoff Coefficients in accordance with Table RO-5 of the Manual)
I = Rainfall Intensity in Inches per Hour (In/Hr) (Calculated based on individual basin drainage conveyance methods, Time of Concentration and Rainfall Intensity Values).
A = Basin Area in Acres (Ac) (Determined based upon proposed site grading and drainage characteristics)

Runoff conditions and the analysis utilized in the preparation of this Letter consist of design intervals as outlined by the following:

Developed Runoff Conditions
- Minor Storm: 5-year Storm Event
- Major Storm: 100-year Storm Event

Detailed runoff calculations have been provided in the **Appendix B**.

Off-site Regional Detention is provided for the Site's developed runoff through Temple Pond located approximately 1.6 miles north of the Site. Water Quality is not required for Tier 1 redevelopment projects.

CONCLUSION

COMPLIANCE WITH STANDARDS

Proposed drainage designs associated with the Project have been designed in substantial accordance with applicable Greenwood Village Drainage Criteria Manual, the Urban Drainage and Flood Control District Criteria Manual, the Master Report, and FHAD and are not anticipated to adversely affect the existing drainage facilities to which they discharge. The Project is not located within a FEMA Floodplain or within the Cherry Creek Basin.

DRAINAGE CONCEPT

The stormwater runoff design generally follows the existing drainage patterns, while reducing the imperviousness and therefore the runoff from the Site, and the proposed site imperviousness is less than the imperviousness assumed in the Master Report and FHAD.

The development will not increase the impervious area assumed in the Master Plan and FHAD and will maintain existing flow patterns. Drainage facilities associated with the proposed site improvements will consist of standard sheet and conveyed flow patterns through the use of on-site pavement area, concrete curbing, and landscape area. The Project is designed to adequately convey the stormwater to the existing storage facility.

REFERENCES

Flood Hazard Area Delineation – Upper Goldsmith Gulch, Moser & Associates Engineering; April 2005.

Flood Insurance Rate Map – Map Number 08005C0457K, Federal Emergency Management Agency; December 17, 2010.

Master Drainage Plan for Denver Technological Center, Gingery Associates Inc.; March 1981

NRCS Web Soil Survey - Website: http://websoilsurvey.nrcs.usda.gov.

Drainage Criteria Manual, Greenwood Village; latest revision.

Urban Storm Drainage Criteria Manual, Volume 1-3, Urban Drainage and Flood Control District, Denver, CO.; latest editions.

APPENDIX

APPENDIX A – MAPS



VICINITY MAP
1" = 500'

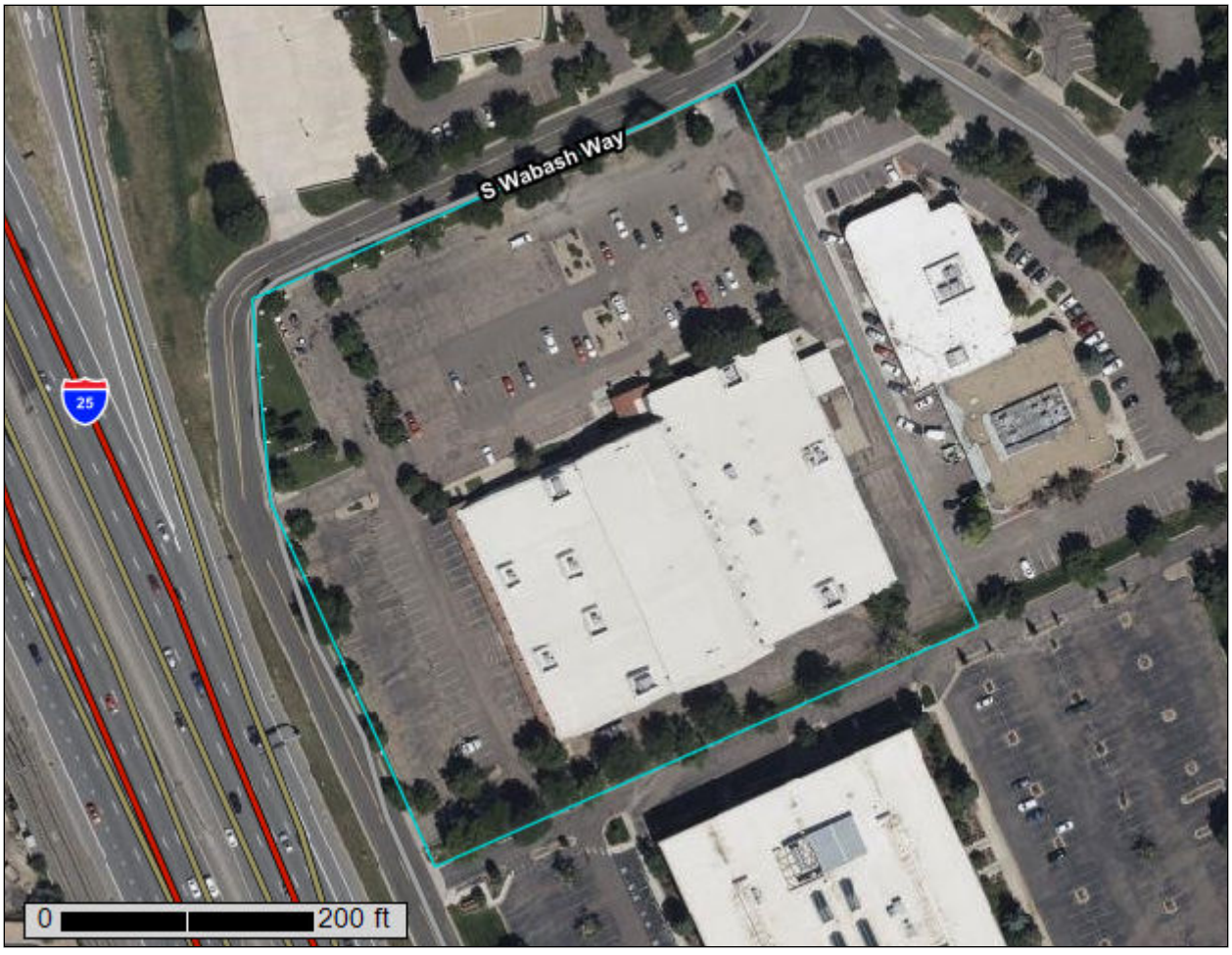
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Arapahoe County, Colorado



March 31, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

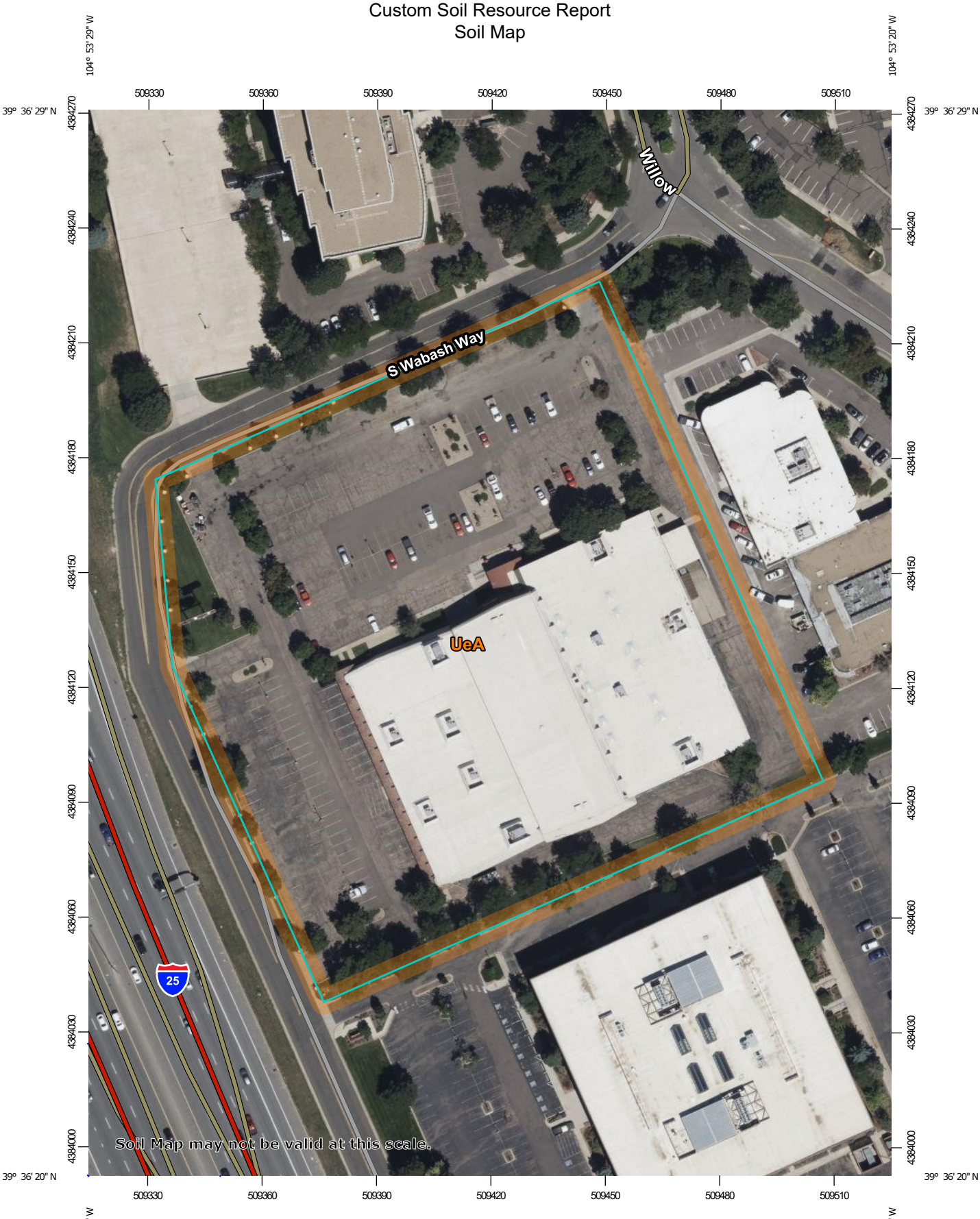
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,360 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Arapahoe County, Colorado
Survey Area Data: Version 21, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UeA	Urban land-Globeville-Southplatte complex, 0 to 3 percent slopes	5.0	100.0%
Totals for Area of Interest		**5.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Arapahoe County, Colorado

UeA—Urban land-Globeville-Southplatte complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 31l2z
Landscape: Alluvial plain remnants, alluvial plains
Elevation: 5,180 to 5,640 feet
Mean annual precipitation: 14 to 17 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 135 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land, eolian substratum: 60 percent
Globeville and similar soils: 20 percent
Southplatte and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land, Eolian Substratum

Setting

Landscape: Alluvial plain remnants, alluvial plains
Landform: Mixed eolian-mantled, nearly level plains
Anthroscape: Anthroscapes
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): 8
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Globeville

Setting

Landscape: Alluvial plain remnants, alluvial plains
Landform: Stream terraces
Landform position (three-dimensional): Tread
Anthroscape: Commercial anthroscapes
Anthropogenic Landform: Thick or very thick fills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Thick fine-loamy human-transported material over alluvium derived from mixed lithologies

Typical profile

^A - 0 to 4 inches: sandy clay loam
^Cu - 4 to 11 inches: sandy clay loam
^C - 11 to 32 inches: sandy clay loam
2C - 32 to 79 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Description of Southplatte

Setting

Landscape: Alluvial plain remnants, alluvial plains
Landform: Mixed eolian-mantled, nearly level plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Anthroscape: Residential anthroscapes
Anthropogenic Landform: Thin fills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Thin human-transported material over fine-loamy eolian deposits derived from glaciofluvial sources

Typical profile

^A1 - 0 to 3 inches: sandy loam
^A2 - 3 to 9 inches: sandy clay loam
2Bw - 9 to 22 inches: sandy clay loam
2BC - 22 to 31 inches: sandy loam
2C1 - 31 to 40 inches: sandy clay loam
2C2 - 40 to 79 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R067BY042CO - Clayey Plains
Hydric soil rating: No

Minor Components

Racas, moderately deep

Percent of map unit: 3 percent
Landscape: Alluvial plain remnants, alluvial plains
Landform: Loess-mantled, nearly level plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Anthroscape: Commercial anthroscapes
Anthropogenic Landform: Thick or very thick fills
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY056CO - Sandstone Breaks
Hydric soil rating: No

Greenvalley, somewhat poorly drained

Percent of map unit: 2 percent
Landscape: Alluvial plain remnants, alluvial plains
Landform: Sand sheets on pleistocene strath terraces
Landform position (three-dimensional): Tread
Anthroscape: Urban commercial anthroscapes
Anthropogenic Landform: Thick or very thick fills
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY029CO - Sandy Meadow
Hydric soil rating: No

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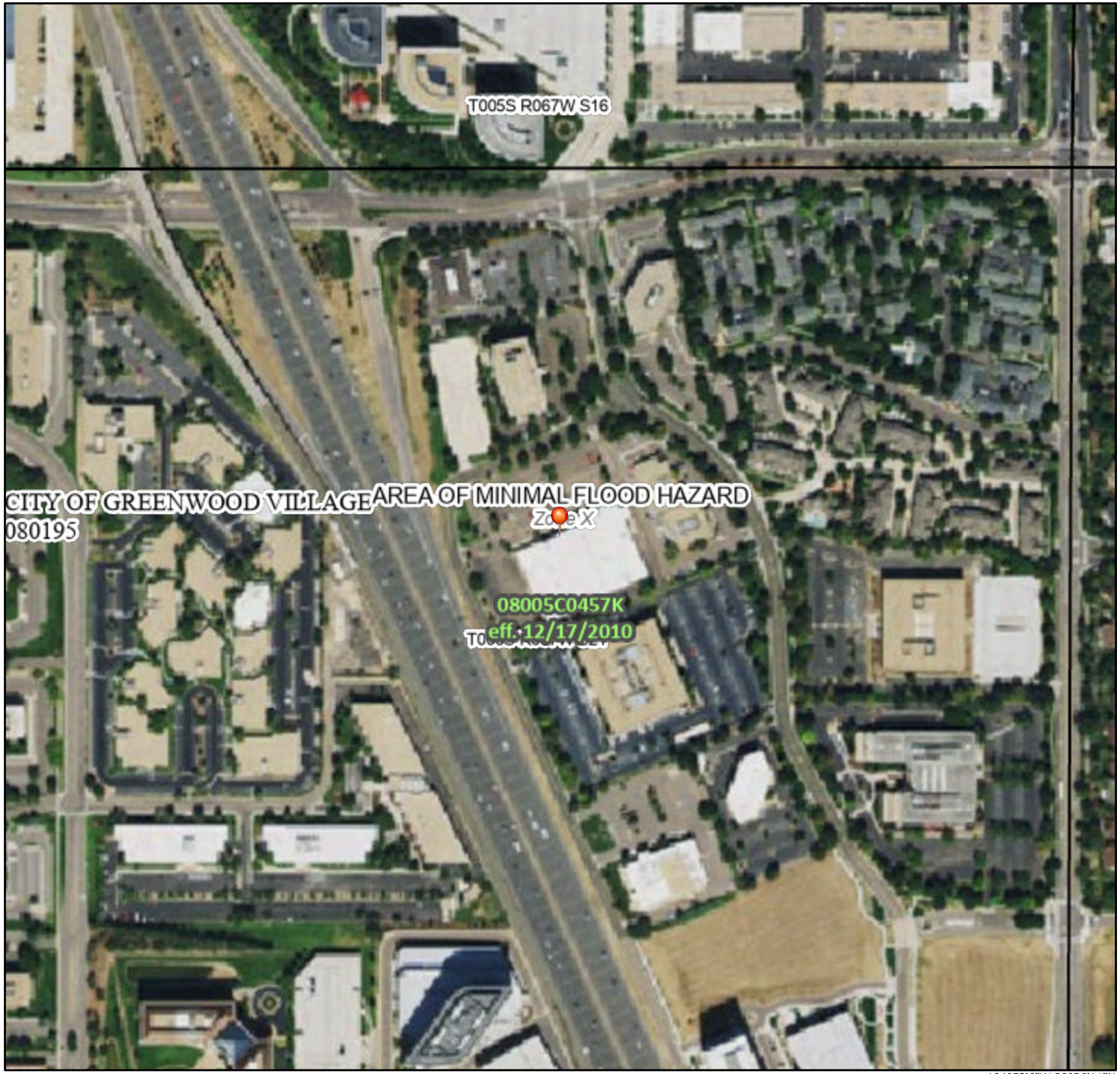
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National Flood Hazard Layer FIRMette

FEMA

104°53'44"W 39°36'39"N



104°53'6"W 39°36'11"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/2/2026 at 5:51 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B – HYDROLOGIC CALCULATIONS

Calculation of Peak Runoff using Rational Method

Designer: Coy Williams, PE
Company: Kimley-Horn
Date: 4/3/2026
Project: Grace Chapel - 8500 E Orchard
Location: Greenwood Village, CO

MHFD-Rational, Version 3.00 (August 2025)

Cells of this color are for required user-input
Cells of this color are for optional override values

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S^{0.33}}$$

$$t_t = \frac{L_t}{60K\sqrt{S_t}} = \frac{L_t}{60V_t}$$

Computed $t_c = t_i + t_t$

Regional $t_c = (26 - 17i) + \frac{L_t}{60(14i + 9).\sqrt{S_t}}$

$t_{c\,minimum}$ = 5 (urban)
$t_{c\,minimum}$ = 10 (non-urban)

Selected $t_c = \max(t_{minimum}, \min(\text{Computed } t_c, \text{Regional } t_c))$

Provide input for area, soil type, and imperviousness on the Runoff Coeffs worksheet.

Subcatchment Name	Area (ac)	NRCS Hydrologic Soil Group(s)	Imperviousness	Runoff Coefficient, C							Overland (Initial) Flow Time					Channelized (Travel) Flow Time							Time of Concentration				Rainfall Intensity, I (in/hr)								Peak Flow, Q (cfs)							
				WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	Overland Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S_t (ft/ft)	Overland Flow Time t_t (min)	Channelized Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope S_t (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V_t (ft/sec)	Channelized Flow Time t_t (min)	Computed t_c (min)	Regional t_c (min)	Selected t_c (min)	(Optional) Override t_c (min)	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
A - EXISTING	4.81	C/D	87.3%	0.72	0.75	0.77	0.81	0.82	0.84	0.86	400.00			0.013	11.77	367.00			0.029	20	3.38	1.81	13.58	12.87	12.87		1.46	2.08	2.73	3.29	4.16	4.89	5.67	7.67	5.06	7.20	9.79	12.23	16.18	19.40	22.95	31.84

Select MHFD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOAA website (click this link)

	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
1-hour rainfall depth, P1 (in) =	0.60	0.85	1.12	1.35	1.71	2.01	2.33	3.15

Rainfall Intensity Equation Coefficients =	a	b	c
	28.50	10.00	0.786

$$I(in/hr) = \frac{a * P_1}{(b + t_c)^c}$$

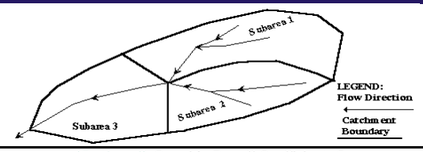
$Q(cfs)$ = CIA

Determination of Runoff Coefficients for Rational Method

Designer: Coy Williams, PE
Company: Kimley-Horn
Date: 4/3/2026
Project: Grace Chapel - 8500 E Orchard
Location: Greenwood Village, CO

MHFD-Rational, Version 3.00 (August 2025)

Cells of this color are for required user-input
Cells of this color are for optional override values



Provide subcatchment names on the Rational Calcs worksheet to open up the table below.

Subcatchment Name	# of Subareas	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness				Runoff Coefficient, C							(Optional) Override Runoff Coefficient, C							Comments
				Imperviousness Source	Imperviousness Category	Calculated Imperviousness	(Optional) Override Imperviousness	WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	
A - EXISTING	3	4.81	C/D			87.3%	87.3%	0.72	0.75	0.77	0.81	0.82	0.84	0.86	0.72	0.75	0.77	0.81	0.82	0.84	0.86	
		1.38	C/D	Surface Type	Roofs	95%		0.79	0.81	0.83	0.85	0.86	0.87	0.89								
		2.94	C/D	Surface Type	Concrete Driveways and Walks	95%		0.79	0.81	0.83	0.85	0.86	0.87	0.89								
		0.50	C/D	Surface Type	Disturbed Soil	20%		0.14	0.20	0.28	0.43	0.49	0.57	0.65								

Calculation of Peak Runoff using Rational Method

Designer: Coy Williams, PE
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$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S^{0.33}}$$

$$t_t = \frac{L_t}{60K\sqrt{S_t}} = \frac{L_t}{60V_t}$$

Computed $t_c = t_i + t_t$

Regional $t_c = (26 - 17i) + \frac{L_t}{60(14i + 9).\sqrt{S_t}}$

$t_{c\,minimum}$ = 5 (urban)
$t_{c\,minimum}$ = 10 (non-urban)

Selected $t_c = \max(t_{minimum}, \min(\text{Computed } t_c, \text{Regional } t_c))$

Provide input for area, soil type, and imperviousness on the Runoff Coeffs worksheet.

Subcatchment Name	Area (ac)	NRCS Hydrologic Soil Group(s)	Imperviousness	Runoff Coefficient, C							Overland (Initial) Flow Time					Channelized (Travel) Flow Time							Time of Concentration				Rainfall Intensity, I (in/hr)								Peak Flow, Q (cfs)							
				WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	Overland Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S_t (ft/ft)	Overland Flow Time t_i (min)	Channelized Flow Length L_t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope S_t (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V_t (ft/sec)	Channelized Flow Time t_t (min)	Computed t_c (min)	Regional t_c (min)	Selected t_c (min)	(Optional) Override t_c (min)	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
A - PROPOSED	4.81	C/D	74.3%	0.61	0.64	0.68	0.73	0.76	0.79	0.82	400.00			0.013	15.30	406.00			0.029	20	3.38	2.00	17.30	15.44	15.44		1.34	1.91	2.51	3.02	3.83	4.50	5.22	7.05	3.93	5.58	7.72	9.86	13.54	16.45	19.77	27.89

Select MHFD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOAA website (click this link)

	WQE	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
1-hour rainfall depth, P1 (in) =	0.60	0.85	1.12	1.35	1.71	2.01	2.33	3.15

Rainfall Intensity Equation Coefficients =	a	b	c
	28.50	10.00	0.786

$$I(in/hr) = \frac{a * P_1}{(b + t_c)^c}$$

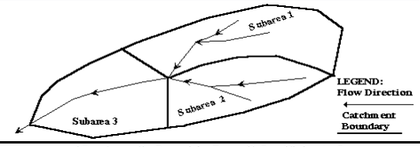
$Q(cfs)$ = CIA

Determination of Runoff Coefficients for Rational Method

Designer: Coy Williams, PE
Company: Kimley-Horn
Date: 4/3/2026
Project: Grace Chapel - 8500 E Orchard
Location: Greenwood Village, CO

MHFD-Rational, Version 3.00 (August 2025)

Cells of this color are for required user-input
Cells of this color are for optional override values



Provide subcatchment names on the Rational Calcs worksheet to open up the table below.

