Elliott Avenue Pilot Closure Project

Initial Study / Proposed Mitigated Negative Declaration

January 2021

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Elliott Avenue Pilot Closure Project

Prepared for:

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1. Project Information

1.1 Introduction and CEQA Requirements

The Sonoma County Junior College District (District), serving as the California Environmental Quality Act (CEQA) Lead Agency, has prepared this Initial Study to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Elliott Avenue Pilot Closure Project (hereafter referred to as the "project"). The proposed project is an initiative between the District and the City of Santa Rosa to evaluate the potential for improved student and pedestrian circulation and safety along Elliott Avenue. The pilot project would involve closure of an approximately 500-foot segment of Elliott Avenue between the western and eastern driveways of the Emeritus Circle parking lot at the Santa Rosa Junior College (SRJC) campus during the Fall 2021 and Spring 2022 semesters. The closed segment would be dedicated for use by students and pedestrians to more safely connect campus facilities north and south of Elliott Avenue. The closed section would remain accessible to first responders, including ambulances and Santa Rosa Fire and Police Department vehicles, but would be closed to normal vehicular traffic. During the pilot phase, the Junior College District and the City of Santa Rosa would monitor the local roadway system in the neighborhood to directly observe changes in circulation and traffic diversion patterns.

As the proposed project would first be in a pilot phase, the closure may or may not be permanent depending on the success of the project in its pilot form. Permanent closure, if proposed by the District and the City of Santa Rosa, would be considered in Fall of 2022, pending future approvals.

The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration or a Negative Declaration. This Initial Study has been prepared to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). Section 15063(d) of the CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 CEQA Lead Agency Contact Information

The CEQA lead agency for the project is the Sonoma County Junior College District. The contact person at the District for this project is:

Serafin Fernandez, Senior Director, Capital Projects
Sonoma County Junior College District
1501 Mendocino Avenue
Santa Rosa, CA 95401
Email: sfernandez2@santarosa.edu
Phone: 707-524-1704

1.3 Project Background

The District's 2016 SRJC Facilities Master Plan endeavors to create a more pedestrian and bicycle friendly SRJC campus and notes that Elliott Avenue presents challenges for pedestrian traffic due to the presence of vehicle traffic on the street. Elliott Avenue is an approximately 0.5-mile two-way transitional/collector street extending from Mendocino Avenue to the east and Armory Drive to the west. Existing SRJC instructional and administrative facilities are located both north and south of Elliott Avenue, requiring students and staff to cross the roadway during college hours. District staff have observed near collisions between vehicles and pedestrians on several occasions.

Restricting vehicular traffic along a portion of Elliott Avenue as a way to calm traffic in the project area is identified as a Vision Plan recommendation in the District's 2016 SRJC Facilities Master Plan. The closure of the roadway to vehicular traffic is intended to have a beneficial effect on safety for alternative modes of circulation since it would eliminate conflict with motor vehicles between the east and west driveways of the SRJC Emeritus Circle parking lot, thereby allowing for greater pedestrian connectivity across the campus. Because the pilot project would split the existing continuous segment of Elliott Avenue into two shorter segments, it is also reasonable to expect a reduction in travel speeds on the two remaining segments of Elliott Avenue on either side of the closure.

1.4 Project Description

1.4.1 Project Location and Setting

The proposed pilot project would be located along an approximately 500-foot segment of Elliott Avenue adjacent to the SRJC campus in the City of Santa Rosa, Sonoma County. Specifically, the project would be located along the portion of Elliott Avenue between the existing western and eastern driveways of the SRJC Emeritus Circle parking lot (see Figure 1, Regional Location Map and Figure 2, Project Area).

Elliott Avenue is a two-way transitional/collector street extending from Mendocino Avenue to the east and Armory Drive to the west. Intervening roadway intersections along Elliott Avenue include intersections at Salem Avenue, Albany Drive, and Illinois Avenue, as well as SRJC parking lot driveways at Emeritus Circle, Scholars Drive, and Planetarium Drive. Sidewalks are present along both sides of Elliott Avenue within the project area. Non-signalized pedestrian crosswalks are located across Elliott Avenue at the western and eastern driveways to the Emeritus Circle parking lot, and a signalized mid-block pedestrian crosswalk is located next to Frank P. Doyle Library and the Bertolini Student Center. Additional non-signalized pedestrian crosswalks are located across Elliott Avenue

at Armory Drive, Nordyke Avenue, Albany Drive, and Salem Avenue.

Surrounding land uses include residential neighborhoods between Elliott Avenue and Steele Lane to the north, commercial land uses off of Clement Avenue and Mendocino Avenue to the east, the SRJC campus, Santa Rosa High School, Ridgway High School, and residential neighborhoods to the south, and residences, SRJC facilities, Armory Drive, and Highway 101 to the west.

No public transit routes or facilities are located along Elliott Avenue. Santa Rosa CityBus operates Routes 1 and 7 along Mendocino Avenue and Route 19 along Steele Lane. The nearest stops to the project site for Routes 1 and 7 are at Dexter Street, less than one-half mile from the project site. Sonoma County Transit operates numerous routes in the vicinity of the project, including Routes 20, 20X, 30, 30X, 44, 44X, 48, 48X, 54, 57, 60, 60X, and 62 which stop at the intersection of Mendocino Avenue/Silva Avenue, less than one-half mile from the project site. The project site is located approximately one mile from the North Santa Rosa SMART station.

1.4.2 Project Characteristics

The proposed pilot project would close an approximately 500-foot segment of Elliott Avenue to vehicular traffic between the western and eastern driveways of the Emeritus Circle parking lot at the SRJC (see Figure 2, Project Area). The section of Elliott Avenue that would be closed to vehicular traffic would be dedicated for student, pedestrian and bicycle crossing to more safely connect SRJC facilities north and south of Elliott Avenue.

The project would begin with a pilot phase in which vehicle barriers would be installed across each end of the closed roadway segment to restrict normal vehicle traffic. Vehicle barriers may include electric driven swinging or sliding driveway gates installed across the roadway, concrete planters, and other similar types of vehicle barriers. Signs and roadway striping would be completed per City of Santa Rosa and Caltrans standards, respectively. Existing raised roadway markers would be removed from the closed street section to eliminate potential tripping hazards.

Access through the vehicle barrier gates would be made available for ambulances, Santa Rosa Fire and Police protection, and other first responders. Access also would be maintained for City of Santa Rosa utility and public works staff and utility company vehicles for maintenance of existing utilities and service systems located within the roadway.

The project would not generate new traffic, however, the closed roadway segment would result in a redistribution of existing traffic to other surrounding roadways. Most of the existing traffic that would be diverted through the adjacent neighborhood north of Elliott Avenue would be local residents that currently use Elliott Avenue to travel out of their neighborhood. These trips would occur along other routes instead, including through the neighborhood to Steele Lane. A circulation study prepared for the project evaluates the effects of potential traffic diversions along such roadways, as well as primary roadways including Armory Drive, Steele Lane and Mendocino Avenue (W-Trans 2020, Appendix A).

The District anticipates the pilot project closure would occur during the Fall 2021 and Spring 2022 semesters. During the pilot phase, the District and the City of Santa Rosa would monitor the local roadway system in the neighborhood to directly observe changes in circulation and traffic diversion patterns. The District and City of Santa Rosa would also conduct additional public outreach prior to any long term consideration of a permanent closure of the street section. As this project would first be in a pilot phase, the closure may or may not be permanent depending on the success of the project in its pilot form. Permanent closure, if approved by the District Board of Trustees and the City of Santa Rosa, would potentially be considered in Fall of 2022, pending future approvals.

1.4.3 Construction Information

The District anticipates that pilot project construction would commence in Summer 2021 and require approximately one to two months to complete. Construction activities would generally occur Monday to Friday, 7 AM to 7 PM. The project is not anticipated to require night time construction work or construction on weekends or legal holidays.

The primary vehicle and haul truck route to the project site is anticipated to be Armory Drive to Elliott Avenue and Mendocino Avenue to Elliott Avenue. This would include transport of construction vehicles and equipment, as well as delivery and storage of construction materials. The contractor may also secure a job site trailer and portable sanitary facilities.

Construction activities would include installation of vehicle barriers, signs, roadway striping, and removal of raised roadway markers within the closed street section to eliminate potential tripping hazards. Construction equipment to be used would include, but not necessarily be limited to, backhoes, front end skip loader, concrete saws, asphalt road pavers, compactors, air compressors, generator sets, and pneumatic tools. A variety of trucks including cement mixers, haul trucks, and water trucks may also be required. Construction would require the removal and off-haul of materials. Construction of any permanent roadway barriers, pending future approval, would require approximately one to two additional months to complete and would be similar in nature to the construction activities described above.

1.5 Environmental Protection Actions Incorporated into the Project

The following actions are included as part of the project to reduce or avoid potential adverse air quality effects that could result during construction of the project. Additional mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. Environmental protection actions and mitigation measures, together, will be included in a Mitigation Monitoring Program at the time that the project is considered for approval.

1.5.1 Environmental Protection Action 1 – BAAQMD Construction Measures

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the District will include the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures in construction contract specifications for the project:

- All exposed surfaces (e.g. parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control

measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;
- A publicly visible sign shall be posted with the telephone number and person to contact at the Junior College District regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

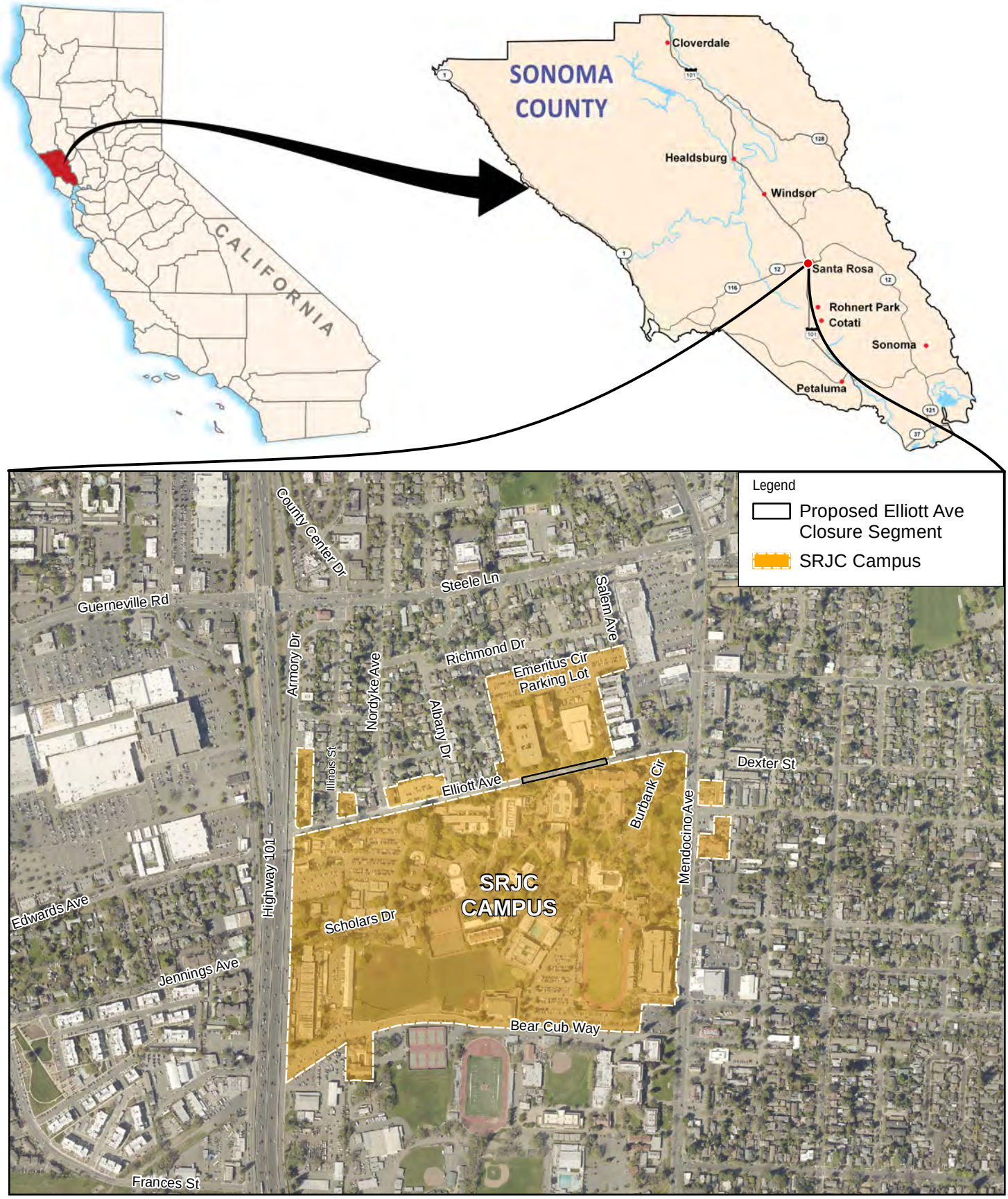
1.6 Required Agency Approvals

The following approvals and permits would be required for the project:

- Adoption of Mitigated Negative Declaration and Project approval by the District Board of Trustees
- Project approval by the Santa Rosa City Council
- Encroachment Permit approval from the Santa Rosa Department of Transportation and Public Works

1.7 Tribal Consultation

The District has not received requests for notification of proposed projects from California Native American tribes pursuant to Public Resources Code Section 21080.3.1. See Section 3.18, Tribal Cultural Resources, for additional information.