Subcatchment Name	# of Subareas	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness				Runoff Coefficient, C							(Optional) Override Runoff Coefficient, C							Comments
				Imperviousness Source	Imperviousness Category	Calculated Imperviousness	(Optional) Override Imperviousness	WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	WQE & 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	
A - PROPOSED	3	4.81	C/D			74.3%	74.3%	0.61	0.64	0.68	0.73	0.76	0.79	0.82	0.61	0.64	0.68	0.73	0.76	0.79	0.82	
		1.38	C/D	Surface Type	Roofs	95%		0.79	0.81	0.83	0.85	0.86	0.87	0.89								
		2.10	C/D	Surface Type	Concrete Driveways and Walks	95%		0.79	0.81	0.83	0.85	0.86	0.87	0.89								
		1.33	C/D	Surface Type	Disturbed Soil	20%		0.14	0.20	0.28	0.43	0.49	0.57	0.65								

APPENDIX C – DRAINGE PLANS



8500 E ORCHARD RD

GREENWOOD VILLAGE, COLORADO
July 1, 2025

SITE IMPERVIOUS & 100-YR RUNOFF COMPARISON			
CONDITION	AREA (AC)	IMP (%)	Q100 (CFS)
EXISTING	4.81	87%	22.95

Kimley»Horn
6200 SOUTH SYRACUSE WAY
SUITE 300
GREENWOOD VILLAGE, COLORADO, 80111
303.228.2300

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE

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LEGEND

- LANDSCAPE
- PAVEMENT
- CONCRETE
- BUILDING
- PROPERTY LINE
- PROPOSED GRADING LIMITS PROJECT CONSTRUCTION LIMITS FOR MS4 PERMIT
- BASIN BOUNDARY

PROPOSED GRADING LIMITS

THE PROJECT LIMITS OF CONSTRUCTION AS DEFINED BY THE GREENWOOD VILLAGE MS4 PERMIT INCLUDE ALL AREAS THAT WILL BE STRIPPED TO SUBGRADE INCLUDING FULL DEPTH ASPHALT/CONCRETE REMOVAL AND REPLACEMENT, CURB AND GUTTER INSTALLATION, SIDEWALK INSTALLATION, ADA GRADING LIMITS, ETC.

PROJECT CONSTRUCTION LIMITS:
- 42,136 SF
- 0.97 ACRES

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

SITE IMPERVIOUS & 100-YR RUNOFF COMPARISON			
CONDITION	AREA (AC)	IMP (%)	Q100 (CFS)
PROPOSED	4.81	74%	19.77

8500 E ORCHARD RD

GREENWOOD VILLAGE, COLORADO
May 17, 2026

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Kimley»Horn
6200 SOUTH SYRACUSE WAY
SUITE 300
GREENWOOD VILLAGE, COLORADO, 80111
303.228.2300

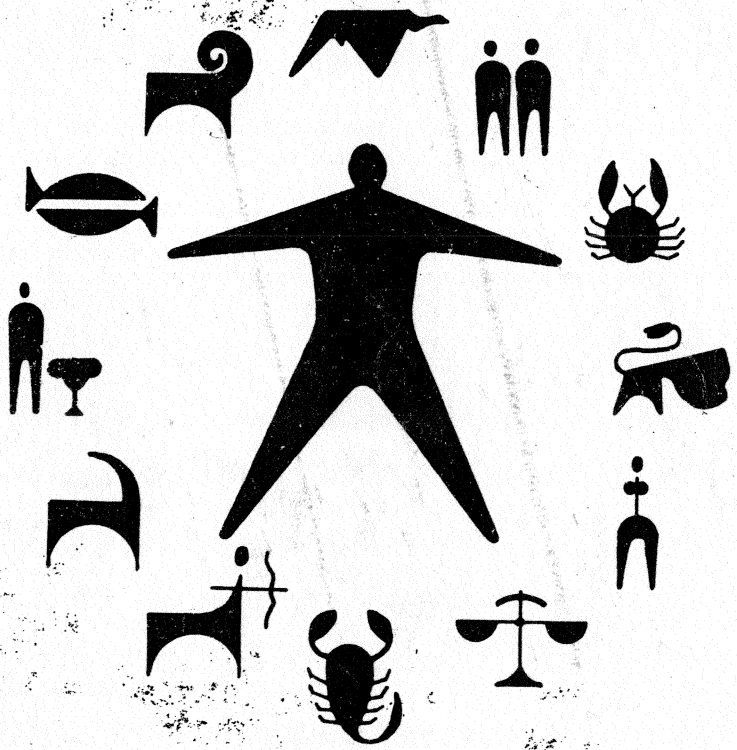
NOTE: THIS PLAN IS CONCEPTUAL IN NATURE

APPENDIX D – REFERENCED INFORMATION

Return to Goldsmith Metro District

Goldsmith Metropolitan District

MASTER DRAINAGE PLAN



for the

Denver Technological Center

Gingery Associates, Inc.

March, 1981

GINGERY ASSOCIATES, INC.
CONSULTING ENGINEERS
2840 SO. VALLEJO ST.
ENGLEWOOD, COLO.
80110 (303) 761-4860

PRINCIPALS
DERYL W. GINGERY
FLOYD E. MONTGOMERY
PATRICK F. MULHERN
WILLIAM A. STERLING
DOUGLAS C. STOVALL
W. KEVIN WILLIAMS

March 23, 1981

Mr. Ray S. Wells
Goldsmith Metropolitan District
5555 DTC Parkway
Building 5, Suite 2007
Englewood, CO 80111

Dear Ray:

Gingery Associates, Inc. is pleased to submit this report, entitled, "Master Drainage Plan for the Denver Technological Center." This study was completed in accordance with our contract with the Goldsmith Metropolitan District.

This report presents information for providing a Master Drainage Plan for the Denver Technological Center, and includes a preliminary design of drainage improvement facilities to eliminate or alleviate flood hazards throughout this area. This is a Master Drainage Plan to be used by the Goldsmith Metropolitan District to guide future development and the design of drainage facilities within the Denver Technological Center. This report presents preliminary engineering that should not be construed as a final design for construction of facilities. The cost information presented in this report is based upon construction quantities estimated from a preliminary design of facilities.

We wish to acknowledge the assistance and consideration demonstrated by all persons and organizations who contributed to the preparation of this report.

Should any questions arise regarding the content of this report, we would be pleased to discuss them at your convenience.

Very truly yours,

GINGERY ASSOCIATES, INC.

Michael R. Moncrief
Design Engineer

Douglas J. Williams
Project Engineer

William A. Sterling, P.E.
Principal/Manager

MRM;DJW:WAS/ta

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EXECUTIVE SUMMARY

1. A "Master Drainage Plan" for the Denver Technological Center was completed which examined three major storm water detention alternatives:
   a. The proposed Temple Pond Detention Facility
   b. Underground Detention
   c. On-site Detention Ponds
2. A detailed hydrologic analysis of the Denver Technological Center and the remaining Goldsmith Gulch Basins south of Interstate 225 was completed.
3. Conceptual plans were developed for the Temple Pond Alternative and the Underground Detention Alternative. These plans included preliminary sizing of major internal drainage facilities.
4. Preliminary Cost Estimates were prepared for each of the alternatives. These estimates are based on preliminary engineering calculations and should be used for planning purposes only. Cost estimates for the three alternatives are as follows:

a. Temple Pond	$1,010,000
b. Underground Detention	$4,903,000
c. On-site Detention Ponds	$4,634,000

   (See text for individual cost summaries)
5. The utilization of Temple Pond was determined to be the least cost alternative. Before this plan can be implemented, review and approval by the Urban Drainage and Flood Control District, Denver Wastewater, and the State Engineer's Office will be required.
6. Recommendations for the implementation of the Master Drainage Plan are presented in this text. As development proceeds, an on-going review of drainage facilities for individual sites would be required to ensure compatibility with the Master Plan.

7. A major internal drainage system is required regardless of the detention alternative chosen. The cost for this system is $617,000, exclusive of right-of-way.

INTRODUCTION

Authorization

Preparation of a Master Plan of Drainage Improvements was authorized by the Goldsmith Metropolitan District on January 6, 1981. This report presents a recommended plan for drainage improvements based on an evaluation of three major detention alternatives. These alternatives are designed to minimize flood damages and nuisance drainage within the Denver Technological Center, (DTC).

Purpose of Scope

The purpose of this report is to present a master plan of drainage for the Denver Technological Center. To accomplish this objective, the scope of work includes reviewing existing data to determine its acceptability for future use, supplementing this data with detailed hydrologic and hydraulic analyses of various design alternatives, preparing conceptual designs for these alternatives complete with cost estimates, and making recommendations for implementing a comprehensive drainage plan.

This information is presented for the consideration and use of the Goldsmith Metropolitan District as a guideline for future drainage planning within the DTC.

Existing information was made available through the Goldsmith Metropolitan District and the Urban Drainage and Flood Control District, and Associated Engineers, Inc. This information was updated and refined to complete a detailed hydrologic analysis of the study area. Peak flows obtained from this analysis were used to develop a conceptual design alternative for the Temple Pond Detention Facility, (originally proposed in "Master Drainageway Planning, Goldsmith Gulch")[1]. This conceptual plan includes typical embankment sec-

tions, reservoir storage capacities, reservoir outlet works, and preliminary sizing of internal drainage facilities for the DTC. A preliminary cost estimate for construction of the detention facility was completed based on the conceptual plan.

The use of underground detention was examined as a possible design alternative. This plan required a more sophisticated hydrologic analysis of the DTC drainage basins. Synthetic outflow hydrographs for the detention facilities were used to determine the required storage volumes for this type of system. These hydrographs were then routed through the DTC to obtain flows at various design points for preliminary sizing of drainage channels and culverts. A preliminary cost estimate for construction of this plan was prepared, based on the conceptual plan.

A third alternative, which called for the utilization of a series of detention ponds located throughout the DTC, was presented in an earlier report, "Preliminary Comprehensive Drainage Report on the Denver Technological Center"[2]. While this plan was initially considered to be unacceptable due to the land area required for detention, it was included in this report for comparison purposes.

Finally, an evaluation of the three design alternatives was completed. This report contains an overview of the above work together with recommendations for implementing a comprehensive drainage plan for the DTC.

Mapping

Mapping for the Denver Technological Center was furnished by the Carl A. Worthington Partnership. The base topography was prepared using photogrammetric methods from photography dated May 11, 1979, by Sharf and Associates, Inc.

Property lines and easements were prepared by J. W. Williams and Associates, Inc., in June 1979. Topographic modifications for planned and committed improvements were prepared by the Carl A. Worthington Partnership. Mapping for the remainder of the Goldsmith Gulch Basin was taken from Reference 1 and U.S.G.S. quadrangle mapping.

It should be noted that several descrepancies in elevations on the Denver Technological Center mapping have been discovered during the course of previous drainage designs. While the topography is within the range of accuracy required for completion of final hydrology, it is not adequate for final design of various major drainage facilities.

Previous Studies

This report utilizes the results of the following previous studies:

1. Goldsmith Gulch Major Drainageway Planning, prepared for the Urban Drainage and Flood Control District, Gingery Associates, Inc., Consulting Engineer, November, 1977.

2. Preliminary Comprehensive Drainage Report on the Denver Technological Center, prepared for the Goldsmith Metropolitan District, Associated Engineers, Inc., November 3, 1980.

3. Master Plan Alternatives for the Denver Technological Center, prepared for the Goldsmith Metropolitan District, Associated Engineers, Inc., November 19, 1980.

Studies 2 and 3 presented preliminary engineering adequate for master planning purposes. While this information is acceptable for determining the feasibility of certain design alternatives, a final hydrologic analysis is required to obtain discharge information for preliminary design of drainage facilities.

One of the major functions of this study is to provide a hydrologic analysis which required a re-evaluation of the sub-basins within the DTC, as well as contributing areas in the upper portion of the Goldsmith Gulch basin. Additionally, the conveyance of the flows across the DTC was

addressed to the point where conceptual designs including preliminary sizing of internal drainage facilities for each alternative could be completed.

STUDY AREA

Drainage Basin Description

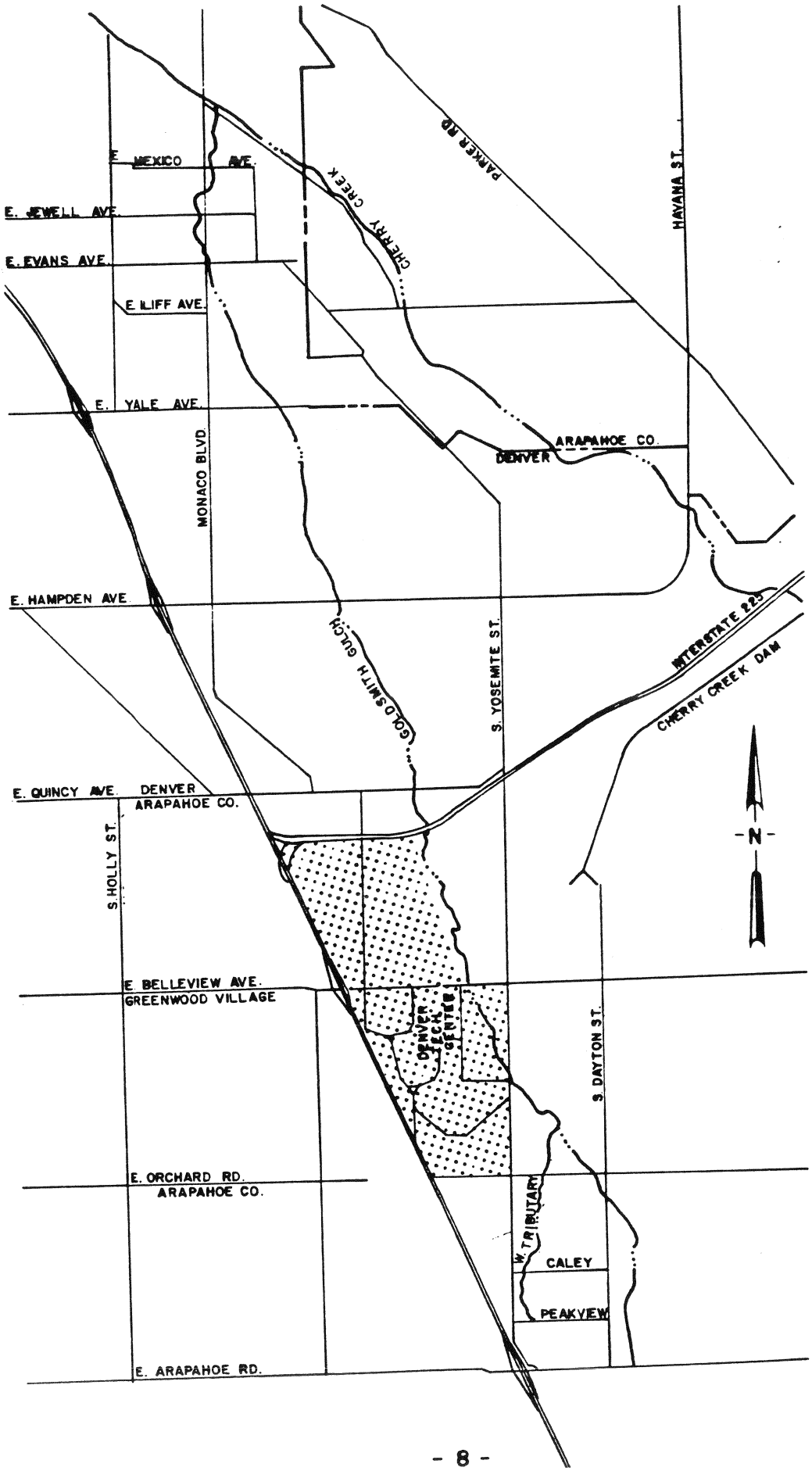
The Denver Technological Center encompasses a drainage area of approximately 830 acres or 1.30 square miles through portions of the City and County of Denver, the City of Greenwood Village, and unincorporated Arapahoe County, (See Figure 1). In general, the DTC is bordered on the west by the Valley Highway (Interstate-25), on the north by Interstate-225, on the east by South Tamarac Parkway (in Denver), and Yosemite Street (in Greenwood Village), and on the south near Orchard Road. Currently, development in the DTC is expected to proceed at a fairly rapid rate, with emphasis on commercial offices and high density residential land uses.

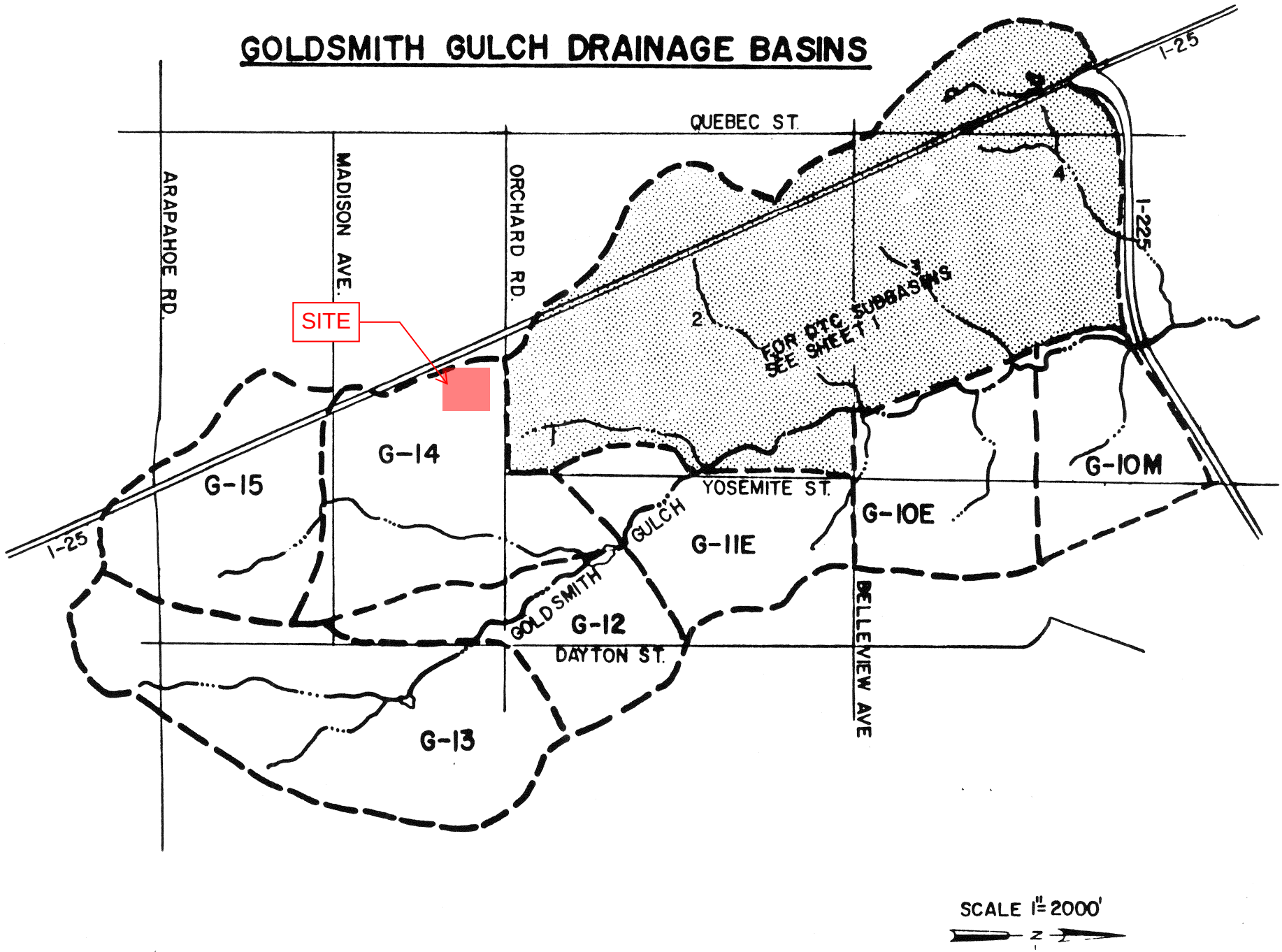
Since runoff from the DTC has a significant impact on flows in Goldsmith Gulch (and consequently on the design of the Temple Pond Detention Facility) the portion of the Goldsmith Gulch Drainage Basin upstream of the DTC must be included in the study area. Figure 2 shows the layout of the major upstream sub-basins within the study area in relation to the DTC.

As shown on Sheet 1, Goldsmith Gulch and four of its minor tributaries pass through the DTC. The main channel enters the DTC property at Yosemite Street between Orchard Road and Belleview Avenue. The main channel flows northwest and passes Belleview Avenue through a 3.5' x 53' bridge and north along the proposed Tamarac Parkway before it exits the vicinity of the DTC through a double 6' x 12' box culvert under I-225.

The southern most tributary, (Tributary #1) from the DTC originates just north of the intersection of Tamarac Parkway and D.T.C. Parkway, (See Sheet 1). This tributary flows northerly for most of its length, then veers to the northeast to outfall into Goldsmith Gulch, just as the main channel enters the DTC property.

VICINITY MAP




GOLDSMITH GULCH DRAINAGE BASINS
QUEBEC ST.
ARAPAHOE RD.
MADISON AVE.
ORCHARD RD.
I-25
I-225
SITE
FOR D.T.C. SUBBASINS SEE SHEET 1
G-15
G-14
G-13
G-12
G-11E
G-10E
G-10M
YOSEMITE ST.
DAYTON ST.
GOLDSMITH GULCH
BELLEVIEW AVE
SCALE 1" = 2000'
N

A second tributary, (Tributary #2) from the DTC drains into Goldsmith Gulch immediately upstream of Belleview Avenue as shown on Sheet 1. This tributary enters the DTC through an 18" culvert under I-25, and flows easterly into a 36" culvert under D.T.C. Parkway. The tributary continues along this course for a short distance before heading northeasterly to the intersection of East Prentice Avenue and South Valentia Way. At this point, the natural channel is interrupted by a 24" reinforced concrete storm sewer constructed under East Prentice Avenue and through the parking lot of building DTC-30. From this point, flows continue in an open channel and drain northeast to a 24" culvert under Tamarac Parkway and to its confluence with Goldsmith Gulch.

Tributary #3 has its origin north of Belleview Avenue between D.T.C. Parkway and Ulster Street. This tributary flows northeasterly through a 42" culvert under Ulster Street, then continues its course to empty into Goldsmith Gulch near Union Avenue.

The fourth Goldsmith Gulch tributary, (Tributary #4) passes through the northern boundary of the DTC. Tributary #4 enters the grounds through a 24" culvert under I-25, and flows northeasterly to a 60" culvert under South Quebec Street. The tributary then drains to the north and exits the DTC through a 60" culvert under I-225.

For the purposes of drainageway planning, all sub-basins were considered to be fully developed, which is consistent with land use plans of the associated municipalities. The proposed land uses in the upper part of the basin are primarily residential with some provision for commercial types of development. The DTC itself is oriented primarily toward commercial and high density land uses.

Soils Investigations

Information on soils conditions for the Denver Technological Center and vicinity was obtained from Reference 1. The four soil types presented in the Goldsmith Gulch basin are Fondis silt-loam, Buick-loam, the Renohill Complex, and an artificial fill introduced during residential development of the lower basin. Fondis silt-loam is the most widespread soil in the basin occupying upland areas. This soil type has a fine to moderately fine texture with lower infiltration rates but a high water holding capacity. The Buick-loam occupies intermediate slopes and extends into the drainage channel in some locations. This soil is deep with moderate infiltration rates and a high water holding capacity. Buick-loam is classified as A-6 or A-7 by AASHO standards and provides good stability for embankments in drainageways. The Renohill Complex represents soils which are not well suited to prepare earthen structures due to poor compactions, slow drainage, and moderate shrink-swell potential. The clay-loam and shale present in the soil rate it an A-6 or A-7 classification in AASHO standards. Slopes up to 20 percent with vegetative cover in this material are stable.

HYDROLOGY

A. General

A hydrologic analysis was completed to establish peak discharge frequency relationships for floods of 5- and 100-year recurrence intervals for individual sub-basins throughout the DTC. For the 100-year event, both developed and historic conditions were modeled. The upper portion of the Goldsmith Gulch Basin was analyzed assuming fully developed conditions for the 100-year flood frequency only. Developed conditions for the study area were based on local zoning regulations in combination with planned and existing land uses.

The Colorado Urban Hydrograph Procedure (CUHP), as outlined in the Urban Storm Drainage Criteria Manual[3,4], was used to generate all basin hydrographs. The rainfall data adopted in the Goldsmith Gulch Major Drainageway Planning Report, (which was obtained from Rainfall/Runoff Information, Project REUSE, Urban Drainage and Flood Control District, May 1972), was used in the calculations. A summary of the rainfall data is given in Table I.

Table 1

DTC - Goldsmith Gulch Basin

Rainfall Data

Storm Frequency	Maximum Total* Rainfall Depth (inches)
2-Year	1.2
10-Year	2.6
100-Year	3.3

*Storm Duration, 2 hours; T4 and 5S, R67W
Ref: Rainfall/Runoff Information, Project REUSE, Urban Drainage and Flood Control District, May 1972.

For the sake of continuity, the basin nomenclature for the DTC used in this report is the same as that which was adopted in the Preliminary Comprehensive Drainage Report on the DTC (i.e., nomenclature based on the DTC Superblock designations). A map of the DTC showing a layout of the individual sub-basins as well as how they are related to the hydrologic design points is shown on Sheet 1. The nomenclature for the remaining sub-basins in the upper part of the Goldsmith Gulch basin is the same as that used in the Goldsmith Gulch Major Drainageway Planning Report.

The hydrologic analysis for the Temple Pond Alternative required a re-evaluation of the hydrology completed for the previous report[2]. In that study, average values were assumed for several input variables used to generate the individual basin hydrographs. Additionally, design flows in the gulch were computed assuming that the DTC contributed approximately 50 percent of the basin drainage area. While this approach is acceptable for feasibility studies, it does not provide sufficient detail for establishing preliminary design concepts.

The hydrologic analysis completed for this report included specific input values (e.g., basin slope, percent pervious, etc.) for each sub-basin in the study area were determined. These values were used to generate hydrographs for each sub-basin. The peak flows from the individual sub-basins, along with the input values, are given in Table II.

Peak discharges at various design points within the DTC were determined by routing the hydrographs of the interrelated sub-basins to a common discharge point, (See Sheet 1). For example, the peak discharge at design point I_2 was determined by lagging the storm hydrograph for basin Ls by 8 minutes, then adding it to the hydrograph for basin I_{SW}. The result of

Table II

Drainage Basin Parameters

Basin	Area (sq.mi.)	Length (mi.)	Length to Centroid (mi.)	Project Development Pervious	C_t	C_p	100-Year Peak Basin Discharge (cfs)	5-Year Peak Basin Discharge (cfs)
A_n	.124	.682	.303	.05	.22	.45	357	202
A-D	.088	.468	.208	.30	.28	.50	255	133
B_e	.036	.378	.193	.25	.25	.45	111	60
B_w	.011	.113	.060	.25	.23	.45	38	20
C	.043	.341	.170	.25	.26	.45	140	72
E	.169	.758	.322	.25	.27	.45	435	225
F_{sh}	.057	.348	.133	.30	.27	.45	187	95
F_w	.037	.492	.227	.30	.28	.50	105	53
G	.042	.265	.134	.30	.28	.50	139	70
H	.067	.379	.170	.30	.27	.48	216	110
I_n-I	.112	.545	.227	.35	.30	.51		
I_{sw}	.046	.492	.227	.35	.30	.51	132	66
J	.076	.303	.133	.30	.28	.49	252	128
K_n	.022	.272	.121	.30	.28	.49	74	36
K_s	.048	.379	.133	.30	.28	.50	154	78
L_n	.057	.417	.072	.30	.28	.50	203	103
L_s	.054	.538	.190	.15	.28	.46	173	93
M_m	.038	.303	.184	.35	.30	.51	120	60
M_n	.038	.409	.174	.35	.39	.51	113	56
M_s	.034	.303	.136	.35	.30	.51	107	53
G-10M	.260	.758	.379	.60	.37	.65	606	N/A
G-10E	.276	.758	.379	.60	.46	.62	531	N/A
G-11E	.324	1.136	.606	.60	.44	.61	544	N/A
G-12	.264	.511	.321	.70	.51	.65	542	N/A
G-13	.568	1.230	.530	.60	.47	.63	913	N/A
G-14	.417	.852	.549	.65	.44	.61	736	N/A
G-15	.362	.758	.256	.60	.42	.60	802	N/A

this operation is a composite hydrograph that reflects the flow time (8 minutes) required for runoff from the upstream basin to reach the design point. This composite hydrograph was then added to the lagged hydrograph for basin K_s (again to reflect the flow time required for runoff from K_s to reach I_2). The final outflow hydrograph gives a peak discharge which represents the time interaction of the individual storm hydrographs for the contributing basins. A similar procedure was followed for all design points in the DTC having two or more inflow hydrographs. Preliminary culvert sizes were determined at various locations along the major tributaries within the DTC. The proposed culverts were sized to pass a 10-year storm event without overtopping the street. Discharges for the 10-year event were interpolated using a log-probability plot. Culverts were then sized assuming inlet control and a headwater (Depth (HW/D) ratio of 1.2. Culvert sizes determined in this report are for planning purposes only. Find sizing of all drainage facilities is required for preliminary and final design.

Table III shows the proposed culvert sizes or equivalents, the interpolated 10-year storm event, and the 5-year and 100-year peak discharges for various design points.

Flow profiles for the 5- and 100-year flood events for developed conditions for each of the three tributaries that discharge into Goldmsith Gulch on the DTC property are given in Figures 3, 4 and 5.

B. Temple Pond

To obtain the inflow hydrograph at Temple Pond, hydrographs for the sub-basins in the upstream portion of Goldsmith Guldh were lagged to determine peak discharges along the channel. The storm hydrograph for basin G-15 was lagged then added to the hydrograph for basin G-14. The hydrograph for G-13 was lagged then added to the G-12 hydrograph. The outflow hydrographs from these two calculations were directly added to determine the

Table III

Peak Discharges for 5-Year and 100-Year Events for Developed Conditions

Design Point	5-Year Discharge (cfs)	100-Year Discharge (cfs)	Extrapolated 10-Year Discharge (cfs)	*Proposed Culvert Size (or equivalent)
A_1	202	357	275	72" RCP
A_2	133	255		
B_1	60	111		
B_2	212	378		
C_1	72	140	105	54" RCP
E_1	225	435	350	84" RCP
F_1	390	755	575	96" RCP
F_2	98	189	140	60" RCP
G_1	70	139	105	54" RCP
H_1	461	681	560	96" RCP
I_1 **	N/A	3037		
I_2	212	410		
J_1	352	432	395	84" RCP
K_1	36	74		
K_2	78	154		
L_1	93	173***		
L_2	266	273	273	72" RCP
M_1	53	107		
M_2	60	113		
M_3	56	120		

* Assumes Inlet Control, HW/D = 1.2
** Neglects u/s Detention
*** Include Historic Runoff from Basin L

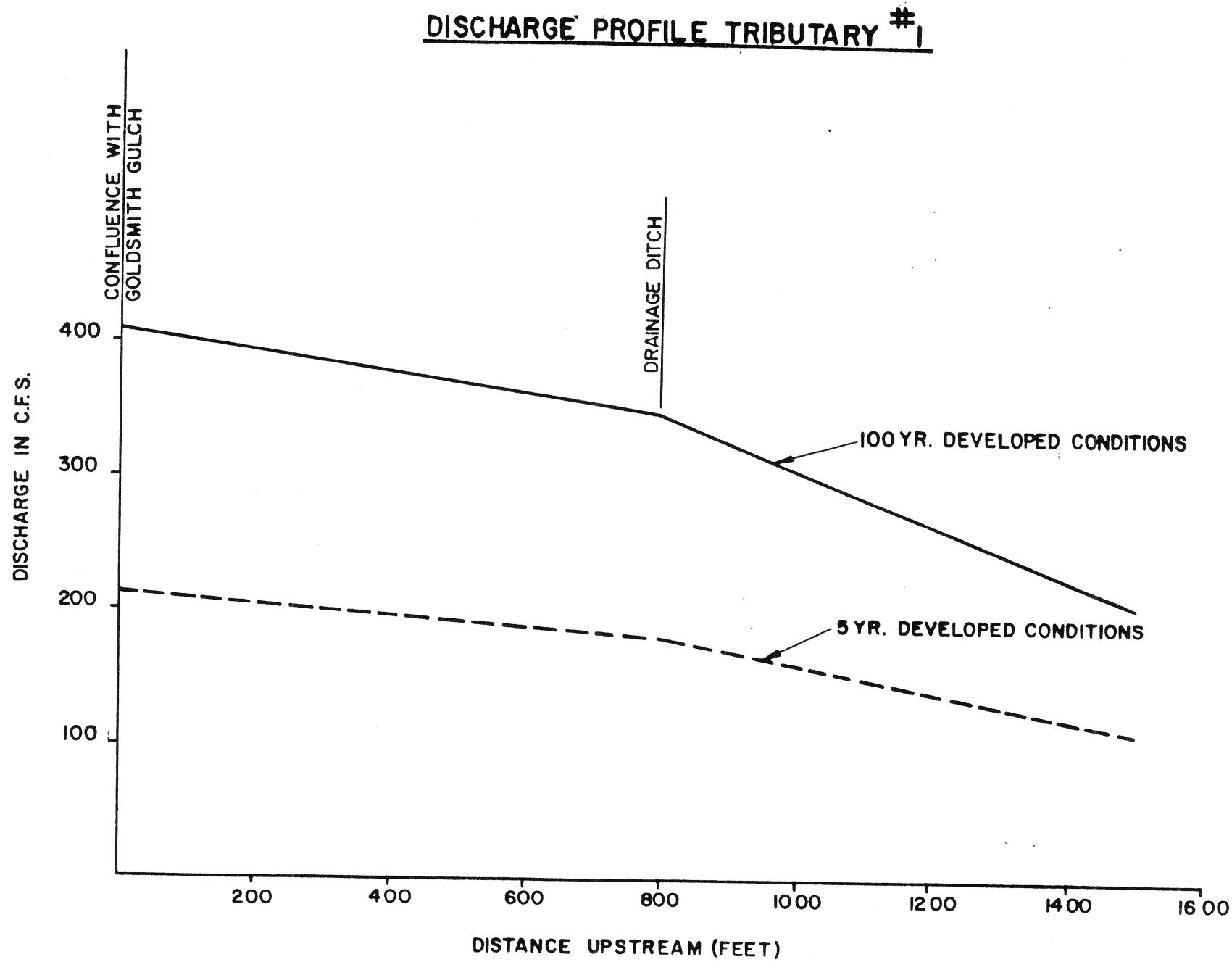

DISCHARGE PROFILE TRIBUTARY #1
CONFLUENCE WITH GOLDSMITH GULCH
DRAINAGE DITCH
100 YR. DEVELOPED CONDITIONS
5 YR. DEVELOPED CONDITIONS
DISCHARGE IN C.F.S.
400
300
200
100
200
400
600
800
1000
1200
1400
1600
DISTANCE UPSTREAM (FEET)

FIGURE 3

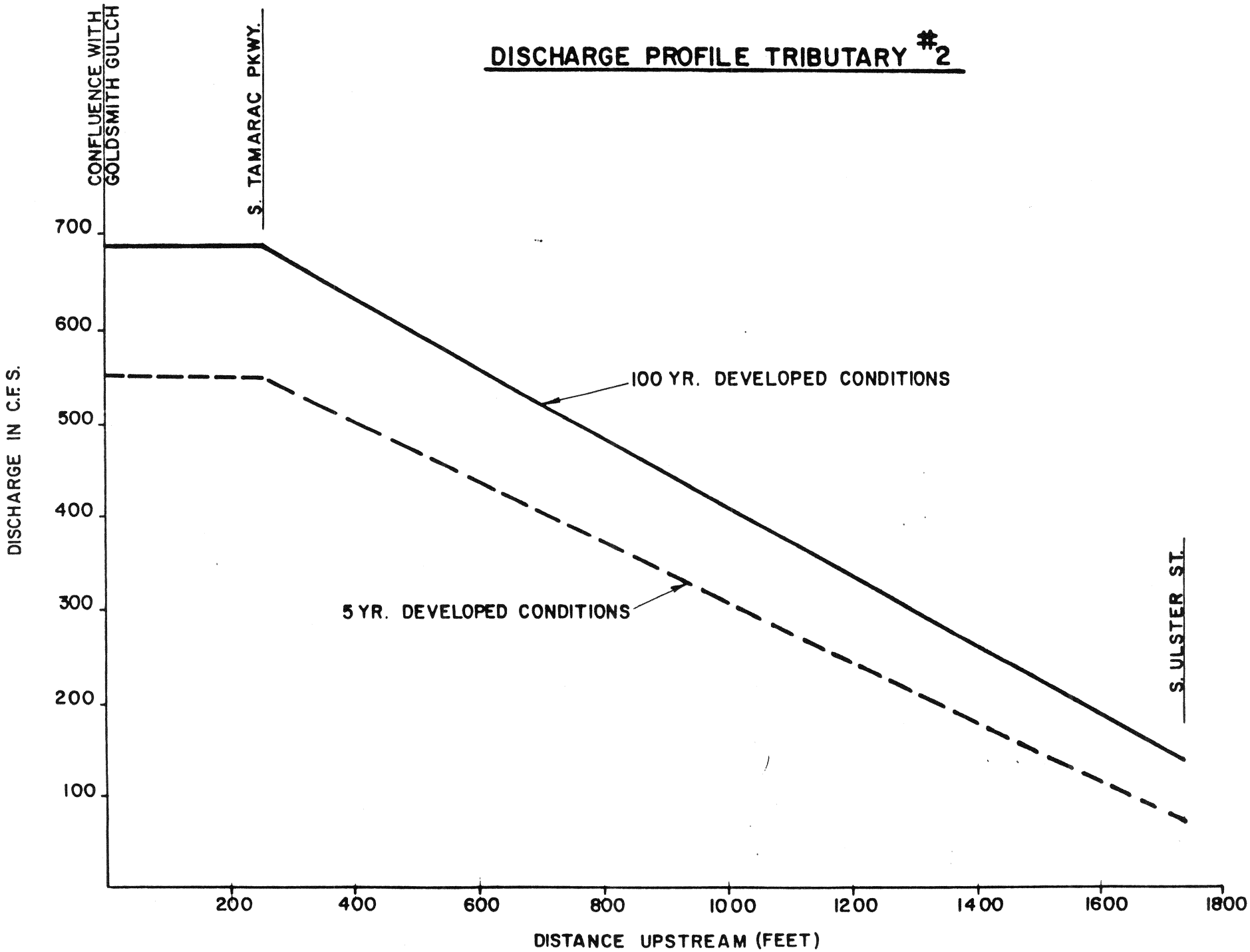

DISCHARGE PROFILE TRIBUTARY #2
CONFLUENCE WITH GOLDSMITH GULCH
S. TAMARAC PKWY.
S. ULSTER ST.
100 YR. DEVELOPED CONDITIONS
5 YR. DEVELOPED CONDITIONS
DISCHARGE IN C.F.S.
700
600
500
400
300
200
100
200
400
600
800
1000
1200
1400
1600
1800
DISTANCE UPSTREAM (FEET)

FIGURE 4

DISCHARGE PROFILE TRIBUTARY #3

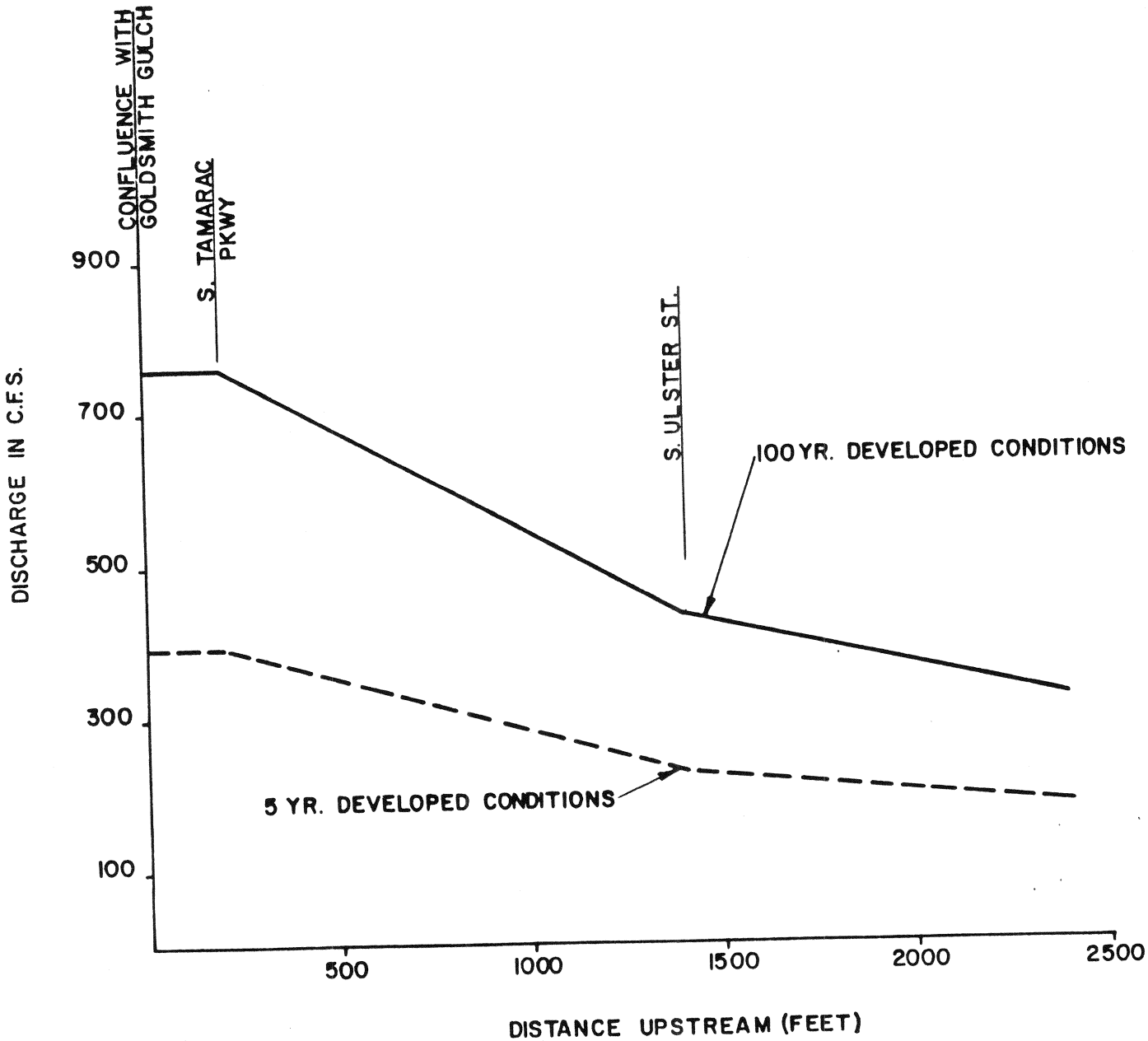


FIGURE 5

discharge at design point GG-1. This combined hydrograph was then lagged and added to the G-11 hydrograph to determine the flow at design point GG-2. Finally, this hydrograph (along with the remaining hydrographs from the DTC) was lagged to Temple Pond to determine the required inflow hydrograph.

The inflow hydrograph was routed through Temple Pond using the stage-storage and stage-discharge relationships shown in Figure 6. The resulting outflow hydrograph (shown with the inflow hydrograph in Figure 7) was then combined with the hydrographs of the two DTC sub-basins downstream of the pond, and routed through the culverts under I-225 to determine the required berm height along South Tamarac. The stage-storage curves for the area upstream of I-225 are shown in Figure 8, with the inflow and outflow hydrographs shown in Figure 9.

In the previous major drainage planning study for Goldsmith Gulch, flows were routed through four upstream detention sites. At the time of this study, one of these sites (located east of South Dayton Street) had been filled in. Two of the other sites provide detention at culverts under roadway embankments at Orchard Road (one for the west tributary and the other for the main channel). These areas are not specifically designed as detention facilities and would provide little if any storage if the existing culverts were replaced with larger ones at some time in the future. Only one of the four sites, the Orchard Hill Pond, was designed as a detention facility.

Due to the above considerations, only detention at the Orchard Hill Pond was included in this study. The approach used in completing the hydrology for this study was based on the fact that Temple Pond would be a major drainage structure along Goldsmith Gulch, and should be designed to