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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Elliott Avenue **Pilot Closure** Project

Regional Location Map

Project No. 11194722
Revision No. -
Date 08/20/2020

FIGURE 1

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Print date: 20 Aug 2020 - 13:18

Data source: . Created by: rmremillard

Paper Size ANSI A

0 100 200

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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Elliott Avenue **Pilot Closure** Project

Project Area

Project No. 11194722
Revision No. -
Date 08/20/2020

FIGURE 2

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Print date: 20 Aug 2020 - 15:24

Data source: . Created by: rmremillard

2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Where checked below, the topic with a potentially significant impact will be addressed in an environmental impact report:

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agricultural & Forestry Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Energy	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Biological Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Cultural Resources	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population/Housing	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☐ I find that the proposed MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

LEAD AGENCY Signature

1-22-21

Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

a) Have a substantial adverse effect on a scenic vista? (No Impact)

Scenic vistas listed in the Santa Rosa General Plan include natural ridgelines, views of the Sonoma Mountain foothills, and the natural landmarks such as Taylor Mountain and Bennett Mountain. The project site is located more than four miles from the Sonoma Mountain foothills, including Taylor Mountain and Bennett Mountain. No existing views of the Sonoma Mountain foothills, Taylor Mountain, or Bennett Mountain from the project site occur due to intervening topography and vegetation and/or distance. Additionally, the project is not located along a hillside or ridgeline and would not obstruct existing views of ridgelines and foothills. No impact would result.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

The project site is located approximately one-quarter mile east of US 101 at the closest point. The US 101 corridor within the project area is not listed as a state designated scenic highway nor an eligible state scenic highway (Caltrans 2019). No impact would result.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (Less than Significant)

The project site consists of an approximately 500-foot segment of Elliott Avenue adjacent to the SRJC in an urbanized portion of Santa Rosa. There is no applicable zoning district for the roadway section of Elliott Avenue roadway, and Elliott Avenue is not identified within the Santa Rosa General Plan or the Santa Rosa Zoning Code as a designated scenic roadway. Additionally, Elliott Avenue is not identified within the Santa Rosa General Plan as a city entry or corridor, nor is it located within an area identified by the General Plan as having scenic character such as natural waterways or hillsides. For the reasons described above, the project does not conflict with applicable zoning and other regulations concerning scenic quality. The impact of changes to Elliott Avenue would be less than significant.

The existing zoning for the SRJC campus located adjacent to the project area is PI (Public and Institutional). This district applies to areas appropriate for public facilities, including public schools. The visual setting of the SRJC campus is characterized primarily by a variety of higher education architectural styles, mature trees, and a park-like atmosphere created by landscaping, communal open space, and pedestrian pathways. Adjacent SRJC facilities south of Elliott Avenue in the project area include Doyle Library, Bertolini Student Center, Bussman Hall and pedestrian paths. SRJC facilities north of Elliott Avenue in the project area include Emeritus Hall, Race Building, Plover Hall and a student courtyard. The project would include installation of vehicle barriers at either end of the proposed closure segment, including electric driven swinging or sliding driveway gates installed across the roadway, concrete planters, or other similar types of vehicle barriers. Signs and roadway striping would be completed per City of Santa Rosa and Caltrans standards, respectively. The proposed improvements would not require the removal of mature trees along Elliott Avenue. The improvements would result in a low level of change in the physical characteristics of the existing environmental and would be compatible with the existing visual character of the campus. The project does not conflict with applicable zoning and other regulations concerning scenic quality. The impact related to changes to the visual quality of the SRJC campus would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

Nighttime construction would not be required for the project. Therefore, no exterior lighting would be required during construction. The existing project area is currently lighted and the proposed pilot project does not proposed any new additional lighting. No impact would result.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

a-e) Convert Farmland or Forest? (No Impact)

The project site is not located on land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDC 2016), or on land enrolled in a Williamson Act contract (CDC 2013). The project would not be constructed on land zoned for agricultural, forest land, or timberland uses. Thus, the project would not convert Important Farmland, land under a Williamson Act contract, or forest land to other uses, nor conflict with zoning for agricultural or forestry uses. No impact to agriculture or forestry resources would result.

3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

An Air Quality Assessment was prepared for the project (Illingworth & Rodkin 2020a, Appendix B). The air quality analysis utilizes the thresholds of significance, screening criteria, and impact assessment methodologies presented in the 2017 BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017a).

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

The Bay Area 2017 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the project (BAAQMD 2017b). The primary goals of the 2017 Clean Air Plan are to protect air quality, public health, and the climate. As shown in Impacts “b” and “c”, the project would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment or expose sensitive receptors to substantial pollutant concentrations. Therefore, the proposed project would not conflict with the primary goals of the Clean Air Plan. The 2017 Clean Air Plan contains 85 individual control measures in nine economic sectors. The control measures are not directly applicable to the project, and the project would not disrupt or hinder implementation of any control measure. In addition, the project would not result in a growth in population or jobs in the project area; therefore, the project would not exceed the growth assumptions contained in the 2017 Clean Air Plan. Overall, the project would not conflict with or obstruct implementation of the Clean Air Plan. No impact would result.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant)

The project is located within the San Francisco Bay Area Air Basin, which is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds apply to both construction period and operational period impacts.

Ozone is not emitted directly into the air, but is a regional pollutant formed by a photochemical reaction in the atmosphere. Reactive organic gases (ROG) and nitrogen oxides (NOx) are ozone precursors that react in the atmosphere in the presence of sunlight to form ozone. Therefore, the BAAQMD does not have a recommended ozone threshold, but has regional thresholds of significance for project-emitted ROG and NOx.

Construction

Construction activities are anticipated to take approximately one to two months to complete for the pilot study, and an additional one to two months for any future permanent improvements. Construction activities would include installation of vehicle barriers, signs, roadway striping, and removal of raised roadway markers within the closed street section to eliminate potential tripping hazards. The types of air pollutants generated by construction activities are typically NOx and particulate matter. Construction activities would temporarily increase levels of $PM_{2.5}$ and PM_{10} downwind of construction activity. These are temporary emissions that vary considerably from day-to-day and by the type of equipment and weather. In addition, carbon monoxide (CO) and ROG are emitted during operation of gas and diesel-powered construction-equipment.

The BAAQMD's CEQA Air Quality Guidelines provides screening criteria for determining if a project could potentially result in significant construction-phase impacts from criteria pollutants and ozone precursors. The project type, traffic calming, is not identified in the BAAQMD's CEQA Guidelines. However, the size, duration, and scale of the project is substantially smaller than the screening levels for other types of projects identified in the BAAQMD CEQA Guidelines. The project would not include demolition activities that would require the removal of asbestos, would not involve the simultaneous occurrence of more than two construction phases, and does not include more than one land-use type. The project would not involve extensive site preparation or material transport. Additionally, as summarized in Section 1.5, "Environmental Protection Actions Incorporated into the project," implementation of Environmental Protection Action 1 is included as part of the project, requiring contractor agreements for implementing the BAAQMD basic dust abatement actions. The project meets the screening criteria recommended by the BAAQMD and, therefore, the potential impact to air quality from criteria air pollutants is considered less than significant.

For construction-related $PM_{2.5}$ and PM_{10} dust, the BAAQMD recommends incorporation of the basic dust abatement actions to reduce localized dust impacts to less than significant. As summarized above, implementation of Environmental Protection Action 1 is included as part of the project, requiring contractor agreements for implementing the BAAQMD basic dust abatement actions. Therefore, the proposed project would meet the BAAQMD's construction-related threshold for fugitive dust (PM_{10} and $PM_{2.5}$). The construction-related impact would be less than significant.

Operation

Localized high levels of CO, referred to as CO hotspots, are associated with traffic congestion and idling or slow-moving vehicles. For evaluating operational impacts, the BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot, which the BAAQMD identifies as increasing traffic volumes at nearby intersections to more than 44,000 vehicles per hour. Comparatively, the busiest project-area intersection (Illinois Avenue and Country Center Drive) would have approximately 5,056 vehicles during the highest peak hour period during in the future plus project scenario. Therefore, there is no CO hotspot in the project area, and the project would not generate traffic levels that would create a CO hotspot.

The purpose of the project is to redirect traffic away from a busy pedestrian street crossing located on the SRJC campus. The project would not generate any new vehicle trips or include any stationary sources of air pollutants. However, closing a portion of Elliott Avenue would affect traffic on other local roadways around the SRJC campus, as drivers would need to take different routes to get to their destinations. The local roadways that could be affected include Bear Cub Way, Clement Avenue, Salem Avenue, Albany Drive, Nordyke Avenue, Victor Drive, Oliver Lane, Illinois Avenue, and Sucher Lane. The primary operational air quality impact would be associated with changes to traffic that may affect air pollutant emissions. Air pollutant emissions (ROG, NO_X, PM_{10}, and $PM_{2.5}$) were estimated for both existing conditions and conditions with the closure of a section of Elliott Avenue. Emissions were estimated under both existing year (2020) and future year (2040) traffic conditions. To estimate emissions, average daily weekday traffic (ADT) was estimated for each project-affected roadway segments. The ADT for each segment was then multiplied by the distance of that segment to estimate the vehicle miles traveled (VMT) for the segment. Emissions factors specific to Sonoma County were developed for the criteria pollutants using EMFAC2017.

Table 3.3-1 and 3.3-2 summarize the results of the emission analysis. The analysis determined that the project is anticipated to result in a reduction in VMT comparative to existing conditions, and that the project would result in an overall decrease in operational traffic-related emissions. Therefore, the operational impact would be less than significant.

Table 3.3-1 Operational Air Pollutant Emissions (2020)

Condition	Pollutant (lbs/day)			
	ROG	NOX	PM_{10}	$PM_{2.5}$
Existing Conditions	4.39	27.51	21.79	3.62
With Project	3.06	19.06	15.58	2.57
Change Due to Project	*-1.33*	*-8.46*	*-6.2*	*-1.06*
BAAQMD Significance Threshold	54	54	82	54
Significant Impact?	No	No	No	No

Source: Illingworth & Rodkin 2020a, Appendix B

Table 3.3-2 Operational Air Pollutant Emissions (2040)

Condition	Pollutant (lbs/day)			
	ROG	NOX	PM_{10}	$PM_{2.5}$
Existing Conditions	1.72	13.18	27.99	4.29
With Project	1.47	10.55	23.36	3.58
Change Due to Project	*-0.26*	*-2.63*	*-4.63*	*-0.71*
BAAQMD Significance Threshold	54	54	82	54
Significant Impact?	No	No	No	No

Source: Illingworth & Rodkin 2020a, Appendix B

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant)

Sensitive receptors are defined by the BAAQMD as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Construction equipment and heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. DPM from equipment exhaust and PM2.5 pose potential health impacts to nearby receptors. The majority of heavy diesel equipment usage would occur during the site demolition and barrier installation. Total project construction is anticipated to take one to two months to complete. Given the short construction period and minimal amount of ground disturbance requiring heavy construction machinery, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur. Additionally, as summarized in Section 1.5, "Environmental Protection Actions Incorporated into the project," implementation of Environmental Protection Action 1 is included as part of the project, requiring contractors to minimize idling times for trucks and equipment to five minutes, as well as ensuring that construction equipment is maintained in accordance with manufacturer's specifications. The impact of construction-related emissions on sensitive receptors would be less than significant.

Following construction, project operation would not expose sensitive receptors to substantial pollutant concentrations as the project does not include any stationary source emissions or an increase in any mobile emissions. No long-term impact would result.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less than Significant)

Implementation of the project would not result in major sources of odor. The project type is not one of the common types of facilities known to produce odors (e.g., landfill, coffee roaster, wastewater treatment facility, etc.). Minor odors from the use of equipment during construction activities would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. The impact would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				✓
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (No Impact)

An evaluation of the existing biological setting on and near the project site was conducted to determine the potential for any special-status plants or animal species to occur. No occurrences of special-status wildlife species have been recorded on the project site or surrounding SRJC campus and residential neighborhood. There are no vernal pools, wetlands, creeks, rivers, riparian zones, ponds, lakes, marshes, or other open water bodies on or adjacent to the project site, nor any grasslands, woodlands, or open forests. Because of the lack of suitable habitat and the location of

the project in a developed environment, no special-status wildlife species are expected to occur within the project area. The project would include installation of vehicle barriers, signs, roadway striping, and removal of raised roadway markers within a portion of Elliott Avenue street section. The project site is comprised of the existing asphalted section of Elliott Avenue and contiguous surrounding hardscapes. Estimated construction noise levels in the project area would be temporary and moderate and not expected to effect potential nesting in off-site trees. Based on the existing conditions at the project site, no impact to special-status plant and wildlife species would result.

b,c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service, including wetlands? (No Impact)

The project site is comprised of existing asphalted section of Elliott Avenue and contiguous hardscapes associated with sidewalks and driveways. The project site does not include riparian habitat or other sensitive natural communities, such as grasslands or wetlands (including marsh or vernal pools). No impact would result.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (No Impact)

The project site is located in an urbanized area and does not include waterways or other sensitive natural communities that provide wildlife movement corridors. The project would not interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. No impact would result.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

The proposed improvements would not require the removal or disturbance of biological resources, such as trees that are subject to the Santa Rosa tree ordinance. The project would not conflict with policies or ordinances protecting biological resources. No impact would result.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan exists for the project area. No impact would result.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The project would include installation of vehicle barriers, signs, roadway striping, and removal of raised roadway markers within a portion of the Elliott Avenue street section. Five buildings on the SRJC campus (Analy Hall, Garcia Hall, Burbank Auditorium, Tauzer Gym, and Baker Hall) possess sufficient historical significance and integrity for potential individual listing on the California Register, and a potential historic district encompassing seven resources (Analy Hall, Garcia Hall, Burbank Auditorium, Tauzer Gym, Legion Gate, the Pump House, and the park-like grounds) is potentially eligible for listing on the California Register (Carey & Co. 2018). The adjacent buildings to the project site, including the Bertolini Student Center, Plover Hall, Doyle Library, and Emeritus Hall, have not been found to possess sufficient historical significance and integrity for potential individual listing on the California Register and are not contributors to the potential SRJC historic district. The project would not result in an adverse change in the significance of a historical resource. No impact would result.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant with Mitigation)

Construction of the project may require shallow excavations for electrical and structural elements of the swinging or sliding barrier gates that would be installed across the roadway. Such excavations would occur within areas that have been previously disturbed during the initial construction of the existing street section and underlying utilities. A previous cultural resources records and literature search completed for the SRJC campus found no previously recorded archaeological resources on the college campus. Similarly, a previous records search of the Native American Heritage Commission Sacred Lands File did not identify the presence of Native American cultural resources in the area. No information has become available to indicate that historic or archaeological resources were identified on the project site during construction of the existing school or roadway. Although no known archaeological resources have been identified within the project area, a remote potential exists for encountering previously undiscovered archaeological resources during project excavation activities if such activities extend beyond the existing roadway base. The impact is considered potentially significant.