STAGE-STORAGE/DISCHARGE FOR TEMPLE POND

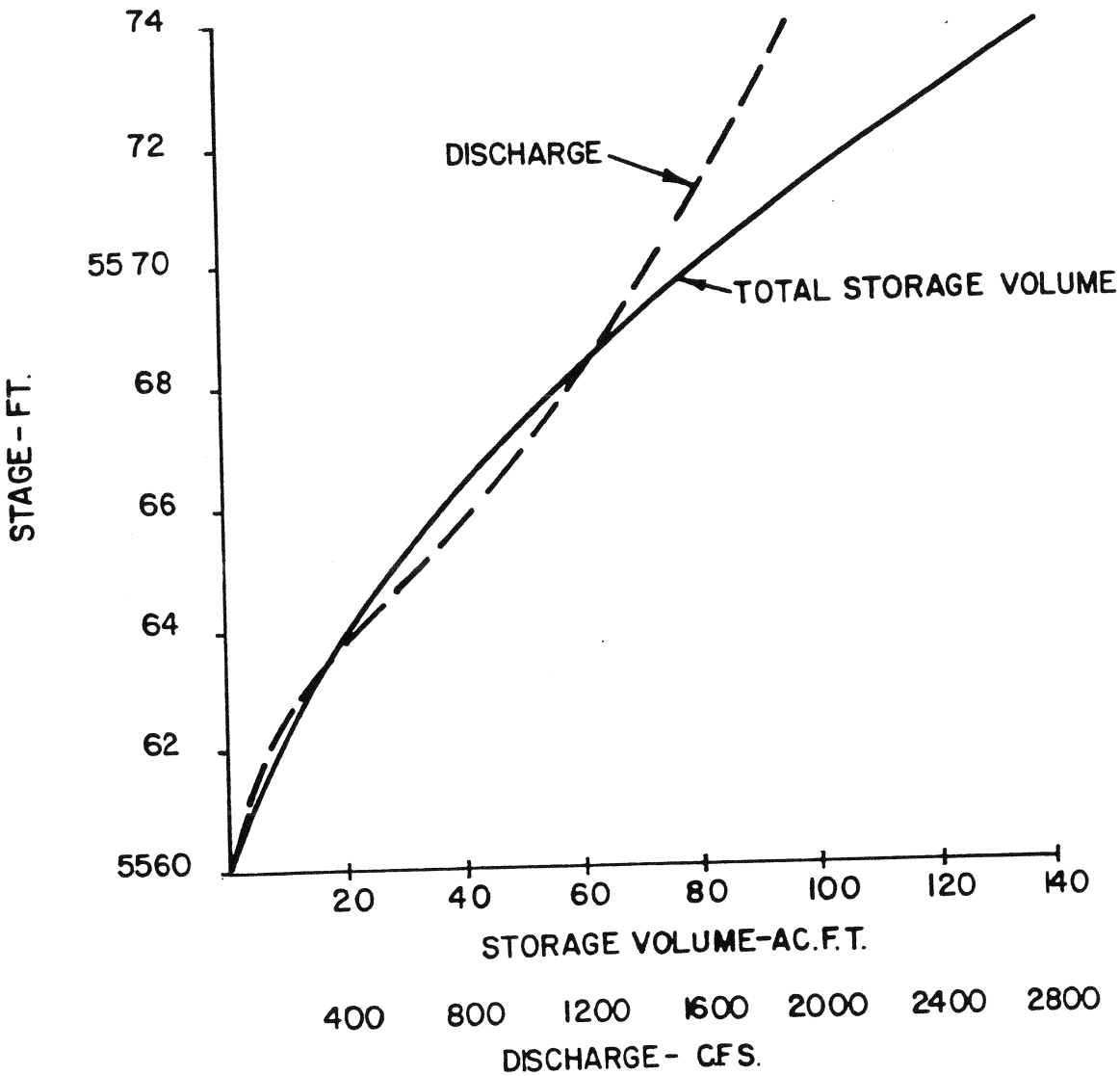


FIGURE 6

100 YEAR FLOOD HYDROGRAPHS AT TEMPLE POND

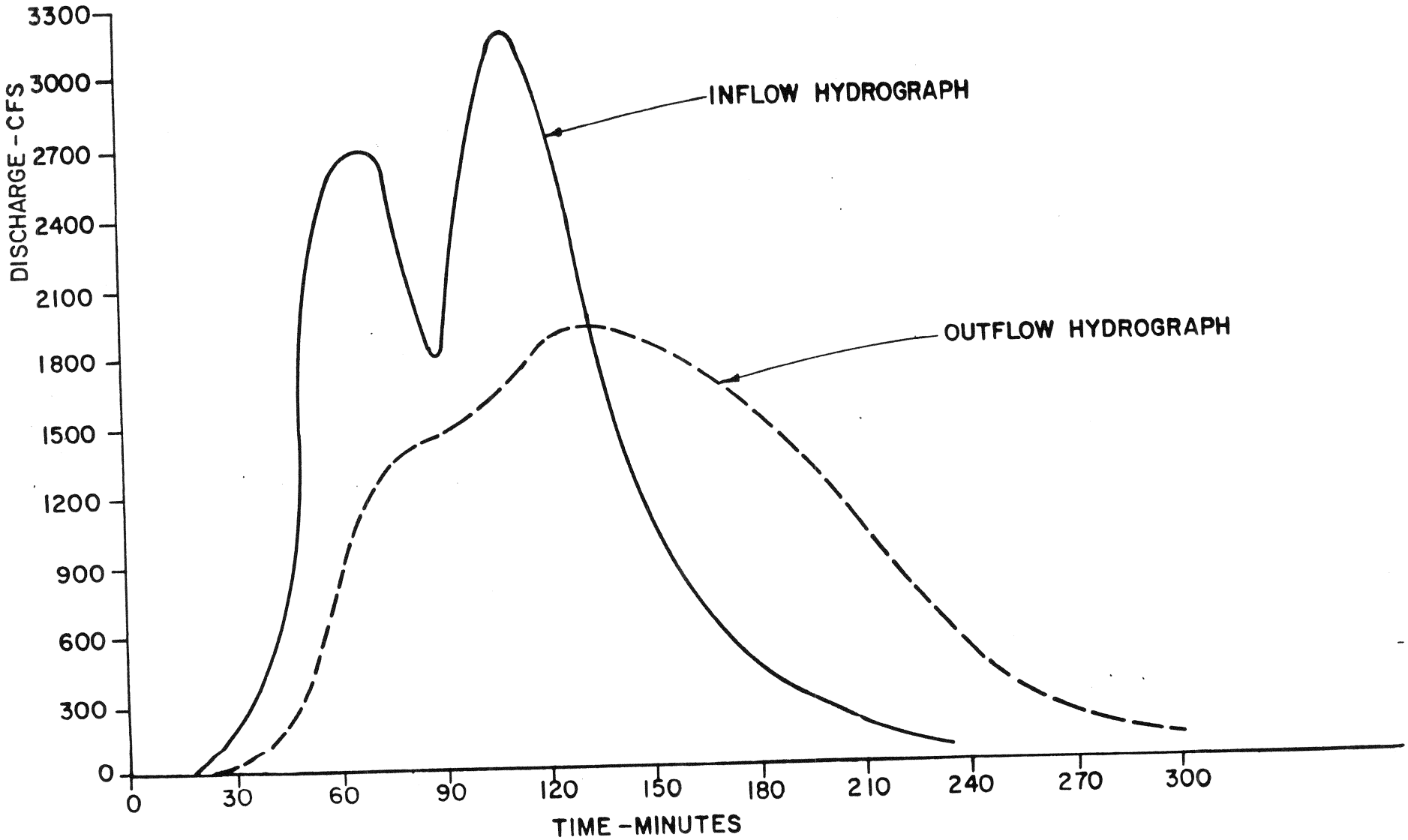


FIGURE 7

STAGE–STORAGE /DISCHARGE AT I-225

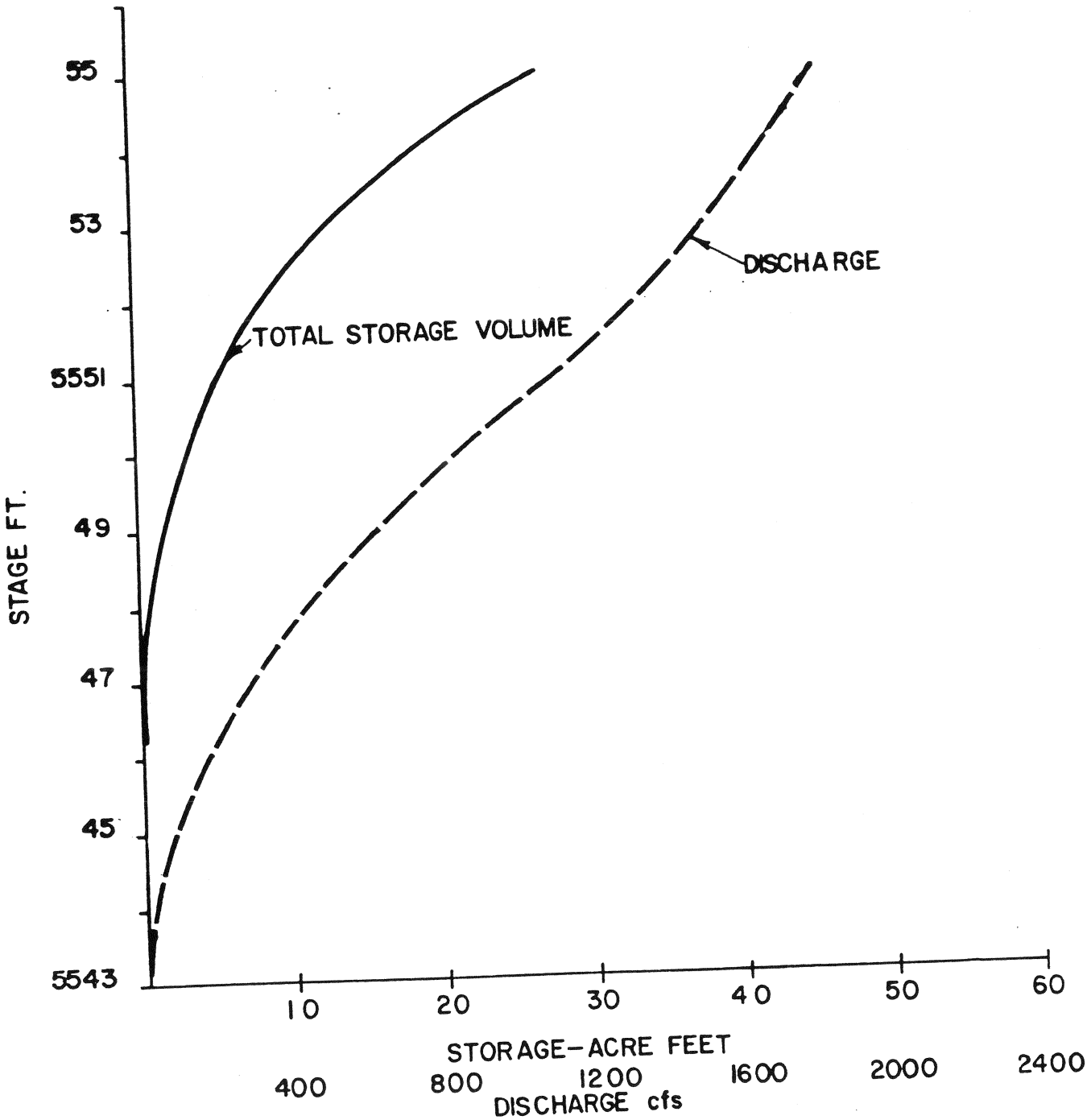


FIGURE 8

100 YEAR FLOOD HYDROGRAPH AT I-225

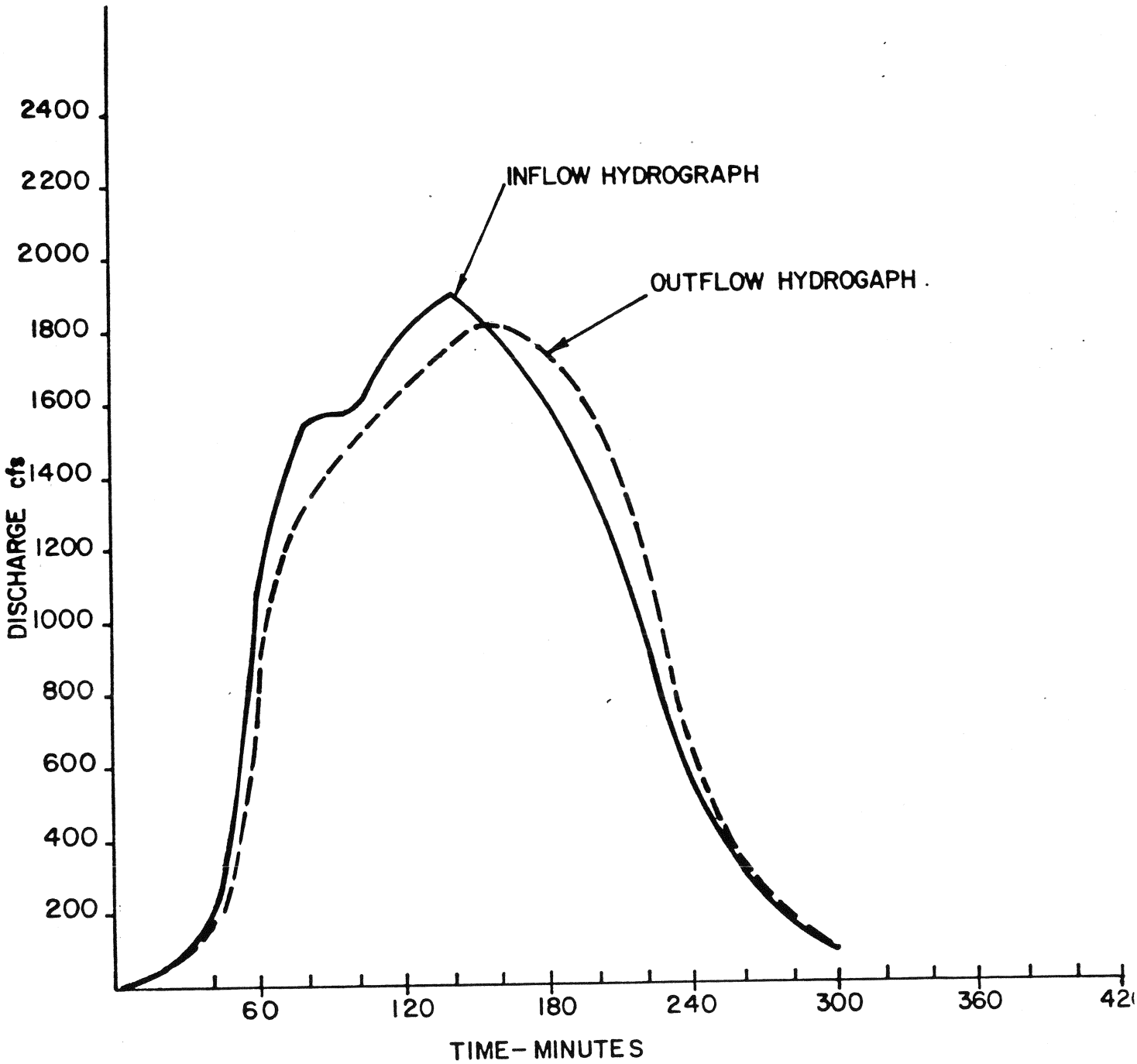


FIGURE 9

provide the bulk of the detention required in the upstream portion of the basin. By taking this approach, modifications to the channel, and upstream structures could be carried out without impairing the effectiveness of the pond. For the purposes of floodplain analysis, however, the information in Reference 1 is still acceptable, due to the fact that all but one of the detention areas, which was the least effective of the three sites, are still operative.

C. Underground Detention

In order to evaluate the underground detention alternative, the larger sub-basins on the DTC were divided into smaller sub-basins (e.g., sub-basin H was divided into east and west halves). Hydrographs for the 100-year storm for both fully developed and historic conditions were then generated for all of the DTC sub-basins.

An initial estimate of the required storage volumes was made by subtracting the volume of the hydrograph for historic conditions from the hydrograph for developed conditions. This resulted in extremely large storage volumes which would require detention.

Since detention requirements are based on peak flows only, a second approach, utilizing a "HYDRO-BRAKE" control system, was taken. Essentially, the "HYDRO-BRAKE" system allows runoff from the developed area to be released at the rate dictated by the basin hydrograph until the limiting release rate (i.e., peak flow for historic conditions) is reached. The limiting flow is maintained while the excess is stored. The relationship between the inflow and limiting hydrographs and the required storage volume is shown in Figure 10.

HYDROGRAPH RELATIONSHIP FOR HYDROBRAKE CONTROL SYSTEM

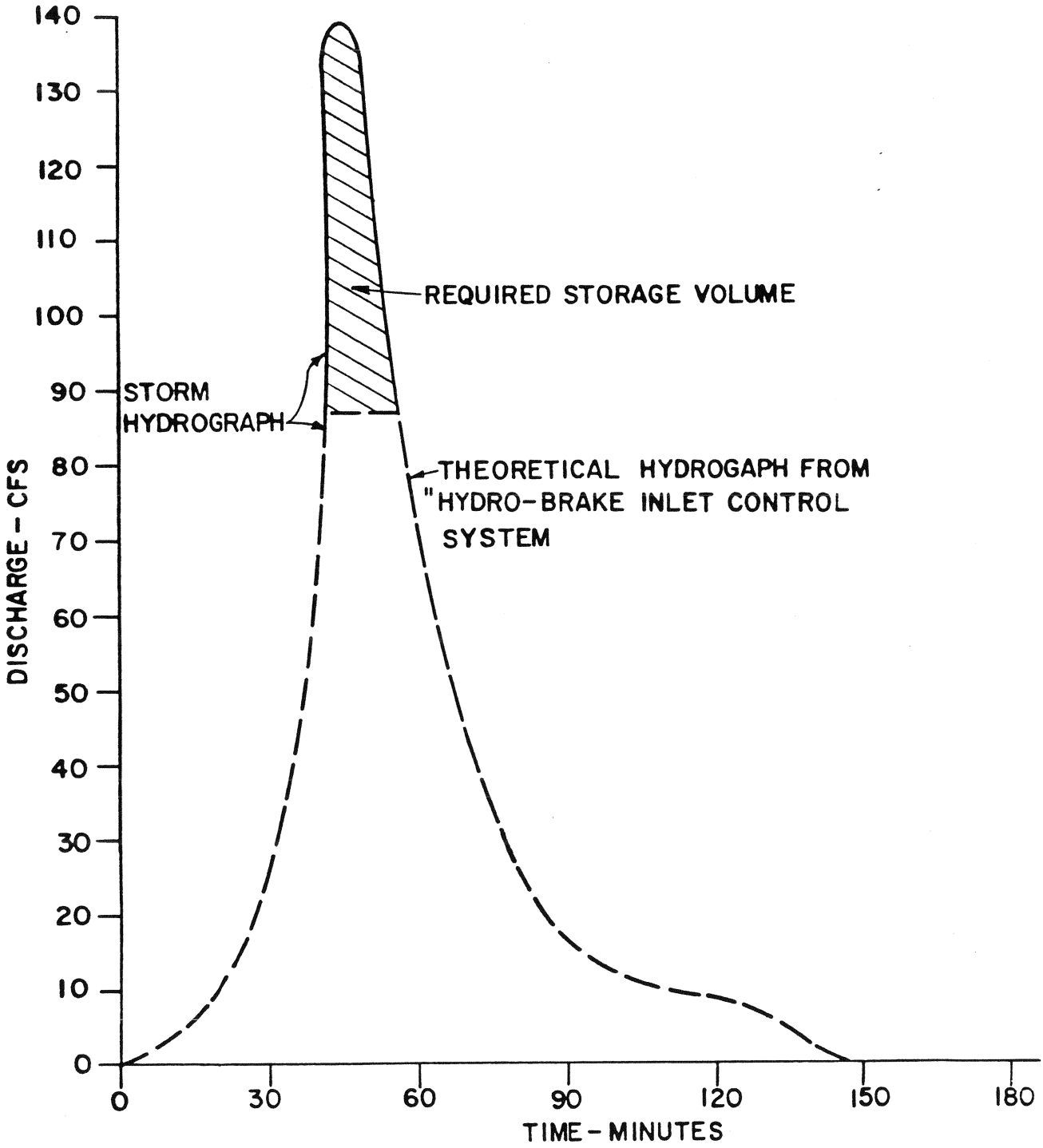


FIGURE 10

The result of this second approach is a decrease in the total required storage for the DTC from 59 acre-feet to 22 acre-feet. This approach could also be used to reduce the size of conventional above ground detention facilities.

A third approach examined for the underground detention alternative attempted to reuse storage areas by detaining upstream flows until downstream facilities could be cleared. Once these facilities had drained the upper basin flows would be released and would collect in the existing downstream detention pipes. However, preliminary results indicated that a larger storage volume than that obtained with the second a-proach would be required. Consequently, the second approach using "HYDRO-BRAKE" was used for our analysis.

The outflow hydrographs for each of the sub-basins were routed (using the same method as previously explained) to determine flows at the various design points within the DTC. A summary of the flows at these points is given in Table IV.

Table IV

Flows at Design Points for Underground Detention Alternative

Peak Discharges from Theoretical Hydrographs

Design Point	Discharge (cfs)	Proposed Culvert Size (or equivalent)*
A_1	91	48"
A_2	197	
B_1	65	
B_2	111	
C_1	82	48"
D	91	
E_1	288	78"
F_1	545	96"
F_2	87	42"
G_1	87	48"
H_1	580	96"
I_1	157	
I_2	255	
J_1	353	84"
K_1	47	42"
K_2	93	48"
L_1	88	
L_2	123	54"
M_1	69	
M_2	72	
M_3	68	

* Assume Inlet Control, HW/D = 1.2

A. Detention Regulations

In an effort to ensure that major urban drainage facilities would continue to function effectively, most municipalities have enacted regulations limiting the allowable runoff rate from newly developed areas. The detention requirements utilized by Greenwood Village are outlined in the Urban Storm Drainage Criteria Manual[4], while Denver uses the criteria established in its Storm Drainage and Design Manual[5]. These regulations are quite similar and may be summarized as follows:

1. Design of the minor storm drainage system is based on the 5-year storm frequency.
2. Design of the major storm drainage system is based on the 100-year storm frequency.
3. Release rates are limited to:
   a. The 5-year storm peak flow when a storm sewer system having that capacity is in service.
   b. The 100-year historic peak flow.

The historic flow is defined as the flow which would occur if no development had taken place within the basin (i.e., the basin in its natural state without development). There are no regulations which establish minimum detention volumes, the only concern is that the peak flows are limited to the prescribed rates.

Three major detention alternatives were examined for implementation in a master drainage plan for the DTC. The Temple Pond Alternative (Sheet 2), utilizes a mjaor offsite detention facility which would serve not only the DTC, but also the entire upstream area in the Goldsmith Gulch basin. This system would provide the necessary detention for the Denver Technological Center, instead of utilizing individual on-site detention ponds. Implementing this plan would

require Denver to waive their current on-site detention requirements in lieu of detaining flows off-site at Temple Pond. The underground detention alternative, (Sheet 3), calls for construction of a network of buried pipeline storage structures throughout the DTC. This would serve the DTC only. A third alternative, employing a series of surface ponds was outlined in a previous report[2], but was initially considered undesireable due to the land area (approximately 10 acres) required. It is mentioned in this report for comparison purposes.

B. Temple Pond Alternative

The construction of the Temple Pond Detention Facility was originally proposed in the Goldsmith Gulch Major Drainageway Planning Report in November 1977. This report recommended the construction of a series of detention areas and channel improvements which would meet the drainage requirements of a fully developed basin.

Improvements to Goldsmith Gulch in the vicinity of the DTC required enlarging the existing natural channel to accommodate runoff from the 100-year flood event. The channel bottom width would vary from approximately 100 feet to 200 feet, with 3:1 side slopes. A concrete-lined low flow channel, having a 5' bottom width, with a 1' depth and 1:1 side slopes would carry seasonal flows through the gulch. Major changes in grade at the channel bottom would be accomplished by the use of riprap drop structures at South Yosemite Street and Belleview Avenue.

Temple Pond, as originally planned, would have a peak inflow of 2,880 cfs, a peak outflow of 1,840 cfs, and a storage capacity of 100 acre-feet. The outflow from the pond was set by the capacity of the double 6' x 12' box culverts passing under I-225, which was increased from 1,030 cfs to 1,840 cfs by incorporating a 3' high berm into the design. This berm, which would begin at the inlet, then extend upstream and out on either side of the culvert, allows an increase in headwater depth at the inlet,

while preventing flows from spilling over onto North Tamarac Parkway. Assuming inlet control (with 0° wingwall flare) the increased headwater depth effectively increases the culvert capacity to 1,840 cfs, which is the design outflow downstream of I-225.

Containment of flows at the pond would be provided by roadway embankments at the proposed Temple drive on the north, and Tamarac Parkway on the west. The roadway embankments would have side slopes of 5:1 and a maximum height of 15.5 feet measured at the downstream end. At the eastern and southern portions of the pond, excavation would be carried out at 4:1 side slopes to tie into the existing ground.

The original estimated cost of this facility was given in reference 1 as $716,000. This includes costs for construction, right-of-way, engineering, operations and maintenance, and fiscal, legal and administrative costs. This report stressed, however, that the plan was conceptual in nature and a more detailed analysis would be required.

For this study, the hydrology for the Temple Pond Alternative was re-evaluated as discussed previously. The new peak inflow at Temple pond is 3,200 cfs as compared to 2,880 cfs in the previous report. The higher discharge determined in our analysis is due to the elimination of temporary detention upstream of the site.

The peak outflow from the pond was increased from 1,840 cfs to 1,910 cfs. In the master drainage plan, the peak outflow was set equal to the capacity of the culvert under I-225. This did not allow for complete utilization of the storage capacity of the berms at the culvert inlet, which functioned only to increase the flow capacity.

As in the original plan, roadway embankments on the north and west would serve to contain the flows. The remaining excavation on the east and south would be carried out at 4:1 side slopes to the limits shown on Sheet 2.

A typical section through the pond is shown in Figure 11, and a typical embankment section is shown in Figure 12. The raodway embankments would have 5:1 side slopes, with a maximum height of 16.5 feet on the downstream end. The concrete trickle channel has a 5' bottom width, with 1:1 side slopes for carrying seasonal flows through the channel and detention area.

In the original plan, the outlet works for the facility consist of a 6' x 12' box culvert combined with a 12' x 6' culvert. In order to accommodate the increase in peak outflow, the culvert has been resized to a double 6' x 10' reinforced concrete box culvert, (Figure 12). Riprap would be placed at the outlet for erosion protection.

In the event of a 100-year storm, flows from the upstream portion of Goldsmith Gulch would combine with runoff from the DTC at various discharge points along the main channel. As these flows enter the detention area, the culvert capacity would limit the discharge at the outlet of the pond. The excess flows entering the pond would be stored while the head on the outlet works would increase until a peak outlet discharge is met. After this time, the outlet discharge would taper off, gradually draining the detention pond.

Flows outleted from Temple Pond enter the storage site at I-225. The culvert under I-225 functions like the Temple Pond outelt structure with the resulting storage contained within the bermed area. Again, a maximum head, corresponding to a peak discharge, is met, and the flow through the culverts tapers off, as the detention area drains.

TYPICAL CHANNEL SECTION APPROXIMATELY 500 FEET U/S OF TEMPLE POND

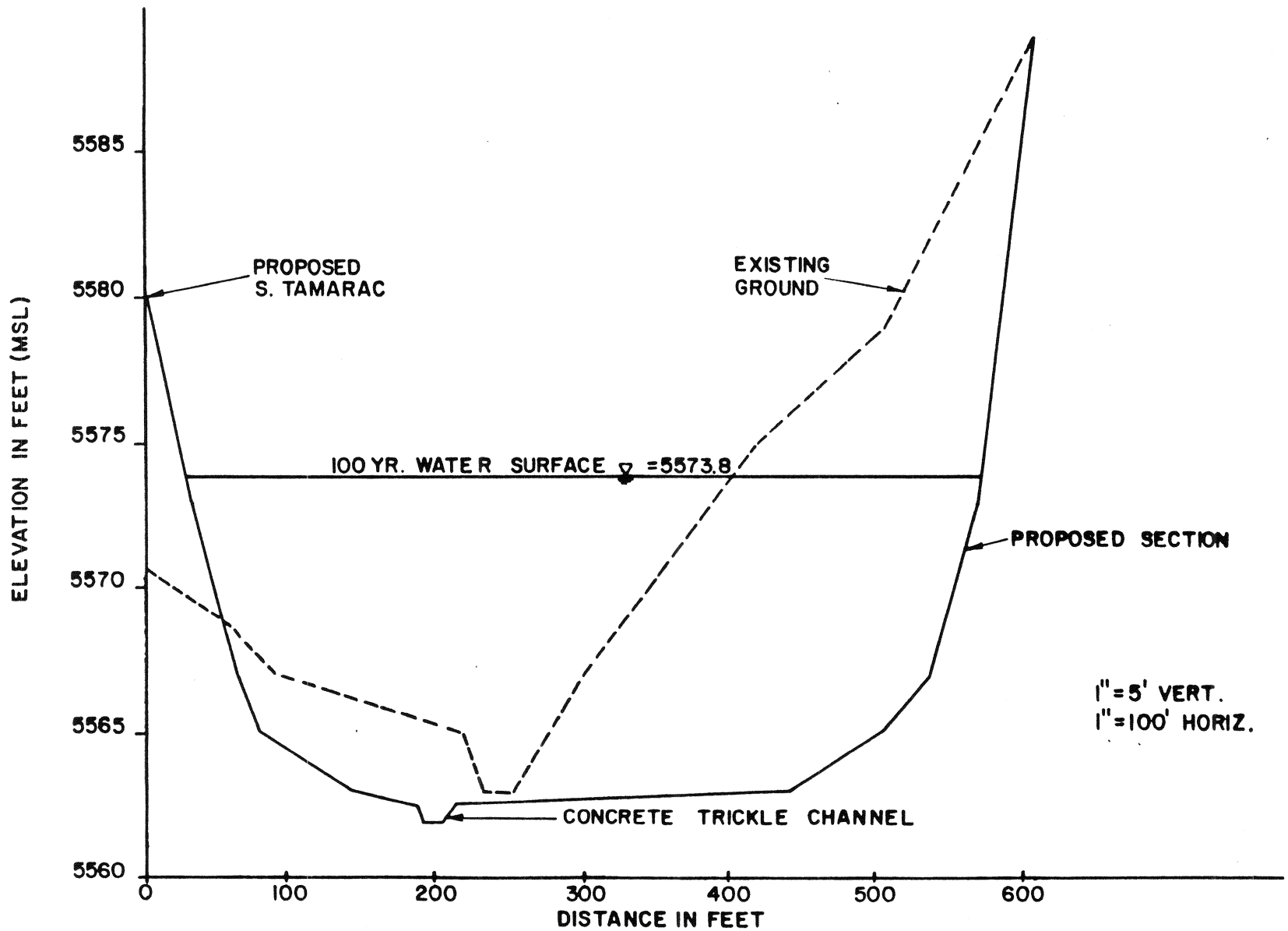


FIGURE 11

In the analysis undertaken for this report, the storage capacity of the berms was incorporated into the total detention pond. The inflow at I-225 is 1,910 cfs and the routed outflow is 1,830 cfs. This compares with the 1,840 cfs as determined in the previous report.

The maximum storage volume at Temple Pond is 136 acre-feet. The maximem storage at the culvert inlet at I-225 is 25 acre-feet and the total combined storage is 161 acre-feet. Table V gives a summary of the Temple Pond Detention Alternative.

TABLE V

Temple Pond Alternative

Temple Pond	Master Drainageway Planning, Goldsmith Gulch, 1977	This Study
Inflow to Temple Pond	2,880 cfs	3,200 cfs
Maximum Temple Pond Embankment Height	5,573.4	5,574.3
100-Year Water Surface	5,572.9	5,573.8
Maximum Storage	100 ac-ft	136 ac-ft
Outlet Structure	Double 6' x 12' RCB	Double 6' x 10' RCB
Maximum Outflow	1,840* cfs	1,910* cfs
I-225		
Inflow at I-225	1,840 cfs	1,910
Berm Height	5,557.9	5,555.3
100-Year Water Surface	5,556.9	5,554.8
Maximum Storage	N/A	25 ac-ft
Outlet Structure	Double 6' x 12' RCB	Double 6' x 12' RCB
Peak Outflow	1,840 cfs	1,830 cfs

*Headwater depth is greater for the proposed facility, therefore, resulting in a greater outflow discharge.

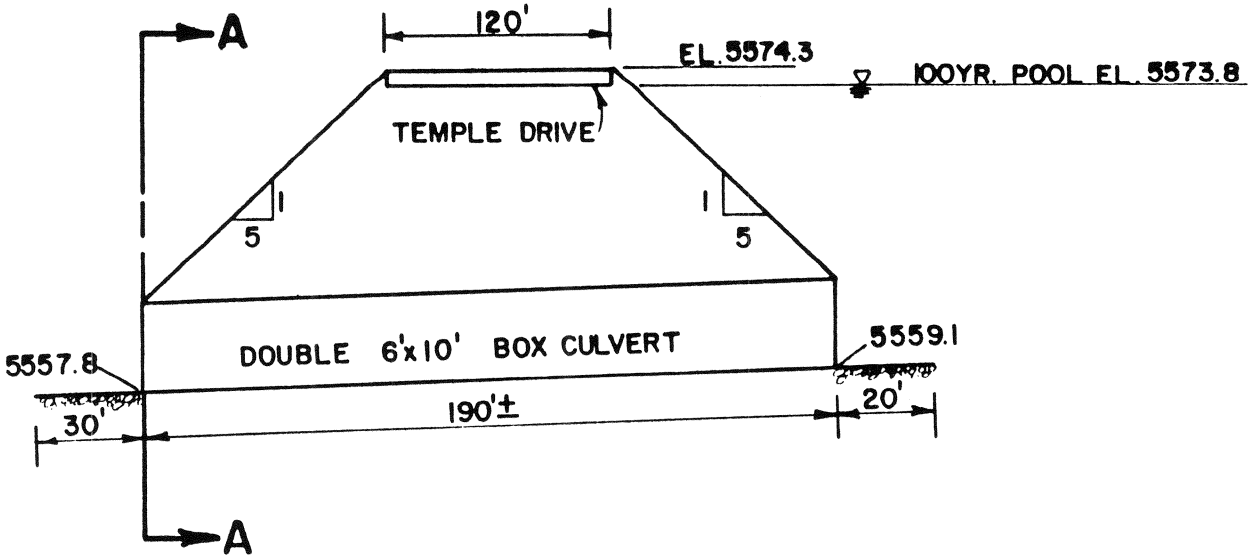
The Temple Pond alternative only provides detention for large storm events as presented in this report and in the Master Plan for Goldsmith Gulch. Detention for smaller storm events were not investigated in this study.

If low flow detention becomes a requirement, then a dual purpose facility at Temple Pond should be examined. This facility would have the capability to detain for both small and large storm events. Concrete check dams placed at various locations upstream of both the I-225 embankment and the Temple Pond embankments would provide ponding for smaller storms, and limit downstream discharges. Limiting downstream discharges would help reduce erosion problems downstream.

Another method for providing low flow detention would be a re-evaluation of the proposed Temple Pond outlet structure. A modification of the outlet structure would be required to limit the smaller flows at the embankment and at the same time, provide enough capacity for discharging the 100-year storm without overtopping the embankment. However, limitations on the height of the road embankment may have a negative effect on this approach.

It is recommended that low flow detention be investigated for the Temple Pond alternative. A detailed analysis should be completed during the preliminary design phase if the Temple Pond plan is selected.

TYPICAL TEMPLE POND EMBANKMENT SECTION



OUTLET SECTION A-A

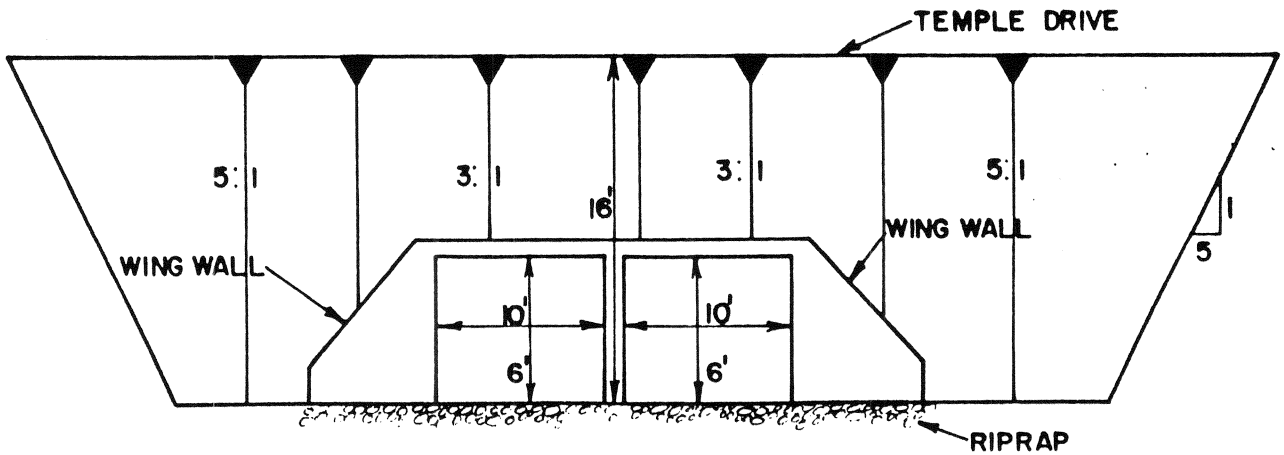


FIGURE 12

Flow for the 100-year flood event would be directed across the DTC by a series of grass-lined channels. Typical channel sections are shown in Figure 13 with the appropriate dimensions given in Table VI. The channel layout showing the required right-of-way easements and the channel capacities is shown on Sheet 2. Riprap drop structures will be required at various locations along the channels to make changes in grade to limit channel velocities. If space limitations become restrictive, concrete-lined channels could be used to reduce the cross-sectional dimensions. Culverts draining into Goldsmith Gulch at the detention areas, (Temple Pond and upstream of I-225), will back up and provide little capacity during a 100-year event.

A small detention pond located in B_w, (see Sheet 2) is required to provide detention for the northern part of Superblock A, and the western part of Superblock B. Onsite detention is required for these areas because they do not drain into the proposed Temple Pond Detention Facility.

Table VI

Channel Dimensions for Temple Pond Alternative

Channel Location	B.W. (ft)	D (ft)	S (ft/ft)	Velocity (ft/sec)	R.O.W. (ft)
A_n	5.0	3.5	.01	6.7	36
B_w	5.0	3.6	.01	6.8	37
E	5.0	4.4	.005	5.4	42
F_w	8.0	5.2	.005	6.2	47
G	5.0	2.2	.01	5.3	29
H	8.0	5.0	.005	6.1	48
I_{sw}	5.0	3.7	.005	7.0	38
J	7.0	4.2	.005	5.5	42
L_n	5.0	3.1	.01	6.3	34

TYPICAL TRIBUTARY CHANNEL SECTION

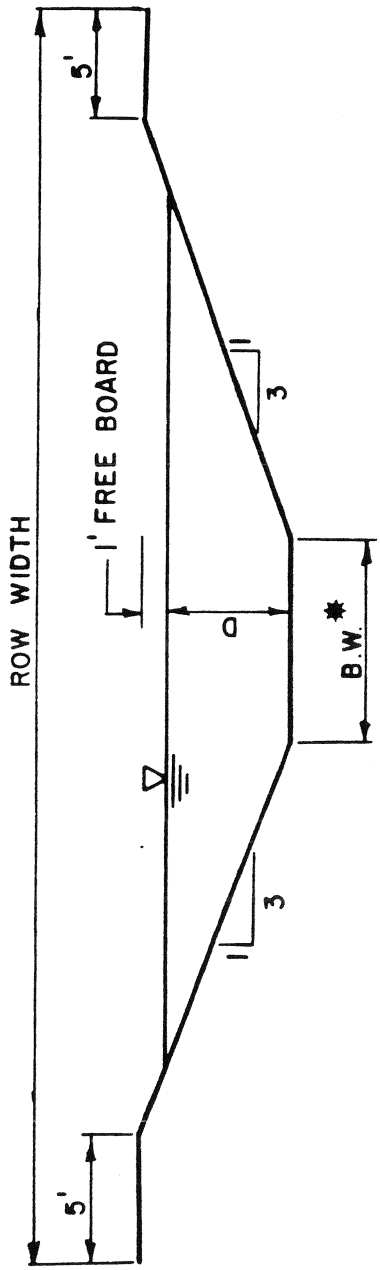


FIGURE 13

Runoff from lower frequency events (i.e., 5-year storms) would be collected by a minor storm sewer system and transported to the larger internal drainageways before being discharged into Goldsmith Gulch. The location and sizing of the minor system should be completed as development proceeds. Design discharges and flow profiles for the major tributaries presented in this report should be used for sizing the minor system.

All easements and dimensions shown for the internal drainage facilities are strictly conceptual in nature and may be used for preliminary planning purposes only. The exact location of these facilities can be determined by the location of future individual development.

It is suggested that the construction of the Temple Pond Detention Facility be a joint venture between the Urban Drainage and Flood Control District, the City and County of Denver, the DTC and the Goldsmith Metropolitan District. Since the facility would be located adjacent to the DTC and would be designed as a detention facility for the entire upstream portion of the basin, the DTC could satisfy its detention requirements by utilizing the pond. At present, the Temple Pond Detention Facility is slated to receive funds from the Urban Drainage and Flood Control District in 1982. Before final design can begin, however, a review by the State Engineer's office will have to be completed. If, in the opinion of the State Engineer, the facility, as currently planned would be classified as a dam, the possibility of splitting the pond into two separate detention sites, connected in series, must be considered. No contact has been made with the State Engineer's office at this time.

C. Underground Detention Alternative

The use of underground detention as a viable design alternative for storage of storm water runoff has become increasingly popular during the past few years. It is an especially attractive approach in areas where maximum utilization of available land area, as at the DTC, is considered imperative.

In its simplest form, underground detention provides storage capacity by allowing excess runoff to be collected in a series of underground conduits where it can later be released at a much slower rate. Some of the more exotic (and consequently more expensive) approaches call for installing perforated pipe in a trench lined with a semi-permeable membrane, then backfilling the trench with crushed gravel. This approach permits water to be absorbed by the surrounding soils rather than simply discharged through the system. In either case, the end result allows construction of certain types of facilities (i.e., parking lots, tennis courts, etc.) on top of the detention site, thereby permitting maximum utilization of land areas.

In the case of the DTC, there are several reasons for considering this type of approach. The DTC is in many ways ideally suited for this type of facility. The area has sufficient slope to ensure adequate hydraulic performance, in addition to the type of development (i.e., office buildings, parking lots, etc.) which permits easy location and installation of the underground facilities. It would also allow the DTC to satisfy all detention requirements while at the same time, permit virtually all of the land area to be utilized. When the value of the land is considered in determining the costs of the drainage facilities, a significant savings over conventional above ground detention systems may be realized.

Initially, the use of underground disposal sites, which would allow an appreciable volume of water to be absorbed by the surrounding soils for eventual distribution into groundwater systems, was considered. This type of system functions effectively only when water quality, soil, and geologic conditions allow for rapid infiltration rates. If any of these factors acts to inhibit the infiltration rate, the overall efficiency of the system will be severely impaired.

As indicated in the previous discussion of soil properties, the soils in the vicinity of the DTC have very low infiltration capacities. Once water enters these types of soils, it is immediately absorbed and retained in a highly saturated soil layer. This layer then acts to prevent any additional infiltration. Since a high infiltration rate is essential for the system to operate effectively, the construction of underground disposal facilities was not considered to be a viable alternative. Consequently, the simple storage and release system approach was utilized.

The use of underground detention would require a system of channels throughout the DTC to convey 100-year flows to the inlets of various underground detention sites. As with the previous alternative, the internal channelization would not only convey flows from the 100-year storm event, but would also serve as a collector system for minor drainage. A typical channel section is shown in Figure 13, with the appropriate dimensions shown in Table VII. Riprap drop structures would be required to make the changes in grade necessary to limit the flow velocities in the channel.

Runoff from the northern area of Superblock A and the western area of Superblock B exit the DTC through a culvert under I-225. Ponding in B_w occurs as a result of the flow constriction at the culvert and the use of underground detention at this site would not significantly reduce the inundated area. Consequently, a small detention pond is required in the western block of Superblock B, (See Sheet 3).

Table VII

Channel Parameters for Underground Detention Alternatives

Channel Location	B.W. (ft)	D (ft)	S (ft/ft)	Velocity (ft/sec)	R.O.W. (ft)
A_n	5.0	1.9	.01	4.8	27
B_w	5.0	2.1	.01	5.1	28
E	5.0	3.2	.01	6.9	35
F_w	5.0	4.9	.005		45
G	5.0	1.9	.01	4.8	27
H	5.0	5.3	.005	6.2	47
I_{sw}	7.0	3.0	.01	6.2	33
J	5.0	4.8	.005	5.7	44
L_n	5.0	2.2	.01	5.2	29

After the runoff has been directed to the various design points, one of two approaches can be taken. Either the flows can be controlled at the inlet, or the entire volume can be routed through the facility with flow control provided at the outlet. In either case, the planned objective is to allow the runoff to flow freely through the system until the limiting flow rate is obtained. At this point, the control mechanism (a "HYDRO-BRAKE") essentially chokes off any additional flow, resulting in utilization of system storage.

Possible locations for the underground detention facilities are shown on Sheet 3, along with the total storage volume and approximate length of 60" diameter pipe required. Although inlets would have to

be provided at or near the low points of these proposed sites, the specific configurations of the individual facilities could be modified to accommodate any appropriate land use plan.

D. On-Site Detention Ponds

The possibility of on-site detention ponds were presented in a "previous report"[2]. The results of that report indicated that approximately ten acres of land would be required for the construction and maintenance of various detention facilities throughout the DTC. The scope of this study did not include a re-evaluation of these on-site detention ponds, however, they were used in evaluating a best cost alternative for the DTC. Approximate locations for on-site detention ponds are shown on Sheet 2. (See Reference 2 for a detailed description for the on-site detention facilities.)

E. Major Internal Drainage System

One of the major purposes of this report is to provide costs for the purpose of comparing the different design alternatives. These alternatives did not include a cost for the internal drainage system required to convey flows to the gulch. Regardless of which alternative is exercised, the internal system must be installed. The major internal drainage system for each alternative would be very similar. This system includes channel improvements for each of the tributaries, along with improved crossing structures. The system would also include crossing structures to provide drainage at various locations along the gulch. Sheet 2 shows the major internal drainage system.

F. Cost Comparison

Estimated project costs for the Temple Pond Alternative, the Underground Detention Alternative, and On-site Dentention Ponds are given in Tables VIII, IX and X respectively. Construction costs have been estimated using normal construction materials and construction techniques for the construction of the proposed improvements for each alternative. Alternate types of materials may be available at the time of final design and construction, which would permit possible savings in the actual construction costs. The evaluation of alternate materials should be made at the time of preliminary and final design.

A cost contingency of 20 percent of the estimated construction cost is included to cover incidental and unforeseen costs.

For the underground detention alternative, an additional 10 percent has been included to cover the cost of relocating utilities.

The cost estimates presented in this report are based on preliminary engineering and were developed for planning purposes only. Construction quantities were based on preliminary design and are an estimate only. The estimated costs of construction are intended to provide the Goldsmith Metropolitan District an indication of the project costs and are based on today's prices. We, as engineers, have no control over the cost of labor and materials, or competitive bidding and cannot guarantee the accuracy of the construction costs.

As shown in Table VIII, the total estimated project cost of the Temple Pond Alternative is $1,010,000. This cost includes construction, engineering, legal, fiscal, and administrative costs. This cost

does not include costs for right-of-way acquisition, as the right-of-way for the Temple Pond facility is currently owned by Denver Parks and Recreation. It is assumed at this time that right-of-way would be dedicated for the Temple Pond Detention Facility.

The underground detention costs, shown in Table IX, assume installation of corrugated aluminum pipe. This pipe provides the necessary strength for locations under parking facilities for normal vehicular loadings, and also has high resistance to various corrosion factors. An estimated project cost for underground detention is $4,903,000. This also includes costs for construction, engineering, legal, fiscal and administrative costs. This cost does not include a cost for right-of-way because facilities would be located underground and, therefore, would not limit development. A cost for temporary construction easements were not included in this cost estimate.

As mentioned earlier in this report, a plan requiring a series of on-site detention ponds was outlined in Reference 2. While the initial cost of constructing this type of system would be relatively low, approximately 10 acres of land would be occupied by the facilities. For comparison purposes, (See Table X) an average cost of $435,600 per acre ($10.00/s.f.) was assumed for land values. Therefore, the total project cost for on-site detention ponds is $4,634,000. This includes a cost for construction and a cost for right-of-way. (See Sheet 2 for approximate pond locations.)

The estimated cost for the Major Internal Drainage System is $617,000 exclusive of right-of-way. It is recommended that drainage improvements be constructed on public right-of-way in order to limit easement costs. If improvements are constructed on private property, easements costs could be in excess of $3,000,000.

Table VIII

Estimated Costs for Temple Pond*

Item	Quantity	Unit Cost	Cost
Excavation	150,000 c.y.	$ 1/cy	$ 150,000
Embankment Fill	70,000 c.y.	3/cy	210,000
Riprap	1,100 c.y.	40/cy	44,000
Reinforced Concrete	500 c.y.	325/cy	162,500
Slab Concrete	400 c.y.	225/cy	90,000
Asphalt	3,100 s.y.	18/sy	55,000
Curb and Gutter	1,500 l.f.	6.50 lf	9,750
(1) Subtotal			$ 722,000
(2) Contingency Costs: (20% of Item 1)			144,500
(3) Engineering Costs (11% of Item 1 & 2)			95,500
(4) Legal, Fiscal and Administrative Costs: (5% of Items 1, 2 and 3)			48,000
Total Project Cost for Temple Pond (Exclusive of right-of-way)			$1,010,000

*Cost includes roadway surface for Temple Drive and concrete trickle channel upstream to Belleview.