Mitigation

Mitigation Measure CR-1 would reduce the impact to potential previously undiscovered archaeological resources to a less-than-significant level because a procedure to address discovery of unanticipated resources and to preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

Mitigation Measure CR-1: Minimize Impacts to Unknown Archaeological Resources

If potential archaeological resources are uncovered during construction, the District shall halt work and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. Prehistoric materials might include obsidian and/or chert flaked-stone tools such as projectile points, knives, or scraping implements; the debris from making, sharpening, and using them ("debitage"); culturally darkened soil containing shell, dietary bone, heat-altered rock, and carbonized plant material ("midden"); or stone milling equipment such as mortars, pestles, handstones, or milling slabs. A qualified professional archaeologist shall evaluate the find and provide appropriate recommendations. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5[c][3]), all work must remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. All significant cultural resources recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the District shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project while mitigation for unique archaeological resources is being carried out.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant)

No human remains are known to exist within the project area. Construction of the project would require only shallow excavations within areas that have been highly disturbed during the initial construction of the school and roadway. Excavation depths would not occur to depths where human remains would likely be encountered, and the project would be required to follow procedures outlined in Public Resources Code § 5097.9 and Health and Safety Code § 7050.5 in the unlikely event of inadvertent discovery of human remains. The impact would be less than significant.

3.6 Energy

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less than Significant)

Construction of the project would involve the use of construction equipment, materials, and fuels, primarily gas, diesel, and motor oil. The precise amount of construction-related energy consumption that would occur is uncertain. However, construction would not require a large amount of fuel or energy usage because of the short duration of construction, the moderate number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this scale. Use of fuels would not be wasteful or unnecessary because their use is necessary to complete the project. Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by the California airborne toxics control measure (Title 13, Section 2485 of the CCR). Therefore, construction would not result in the use of large amounts of fuel and energy in a wasteful manner, and the impact would be less than significant. Following construction, the project would not result in a substantial increase in vehicle miles travelled or substantial increase in trip lengths that would result in wasteful consumption of fossil fuels. The operational impact would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

In 2003, the California Energy Commission (CEC), the California Power Authority (CPA), and the California Public Utilities Commission (CPUC) jointly adopted an Energy Action Plan (EAP) that listed goals for California's energy future and set forth a commitment to achieve these goals through specific actions. In 2005, the CPUC and the CEC jointly prepared the EAP II to identify the further actions necessary to meet California's future energy needs. Additionally, the CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. Locally, the Santa Rosa 2035 General Plan includes goals to promote energy efficiency in the City, including Goal H-G, which applies to new and rehabilitated residential units.

Construction and operation of the project would not conflict with or obstruct implementation of either the EAP, EAP II, the State Alternative Fuels Plan or local general plan goals. Project construction would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles and equipment, worker

trips, and truck trips that would be required for a project of this small scale. Project operation would not result in a substantial increase in vehicle miles travelled or substantial increase in trip lengths that would result in wasteful consumption of fossil fuels. No conflicts with a state or local plan for renewable energy or energy efficiency have been identified. Therefore, no impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic related ground failure, including liquefaction?			✓	
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	

a, i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

The project site is not located within a designated Alquist-Priolo Earthquake Fault Zone or near a known active fault (CGS 1983). The project would not change the exposure of people of structures to risk of loss, injury, or death from fault rupture. No impact would result.

a, ii) Strong seismic ground shaking? (Less than Significant)

Future strong seismic shaking is anticipated at the project site. However, the project would not alter the seismic environment or affect the risk of seismically-induce groundshaking. Therefore, there would be no change regarding the exposure of people or structures to substantial adverse effects related to the risk of property loss, injury, or death due to seismically-induced groundshaking compared to existing conditions. If strong seismic groundshaking were to damage the proposed facilities, it is unlikely that human lives would be put at risk because the project does not involve the construction of habitable structures. Therefore, the impact to people and structures from strong seismic groundshaking would be less than significant.

a.iii, c, d) Liquefaction or otherwise unstable soils? (Less than Significant)

The project site is located in an area mapped as having moderate susceptibility to liquefaction (USGS 2006). The project would not alter the seismic environment or affect the risk of seismically-induced ground failure, including liquefaction. There would be no change regarding the exposure of people or structures related to the risk of property loss, injury, or death due to seismically-induced ground failure compared to existing conditions. Therefore, the impact related to seismic-related liquefaction would be less than significant.

a.iv) Landslides? (No Impact)

The proposed improvements would be located on relatively level, previously developed and paved land. The project site is not located within a mapped landslide complex or debris flow source area (USGS 1998). No impact would result.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

Areas to be disturbed during construction would consist predominantly of hardscapes and underlying soils that have been highly altered from their original, natural state. As a result, the project would result in little disturbance to native soils. Following construction, the project site would remain developed with paved areas and landscaping. Areas of exposed soil vulnerable to erosion would not be present. The impact would be less than significant.

Refer to Section 3.10, Hydrology and Water Quality, for additional discussion of construction impacts to water quality associated with soil erosion.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No Impact)

The project would not involve the use of septic tanks or other alternative wastewater disposal systems. No impact would result.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant)

The proposed improvements would not require modification of any unique geologic features. Excavation and earthmoving activities would occur within highly disturbed paved areas that are underlain by engineered soils and/or fill. Because project excavations would be shallow and would occur in previously disturbed soils on the SRJC campus and beneath the roadway, the sensitivity of the project area for buried paleontological resources is considered to be low. Excavation depths would not occur to depths where paleontological resources would be likely encountered, and the project would be required to follow procedures outlined in Public Resources Code § 5097.5 in the event of inadvertent discovery of paleontological resources. The impact would be less than significant.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

Greenhouse gas (GHG) emissions would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There is currently no applicable Federal, State, or local standard or significance threshold pertaining to construction-related GHG emissions. However, the BAAQMD does recommend that lead agencies quantify and disclose construction-related emissions. Therefore, this review uses a qualitative approach to construction emissions in accordance with Section 15064.4(a)(2) of the CEQA Guidelines. Construction activities are anticipated to take approximately one to two months to complete for the pilot study, and an additional one to two months for any future permanent improvements. Construction activities would include installation of vehicle barriers, signs, roadway striping, and removal of raised roadway markers within the closed street section to eliminate potential tripping hazards. Project construction activities are limited in scope and duration and would not involve construction activities associated with higher-level greenhouse gas emissions such as use of a significant amount of heavy construction equipment, substantial earth-moving activities, or import/export of a substantial amount of material. Project construction activities would not impede the State in meeting the AB 32 greenhouse gas reduction goals. Therefore, the impact from construction GHG emissions would be less than significant.

Following construction, long-term operational emissions associated with re-distributed vehicular traffic within the project vicinity would decrease as the project would result in an overall decrease in VMT. As shown in Table 3.8-1, the project's estimated operational GHG emissions associated with re-distributed traffic decreases comparative to existing conditions. Additionally, the project would not result in an increase in energy consumption or a new stationary source of air or GHG emissions. Therefore, the impact from operational GHG emissions would be less than significant.

Table 3.8-1 Operational Greenhouse Gas Emissions

Scenario Year	CO2 (metric ton/day)		
	Existing	With Project	Change Due to Project
Year 2020	11.74	9.48	-2.25
Year 2040	10.42	9.40	-1.01

Source: Illingworth & Rodkin 2020a

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

According to the BAAQMD, if a project is consistent with an adopted qualified GHG Reduction Strategy, it can be presumed that the project will not have significant GHG emission impacts. The District does not have a qualified Climate Action Plan or other qualified greenhouse gas reduction strategy, and the Santa Rosa Community-Wide Climate Action Plan is not applicable to the project type. However, it is noted that the project is consistent with Measure 3.6 and Action 3.6.1 of the Santa Rosa Community-Wide Climate Action Plan, which seeks to provide traffic calming measures to improve pedestrian convenience and encourage pedestrian and bicycle travel.

The Climate Change Scoping Plan released by the California Air Resources Board (CARB) provides strategies for meeting the near-term 2020 GHG emission reduction goals in Assembly Bill (AB) 32. The strategies cover energy, transportation, agriculture, water, waste management, natural and working lands, short-lived climate pollutants, green building, and cap-and-trade sectors, and are to be implemented by a variety of State agencies. The recommended next steps in the Scoping Plan are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction and operation of individual projects such as the project. The project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. Therefore, the project would not conflict with AB 32 or the Climate Change Scoping Plan. No impact would result.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✓	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			✓	

a,b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant)

Construction activities would include the use of materials such as fuels, lubricants, degreasers, paints, and solvents, which are commonly used during construction, are not acutely hazardous, and

would be used in small quantities. Use, storage, and transport of such materials would be required to follow standard protocols (as determined by the U.S. EPA, California Department of Health and Safety, and Sonoma County) for maintaining health and safety. Caltrans and the California Highway Patrol also regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. The California Division of Occupational Safety and Health (Cal-OSHA) enforces hazard communication program regulations which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees. Because the District and its contractors would be required to comply with existing and future hazardous materials laws and regulations and applicable best management practices addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during construction of the project would be less than significant.

Following construction, operation of the project would not include the routine transport, use or disposal of hazardous materials. No operational impact would result.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant)

The project would include construction activity adjacent to the SRJC campus, as well as within one-quarter mile of the Santa Rosa High School. Construction activities would include the use of materials such as fuels, lubricants, degreasers, paints, and solvents, which are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact “a” and “b” above). Although construction activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release would not be expected to endanger individuals at SRJC or Santa Rosa High School given the nature of the materials and the small quantities that would be used. Because the District and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the project, the impact related to the use of hazardous materials during construction within one-quarter mile of a school would be less than significant.

Following construction, the project would not include a new stationary source of hazardous emissions or handling of acutely hazardous materials or waste. No operational impact would result.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less than Significant)

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." A search of the Cortese List was completed to determine if any known hazardous waste sites have been recorded on or adjacent to the project site, including review of:

- Department of Toxic Substances Control EnviroStor database;
- List of Leaking Underground Storage Tank Sites from the Water Board GeoTracker database;
- List of solid waste disposal sites identified by the Water Board with waste constituents above hazardous waste levels;

- List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from the Water Board;
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

The project site is not included on any of the above-mentioned hazardous waste lists and no adjacent sites were identified where contamination may have extended into the project area. A hazardous materials investigation and cleanup occurred on the SRJC campus between 1987 and 1991 in the vicinity of Lark Hall, located approximately 800 feet to the southwest of the project site. The investigation was related to a diesel fuel release, and cleanup activities included remediation, verification monitoring, and site closure in 1997 in compliance with the Health and Safety Code. The site is no longer an active case on a list compiled pursuant to Section 65962.5 of the Government Code. The impact would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

The project site is not located within the jurisdictional boundaries of the Sonoma County Comprehensive Airport Land Use Plan (Sonoma County 2016), or within two miles of the Charles M. Schulz-Sonoma County Airport, which is the nearest public airport to the project site. No impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than Significant)

The Santa Rosa Emergency Operation Plan (EOP) identifies the City's emergency planning, organization, and response policies and procedures (Santa Rosa 2017). The EOP also addresses the integration and coordination with other governmental levels and special districts as required. The EOP outlines how the City will respond to extraordinary events or disasters, from preparation through recovery. The EOP designates specific evacuation planning areas and routes. The project site is located within the North Santa Rosa Evacuation Planning Area. Designated evacuation travel routes in the project area include Steele Lane to the north, Mendocino Avenue to the east, College Avenue to the south, and Highway 101 to the west. Elliott Avenue is not designated as an evacuation travel route, and alternate connections to the designated evacuation routes would remain accessible with implementation of the project. Therefore, the project would not substantially impair implementation of or physically interfere with the City's EOP or evacuation travel routes. The impact would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant)

The City of Santa Rosa and CALFIRE have identified and designated areas within their jurisdiction that are at risk of wildland fires. The project site is not located within the established boundaries of the Santa Rosa Wildland–Urban Interface Fire Area, or within a CALFIRE designated fire hazard severity zone (Santa Rosa 2009b, CALFIRE 2008). Because the project site is composed of paved areas with little to no vegetation, the risk of fire ignition to occur during construction (e.g. related to heavy machinery usage) is low. In the event of a fire or wildland fire, the City's existing evacuation plan would be implemented. Elliott Avenue is not designated as an evacuation travel route, and alternate connections to the designated evacuation routes would remain accessible with implementation of the project (see Impact "f" above). Therefore, the impact would be less than significant.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site?			✓	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
iv) Impede or redirect flood flows?				✓
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant with Mitigation)

Areas that would be disturbed during construction consist of hardscapes and underlying soils. No waterways are located within the project site, and construction activities would disturb less than one acre of soil. The project would include minor land disturbance that could potentially result in sediment laden water reaching the local storm drain system, or discharge of chemicals and materials, such as concrete, mortar, asphalt, fuels, and lubricants. Applicable water quality standards and waste

discharge requirements could be violated, and polluted runoff could substantially degrade water quality. The impact is considered significant.