Table IX

Estimated Costs for Underground Detention

Item	Quantity	Unit Cost	Cost
60" CMP	48,880 l.f.	$ 65/l.f.	$3,172,000
Hydro-brakes	30 units	500/unit	15,000
(1) Subtotal			$3,187,000
(2) Utility Relocation (10% of Item 1)			318,700
(3) Contingency Costs (20% of Items 1 and 2)			701,200
(4) Engineering Costs (11% of Items 1, 2 and 3)			462,800
(5) Legal, Fiscal and Administrative Costs (5% of Items 1, 2, 3 and 4)			233,500
Total Project Costs for Underground Detention (exclusive of right-of-way)			$4,903,000

Table X

Estimated Cost for Detention Ponds

Item	Quantity	Cost
Construction of Detention Facilities	6 Ponds	$ 50,000
(1) Subtotal		$ 50,000
(2) Contingencies (20% of Item 1)		10,000
(3) Engineering (11% of Items 1 and 2)		6,600
(4) Right-of-way 10 acres x $435,600/acre ($10.00 s.f.)		4,356,000
(5) Legal, Fiscal and Administrative Costs (5% of Items 1, 2, 3 and 4)		211,200
Total Project Cost Including Right-of-way		$4,634,000

Table XI

Estimated Costs for the Major Internal Drainage System

	Cost
Tributary #1	
Channel Improvements	$ 38,300
Crossing Structures	10,800
Tributary #2	
Channel Improvements	75,600
Crossing Structures	102,900
Tributuary #3	
Channel Improvements	55,400
Crossing Structures	72,200
Tributary #4	
Channel Improvements	21,400
Crossing Structures	26,300
Miscellaneous crossings to drain flows into Goldsmith Gulch	38,100
(1) Subtotal	$441,100
(2) Contingency Costs (20% of Item 1).	88,200
(3) Engineering Costs (11% of Items 1 and 2) . .	58,200
(4) Legal, Fiscal and Administrative Costs (5% of Items 1 , 2, 3 and 4)	29,400
	$617,000*

*Does not include right-of-way costs. It is assumed channel improvements Will be constructed on public right-of-way, or on properties dedicated during future development.

Alternatives	Estimated Total Project Cost
A. Temple Pond	$1,010,000
B. Underground Detention	4,903,000
C. On-Site Detention Ponds	4,634,000

Internal System	Estimated Total Project Cost
A. Major Internal Drainage System Required for all Alternatives	$ 617,000

The utilization of the Temple Pond Detention Facility for storage of excess storm water runoff for the 100-year flood event, offers by far the most economical approach to meeting the drainage requirements of the DTC. Therefore, this is the recommended plan for detention. Several different agencies (including the Urban Drainage and Flood Control District, Denver Wastewater, and the State Engineer's office) would be involved in the design and construction of this facility. Therefore, acceptance of this plan would be required by these agencies. It is also recommended that the Goldsmith Metropolitan District request Denver to accept this plan of off-site detention in lieu of their current on-site detention requirements.

Preliminary meetings will be required to address the technical aspects of the proposed plan. Should this plan be accepted, a schedule for funding and construcing the facility should be adopted. If the recommended plan is not accepted, then the other two alternatives discussed in this report should be investigated.

In any event, the implementation of a master drainage plan for the DTC is imperative if the full development potential of the area is to be realized. To facilitate the successful incorporation of such a plan into

the overall development scheme of the DTC, an ongoing review program should be enacted, which would evaluate developments on a site-by-site basis to ensure compliance with the master drainage plan. This individual monitoring process would also allow for construction of both the major and minor drainage facilities as development proceeds. The result of this approach is a flexible design/construction process which could easily deal with changes in development objectives.

SUMMARY

This report examines three possible detention alternatives for the purpose of providing a master drainage plan for the DTC. The most economical design alternative would utilize a major on-stream detention facility, Temple Pond, to satisfy the drainage requirements of the DTC.

Successful implementation of this plan would require a coordinated effort by the Denver Technological Center, the Urban Drainage and Flood Control District, and Denver Wastewater. A review of the plan by the State Engineer's Office would also be necessary.

Recommendations are made for initiating a plan for site-by-site drainage review as development on the DTC progresses. This approach allows for implementation of a master drainage plan which would permit an extremely flexible design/construction process.

Recommendations are also provided for a Cost Participation Plan for funding the Temple Pond project. The funding plan is based on the 5-year plan completed by the Urban Drainage and Flood Control District.

REFERENCES

1. Goldsmith Gulch Major Drainageway Planning, prepared for Urban Drainage and Flood Control District, City and County of Denver, City of Greenwood Village, and Arapahoe County, by Gingery Associates, Inc., Consulting Engineers, Englewood, Colorado, November, 1977.

2. Preliminary Comprehensive Drainage Report on the Denver Technological Center, prepared for the Goldsmith Metropolitan District and the Denver Technological Center, by Associated Engineers, Inc., Consulting Engineers, November 3, 1980.

3. Master Plan Alternatives for the Denver Technological Center, prepared for the Goldsmith Metropolitan District and the Denver Technological Center, by Associated Engineers, Inc., Consulting Engineers, November 19, 1980.

4. Urban Storm Drainage Criteria Manual, Volumes I and II, Denver Regional Council of Governments and Urban Drainage and Flood Control District, 1969.

APPENDIX

Drainage System and Flood Potential

Layouts of the existing and proposed drainage facilities are shown on Sheet 2. Information on sizes and locations of existing drainage structures were obtained from a previous report[2]. The following information, describing the flood problems of the DTC on an individual superblock basis, is taken from that report.[2]

Superblock "M" - Arapahoe County

Superblock "M" does not provide for any onsite detention, nor do most individual developments. The existing pipe controlling the runoff from the Shepler site must be completed along the south side of Roundtree to South Yosemite. The present storm sewer network serving Superblock "M" converges at the southwest corner of Yosemite and Orchard and is conveyed directly east in a 36-inch diameter pipe to the west tributary of Goldsmith Gulch.

Superblock "L" - Greenwood Village

The southern part of Superblock "L", including the Diners Club and Columbia Bank (without the new addition), have no onsite detention. The detention facilities of Vantex have little effect on detaining the runoff generated. The inlets for the detention areas in the Vantex project should be restricted to limit the discharge into the existing storm system. The result of not providing any improvements in this area is that the DTC Parkway will flood during moderate storms - particularly the intersection of DTC Parkway and South Tamarac Parkway.

If future developments do not provide drainage facilities, there is a flooding potential at South Ulster Circle West and DTC Parkway.

In the northern part of Superblock "L", there exists no detention at hydraulic design point L2. The inlet grate is generally blocked with mud and trash, thereby causing continued flooding at the low point of DTC Parkway. There will be increased flooding at this particular location if provisions are not made for regular maintenance of the catch basin.

Superblock "K" - Greenwood Village

The existing facilities in the southern part of Superblock "K" (K_s) are adequate for moderate storms in the Hewlett-Packard and American Management areas. But each discharges the runoff from their particular tract as quickly as possible and thereby burdens downstream tracts with handling the additional runoff and detention for major storms. There is general flooding along South Tamarac Parkway resulting in severe deterioration of the existing asphalt pavement at this location.

Severe flooding can be eliminated on South Tamarac Parkway by the proper sizing of culverts beneath Tamarac to pass flows of a selected storm frequency. United Airlines should enact precautionary measures to prevent compounding the minor drainage problems which exist already. The majority of runoff from the southern part of Superblock "K" (K_s) is collected at hydraulic point K2.

Superblock "J" - Greenwood Village

The problems in Superblock "J" contribute to further problems throughout the entire sub-basin, extending from hydraulic design point L3 (Greenwood Plaza) to the outfall at the main channel of Goldsmith Gulch Ditch identified as hydraulic design point H1. This sub-basin

has inadequate drainage facilities including undersized culverts and more drastically, the placement of building DTC-30 in the middle of the major drainageway from Superblock "J" to Goldsmith Gulch. The finished floor elevation of DTC-30 is approximately 3/10 a foot lower than the grated manhole in the parking lot.

The low and moderate flows through Superblock "H" can be piped but heavy flows must be routed on the surface in a drainageway easement. This is done to some extent presently, however, the pipe diameter becomes steadily smaller as flows proceed downstream from hydraulic design point L2 to hydraulic design point J1.

Superblock "I" - Greenwood Village

The major problem facing the development of Superblock "I" is that the existing channel is subject to flooding. Superblock "I" receives flows from the upper Goldsmith Gulch Basin at Yosemite in addition to flows from the DTC itself lying south of Belleview. The impact of these flood levels are ultimately controlled by upstream development and its associated floodwater detention facilities. The major drainageway planning study for Goldsmith Gulch prepared for the Urban Drainage and Flood Control District proposes upstream facilities which will help control future flood flows through Superblock "I".

Superblock "H" - Greenwood Village

Superblock "H" has essentially no defined detention system in use for the major storm on individual developments. The individual problems of Superblock "H" are a result of its location to adjacent Superblocks "G" and "J". At present, there is flooding across the low point of Ulster between Superblocks "G" and "H" because of the uncontrolled runoff from Superblock "G" going into the undersized pipe.

The problems associated with Superblock "H" can be critical since the major flows from Superblock "J" will pass between buildings DTC-30 and DTC-31. The runoff could be controlled by increasing the pipe size running from Superblock "J" past the buildings to accommodate the major flow.

Superblock "G" - Greenwood Village

As mentioned in the discussion of Superblock "H", the flows generated in Superblock "G" are not controlled and they flood across the low point at Ulster. The intent to control the runoff from the Financial Plaza is evident, but the location of this outlet may be a problem. There is limited space available to correct any drainage problem in Superblock "G", so it is recommended that an adequate system be provided to collect the runoff (pipe or open channel) and direct it into Superblock "H".

Superblock "F" - Denver

It is evident that the basins under the jurisdiction of the Denver Wastewater Management Division have been complying with the drainage criteria established in Chapter 12, Storm Drainage Planning and Design. This can be seen by the attention to providing required detention in Superblock "F". Although more onsite detention is visably apparent, in provided areas, some runoff excapes directly from parking areas and continues eastward to the main channel of Goldsmith Gulch.

The majority of this superblock is currently undeveloped and the runoff reaching the gulch is primarily sheetflow. With future construction of South Tamarac in this area, the runoff can still travel eastward by providing multiple crossings or by establishing a collection network and providing a single or perhaps two (2) crossings.

The other major drainage feature in Superblock "F" is the channel through its northern portion. This channel collects the runoff from Superblock "E" system, Superblock "D" and the southern portion of Superblock "A".

Superblock "E" - Denver

Superblock "E" is similar to Superblock "F" in that the detention requirements appear to have been considered and provided for in the more recent developments. However, the prior drainage network which flowed through Superblock "E" had little detention provided and thus now places the burden of storage on Superblock "E".

Superblock "D" - Denver

Superblock "D" is fairly well drained and has adequate detention facilities for moderate storms. Superblock "D" supplies runoff to three (3) basins "A", "E" and "F". This system should serve basin "D" well even for larger storms but will become seriously overloaded if it accepts runoff from the southern portion of "A".

A portion of the "D" basin in the Sheraton Hotel empties runoff directly into the northern portion of "A" basin. The remaining runoff from the southern portions of the "D" basin are collected in a storm sewer system which presently empties into the middle of Superblock "E".

Superblocks "B" and "C" - Denver

Superblocks "B" and "C" are very similar in nature to Superblock "I" since all are completely undeveloped and each is susceptible to flooding from the main channel. Many of the same cautions pertaining to Superblock "I" should be followed for Superblocks "B" and "C" also.

Superblock "A" (south) - Denver

Superblock "A" is currently undeveloped and covers a major portion of the DTC area north of Belleview. Because of its size and location, Superblock "A" splits its drainage north and south, each covering approximately half the area. The runoff from Superblock "A" will contribute to the storm sewer system connecting Superblock "D" to Superblock "F" if allowed. This direct connection will seriously overload the sewer system during a major storm.

Superblock "A" (north) - Denver

The northern part of Superblock "A" drains to the north and continues under Ulster Street and proceeds through the west part of Superblock "B" and under Interstate-225. There are some offsite areas west of Interstate-25 which route through the northern portion of Superblock "A".

Base topography and existing improvements prepared by stereophotographic methods from photography dated May 11, 1979 by Sharf & Associates, Inc. Property lines and easements prepared by J.W. Williams Associates, Inc. on June 15, 1979. Planned and committed improvements to streets and parcels, and topographic modifications prepared by Carl A. Worthington Partnership on August 31, 1

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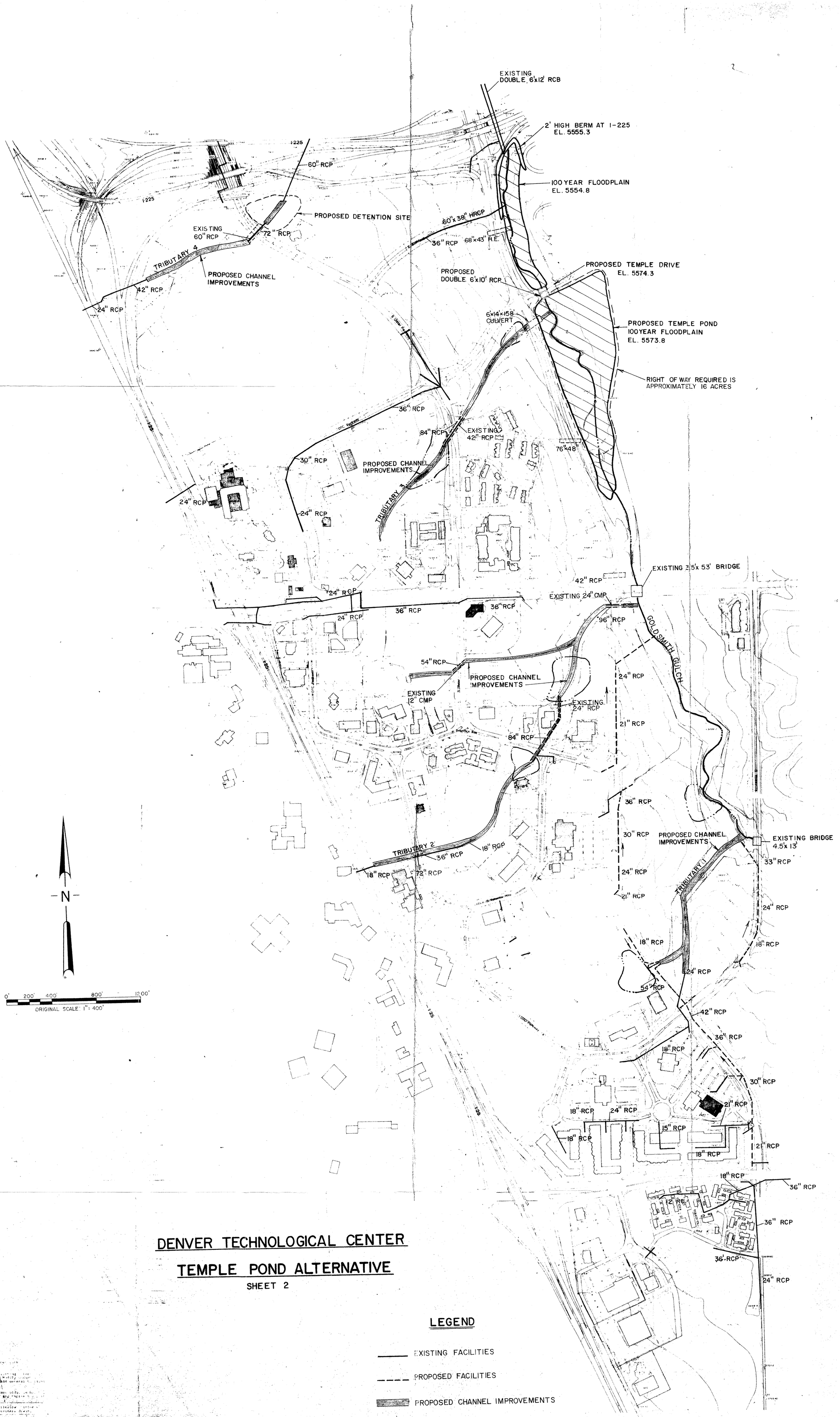
SHEET 1

OF 1

DENVER TECHNOLOGICAL CENTER

TEMPLE POND ALTERNATIVE

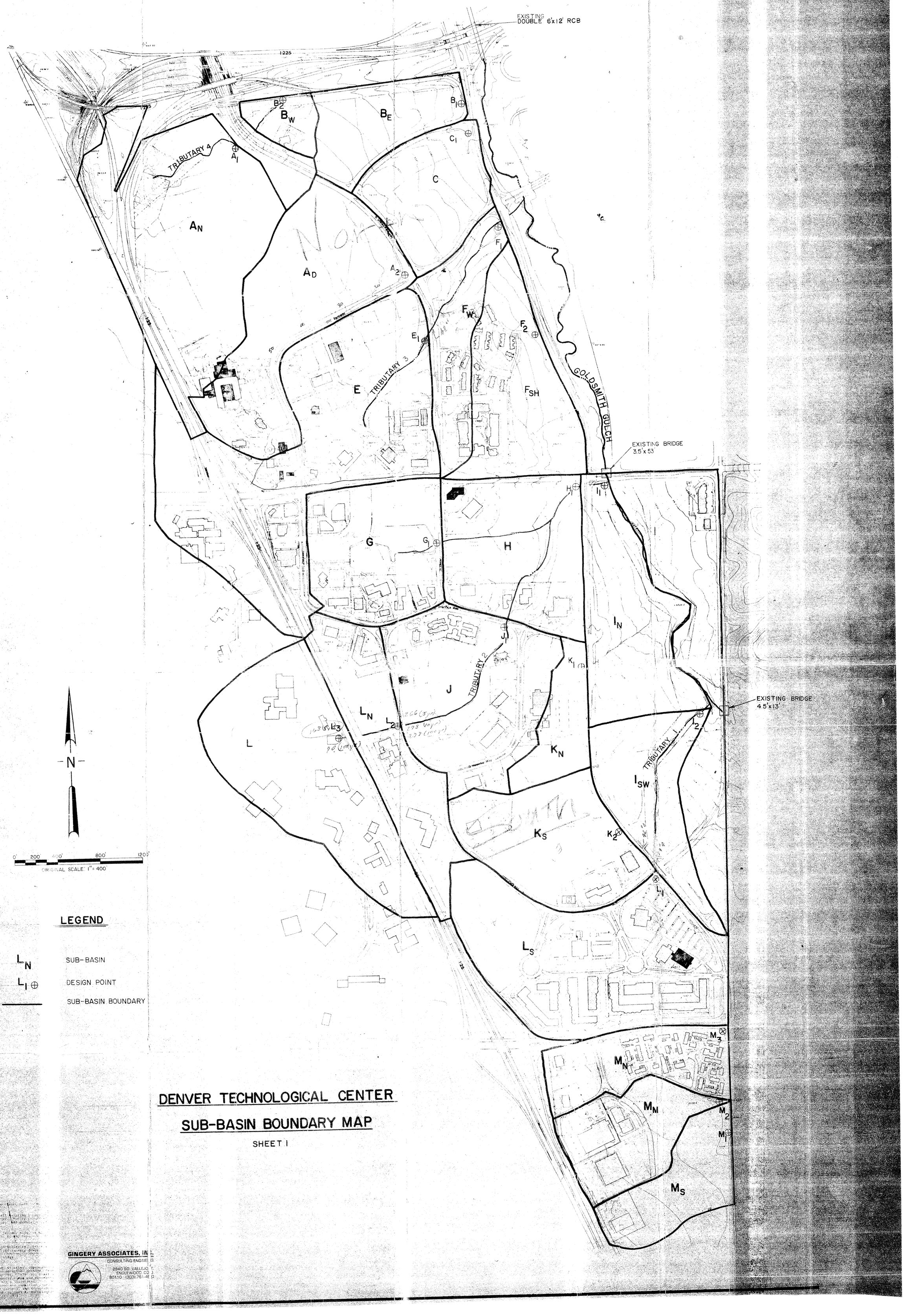
SHEET 2



LEGEND

- EXISTING FACILITIES
- PROPOSED FACILITIES
- PROPOSED CHANNEL IMPROVEMENTS
- AREAS PRESERVED BY USING TEMPLE POND

GINGERY ASSOCIATES, INC.
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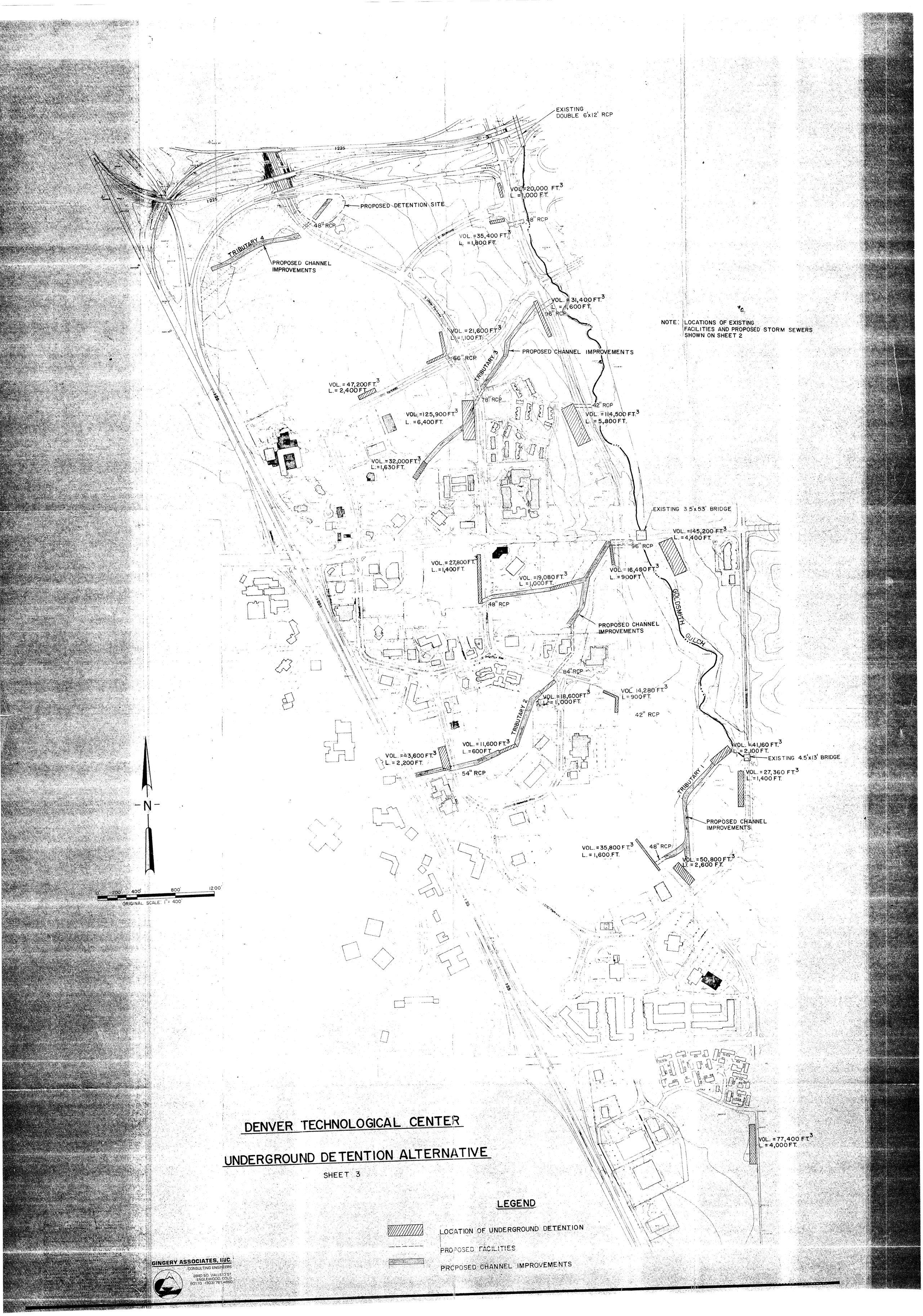


DENVER TECHNOLOGICAL CENTER

SUB-BASIN BOUNDARY MAP

SHEET 1

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CONSULTING ENGINEERS
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ENGLEWOOD, COLO.
80110 (303) 761-4[illegible]