Mitigation

Implementation of Mitigation Measure HWQ-1 would reduce potential impacts relative to water quality standards and waste discharge requirements from construction activities to a less-than-significant level by requiring implementation of best management practices.

> **Mitigation Measure HWQ-1: Implement Storm Water Control Measures during Construction**
>
> The District and its contractor shall implement appropriate Best Management Practices to prevent the discharge of sediment, construction waste, debris or contaminants to the storm drain system. Best Management Practices may include, but would not be limited to, erosion and sediment controls such as fiber rolls, sand bag barriers around storm drain inlets. Waste management controls shall also be implemented to prevent the release of hazardous construction chemicals during construction. Such controls may include material handling and waste management, material stockpile management, management of any washout areas, control of vehicle/equipment fueling to contractor's staging area, vehicle and equipment cleaning performed off site, and spill prevention and control.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)

During construction, project-related excavations would be shallower than the underlying groundwater table and groundwater dewatering would not be required. Following construction, the project would not result in an increase in impervious surfaces or increase groundwater use. No impact would result.

c, i, ii) Substantially alter the existing drainage pattern of the site or area, or substantially increase the rate or amount of surface runoff, in a manner which would result in substantial erosion, siltation or flooding on- or off-site? (Less than Significant)

Construction and operation of the project would not substantially change existing drainage patterns. The project is not located within a 100-year floodplain or within the vicinity of a waterway. Storm water runoff would continue to flow to the local storm drain system located within Elliott Avenue. Because the project would not directly alter the course of a stream or river, and would not substantially alter existing drainage patterns, the potential for substantial erosion, siltation, or flooding to occur would be less than significant.

c, iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less than Significant)

Project improvements would be located within existing hardscapes, and areas disturbed during construction would be restored to pre-construction conditions. The project would not result in an increase in new impervious surfaces that would increase the rate or amount of surface runoff. The project would not alter the course of a stream or river, would not increase surface runoff, or create substantial additional sources of polluted runoff. The impact would be less than significant.

c, iv) Impede or redirect flood flows? (No Impact)

The project site is not located within a 100-year flood zone (FEMA 2008) and would not impede or

redirect flood flows. No impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (No Impact)

The project site is not located within a 100-year flood zone (FEMA 2008), a tsunami inundation area, or near a large body of water that may be affected by a seiche. No impact would result.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

The North Coast Regional Water Quality Control Board Basin Plan establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The project site is not located near a stream or river and would not alter water quality parameters established in the Basin Plan. Erosion control BMPs would be required to be implemented during construction to prevent erosion and to protect overall water quality (see Impact "a" above). The project would not utilize groundwater and no conflicts with an existing or foreseeable sustainable groundwater management plan would occur. No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?			✓	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			✓	

a) Physically divide an established community? (Less than Significant)

The proposed pilot project would close an approximately 500-foot segment of Elliott Avenue adjacent to the SRJC campus between the existing western and eastern driveways of the SRJC Emeritus Circle parking lot (see Figure 2, Project Area). The section of Elliott Avenue closed to vehicular traffic would be dedicated for student, pedestrian and bicycle circulation to better connect the SRJC facilities located on the north and south sides of Elliott Avenue. The closed roadway segment would result in a redistribution of existing traffic to other local roadways. Most of the existing traffic that would be diverted through the adjacent neighborhood north of Elliott Avenue would be local residents that currently use Elliott Avenue to travel out of their neighborhood. These trips would instead occur along other accessible roadways, including through the neighborhood to Steele Lane. Alternate connections to surrounding roadways would remain accessible, thereby preserving continuity within the local community. The impact would be less than significant.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (Less than Significant)

The project would be consistent with the District's 2016 SRJC Facilities Master Plan, which seeks to restrict vehicular traffic along a portion of Elliott Avenue as a way to calm traffic in the project area.

The Santa Rosa General Plan (Santa Rosa 2009a) identifies Elliott Avenue as a two-way transitional/collector street extending from Mendocino Avenue to Armory Drive. General Plan Policy T-C-3 seeks to implement traffic calming techniques on streets subject to high speed and/or cut-through traffic, while Policy T-J seeks to provide attractive and safe streets for pedestrians and bicyclists. The pilot closure of the roadway segment to vehicular traffic is intended to have a beneficial effect on safety for alternative modes of circulation since it would eliminate potential conflicts with motor vehicles, thereby providing greater pedestrian connectivity across the campus. Because the pilot project would split the existing continuous segment of Elliott Avenue into two shorter segments, it is also reasonable to expect a reduction in travel speeds on the two remaining segments of Elliott Avenue on either side of the closure, which also would be expected to have a beneficial impact on safety for bicyclists and pedestrians. No conflict with General Plan policies T-C-3 or T-J would result.

Santa Rosa General Plan policies T-D-1 and T-D-2 seek to maintain a level of service D or better along all major corridors and intersections. As discussed in Section 3.17, Transportation, the evaluation of the effect of redistributed traffic on surrounding intersections indicates that each intersection would continue operating acceptably within Santa Rosa's adopted level of service

standard. Therefore, the effect of the redistributed traffic would not conflict with General Plan policies T-D-1 and T-D-2.

Other General Plan policies adopted for the purpose of avoiding environmental effects are evaluated in this Initial Study under the corresponding issue areas.

The Santa Rosa Bicycle and Pedestrian Master Plan recommends future study of a potential Class II bicycle lane on Elliott Avenue between Armory Drive and Mendocino Avenue (Santa Rosa 2019). While no bike lanes are currently located along Elliott Avenue, the project would not preclude the future study or completion of a Class II bicycle lane on Elliott Avenue. The proposed street closure would still allow bicyclists to ride through the area. Therefore, no conflict with the Santa Rosa Bicycle and Pedestrian Master Plan would result.

No conflicts with land use plans, policies, or regulations adopted for the purpose of avoiding environmental effects have been identified. The impact would be less than significant.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
f) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
g) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

Construction of the project would not result in the loss of a known mineral resource or availability of a locally-important mineral resource recovery site as delineated on a land use plan, such as a local general plan or a specific plan. Neither the California Department of Conservation Mineral Land Classification studies (CDC 2013b) nor the Sonoma County Aggregate Resource Management Plan (Sonoma County 2010) designate the project site as having a known mineral resource. No impact to mineral resources would result.

3.13 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Result in generation of excessive groundborne vibration or noise levels?			✓	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant)

Construction

Neither the Santa Rosa General Plan nor the Santa Rosa Noise Ordinance (Municipal Code Chapter 17-16 Noise) contain policies or regulations that apply to construction noise. Therefore, the project would not generate construction-related noise levels in excess of applicable local standards. No construction-related impact would result.

Operation

Operational noise impacts are evaluated based on the findings of an environmental noise assessment performed by Illingworth & Rodkin (Illingworth & Rodkin 2020b, Appendix C). Policy NS-B-14 of the Santa Rosa General Plan was identified as the noise-related threshold most applicable to the project. Policy NS-B-14 discourages new projects that have the potential to create ambient noise levels more than 5 dBA Day/Night Sound Level (DNL) above existing background within 250 feet of sensitive receptors. For reference, a 5 dBA DNL noise increase would be expected if the project would triple existing traffic volumes along a roadway.

A noise monitoring survey was performed in the study area beginning on Wednesday May 8, 2019 and concluding on Monday May 13, 2019. The survey included three long-term measurements (LT-1 through LT-3) and two short-term measurements. Additional long-term measurement data (LT-4 and LT-5) was obtained from previously completed surveys along Elliott Avenue conducted in 2017.

Table 3.13-1 summarizes the results of hourly and day-night average noise levels at the long-term measurement locations. The survey indicates that local traffic noise dominates the noise environment at the project site and surrounding land uses. Secondary noise sources include traffic noise from U.S. Highway 101 and Mendocino Avenue.

Table 3.13-1 Existing Noise Levels on Project-affected Roadway Segments

Number	Roadway	Noise Level		
		Hourly Average Day (dBA L_{eq})	Hourly Average Night (dBA L_{eq})	Day-night average (dBA DNL)
LT-1	Bear Cub Way	49-64	46-61	60-63
LT-2	Albany Drive	48-68	38-57	56-59
LT-3	Salem Avenue	48-70	42-57	57-60
LT-4	Elliott Avenue	56-70	44-64	61-65
LT-5	125 feet north of Elliott Ave, East of Nordyke Ave	51-56	44-55	58

Source: Illingworth & Rodkin 2020b, Appendix C

The two short-term noise measurements were made on Wednesday, May 8, 2019 in 10-minute intervals. Short-term noise measurement ST-1 was made from 11:00 a.m. to 11:10 a.m. on Clement Avenue. The dominant source of noise was traffic on Mendocino Avenue, with occasional traffic on Clement Avenue. The ten-minute average noise level at ST-1 was 55 dBA Leq (10-min). Short-term noise measurement ST-2 was made from 11:20 a.m. to 11:30 a.m. on Nordyke Avenue. The dominant source of noise was occasional traffic on Nordyke Avenue, with constant background traffic noise coming from U.S. Highway 101. The ten-minute average noise level at ST-1 was 56 dBA Leq (10-min).

A review of the peak hour traffic volumes at 15 surrounding intersections was conducted, and the Federal Highway Administration's (FHWA) Traffic Noise Model, version TNM 2.5, was used to calculate noise levels under both existing and existing plus project conditions. In order to provide a worst-case assessment along the roadways in the study area, the modeling focused on weekdays when SRJC classes would be in session and did not incorporate existing buildings or barriers into the calculations.

Table 3.13-2 summarizes the results of the noise modeling for the intersection segments that showed increased noise levels from rerouting traffic.

Table 3.13-2 Operational Noise Levels on Project-affected Roadway Segments

Roadway	Segment	Noise Level Increase from Existing Conditions, dBA DNL		
		Existing	Existing Plus Project	Increase
Clement Avenue	Salem Avenue to Mendocino Avenue	59	60	1
Emeritus Circle West Parking Lot	Just North of Elliot Avenue	64	65	1
Emeritus Circle West Parking Lot	North of Elliot Avenue near Clement Avenue	57	58	1

Source: Illingworth & Rodkin 2020b, Appendix C

The noise assessment indicates that project traffic is anticipated to increase ambient noise levels by at most 1 dBA DNL along the most-affected roadway study segments, and by 0 to 1 dBA DNL on the remaining roadway segments in the project area. The analysis indicates that re-distributed traffic would not increase traffic noise levels by 5 dBA DNL or more, and therefore the project would not result in a conflict with the noise threshold established in Santa Rosa General Plan Policy NS-B-14. The operational impact would be less than significant.

b) Result in generation of excessive groundborne vibration or noise levels? (Less than Significant)

The construction and operation of the project would not generate excessive groundborne vibration or groundborne noise levels because the resulting project-generated traffic would not increase levels enough to significantly impact the nearby sensitive receptors. Construction would involve the use of normal construction equipment, and no pile driving or other excessively noisy activities would be required. The impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)

The project site is not located within an Airport Referral Area as designated by the Sonoma County Comprehensive Airport Land Use Plan, or within two miles of a public airport. No Impact would result.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (No Impact)

The project would not expand infrastructure, provide new housing, new employment, or otherwise induct substantial unplanned growth. No impact would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

No housing or people would be displaced by the project and no replacement housing would be required. No impact would result.

3.15 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)

As discussed in Section 3.14, Population and Housing, implementation of the project would not induce population growth. Therefore, the project would not result in growth that would require expanded fire or police protection facilities. The section of Elliott Avenue that would be closed to normal vehicular traffic would remain accessible for first responders, including ambulances, Santa Rosa Fire, and Santa Rosa Police through the electric driven vehicle barrier gates. The existing east and west driveways to the Emeritus Circle parking lot would remain open to all vehicle use. Because emergency access would be maintained, the project would not require expanded fire or police protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives. The project would not result in an increase in student population and no new or expanded schools would be required. The project would not result in the increased use of existing parks and other public facilities as it would not induce population growth. No impact on public services would result.

Additional evaluation of emergency access is provided in Section 3.17, Transportation.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

a, b) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)

Implementation of the project would not induce population growth in the project area. The use of existing neighborhood and regional parks or other recreational facilities would not change as a result of the project. The project would not include construction activities within an existing recreational property or require new or expanded recreational facilities. No impact would result.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			✓	
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			✓	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			✓	
d) Result in inadequate emergency access?			✓	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Less than Significant)

Transit Facilities

No public transit routes or facilities are located along Elliott Avenue. The nearest routes are operated by Santa Rosa CityBus, including Routes 1 and 7 along Mendocino Avenue and Route 19 along Steele Lane. The nearest transit stops to the project site for Routes 1 and 7 are at Dexter Street, less than one-half mile from the project site. Sonoma County Transit also operates numerous routes in the vicinity of the project, which stop at the intersection of Mendocino Avenue/Silva Avenue less than one-half mile from the project site. The existing transit routes and facilities are adequate to accommodate the project area, and no transit facilities along Elliott Avenue would be impacted by the pilot closure. Therefore, no transit-related conflict would result.

Bicycle and Pedestrian Facilities

The 2018 Update of the Santa Rosa Bicycle and Pedestrian Master Plan recommends future study of a potential Class II bicycle lane on Elliott Avenue between Armory Drive and Mendocino Avenue (Santa Rosa 2019). Presently, no existing bike lanes are located along Elliott Avenue. The project would not preclude the future study or completion of a Class II bicycle lane on Elliott Avenue. The proposed street closure would still allow bicyclists to ride through the area. No conflict with the Santa Rosa Bicycle and Pedestrian Master Plan would result.

The closure of the roadway to vehicular traffic is intended to have a beneficial effect on safety for alternative modes of circulation since it would eliminate conflict with motor vehicles between the east and west driveways of the SRJC Emeritus Circle parking lot, thereby allowing for greater pedestrian connectivity across the campus. Because the pilot project would split the existing continuous segment of Elliott Avenue into two shorter segments, it is also reasonable to expect a reduction in travel speeds on the two remaining segments of Elliott Avenue on either side of the closure, which would be expected to have a beneficial impact on safety for bicyclists and pedestrians. No impact on pedestrian facilities would result.

Roadway Facilities

The project would change vehicular travel patterns in the project area. However, the project would not add additional motor vehicle capacity to the roadway network and would not lead to additional vehicle travel. Senate Bill 743 eliminated vehicular congestion traditionally expressed as Level of Service (LOS) as a means of measuring transportation impact. However, to evaluate the influence of the project-related change in vehicular travel patterns relative to Santa Rosa's adopted General Plan standard of LOS D or better along all major corridors, a Circulation Study was completed (W-Trans 2020, Appendix A). The Circulation Study evaluates the effect of the anticipated changed vehicular travel patterns at fifteen localized intersections in the project vicinity.

Table 3.17-1 summarizes both the existing peak hour LOS as well as the existing plus project peak hour LOS upon anticipated redistribution of traffic. Each of the 15 study intersections is expected to continue operating acceptably upon the redistribution of traffic. It is noted that the Nordyke Avenue approach to Steele Lane would continue to operate at LOS F during the PM peak hour, however the overall operation of the intersection would remain at LOS A and the side-street volume is substantially less than that required for a traffic signal, therefore this condition is considered acceptable. The results of the Circulation Study indicate that the effect of redistributed traffic would not conflict with Santa Rosa's adopted General Plan LOS D standard (General Plan Policy TD-1). The impact would be less than significant.

Table 3.17-1 Existing Peak Hour Intersection Levels of Service

	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
Study Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Steele Ln/Illinois Ave-County Center Dr	16.4	B	25.9	C	17.1	B	26.5	C
Steele Ln/Nordyke Ave	0.7	A	0.8	A	0.7	A	0.9	A
NB (Nordyke Ave) Approach	*28.2*	*D*	*54.4*	*F*	*32.8*	*D*	*71.1*	*F*
Steele Ln/Berkeley Dr	0.3	A	0.3	A	0.4	A	0.3	A
NB (Berkeley Dr) Approach	*20.7*	*C*	*26.9*	*D*	*24.4*	*C*	*33.5*	*D*
Steele Ln/Salem Ave	0.1	A	0.1	A	0.2	D	0.2	A
NB (Salem Ave) Approach	*13.0*	*B*	*12.5*	*B*	*14.0*	*B*	*13.2*	*B*
Steele Ln-Lewis Rd/ Mendocino Ave	19.2	B	33.3	D	23.5	C	46.0	D
Clement Ave/Salem Ave	n/a	A	n/a	A	7.5	A	7.2	A
Clement Ave/Mendocino Ave	0.3	A	0.6	A	1.5	A	0.41	A
EB (Clement Ave) Approach	*13.6*	*B*	*23.5*	*C*	*21.8*	*C*	33.4	*D*
Elliott Ave/Armory Dr	10.5	B	10.0	A	11.8	B	10.7	B
Elliott Ave/Albany Dr	1.1	A	0.9	A	2.2	A	2.0	A
SB (Albany Dr) Approach	*10.6*	*B*	*11.5*	*B*	*8.9*	*A*	*9.3*	*A*
Elliott Ave/Emeritus Cir W	0.8	A	1.7	A	0.0	A	0.0	A
SB (Emeritus Cir W) Approach	*9.6*	*A*	*10.0*	*A*	*0.0*	*A*	*0.0*	*A*

Study Intersection	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Elliott Ave/Emeritus Cir E	2.5	A	1.9	A	0.0	A	0.0	A
SB (Emeritus Cir E Approach)	*11.5*	*B*	*10.0*	*B*	*0.0*	*A*	*0.0*	*A*
Elliott Ave/Salem Ave	1.0	A	1.9	A	1.6	A	2.3	A
SB (Salem Ave) Approach	*10.3*	*B*	*12.1*	*B*	*9.2*	*A*	*10.25*	*A*
Elliott Ave/Mendocino Ave	11.0	B	17.8	B	8.0	A	14.1	B
Bear Cub Way/Armory Dr	10.0	A	9.3	A	11.2	B	12.1	B
Bear Cub Way-Pacific Ave / Mendocino Ave	21.5	C	20.6	C	21.5	C	21.2	C

Source: W-Trans 2020, Appendix A

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (Less than Significant)

Pursuant to Senate Bill 743 and the current CEQA Guidelines, evaluation of a project's potential transportation impact requires consideration of vehicle miles traveled (VMT), which refers to the amount and distance of automobile travel attributable to a project. Transportation projects that reduce or have no impact on VMT are presumed to cause a less than significant transportation impact (OPR 2018). For roadway capacity projects, lead agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements.

The purpose of the proposed project is to improve student circulation and safety across a primary crossing point of Elliott Avenue at the SRJC campus. The project would not add additional motor vehicle capacity to the roadway network and would not lead to additional vehicle travel. As discussed in Impact "a" above, 15 local intersections were studied and upon the redistribution of traffic, each is expected to continue operating acceptably with Santa Rosa's adopted General Plan standard of LOS D or better. An Air Quality and Greenhouse Gas assessment has also been prepared for the project, which includes an evaluation of VMT under year 2020 and year 2040 for both existing conditions and existing plus project conditions (Illingworth & Rodkin 2020a). Table 3.17-2 summarizes the estimated VMT under each scenario. The results of the analysis indicates that the project would slightly decrease VMT comparative to existing conditions. The impact would be less than significant.

Table 3.17-2 Estimated Vehicle Miles Traveled (VMT)

Scenario Year	Vehicle Miles Traveled		
	Existing Conditions	With Project	Change
Year 2020	27,741	25,668	-2,073
Year 2040	36,446	35,476	-970

Source: Illingworth & Rodkin 2020a

c,d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or result in inadequate emergency access? (Less than Significant)

Construction

Construction activities are expected to begin in the fall of 2021 and require approximately one to two months to complete. Construction of any permanent roadway barriers following the pilot project would require future approvals, and any such improvements would require approximately one to two additional months to complete. Construction activities would not be of such intensity or duration as to result in a substantial increase in trips on adjacent roadways. Construction activity would be temporary and the District and its contractor would be required to implement a traffic control plan for work within the road right-of-way. Implementation of traffic controls would be required, including the use of signs, flaggers, notifications, and ability to accommodate access by emergency vehicles. Through required encroachment permit compliance and traffic control requirements, construction activities would not substantially increase hazards or result in inadequate emergency access. The temporary construction-related impact would be less than significant.

Operation

The section of Elliott Avenue that would be closed to normal vehicular traffic would remain accessible to first responders through the proposed electric driven vehicle barrier gates, including ambulances and Santa Rosa Fire and Police Department vehicles. The existing east and west driveways to the SRJC Emeritus Circle parking lot would remain open to all vehicle use. Signs and roadway striping would be completed per City of Santa Rosa and Caltrans standards at each end of the closed roadway segment, respectively. Existing raised roadway markers would be removed from the closed street section to eliminate potential tripping hazards.

Designated evacuation travel routes in the project area include Steele Lane to the north, Mendocino Avenue to the east, College Avenue to the south, and Highway 101 to the west. Elliott Avenue is not designated as an evacuation travel route, and alternate connections to the designated evacuation routes would remain accessible with implementation of the project. The project's impact related to potential hazards, incompatible uses, or inadequate emergency access would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe,				
i) Listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

a,i, a.ii) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less than Significant with Mitigation)

CEQA requires lead agencies to determine if a proposed project would have a significant effect on tribal cultural resources. The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe.

The District has no record of receiving requests for notification of proposed projects from California Native American tribes pursuant to Public Resources Code Section 21080.3.1. A 2018 cultural resources records and literature search completed for the SRJC campus found no previously recorded archaeological resources on the campus or in the immediate project vicinity. As described in Section 3.5, Cultural Resources, the potential to encounter as-of-yet unknown archaeological materials during project-related construction activities is considered low given the shallow extent of disturbance that would occur into previously undisturbed soils. However, in the unlikely event that

such resources ere encountered, they could represent tribal cultural resources as defined by CEQA, and any substantial change to or destruction of these resources would be a significant impact.

Mitigation

Implementation of Mitigation Measure TCR-1 would reduce this impact to a less-than-significant levels by requiring the District and its contractors to adhere to appropriate procedures and protocols in the event that a possible tribal cultural resource is discovered during construction activities associated with the project.

> **Mitigation Measure TCR-1: Minimize Impacts to Unknown Tribal Cultural Resources if Encountered**
>
> If potential tribal cultural resources are uncovered, the District shall halt work, and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. The District shall notify California Native American tribes culturally affiliated with the project area. The District, in coordination with Native American tribes, shall determine if the resource qualifies as a tribal cultural resource under CEQA. If it does, then all work must remain stopped in the immediate vicinity to allow evaluation of any materials. The District shall ensure that qualified resources are avoided or protected in place, in accordance with the requests of Native American tribes, to the extent feasible. Work may proceed on other parts of the project while mitigation for tribal cultural resources is being carried out.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				✓
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				✓
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				✓
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No Impact)

The project would not require the construction of new or expanded water, wastewater, storm water, electrical power, natural gas, or telecommunications facilities. Water, wastewater, storm water, electrical, natural gas, and telecommunication facilities located along and beneath Elliott Avenue would remain accessible to local utility providers for routine or emergency maintenance. No permanent structures or improvements would be placed over the existing utilities. Relocations of such utilities and facilities would not be required. No impact would result.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

During construction, water supplies could potentially be used for dust control and other activities. Construction-related water demands would be short-term and minimal in volume and would be sufficiently served by existing entitlements. Following construction, the project would not directly or

indirectly induce population growth and would not result in an increased demand for water. No new regional water supplies or facilities would be required. No impact would result.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)

The project would not directly or indirectly induce population growth and would not increase the amount of wastewater generated. Because there would be no increase in wastewater discharges, the project would not impair the ability of the Laguna Treatment Plant to continue serving existing commitments. No impact would result.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (No Impact)

Construction of the project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes, such as asphalt pavement and concrete. Construction waste with no practical reuse or that cannot be salvaged or recycled would be disposed of at a local transfer station and solid waste facility. Active permitted regional landfills include the Redwood Sanitary Landfill (26 million cubic yards remaining capacity), Potrero Hills Landfill (13.9 million cubic yards remaining capacity), Vasco Road Landfill (7.4 million cubic yards remaining capacity), and Keller Canyon Landfill (63.4 million cubic yards remaining capacity) (CalRecycle 2020). Solid waste generated by the project would represent a small fraction of the daily permitted tonnage of these facilities, therefore, the project's one-time construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills. Following construction, project operation would not generate additional solid waste. No impact would result.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

No applicable federal solid waste regulations would apply to the project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The project would not conflict with or impede implementation of such programs. Following construction, project operation would not generate additional solid waste. No impact would result.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?				✓

a-d) Substantially impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, or expose people or structures to risks? (No Impact)

The project site is not located in or contiguous to a State Responsibility Area (SRA) or lands classified as very high fire severity zones (VHFHSZ). The project site is located approximately 1.7 miles from the nearest designated SRA, and approximately 1.7 miles from the nearest lands classified as a VHFHSZ (CalFire FHSZ Viewer 2020). Additionally, the project site is not located with the City's Wildland-Urban Interface Area Zone. As such, the CEQA Guidelines Appendix G Checklist section for wildfire is not applicable to the project. No impact would result.

Impacts related to potential exposure of people or structures to risks involving wildland fires is further evaluated in Section 3.7 (Hazards and Hazardous Materials).

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		✓		
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?		✓		

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less than Significant with Mitigation)

Potential project impacts to biological and cultural resources are addressed in Section 3.4, Biological Resources, Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, respectively. With implementation of the recommended mitigation measures identified in this Initial Study, the potential for project-related activities to degrade the quality of the environment would be reduced to less-than-significant levels.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (Less than Significant with Mitigation)

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines

Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This cumulative impact analysis uses the list approach, whereby a search was undertaken to identify other reasonably foreseeable projects at the SRJC campus and in the project vicinity that may have overlapping or cumulative impacts with the project. Projects identified and considered for cumulative impacts include:

- Planned modifications to on-campus parking lots, including Emeritus Circle Parking Lot, in year 2020.
- Planned construction of a new education building at the SRJC between 2019 and 2021, replacing Shuhaw Hall and Bech Hall.
- Planned renovations to existing SRJC athletic facilities in year 2020 or 2021.
- Planned construction of student housing at the SRJC campus near the corner of Elliott Avenue and Armory Drive between years 2020 and 2022.
- Planned City of Santa Rosa bicycle and pedestrian crossing over Highway 101 with a potential landing on Elliott Avenue or Bear Cub Way in year 2022 or 2023.

As summarized in Section 3 of this Initial Study, the project would not result in impacts to agriculture and forest resources, biological resources, mineral resources, population and housing, public services, recreation, utilities and service systems, or wildfire. Therefore, implementation of the project would not contribute to any related cumulative impact on these resources.

Construction of several of the cumulative projects identified above would overlap with the proposed project, and construction vehicles for the cumulative projects would likely utilize similar regional highways and roadways, and potentially require staging areas that would affect normal roadway functionality at the SRJC campus. Given that several projects may be occurring along Elliott Avenue simultaneously, the potential for a cumulative increase in construction related traffic and disturbance would be significant and the project's contribution to the cumulative impact could be cumulatively considerable. Implementation of Mitigation Measure C-TR-1 would ensure that the District and its contractor coordinate with other SRJC construction projects to avoid or minimize impacts during construction of the project.

The temporary construction overlap of the project with cumulative projects could also increase dust generation and exhaust emissions at the SRJC campus and nearby surrounding areas. The project includes environmental protection actions to reduce construction-related air emissions to a less-than-significant level, and the project's contribution to a cumulative air quality impact would not be cumulatively considerable.