NOTE: LOCATIONS OF EXISTING FACILITIES AND PROPOSED STORM SEWERS SHOWN ON SHEET 2

DENVER TECHNOLOGICAL CENTER

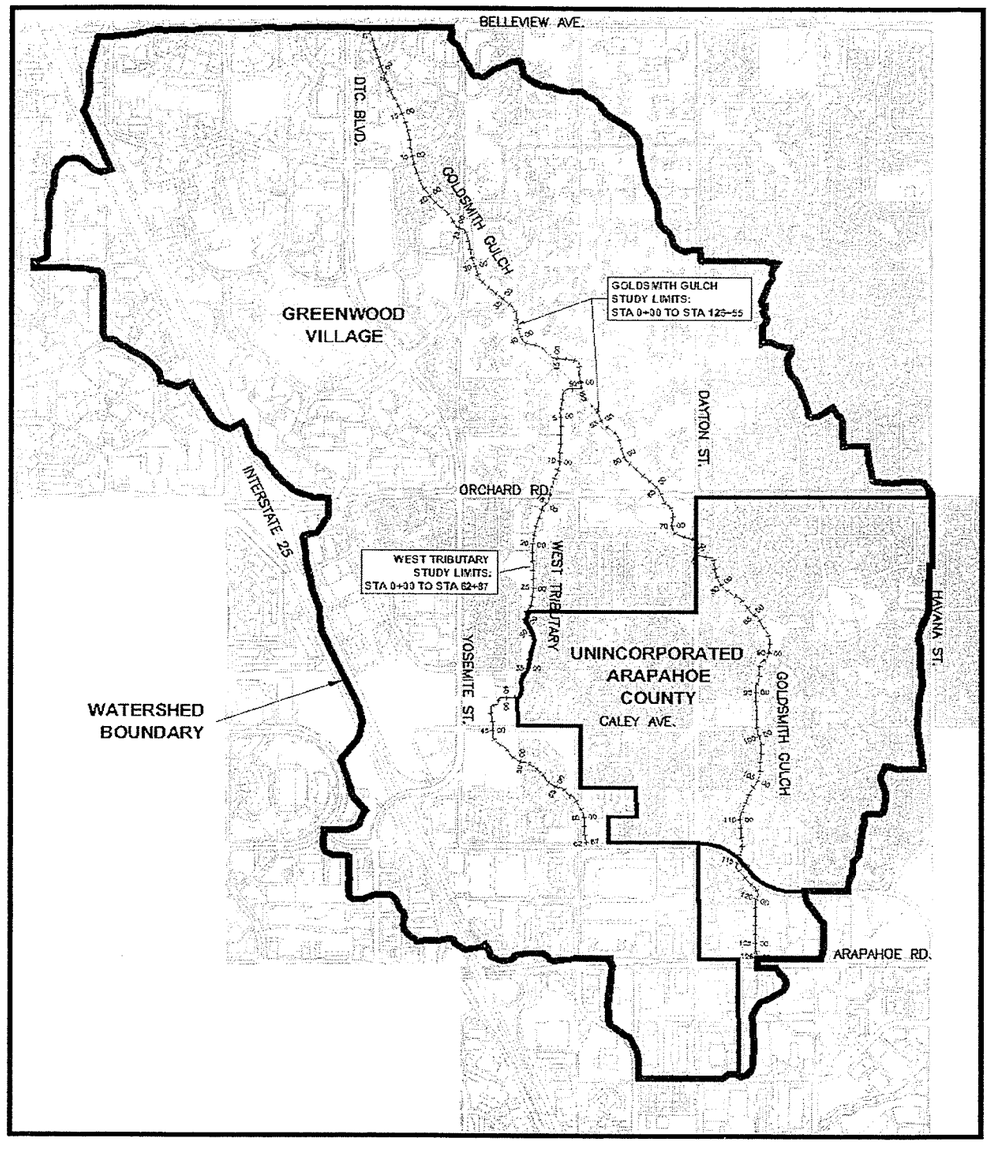
UNDERGROUND DETENTION ALTERNATIVE

SHEET 3

LEGEND

- LOCATION OF UNDERGROUND DETENTION
- PROPOSED FACILITIES
- PROPOSED CHANNEL IMPROVEMENTS

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FLOOD HAZARD AREA DELINEATION

UPPER GOLDSMITH GULCH

Project Sponsors:

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

ARAPAHOE COUNTY

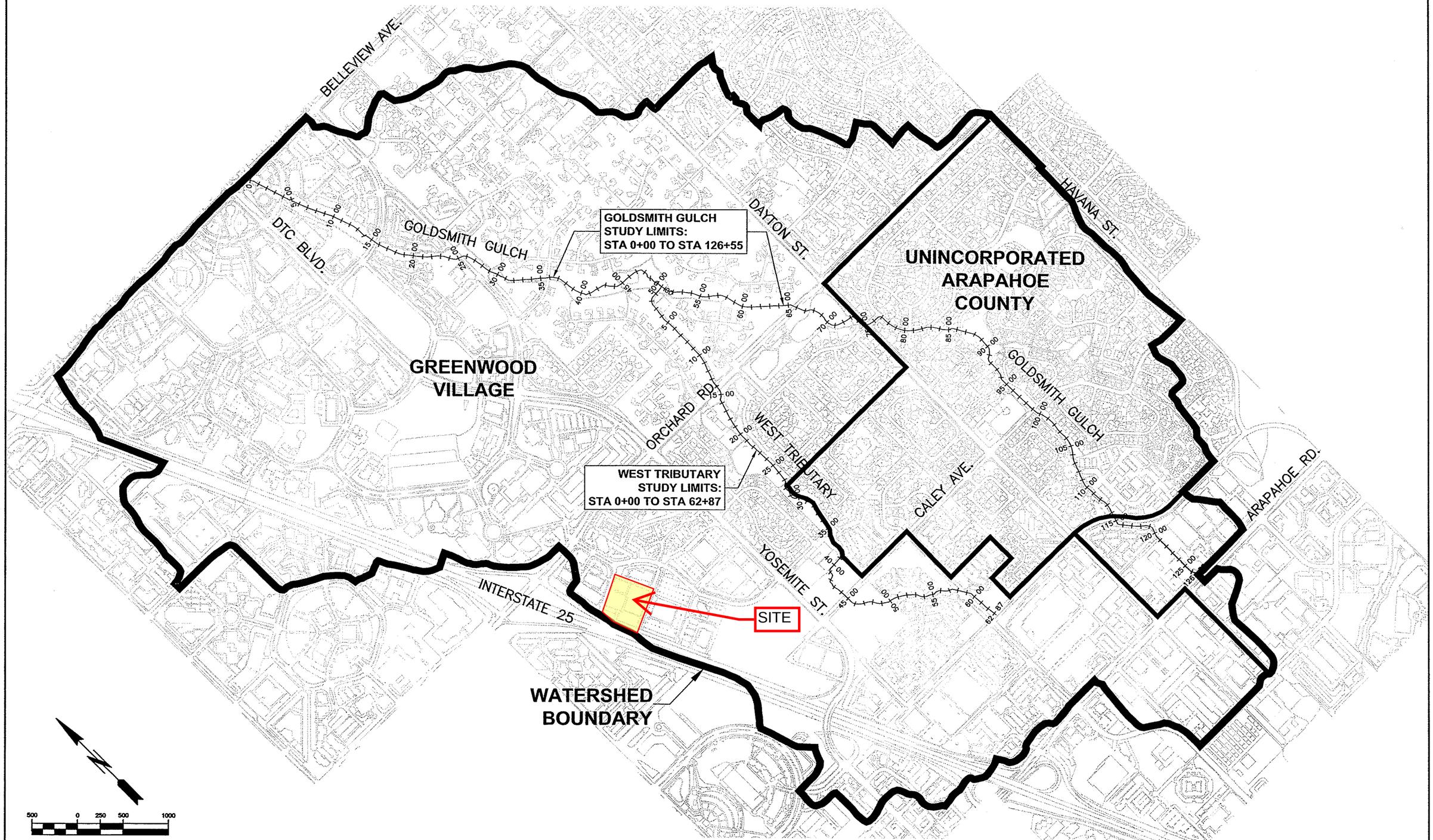
CITY OF GREENWOOD VILLAGE

Prepared by:

MOSER & associates ENGINEERING

720 South Colorado Boulevard
Suite 410 S
Denver, Colorado 80246
phone (303) 757-3655
fax (303) 300-1635

April 2005



MOSER & associates ENGINEERING 720 S. COLORADO BLVD. SUITE 410 S DENVER, CO 80246 PHONE: 303-757-3655 FAX: 303-300-1635	DESIGNED TLP DATE 11/12/04 DRAWN TLP DATE 11/12/04 CHECKED RRM DATE 11/16/04 REVISED DATE	ARAPAHOE COUNTY CITY OF GREENWOOD VILLAGE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT	GOLDSMITH GULCH OUTFALL FLOOD HAZARD AREA DELINEATION	STUDY AREA	FIGURE 1-1

LEGEND

SUB–WATERSHED BOUNDARY

WATERSHED BOUNDARY

XX / XX — SUB–WATERSHED ID / SUB–WATERSHED AREA (ACRES)

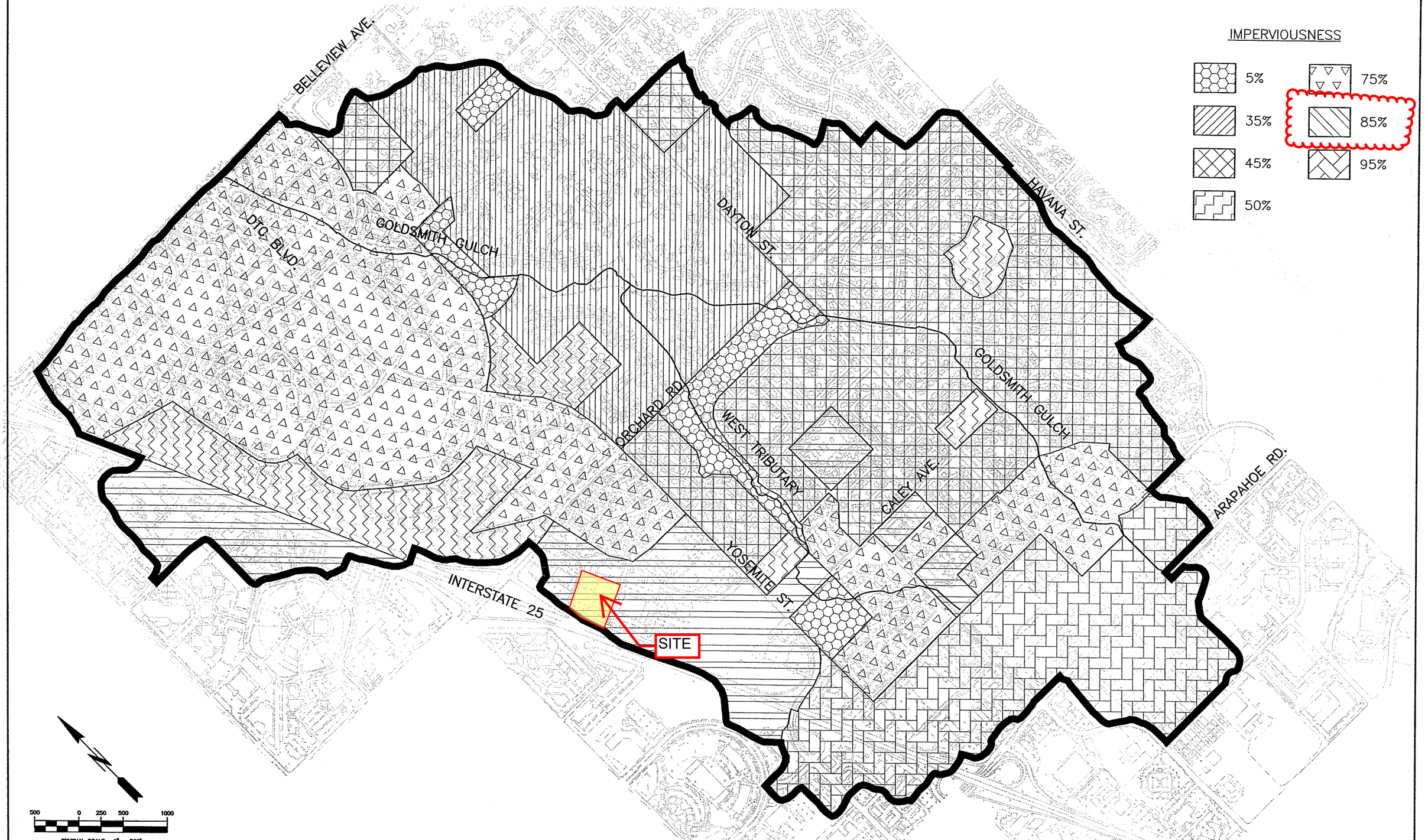
BELLEVIEW AVE.
DTC BLVD.
GOLDSMITH GULCH
DAYTON ST.
HAVANA ST.
DORCHARD RD.
WEST TRIBUTARY
CALEY AVE.
GOLDSMITH GULCH
ARAPAHOE RD.
YOSEMITE ST.
INTERSTATE 25
SITE

10 40.6 | 11 48.8 | 12 20.4 | 13 56.7 | 14 52.6 | 15 52.5 | 16 17.3 | 17 34.1 | 18 15.9 | 19 22.1 | 20 21.5 | 21 66.3 | 30 13.9 | 31 8.0 | 32 61.6 | 33 5.9 | 34 81.6 | 35 48.0 | 40 28.4 | 41 43.5 | 42 43.6 | 43 41.6 | 44 27.2 | 45 23.5 | 46 73.8 | 47 14.4 | 48 7.1 | 49 14.1 | 50 27.3 | 51 28.5 | 52 23.7 | 53 27.0 | 54 44.6 | 60 38.8 | 61 18.4 | 62 43.4 | 63 35.2 | 64 64.5 | 65 6.1 | 66 26.2 | 67 29.5 | 68 43.8 | 69 16.7 | 70 6.7 | 71 20.4 | 72 9.3 | 73 24.2 | 74 19.1 | 75 6.1 | 76 5.6 | 77 22.9

500 0 250 500 1000

ORIGINAL SCALE: 1" = 500'

MOSER & associates ENGINEERING — 720 S. COLORADO BLVD. SUITE 410 S DENVER, CO 80246 PHONE: 303–757–3655 FAX: 303–300–1635 — DESIGNED TLP DATED 7/22/04; DRAWN TLP DATED 7/22/04; CHECKED RCO DATED 8/03/04; REVISED ____ DATE ____	ARAPAHOE COUNTY CITY OF GREENWOOD VILLAGE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT	GOLDSMITH GULCH OUTFALL SYSTEMS PLANNING STUDY	SUB-WATERSHED BOUNDARIES	FIGURE A-1



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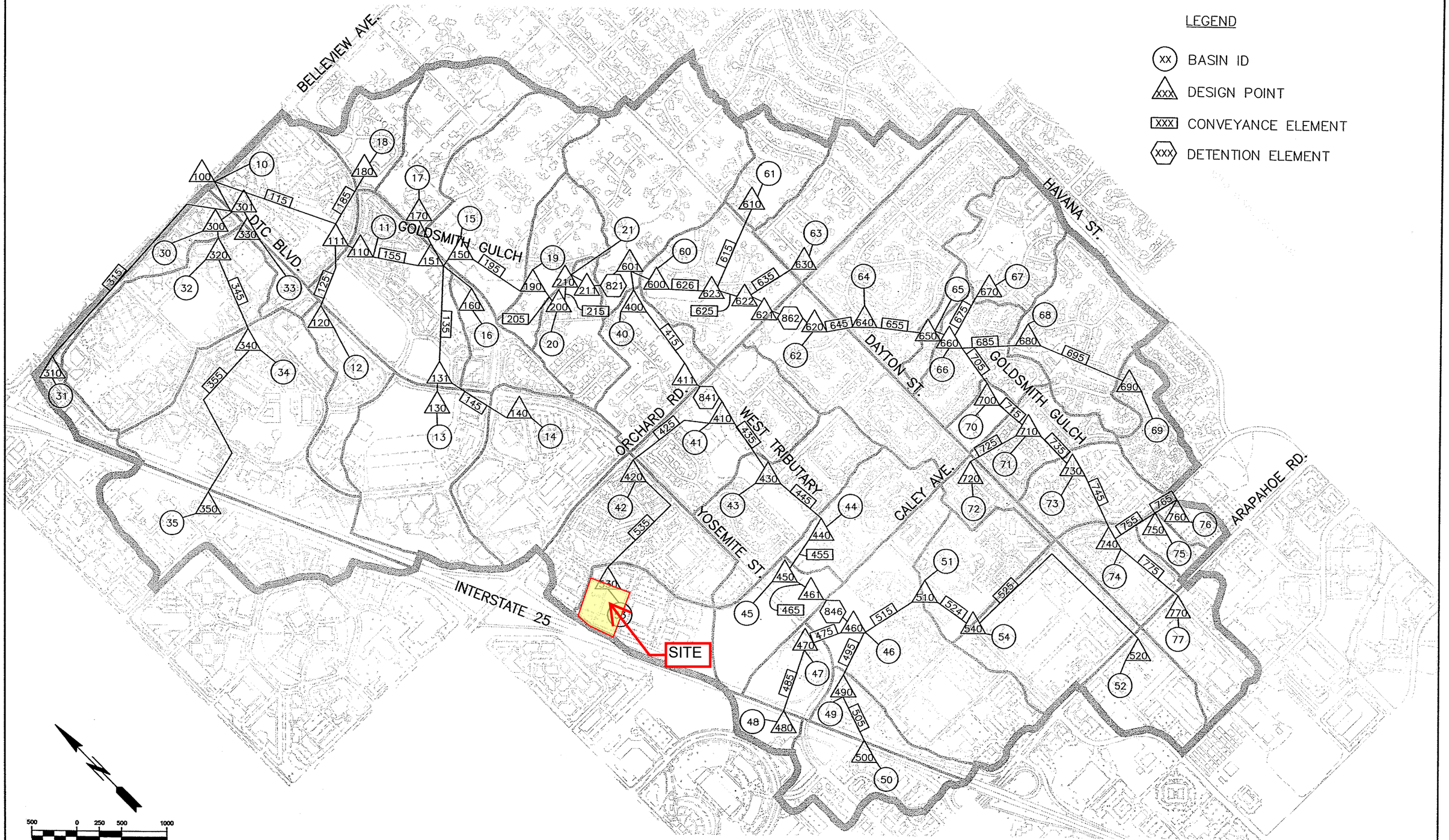
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DRAWN	TLP	DATED 7/26/04
CHECKED	RCO	DATED 8/03/04
REVISED		DATE

ARAPAHOE COUNTY
CITY OF GREENWOOD VILLAGE
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

GOLDSMITH GULCH OUTFALL SYSTEMS PLANNING STUDY

EXISTING IMPERVIOUSNESS MAP

FIGURE A-2



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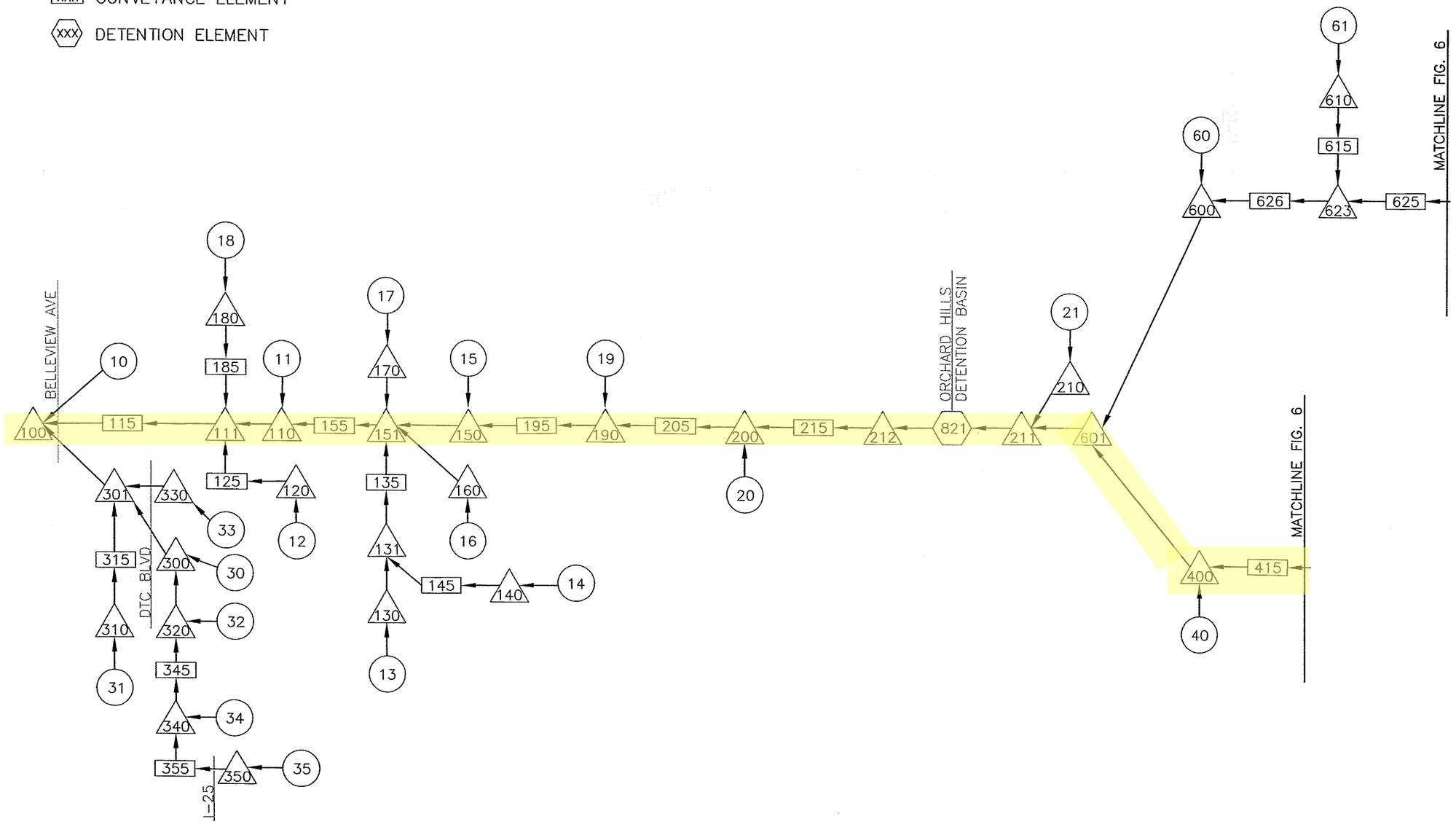
LEGEND