As discussed in Section 3.17, Transportation, the project would not add additional motor vehicle capacity to the roadway network and would not lead to additional vehicle travel. However, the project would change travel patterns in the project area. The Circulation Study completed for the project determined that under Future and Future plus Project scenarios, 13 of the 15 study intersections identified in Table 3.17-1 would operate acceptably. The two exceptions are Steele Lane-Lewis Road/Mendocino Avenue, which is expected to continue operating unacceptably at LOS E during the evening peak hour, and Steele Lane/Illinois Avenue-County Center Drive, which would be expected to deteriorate from LOS D to LOS E during the evening peak hour.

Santa Rosa General Plan Policy TD-1 and TD-2 includes exceptions to meeting Santa Rosa's adopted LOS D standard. Exceptions include scenarios where attainment of the standard would result in significant degradation, as well as scenarios where topography or impacts makes the improvement impossible. In order to maintain a LOS D or better at the Steele Lane-Lewis Road/Mendocino Avenue intersection, a second northbound left-turn lane would be required, which

could only be accommodated by eliminating existing bike lanes at this location. To maintain LOS D at the Steele Lane/Illinois Avenue-County Center Drive intersection, a right-turn lane would need to be added to the eastbound approach of the intersection, which would need to share a turn lane with bicyclists. Senate Bill 743 and the CEQA Guidelines eliminated vehicular congestion traditionally expressed as LOS as a measure of transportation impact in CEQA. As such, the cumulative impact of the redistributed traffic at the local intersections is not deemed a significant cumulative impact under the current CEQA Guidelines. An Air Quality and Greenhouse Gas assessment prepared for the project includes an evaluation of VMT under year 2020 and year 2040 for both existing conditions and existing plus project conditions (Illingworth & Rodkin 2020a). The results of the analysis indicates that the project would slightly decrease VMT comparative to existing conditions. The cumulative transportation impact would be less than significant.

Mitigation

With implementation of Mitigation Measure C-TR-1 (Coordinate Traffic Control Plan with other SRJC Construction Projects), the project's contribution to cumulative impacts related to construction traffic impacts would not be cumulatively considerable (less than significant with mitigation).

Mitigation Measure C-TR-1: Coordinate Traffic Control Plan with Other Simultaneous Construction Projects

Prior to construction, the District and its contractors shall coordinate with other SRJC construction projects at the campus and other projects adjacent to the campus and update traffic control plans to avoid overlapping construction schedules or, if not practical, to minimize impacts to congestion, emergency access, and alternative modes of transportation.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

With implementation of the recommended mitigation measures identified in this IS/MND, the potential for project-related activities to cause substantial adverse effects on human beings would be reduced to less-than-significant levels.

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Appendices

Appendix A - Circulation Study

Circulation Study for the Elliott Avenue Pilot Closure Project

Prepared for the City of Santa Rosa

Submitted by
W-Trans

July 31, 2020

TRAFFIC ENGINEERING
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A. Collision Rate Calculations
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Executive Summary

The proposed Elliott Avenue Closure pilot project would result in closure of the section of Elliott Avenue between West Emeritus Way and East Emeritus Way to vehicular traffic, thereby allowing pedestrians and bicycles to cross anywhere within the 600-foot length of the section closed to vehicular traffic. As this project would first be in a "pilot" phase, the closure may or may not be permanent depending on the success of the project in its pilot form. In addition to closing a portion of Elliott Avenue to vehicular traffic, a new connection to the Emeritus Circle parking lot is proposed at Salem Avenue and Clement Avenue, which is currently a ninety-degree bend in the roadway; the new driveway would be the north leg of a tee-intersection.

The study area was established with input from City staff and includes fifteen intersections surrounding the project along Steele Lane, Elliott Avenue and Mendocino Avenue. This project would not be expected to generate any new traffic; however, it would result in the redistribution of existing traffic. Most of the traffic that would be diverted through the adjacent neighborhood would be generated by the neighborhood and consist of local residents that currently use Elliott Avenue to travel out of their neighborhood; these trips would occur along other routes instead, including through the neighborhood to Steele Lane. Minimal new traffic through the neighborhood would be expected.

Upon redistribution of existing trips all study intersections would be expected to operate acceptably at the same levels of service. While the Nordyke Avenue approach to Steele Lane would continue to operate at LOS F and would be expected to have more than a 5-second increase in delay due to the addition of "project-generated" traffic, because the overall operation would remain at LOS A and the side-street volume is substantially less than that required to indicate need for a traffic signal, this condition is considered acceptable.

Under the Future and Future plus Project scenarios, the study intersections are expected to operate acceptably, except for Steele Lane-Lewis Road/Mendocino Avenue, which is expected to continue operating unacceptably at LOS E during the evening peak hours, and Steele Lane/Illinois Avenue-County Center Drive which would be expected to deteriorate from LOS D to E during the peak hour. While adding turn lanes at these two intersections would result in acceptable operation, it would require elimination of bike lanes to achieve adequate width for the extra lanes. This change would trigger a significant impact under CEQA, so is not recommended.

The proposed project would have positive impact on access for alternative modes by expanding facilities for pedestrians and bicyclists. The closure of the roadway to vehicular traffic would be expected to have a beneficial impact on safety for these modes since the existing conflict with motor vehicles would be eliminated, though it should be noted that the crossing is currently signalized and there were no collisions between vehicles and pedestrians or bicyclists reported on Elliott Avenue during the five-year study period. Because the project would split the existing approximately 0.46-mile continuous segment of Elliott Avenue into two shorter segments of approximately 450 feet and 0.25 miles, thereby reducing the amount of travel way for vehicles to accelerate in a single action, it would also be reasonable to expect a reduction in travel speeds on the two remaining segments of Elliott Avenue on either side of the closure.

Introduction

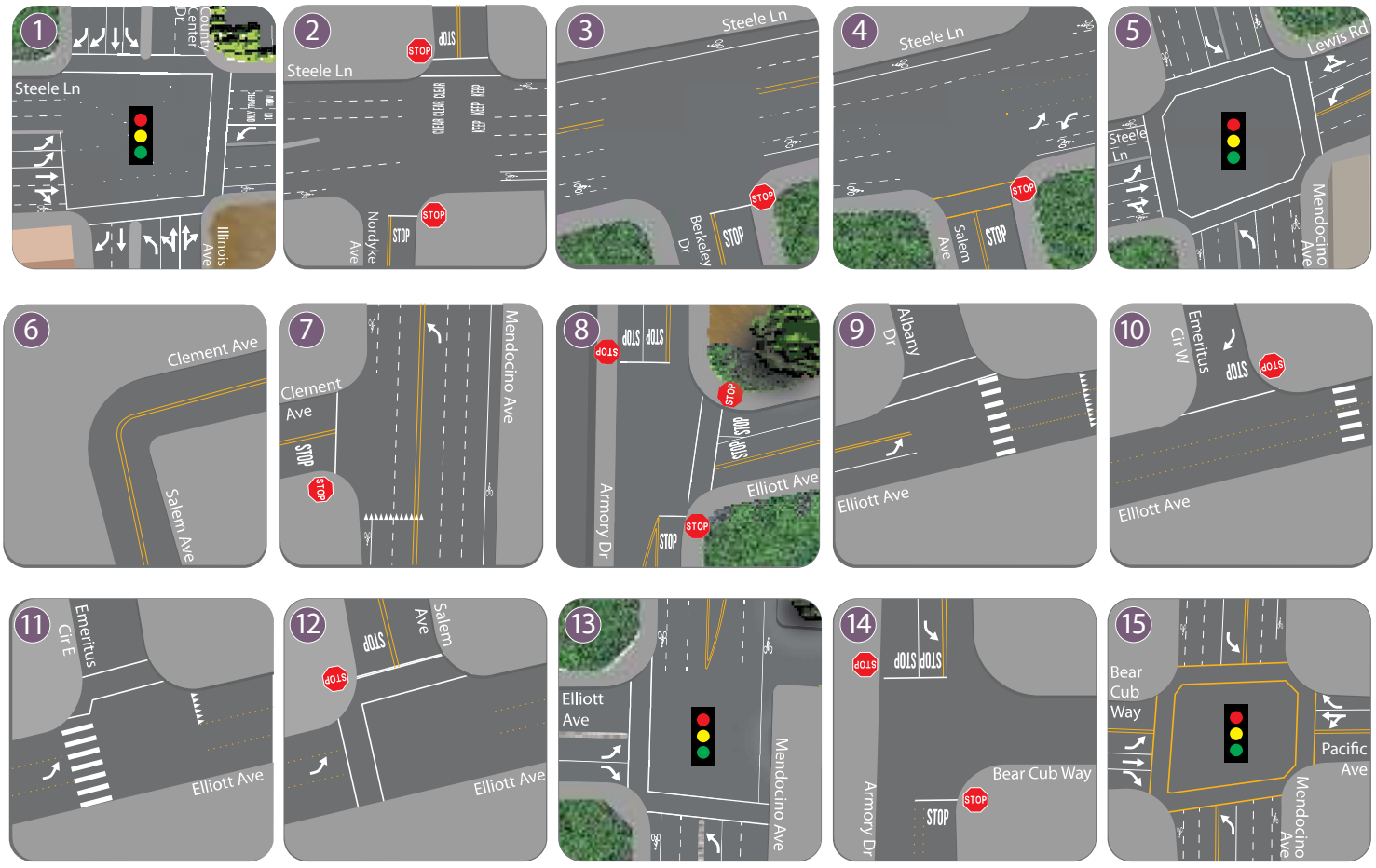
This report presents an analysis of the potential traffic impacts that would be associated with redistribution of vehicle trips due to the proposed closure of Elliott Avenue to vehicular traffic from West Emeritus Way to East Emeritus Way along with connecting Salem Street to the Emeritus Circle Parking Lot. Elliott Avenue currently bisects the Santa Rosa Junior College campus in the City of Santa Rosa, resulting in substantial pedestrian traffic crossing at the existing traffic signal located mid-block between West Emeritus Way and East Emeritus Way. The traffic study was completed in accordance with the criteria established by the City of Santa Rosa and is consistent with standard traffic engineering techniques.

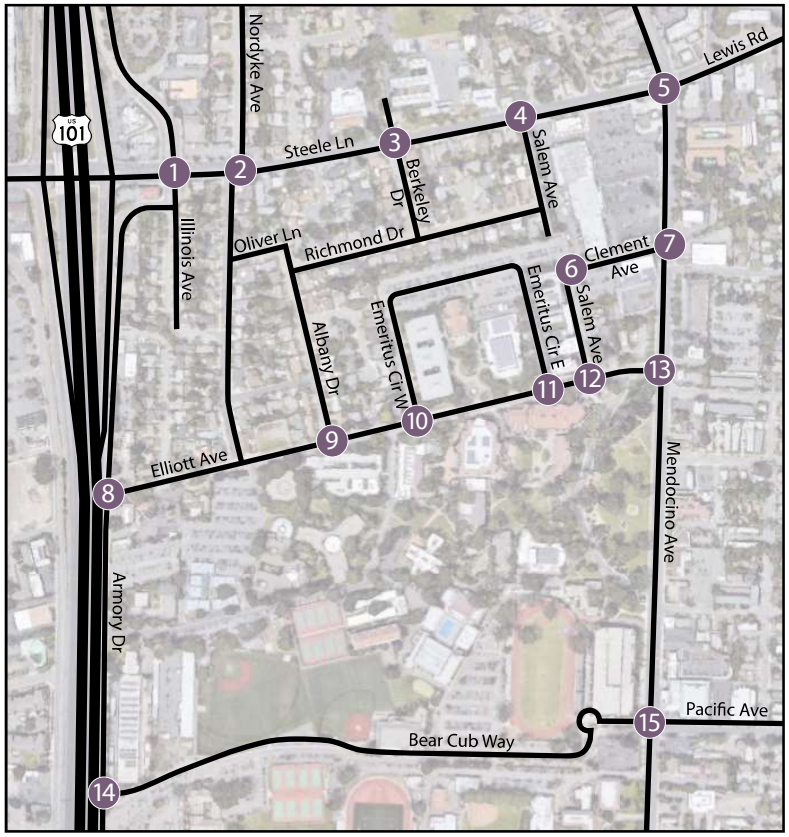
Prelude

The purpose of a circulation study is to provide District and City staff and policy makers with data they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. However, for this project, no new trips will be created, though existing traffic will be redistributed. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The Elliott Avenue Closure pilot project would close the section of Elliott Avenue from West Emeritus Way to East Emeritus Way to vehicular traffic, thereby allowing pedestrians and bicycles to cross anywhere within the 600-foot length of the section closed to vehicular traffic. This would connect Emeritus Hall, Race Building, and Plover Hall to the main Santa Rosa Junior College Campus. Currently, West Emeritus Way is limited to outbound traffic only; however, a project to redesign the parking lot and driveway to create ingress and egress is expected to be completed during the Summer of 2020. In addition to closing a portion of Elliott Avenue to vehicular traffic, a new connection to the Emeritus Circle parking lot at Salem Avenue and Clement Avenue, which is currently a ninety-degree bend in the roadway, is proposed with the new driveway coming in as the north leg of a tee-intersection. The study area and existing lane configurations are shown in Figure 1. This proposed project stems from the Santa Rosa Junior College *2016 Facilities Master Plan and Guidelines*, which aims for a more pedestrian and bicycle friendly campus. Traffic calming measures including the restriction of vehicular traffic are called for in the Master Plan's "Vision Plan" Recommendations.