(XX) BASIN ID

XXX DESIGN POINT

[XXX] CONVEYANCE ELEMENT

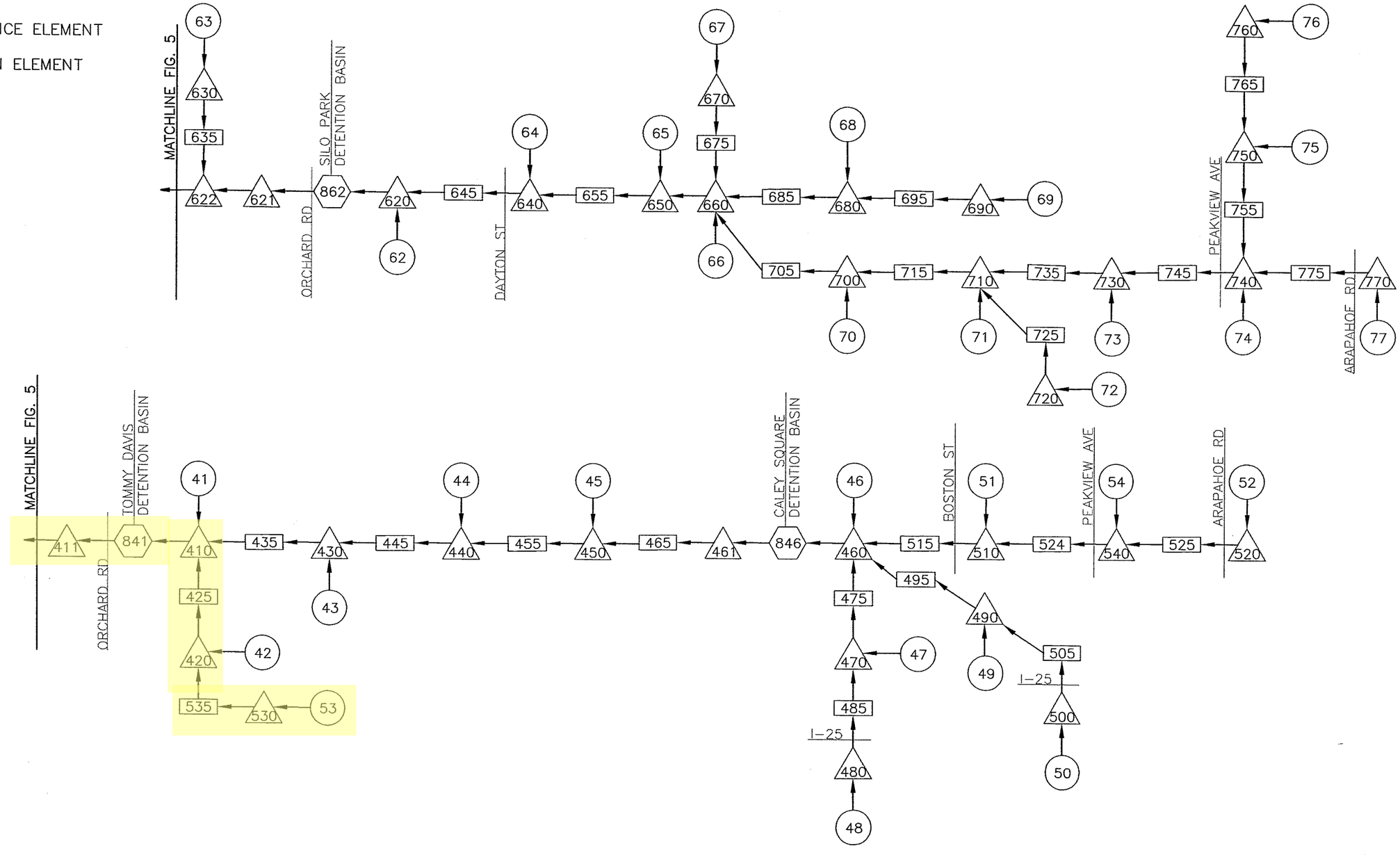
⟨XXX⟩ DETENTION ELEMENT



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LEGEND

- (XX) BASIN ID
- XXX DESIGN POINT
- [XXX] CONVEYANCE ELEMENT
- (XXX) DETENTION ELEMENT



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TABLE A-1
Subwatershed Characteristics

Basin ID	Area (sq. mi.)	Length (miles)	Dist to Centroid (miles)	Imperv. 1989 (%)	Imperv. Existing (%)	Slope (feet/foot)	Tc (min)	Average Maximum Depression Storage		Infiltration		Horton's Exponential Decay Rate Coef. (1/s)
								Perv. Surf. (in)	Imp. Surf. (in)	Initial (in/hr)	Final (in/hr)	
10	0.063	0.366	0.149	35	75.0	0.030	21	0.35	0.10	3.0	0.5	0.0018
11	0.076	0.421	0.191	35	75.0	0.025	22	0.35	0.10	3.0	0.5	0.0018
12	0.032	0.392	0.117	35	75.0	0.021	22	0.35	0.10	3.0	0.5	0.0018
13	0.089	0.403	0.174	35	66.1	0.030	22	0.35	0.10	3.0	0.5	0.0018
14	0.082	0.486	0.203	35	65.5	0.022	24	0.35	0.10	3.0	0.5	0.0018
15	0.082	0.528	0.222	35	29.5	0.038	26	0.35	0.10	3.0	0.5	0.0018
16	0.027	0.370	0.169	35	59.3	0.033	21	0.35	0.10	3.0	0.5	0.0018
17	0.053	0.530	0.276	35	39.9	0.031	26	0.35	0.10	3.0	0.5	0.0018
18	0.025	0.338	0.193	35	43.0	0.040	20	0.35	0.10	3.0	0.5	0.0018
19	0.034	0.283	0.111	35	35.1	0.048	18	0.35	0.10	3.0	0.5	0.0018
20	0.034	0.313	0.134	35	42.0	0.044	19	0.35	0.10	3.0	0.5	0.0018
21	0.104	0.620	0.314	30	36.8	0.029	28	0.35	0.10	3.0	0.5	0.0018
30	0.022	0.489	0.098	35	75.0	0.025	24	0.35	0.10	3.0	0.5	0.0018
31	0.013	0.300	0.153	35	71.7	0.023	19	0.35	0.10	3.0	0.5	0.0018
32	0.096	0.539	0.286	35	75.0	0.029	26	0.35	0.10	3.0	0.5	0.0018
33	0.009	0.258	0.108	35	75.0	0.025	18	0.35	0.10	3.0	0.5	0.0018
34	0.128	0.692	0.370	35	62.5	0.022	30	0.35	0.10	3.0	0.5	0.0018
35	0.075	0.431	0.078	35	85.0	0.017	23	0.35	0.10	3.0	0.5	0.0018
40	0.044	0.424	0.195	30	35.0	0.025	22	0.35	0.10	3.0	0.5	0.0018
41	0.068	0.394	0.123	35	30.9	0.031	22	0.35	0.10	3.0	0.5	0.0018
42	0.068	0.379	0.162	35	79.7	0.016	21	0.35	0.10	3.0	0.5	0.0018
43	0.065	0.482	0.106	35	51.4	0.027	24	0.35	0.10	3.0	0.5	0.0018
44	0.043	0.342	0.131	35	54.9	0.039	20	0.35	0.10	3.0	0.5	0.0018
45	0.037	0.300	0.140	35	80.5	0.039	19	0.35	0.10	3.0	0.5	0.0018
46	0.111	0.702	0.308	40	75.2	0.027	31	0.35	0.10	3.0	0.5	0.0018
47	0.023	0.201	0.109	40	82.3	0.028	16	0.35	0.10	3.0	0.5	0.0018
48	0.011	0.135	0.090	40	85.0	0.025	14	0.35	0.10	3.0	0.5	0.0018
49	0.022	0.382	0.178	40	95.0	0.035	21	0.35	0.10	3.0	0.5	0.0018
50	0.043	0.259	0.057	40	95.0	0.023	18	0.35	0.10	3.0	0.5	0.0018
51	0.118	0.603	0.352	40	87.3	0.025	28	0.35	0.10	3.0	0.5	0.0018
52	0.037	0.439	0.310	40	95.0	0.017	23	0.35	0.10	3.0	0.5	0.0018
53	0.042	0.401	0.164	35	85.0	0.013	22	0.35	0.10	3.0	0.5	0.0018
54	0.070	0.471	0.369	40	95.0	0.017	24	0.35	0.10	3.0	0.5	0.0018
60	0.061	0.357	0.140	30	35.0	0.029	20	0.35	0.10	3.0	0.5	0.0018
61	0.029	0.283	0.116	30	40.4	0.028	18	0.35	0.10	3.0	0.5	0.0018
62	0.068	0.543	0.278	40	36.8	0.029	26	0.35	0.10	3.0	0.5	0.0018
63	0.055	0.444	0.238	30	44.7	0.025	23	0.35	0.10	3.0	0.5	0.0018
64	0.101	0.623	0.126	40	45.0	0.027	28	0.35	0.10	3.0	0.5	0.0018
65	0.010	0.176	0.010	40	45.0	0.052	15	0.35	0.10	3.0	0.5	0.0018
66	0.041	0.266	0.114	40	45.0	0.021	18	0.35	0.10	3.0	0.5	0.0018
67	0.046	0.368	0.194	40	46.7	0.035	21	0.35	0.10	3.0	0.5	0.0018
68	0.068	0.413	0.220	40	45.0	0.014	22	0.35	0.10	3.0	0.5	0.0018
69	0.026	0.309	0.178	40	45.8	0.018	19	0.35	0.10	3.0	0.5	0.0018
70	0.011	0.189	0.109	40	48.5	0.042	16	0.35	0.10	3.0	0.5	0.0018
71	0.032	0.245	0.121	40	45.2	0.034	17	0.35	0.10	3.0	0.5	0.0018
72	0.015	0.243	0.116	40	49.0	0.014	17	0.35	0.10	3.0	0.5	0.0018
73	0.038	0.309	0.109	40	73.4	0.022	19	0.35	0.10	3.0	0.5	0.0018
74	0.030	0.224	0.094	40	86.1	0.037	17	0.35	0.10	3.0	0.5	0.0018
75	0.010	0.143	0.052	40	95.0	0.032	14	0.35	0.10	3.0	0.5	0.0018
76	0.009	0.130	0.059	40	95.0	0.032	14	0.35	0.10	3.0	0.5	0.0018
77	0.036	0.372	0.171	40	95.0	0.019	21	0.35	0.10	3.0	0.5	0.0018

TABLE A-6 Continued

Design Element	Location	Drainage Area (ac)	Peak Flows (cfs)			
			10-Year	50-Year	100-Year	500-Year
485			16	25	30	38
490			100	157	181	229
495			97	156	184	232
500	I-25	27.5	75	112	131	165
505			66	102	121	151
510	Bridgewater Apartments	99.2	201	322	381	483
515			187	303	361	457
520	Peakview Avenue	23.7	59	90	103	130
524			144	229	269	341
525			42	70	83	106
530			63	99	115	146
535			54	90	106	136
540			141	223	265	336
600	Goldsmith Gulch before Confluence	439.0	147	608	886	1325
601	Goldsmith Gulch at Confluence	907.5	480	1407	1892	2602
610			28	53	65	85
615			26	50	62	81
620	Into Silo Park	346.2	441	807	1004	1328
621			94	533	756	1111
622			109	568	812	1195
623			123	594	852	1260
625			109	579	825	1217
626			122	578	832	1244
630			49	92	111	146
635			50	92	113	147
640	Dayton Street	302.7	410	730	903	1204
645			404	729	906	1199
650	Arapahoe Lake Outfall	238.1	344	645	787	1026
655			335	605	746	974
660			336	629	767	1000
670	Arapahoe Lake-East Cove	29.4	45	83	100	131
675			33	69	86	114
680	Arapahoe Lake-SE Cove	60.2	89	163	198	258
685			67	139	173	231
690			26	48	58	76
695			25	46	56	73
700	Arapahoe Lake-SW Cove	115.8	240	396	472	604
705			207	362	435	559
710	Caley Avenue	108.8	228	374	446	567
715			230	377	448	572
720			16	29	35	46
725			16	28	34	44
730	Appletree Condos	78.7	179	283	337	424
735			183	290	343	434
740	Peakview Avenue	54.4	135	211	244	308
745			132	205	242	304
750			32	49	57	72
755			31	48	56	70
760			15	24	28	35
765			15	23	27	34
770	Arapahoe Road	23.0	61	92	107	134
775			57	88	102	127
821	Orchard Hills	907.5	503	1422	1939	2668
841	Tommy Davis Park/Orchard Road	440.3	347	802	965	1206
846	Caley Detention/Caley Avenue	233.6	276	554	593	670
862	Silo Park/Orchard Road	346.2	94	533	756	1111

This Neighborhood Input Meeting took place at the City of Greenwood Village, City Hall in the Community Room at 6060 S Quebec Street, Greenwood Village, CO 80111, on Tuesday, January 27, 2026, at 6:00pm and the Neighborhood Attendees Sign-in Sheet is attached.

ATTENDANCE

- City: Grady Timmerman
- City Council Members: 2 in attendance
- Owner: Pastor Josh Weidmann
- Design Team: Kimley Horn: Coy Williams
- Design Team: Beck: Doug Spuler, Chris Engebretson
- Neighbors: 6 in attendance

SUMMARY OF QUESTIONS AND ANSWERS

1. Q: Questions related to density, low crime, walkable city and concern on the economics to the Village and concern over traffic impacts.
   A: The lack of tax revenue to the Village was acknowledged, however the Traffic Impact Study (TIS) has determined that no improvements are required due to the church use (in fact their peak is Sunday, when traffic counts are low for the area in general). Rebuttal by Neighbor: the building could become a liquor store or large-scale entertainment center, both of which would be a far less desirable use than a church.
2. Q: How will you use the lobby / retail space, coffee shop and counseling center?
   A: Meant to be open to public as a community resource.
3. Q: Question related to architectural changes (if any) to the building / will you be maintaining the existing building?
   A: Yes, with some modest enhancements.
4. Q: What are you doing about signage?
   A: It will be a separate and future process.
5. Q: How do you handle security of the new and existing facilities?
   A: Work closely with local law enforcement as we have been doing.
6. Q: When could the church be operational (schedule / timing)?
   A: Hoping to occupy building by Easter 2028.
7. Q: How many services do you typically hold on Sunday's?
   A: Two (2) typically and during holidays three (3) at Christmas and Easter
8. Q: What will happen to existing tall signage?
   A: Most likely will be removed, but potential to explore historic options.

Meeting adjourned at approximately 6:50pm.

City of Greenwood Village

Minutes – Final
Planning and Zoning Commission

6060 South Quebec Street
Greenwood Village, CO
80111

Hearing-impaired apparatus available
Please turn off all cellular phones and/or audible pagers
All Board, Commission and Council meetings are digitally recorded

Tuesday, August 4, 2026	6:00 PM	Council Chambers

DINNER (5:00 PM)

REGULAR MEETING (6:00 PM)

1. CALL TO ORDER

The Planning & Zoning Commission of the City of Greenwood Village met in a regular session in the Council Chambers at Greenwood Village City Hall, 6060 South Quebec Street, Greenwood Village, County of Arapahoe, State of Colorado at 6 p.m.

Staff in Attendance - Derek Holcomb, Community Development Director, Christy Fitch, Attorney, Justin Williams, Engineering Manager, Spencer Raish, Senior Project Manager, Derek Stertz, Planning Manager, Grady Timmerman, Planner II, Jonathan Mehki, Planner I, Brandon Nehl, Planner I.

2. ROLL CALL

Present: *4 - Randy Davis, Tim Hascall, Jeffrey Litman, Steve Moran*
Absent: *4 - Richard Easton, Eric Montag, Scott Sax, Jonathan Mann*
Presiding: *Tim Hascall*

3. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance led by Commissioner Randy Davis.

4. APPROVAL OF MINUTES

A. July 21, 2026 Minutes (2026-232)

5. PUBLIC COMMENT

6. PUBLIC HEARINGS

A. A. Grace Chapel Site Development Plan (SDP) And Special Use Permit (SUP). Allowance To Establish A Place Of Worship Use With An Auditorium Of 1,000 Seats In The Existing Building. (2026-233)

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Planner Timmerman presented the staff presentation.

Planner Timmerman stated that a notice of the date, time, and place of the hearing was published on the City website at least 15 days prior to the hearing, as required by the Greenwood Village Municipal Code. Notice of the hearing was also posted on the property at least 15 days prior to the hearing, as required by the Greenwood Village Municipal Code. Notice of the hearing date, time, and place was also sent by mail to property owners as required by the Greenwood Village Municipal Code for this type of hearing at least 15 days prior to the hearing.

Doug Spuler, 1001 17th St. Denver, CO 80002, Josh Weidmann, 8505 S Valley Highway, Englewood, CO 80112, Coy Williams, 6200 S Syracuse Way, Greenwood Village, CO 80111 presented their presentation.

Questions to Staff and/or Applicants
Commissioner Davis requested clarification about the number of parking islands being proposed was an exception since the applicants indicated they are asking for no exceptions.

Applicants clarified that anything existing will remain existing and modifications being proposed will be brought to code.

Commissioner Davis asked if adding additional landscaping islands would eliminate parking spaces and still comply with code.

Applicants discussed the issue of remaining under the less than 1 acre of disturbance criteria for the site and being compliant with the stormwater code. A full pavement analysis was conducted to determine what will need to be removed and replaced. The applicants want to avoid a disturbance of over 1 acre because it would be difficult to comply with water quality requirements that would be triggered if the disturbance exceeds 1 acre because there is no storm sewer system on site.

Chair Hascall asked about the number of parking spaces being proposed.

Planner Timmerman confirmed that although there is a reduction, there would be 250 parking spaces and in compliance with the minimum ratio required outlined in the Land Development Code.

Chair Hascall asked applicants about increased traffic and parking during certain times of the year, specifically if there are any plans to accommodate the high traffic events throughout the year.

Applicants plan to set up parking agreements for weekends and holidays with adjacent property owners.

Chair Hascall asked about if there are any additional criteria that P&Z staff would need to consider in the future for parking arrangements beyond the existing premises.

Planner Timmerman stated there are no additional criteria.

Commissioner Moran wanted clarification from staff on the directional signage to help navigate traffic due to the complex layout of surrounding buildings.

Planning Manager Stertz clarified that directional signage is administered by the Community

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Development Director and in compliance with the sign code.

Commissioner Litman asked about where most of the number of their congregates travel from.

Applicants indicated that most of the congregates traveled from the South and West, some from the North. They further explained that Grace Chapel originated from the West and has some of the older congregates traveling from there as well.

Commissioner Litman asked if there was a number for the congregate base.

Applicants indicated that the number is approximately 1,300 active people in their database, but that normal weekends consist of 600–700 people including kids.

Commissioner Davis asked about hours of operation during the week and weekends.

Applicants stated they would be open 7 days a week for multiple uses and would usually not go past 9 or 10 p.m. Bible studies at 6:00 a.m. They plan to offer some classes. Office hours are 8:30 a.m. to 4:30 p.m. Monday through Thursday. The coffee shop will mostly be a morning to mid-afternoon coffee shop. Weekend services are planned to continue to have two sessions, which are 9 a.m. and 11 a.m. Saturday night services are not offered nor are planned to be offered.

Commissioner Davis asked about traffic congestion and if there are gaps between services to avoid issues with traffic.

Applicants clarified that they have their own security and traffic team that assist with directing traffic and they coordinate efforts with the police department as needed. Services are typically about 75 mins and there are about 45 minutes between services to direct traffic and clear the parking lot.

Commissioner Davis, asked about the NIM, mentioned potential days of having a third service and how that would be handled.

Applicants explained that there was a situation where they had a lower number of attendees during COVID and explained the various times that were used in the past and cut services down to 65 minutes.

Commissioner Davis asked about the other accessory uses within the building, such as pre-school and daycare.

Applicants confirmed that those types of uses would not be allowed under the Land Development Code, and therefore are not part of the operation.

Commissioner Davis asked if that would require additional licensing.

Applicants clarified that daycare is not an allowed use for this location. However, applicants mentioned there is childcare for some of the other programs, but it would not be open to the public.

Commissioner Davis asked about the use of the rooms that were presented and asked for additional clarification on when those rooms are utilized.

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Applicants clarified that the childcare services are for those who attend the events during the weekdays and clarified that each space is for specific age groups.

Commissioner Davis expressed concern about traffic at the Wabash and Willow intersection and how that movement will work at that intersection.

Applicants clarified that they reviewed the traffic and confirmed that there is staff who are assigned to assist with traffic at the intersection and in the parking lot. Also, they typically request a police presence at those congested intersections.

Commissioner Davis asked about potential congestion at the intersection and if the queuing would back up on to Wabash St or back into the parking lot.

Applicants believe that there would not be any foreseeable issues with queuing and, if there are, the traffic would back up into the parking lot but not in the street. Additionally, they plan to close off the north-west entrance to assist with the flow of traffic.

Chair Hascall asked staff if there were any additional comments that needed to be made about traffic for this facility.

Justin Williams, Engineering Manager, had no additional comments to add regarding traffic.

Chair Hascall asked about food distribution service in the building.

Applicants explained that they don't plan on providing that service and explained their experience with that in the past. There are no plans to bring that service back.

Commissioner Litman asked about the number of seats proposed for the coffee shop inside the building.

Applicants stated that they do not have an exact number of seats that will be provided, but there is a corridor in the building that could be potentially used for the coffee shop. Additionally, it would be the side of the building with the most glass to provide transparency and vibrancy.

Chair Hascall asked what was the latest time in the evening would some of the programs would go to.

Applicants stated that some of the younger kids would get out around 8:00 to 8:30 p.m. and the younger adult groups would get out around 9:00 to 10:00 p.m. would be the latest.

Commissioner Litman asked if the applicants were building out the auditorium to the full 1,000-seat capacity.

Applicants explained it is their goal to move forward with that seat capacity based on the level of growth and funding recently.

Commissioner Davis asked about festivals and concerts, specifically if they would be inside or outside. If outside, how many people attending, amplified sound, tents, etc.

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Applicants clarified that the events are in the daytime designated to be a gathering space for the community. Some of their events have about 750 to 1000 people in attendance. They offer free food, games, and entertainment. Typically an event that lasts for a couple of hours.

Commissioner Davis asked if the parking management for events would be similar to how it is handled during services.

Applicants clarified that they would like to have a parking agreement with adjacent properties to allow for additional parking and would want those agreements in order before planning any events.

Planning Manager Stertz clarified that the City of Greenwood Village does require Special Event Permits that consist of the review of certain criteria, such as police presence requested, number of guests, parking accommodations, to ensure all impacts are adequately mitigated.

Chair Hascall observed no public comment. Closed the case for commission discussion.

A motion was made by Commissioner Steve Moran, seconded by Commissioner Jeffrey Litman; to Recommend Approval of PZ-26-00017 Grace Chapel SUP. The motion carried by unanimous voice vote.

Yes: *4 - Randy Davis, Tim Hascall, Jeffrey Litman, Steve Moran*
No: *0 - None*
Recused: *0 - None*

ii. PZ-26-00026 Grace Chapel SDP (2026-188)

A motion was made by Commissioner Steve Moran, seconded by Commissioner Jeffrey Litman; to Recommend Approval of PZ-26-00026 Grace Chapel SDP. The motion carried by unanimous voice vote.

Yes: *4 - Randy Davis, Tim Hascall, Jeffrey Litman, Steve Moran*
No: *0 - None*
Recused: *0 - None*

7. DISCUSSION ITEMS

Commissioners wanted to follow up on the findings from the noise study based on the previous pickleball courts case.

Planning Manager Stertz confirmed that a noise study was conducted, and City Council placed no conditions and approved all applications. However, as we move forward with the construction, City Council will consider the recommendations that were provided under the CIP.

8. NEW BUSINESS

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Planning Manager Stertz wanted to remind the commissioners that there is not a meeting scheduled for the next P&Z date and emphasized that we are still in a busy season for applications and expect to be busy in September. Planning Manager Stertz wanted to follow up with a previous request and wanted to ask if the P&Z commissioners prefer to repurpose future meetings where no case is scheduled to have study sessions on the code or should we add 20–30-minute study sessions at the end of the hearings.

Chair Hascall recommended we ask again when there are more commissioners present.

Commissioner Moran recommended having a study session during dinner for a more efficient use of time and prefers not to have late evenings.

Commissioner Davis agrees that a study session during dinnertime would be efficient but believes that 20–30 minutes is not enough time.

9. ADJOURNMENT

There being no further business, the meeting was adjourned.

A motion was made by Commissioner Steve Moran, seconded by Commissioner Randy Davis; to Adjourn Adjournment. The motion carried by unanimous voice vote.

Yes: *4 - Randy Davis, Tim Hascall, Jeffrey Litman, Steve Moran*
No: *0 - None*
Recused: *0 - None*

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