LEGEND
Study Intersection

North
Not to Scale

sro512.ai 4/20

Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 1 – Study Area and Existing Lane Configurations

W-Trans

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the following intersections:

1. Steele Lane/Illinois Avenue-County Center Drive
2. Steele Lane/Nordyke Avenue
3. Steele Lane/Berkeley Drive
4. Steele Lane/Salem Avenue
5. Steele Lane-Lewis Street/Mendocino Avenue
6. Clement Avenue/Salem Avenue
7. Clement Avenue/Mendocino Avenue
8. Elliott Avenue/Armory Drive
9. Elliott Avenue/Albany Drive
10. Elliott Avenue/Emeritus Circle West
11. Elliott Avenue/Emeritus Circle East
12. Elliott Avenue/Salem Avenue
13. Elliott Avenue/Mendocino Avenue
14. Bear Cub Way/Armory Drive
15. Bear Cub Way-Pacific Avenue/Mendocino Avenue

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

Steele Lane/Illinois Avenue-County Center Drive is an adaptive signalized intersection, with protected left-turn phasing on all four approaches. There are marked crosswalks on the north, east, and south legs of the intersection.

Steele Lane/Nordyke Avenue is an offset four-way intersection with stop signs on the north and south approaches. There is a marked crosswalk on the north leg.

Steele Lane/Berkeley Drive is a tee-intersection with the northbound approach stop-controlled. There are no marked crosswalks.

Steele Lane/Salem Avenue is a tee-intersection with a stop control on the northbound approach. There is a marked crosswalk on the south leg of the intersection.

Steele Lane-Lewis Street/Mendocino Avenue is an adaptive signalized intersection, with protected left-turn phasing at all four approaches. Bike lanes are present along Mendocino Avenue, and there are crosswalks on all four legs with pedestrian signal phasing.

Clement Avenue/Salem Avenue is a 90-degree turn with no controls. As part of the project a driveway to Emeritus Circle parking lot would be constructed to produce a tee-intersection.

Clement Avenue/Mendocino Avenue is a stop-controlled tee-intersection. There is a marked crosswalk on the west leg of the intersection.

Elliott Avenue/Armory Drive is an all-way stop-controlled tee-intersection. There is a marked crosswalk on the east leg of the intersection.

Elliott Avenue/Albany Drive is an all-way stop-controlled tee-intersection. There are marked crosswalks on the north and west legs of the intersection. It is noted that this intersection was analyzed with a southbound stop control only as the all-way stop controls were implemented subsequent to the field review and initiation of this analysis.

Elliott Avenue/Emeritus Circle West is a tee-intersection with a stop control on the north leg, which is an exit only.

Elliott Avenue/Emeritus Circle East is a tee-intersection a stop control on the southbound approach. There are crosswalks on the north and west legs.

Elliott Avenue/Salem Avenue is a tee-intersection with a controlled stop southbound. There are marked crosswalks on the north and east leg of the intersection.

Elliott Avenue/Mendocino Avenue is an adaptive signalized intersection, with protected left-turn phasing on the northbound approach and a right-turn overlap phase on the westbound approach. There are marked crosswalks on the west and south legs with pedestrian phasing, and there are bike lanes along Mendocino Avenue.

Bear Cub Way/Armory Drive is an all-way stop-controlled tee-intersection. There are no marked crosswalks.

Bear Cub Way-Pacific Avenue/Mendocino Avenue is an adaptive signalized intersection, with protected left-turn phasing on the Mendocino Avenue approaches and permitted left-turn phasing on the Pacific Avenue and Bear Cub Way approaches, both of which also have right-turn overlap phases. There are marked crosswalks on all four legs of the intersection.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is November 14, 2014 through November 15, 2019.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2016 Collision Data on California State Highways*, California Department of Transportation (Caltrans). For the four signalized intersections the calculated collision rate is higher than the statewide average. The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates at the Study Intersections			
Study Intersection	**Number of Collisions (2014-2019)**	**Calculated Collision Rate (c/mve)**	**Statewide Average Collision Rate (c/mve)**
1. Steele Ln/Illinois Ave-County Center Dr	23	**0.38**	0.24
2. Steele Ln/Nordyke Ave	5	0.13	0.13
3. Steele Ln/Berkeley Dr	3	0.08	0.08
4. Steele Ln/Salem Ave	3	0.08	0.08
5. Steele Ln-Lewis St/Mendocino Ave	18	**0.29**	0.24
6. Clement Ave/Salem Ave*	0	0.00	n/a
7. Clement Ave/Mendocino Ave	2	0.05	0.08
8. Elliott Ave/Armory Dr	0	0.00	0.08
9. Elliott Ave/Albany Dr	0	0.00	0.08
10. Elliott Ave/Emeritus Cir W	0	0.00	0.08
11. Elliott Ave/Emeritus Cir E	0	0.00	0.08
12. Elliott Ave/Salem Ave	0	0.00	0.08
13. Elliott Ave/Mendocino Ave	9	**0.20**	0.19
14. Bear Cub Way/Armory Dr	0	0.00	0.08
15. Bear Cub Way-Pacific Ave/Mendocino Ave	17	**0.36**	0.24

Note: c/mve = collisions per million vehicles entering; **bold** = calculated collision rate larger than the statewide average;
* Location is currently a curve and not an intersection

As the intersection of Steele Lane/Illinois Avenue-County Center Drive intersection had a collision rate higher than the statewide average for similar facilities, it was studied further. Of the 23 collisions at the intersection, nine were rear-end collisions. The remaining 14 collisions included several crash types: five sideswipe, three broadside, two hit object, one head-on, and two involving pedestrians. It should also be noted seven of these collisions were attributed to unsafe speeds. A predominant collision type of rear-end crashes is typical of locations with congested conditions and vehicles exiting the freeway onto a local street. In this case, this is exacerbated by the complex traffic patterns in the area associated with drivers turning onto Steele Lane from nearby intersections and needing to merge across several lanes within a short distance to access the freeway ramps. Further review indicates that the percentage of collisions at this intersection resulting in injuries was 39 percent, which is below the statewide average injury rate of 44.6 percent. Given the below-average incidence of injuries it appears that this intersection does not have a demonstrated safety problem despite the above-average collision rate.

Of the 18 collisions at Steele Lane-Lewis Road/Mendocino Avenue, ten were rear-end collisions, three were broadside, three were sideswipe, one involved a pedestrian, and two involved a bicyclist. It should be noted that the intersection has an above-average injury rate of 50.0 percent compared to the statewide injury rate average of 44.6 percent. Of the rear-end collisions, six were due to unsafe speed, three were attributed to driving under the influence, and one was a right-of-way violation. With no clear collision factor pattern to the broadsides, no measures are recommended to address this collision type. Increased speed enforcement could benefit safety at this location, especially for pedestrians and bicyclists.

Of the nine collisions at Elliott Avenue/Mendocino Avenue, four were rear-ends, two were sideswipes, two were hit objects and one was a broadside; this last crash was the only one involving a driver on Elliott Avenue. It should be noted that the intersection has an above-average injury rate of 55.6 percent compared to the statewide injury

rate average of 46.8 percent. The preponderance of crashes involving two southbound vehicles (six of nine), five of which were attributed to unsafe speed, indicates a potential need for additional speed enforcement in this area.

Of the 17 collisions at the intersection of Bear Cub Way-Pacific Avenue/Mendocino Avenue there were a number of different types, including broadsides, rear-ends, sideswipes and head-on crashes. Three involved pedestrians (two of whom were at fault) and two involved bicyclists which likely contributed to the above-average injury rate of 52.9 percent compared to the statewide injury rate average of 44.6 percent. With no clear collision pattern in either the type of collision or primary collision factors, no measures are recommended. Increased speed enforcement could benefit safety at this location, especially for pedestrians and bicyclists. It is noted that in the last five years there have not been any pedestrian or bicycle collisions reported along Elliott Avenue between Armory Drive and Mendocino Avenue, though it is anecdotally noted that District staff has indicated that they have witnessed "near collisions" on many occasions.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, and curb ramps provide access for pedestrians in the vicinity of the proposed project site; however, obstacles can be found on sidewalks along the roadways connecting to the project site. These gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Armory Drive** – There are sidewalks along only the east side of the street as the western side of the street is adjacent to US 101. The existing sidewalks are partially obstructed by utility poles. Curb ramps are present at intersections, but truncated domes are not present at most locations.

- **Elliott Avenue** – Sidewalks exist along both sides of Elliott Avenue between Armory Drive and Mendocino Avenue, with the exception of one lot between Elliott Avenue and Illinois Avenue, though they are partially obstructed by utility poles on the north side of the street. Curb ramps are present at intersections, but truncated domes are missing at many locations meaning that these crossings are not compliant with current Americans with Disability Act (ADA) design standards. A midblock crossing connecting the library and student center buildings is controlled by a pedestrian signal and there are four uncontrolled crossings on Elliot Avenue, including at Nordyke Avenue, Emeritus Circle West, Emeritus Circle East, and Salem Avenue along with two stop-controlled crossings at Armory Drive and Albany Drive. Pedestrian crossing signage is present at most of these crosswalks.

  Based on counts taken in May 2019, there were five pedestrian crossings recorded at Emeritus Circle West and 81 crossings at Emeritus Circle East during the morning peak hour. During the evening peak hour there was a single pedestrian crossing at Emeritus Circle West and 215 pedestrians crossing at Emeritus Circle East. It is also noted that these numbers do not account for the crossings at the pedestrian traffic signal, which was not counted though was observed to facilitate more crossings than the other two locations.

- **Illinois Avenue –** This street has sidewalks along both sides. A diverter at the intersection with Sucher Lane blocks the through movement for vehicular traffic on both streets; pedestrian access is permitted. Curb ramps and truncated domes are present at intersections.

- **Mendocino Avenue** – Sidewalks are present along both sides of the street. There are marked school crosswalks at the intersections with Ridgway Avenue, Crawford Court, Bear Cub Way, and McConnell Avenue, and standard crosswalks at the intersection with Elliott Avenue. There is a high-intensity activated crosswalk (HAWK) beacon at the crossing at McConnell Avenue, including a pedestrian refuge island and advanced yield

markings. An overhead pedestrian beacon and advanced yield markings are also present at the Silva Avenue intersection. Curb ramps are present at intersections, but most do not include truncated domes.

- **Nordyke Avenue** – There are sidewalks along both sides of the street. There is a barrier at the southern end of Nordyke Avenue, blocking vehicular access. However, there is a sidewalk connection, providing pedestrian access between the two streets. Curb ramps are present at intersections, but only the ramps at the intersection with Steele Avenue include truncated domes.

- **Ridgway Avenue –** There are marked crosswalks at several intersections that connect continuous sidewalks on both sides of the street. The intersection at Glenn Street has all-way stop controls and is a major access point to the high school. School crosswalks are marked at Armory Drive, Morgan Street, Glenn Street, and Mendocino Avenue. Truncated domes are not present at all locations. Utility poles on the north side of the street partially obstruct the sidewalk.

- **Steele Lane –** There are sidewalks along both sides of Steele Lane. There is a marked school crosswalk and pedestrian traffic signal with advance warning beacons between Berkeley Drive and Salem Avenue, in front of Steele Lane Elementary School. There is a marked crosswalk at the unsignalized intersection of with Meyers Drive. There are also marked crosswalks at the signalized intersections at Illinois Avenue-County Center Drive and at Mendocino Avenue. Ramps with truncated domes are present at intersections. Utility poles, signs, and trees are located in the sidewalk, effectively narrowing the available width for pedestrians.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on Mendocino Avenue between Steele Lane and College Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. According to the *City of Santa Rosa Bicycle & Pedestrian Master Plan Update 2018*, there are planned bicycle lanes along Armory Drive between Ridgway Avenue and Steele Lane. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity.

Table 2 – Bicycle Facility Summary				
Status **Facility**	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Mendocino Ave	II	1.10	Steele Ln/Lewis Rd	College Ave
Planned				
US 101 Overpass	I	<0.10	TBD	TBD
Elliott Ave (study)	TBD	0.50	Mendocino Ave	Armory Dr
Steele Ln	II	0.50	Illinois Ave	US 101 S Ramps
Armory Dr	II	0.80	Ridgway Ave	Steele Ln
Ridgway Ave	II	0.40	Armory Dr	Mendocino Ave
College Ave	II	0.30	Mendocino Ave	Morgan St
Bear Cub Way	III	0.50	Armory Dr	Mendocino Ave
Morgan St	III	0.20	College Ave	Ridgway Ave

Notes: TBD = To Be Determined
Source: *City of Santa Rosa Bicycle & Pedestrian Master Plan Update 2018*, City of Santa Rosa, 2018

Transit Facilities

Santa Rosa CityBus and Sonoma County Transit are the primary providers of fixed route bus service in Santa Rosa. Regional service and connections are also available, as described below.

Santa Rosa CityBus operates Routes 1 and 7 along Mendocino Avenue and Route 19 (North Circulator) along Steele Lane. The nearest stops to the project site for Routes 1 and 7 are at Dexter Street, less than one-half mile from the project site. Route 1 operates seven days a week, with 15-minute headways on weekdays from 6:00 a.m. to 8:00 p.m., 30-minute headways on Saturdays from 6:00 a.m. to 8:00 p.m., and 45-minute headways on Sundays from 10:00 a.m. to 5:00 p.m. Route 7 operates eight trips per day between 7:00 a.m. and 5:00 p.m. on weekdays. Route 19 stops at the intersections of Steele Lane with Meyers Drive and Berkeley Drive, less than one-half mile from the project site. The service runs only on weekdays, with six trips between 8:00 a.m. and 5:00 p.m.

Sonoma County Transit operates numerous routes in the vicinity of the project. Routes 20, 20X, 30, 30X, 44, 44X, 48, 48X, 54, 57, 60, 60X, and 62 stop at the intersection of Mendocino Avenue/Silva Avenue, less than one-half mile from the project site. These routes provide service ranging from two to 16 times per day to locations including Petaluma, Rohnert Park, North Santa Rosa, and the Sonoma Coast.

SMART offers regional rail service between Sonoma County Airport and San Rafael. While the project site is located approximately one mile from the North Santa Rosa SMART station, it is assumed some students will bike to the station for regional transit service. Access to the SMART station from the SRJC campus would be enhanced with the completion of the proposed pedestrian/bicycle overpass across US 101. Mendocino Transit and Amtrak also provide regional service which can be accessed from a stop at the intersection of Cleveland Avenue/Edwards Avenue, approximately 0.80 miles from the project site.

There are bicycle racks on the front of all Santa Rosa CityBus and Sonoma County Transit buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on buses at the discretion of the driver.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. CityBus paratransit is contracted out

to MV Transportation and is designed to serve the needs of individuals with disabilities within three-quarters of a mile from existing CityBus routes.

The routes and their respective operating hours and stops are shown in Table 3.

Table 3 – Transit Facility Summary

Service	Distance to Stop (mi)	Stop Frequency (per day)	Days of Operation	Begin Point	End Point
Sonoma County Transit					
Route 20, 20X	0.50	Weekday – 9 Weekend – 4	7	Kaiser Hospital Coddingtown Mall (weekend)	Monte Rio
Route 30, 30X		EB – 9 WB – 10 Weekend EB – 4 Weekend WB – 3	7	Kaiser Hospital Coddingtown Mall (weekend)	Sonoma Plaza
Route 44, 44X		NB – 14 NB – 11 Weekend NB – 5 Weekend SB – 5	7	Coddingtown Mall	Petaluma Transit Mall
Route 48, 48X		NB – 9 SB – 8 Weekend NB – 5 Weekend SB – 5	7	Coddingtown Mall	Petaluma Transit Mall
Route 54		NB – 2 SB – 2	5	Coddingtown Mall	Petaluma Transit Mall
Route 57		NB – 1 SB – 1	5	Santa Rosa North SMART Station	SRJC
Route 60, 60X		NB – 18 SB – 17 Weekend – 9	7	Cloverdale Depot	Santa Rosa Transit Mall
Route 62		NB – 9 SB – 8	5	Santa Rosa Transit Mall	Sonoma County Airport
Santa Rosa City Bus					
Route 1	0.50	Weekday – 112 Saturday – 56 Sunday – 20	7	Coddingtown Mall	Santa Rosa Transit Mall
Route 7		16	5	Coddingtown Mall	Montgomery Village Transit Hub
Route 19	0.40	12	5	Fulton Rd/Guerneville Rd	Stagecoach at Fountaingrove Pkwy
Sonoma-Marin Area Rail Transit (SMART)					
Northbound & Southbound	1.10	Weekday – 17 Weekend – 5	7	Sonoma County Airport	San Rafael Transit Center

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side-street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a Level of Service.

The study intersections that are currently controlled by a traffic signal, or may be in the future, were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology.

The ranges of delay associated with the various levels of service are indicated in Table 4.

Table 4 – Intersection Level of Service Criteria			
LOS	**Two-Way Stop-Controlled**	**All-Way Stop-Controlled**	**Signalized**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop, and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Traffic Operation Standards

City of Santa Rosa

Section 5.8 Transportation Goals & Policy of the City of Santa Rosa General Plan states:

T-D-1 *Maintain a Level of Service (LOS) D or better along all major corridors. Exceptions to meeting the standard include:*

- *Within downtown;*
- *Where attainment would result in significant degradation;*
- *Where topography or impacts makes the improvement impossible; or*
- *Where attainment would ensure loss of an area's unique character.*

The LOS is to be calculated using the average traffic demand over the highest 60-minute period.

Traffic Engineering Division will require a level of service evaluation of arterial and collector corridors if deemed necessary.

T-D-2 *Monitor level of service at intersections to assure that improvements or alterations to improve corridor level of service do not cause severe impacts at any single intersection.*

General interpretation of Policy T-D-2. The impact to an intersection is considered adverse if the project related and/or future trips result in:

1. The level of service (LOS) at an intersection degrading from LOS D or better to LOS E or F, OR
2. An increase in average vehicle delay of greater than 5 seconds at a signalized intersection where the current LOS is either LOS E or F.
3. Queuing impacts based on a comparative analysis between the design queue length and the available queue storage capacity. Impacts include, but are not limited to, spillback queue at project access locations (both ingress and egress), turn lanes at intersections, lane drops, spill back that impacts upstream intersections or interchange ramps.
4. Exceptions may be granted under the following conditions:
   a. Within downtown,
   b. Where attainment would result in significant degradation,
   c. Where topography or impacts makes the improvement impossible; or
   d. Where attainment would ensure loss of an area's unique character.

T-C-3 *Implement traffic calming techniques on streets subject to high speed and/or cut-through traffic, in order to improve neighborhood livability, Techniques Include:*

- *Narrow Streets*
- *On-street parking*
- *Choker or diverters*
- *Decorative crosswalks*
- *Planted islands*

General interpretation of Policy T-C-3. An impact is considered adverse if the project has the potential to alter community character by significantly increasing cut-through traffic, unexpected vehicle maneuvers or commercial vehicle trips in a residential area.

T-H-3 *Require new development to provide transit improvements, where a rough proportionality to demand from the project is established. Transit improvements may include:*

- *Direct and paved pedestrian access to transit stops*
- *Bus turnouts and shelters*
- *Lane width to accommodate buses.*

General interpretation of Policy T-H-3. An impact is considered adverse if the project has the potential to disrupt existing transit operations or establishes transit facilities and equipment such that it creates a sight distance deficiency or vehicle conflict point.

T-J *Provide attractive and safe streets for pedestrian and bicyclists.*

General interpretation of Policy T-J. An impact is considered adverse if the project generates 20 pedestrians in any single hour at an unsignalized intersection, mid-block crossing or where no crossing has been established.

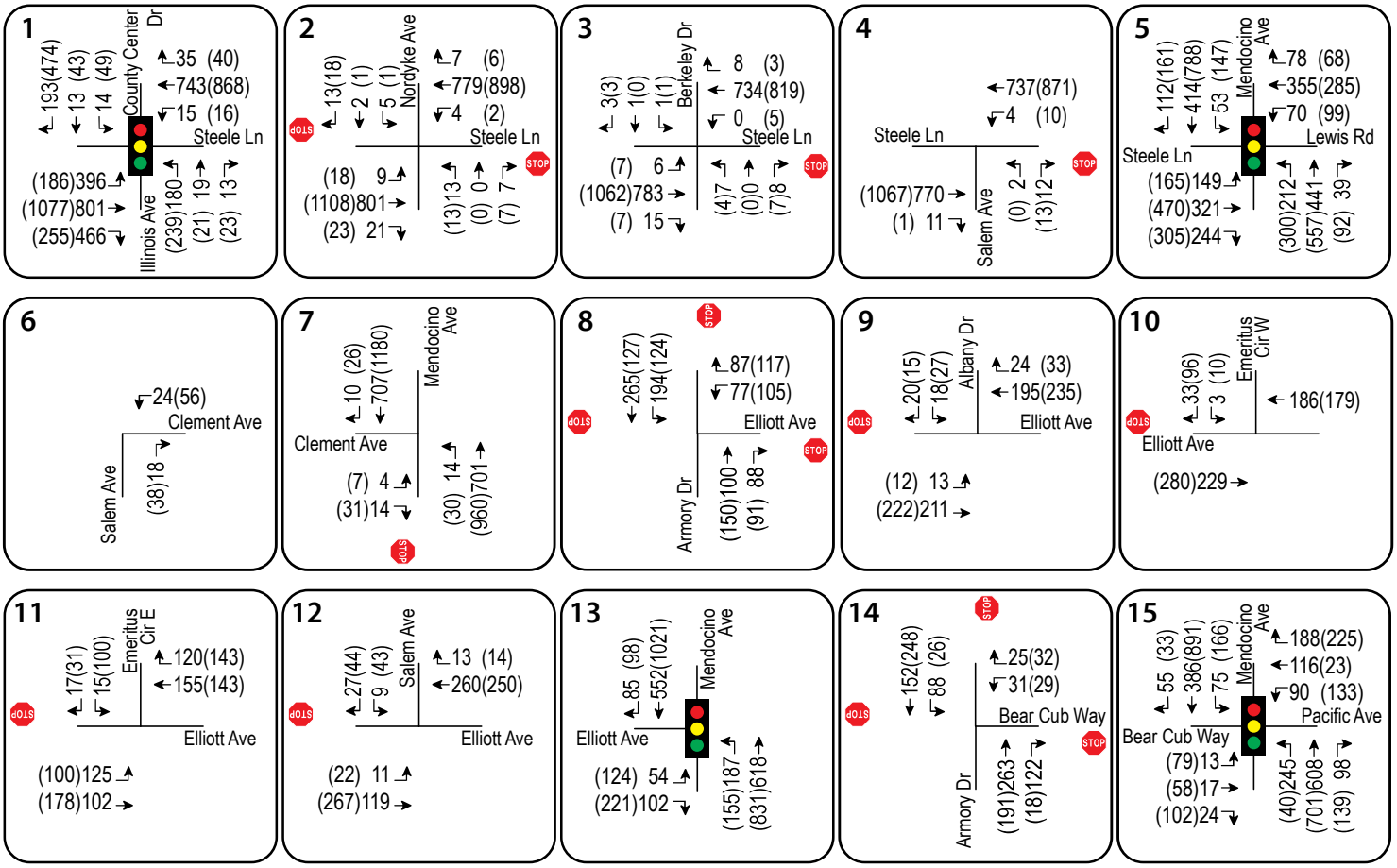
An impact is further considered significant if the project interrupts existing or proposed pedestrian, bicycle and transit facilities, path or travel, direct access resulting in excessive rerouting or creates a vehicle conflict condition which affects the safety of other roadway users.

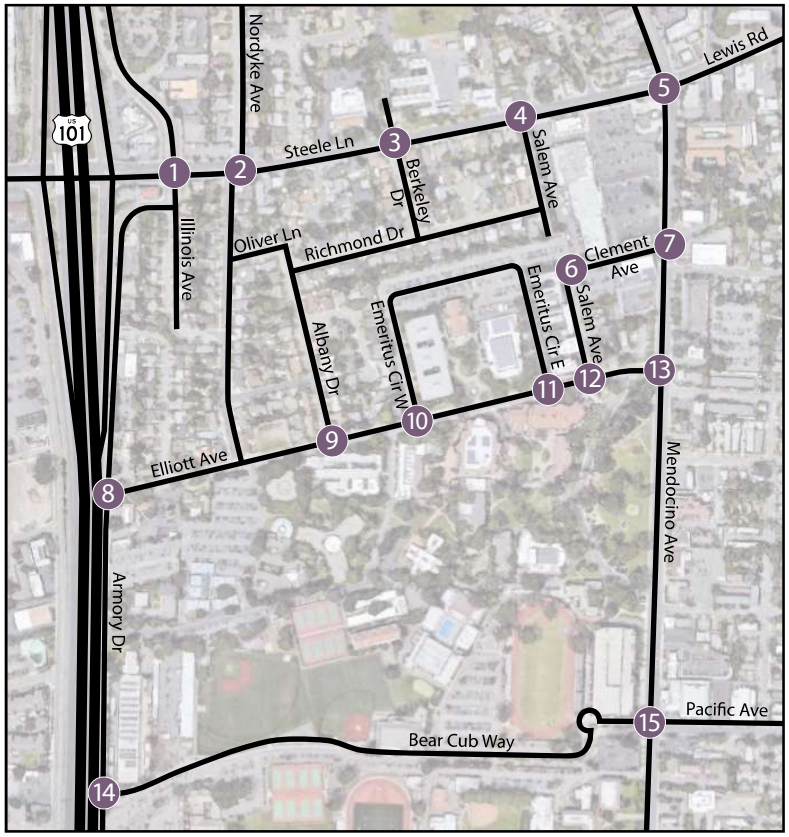
Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project redistribution of traffic volumes. Volume data was collected while local schools were in session. The existing traffic volumes are shown in Figure 2.

Intersection Levels of Service

Under existing conditions, all intersections are operating acceptably overall. Because the City of Santa Rosa's policies emphasize capacity on the through streets and at signalized intersections, operation is considered acceptable if the average delay for the intersection as a whole reflects LOS D operation or better. The LOS F operation on the Nordyke Avenue approach to Steele Lane is therefore considered acceptable as this is common of minor side streets where they intersect a major arterial such as Steele Lane. Attempting to achieve LOS D or better operation on such minor side-street approaches would result in degradation of the overall operation of the system through installation of traffic signals at locations where they would not otherwise be necessary. A summary of the intersection level of service calculations is contained in Table 5, and copies of the Level of Service calculations are provided in Appendix B.





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

North
Not to Scale

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Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 2 – Existing Traffic Volumes

W-Trans

Table 5 – Existing Peak Hour Intersection Levels of Service				
Study Intersection ***Approach***	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. Steele Ln/Illinois Ave-County Center Dr	16.4	B	25.9	C
2. Steele Ln/Nordyke Ave	0.7	A	0.8	A
Northbound (Nordyke Ave) Approach	*28.2*	*D*	*54.4*	*F*
3. Steele Ln/Berkeley Dr	0.3	A	0.3	A
Northbound (Berkeley Dr) Approach	*20.7*	*C*	*26.9*	*D*
4. Steele Ln/Salem Ave	0.1	A	0.1	A
Northbound (Salem Dr) Approach	*13.0*	*B*	*12.5*	*B*
5. Steele Ln-Lewis Rd/Mendocino Ave	19.2	B	33.3	D
6. Clement Ave/Salem Ave	n/a	A	n/a	A
7. Clement Ave/Mendocino Ave	0.3	A	0.6	A
Eastbound (Clement Ave) Approach	*13.6*	*B*	*23.5*	*C*
8. Elliott Ave/Armory Dr	10.5	B	10.0	A
9. Elliott Ave/Albany Dr	1.1	A	0.9	A
Southbound (Albany Dr) Approach	*10.6*	*B*	*11.5*	*B*
10. Elliott Ave/Emeritus Cir W	0.8	A	1.7	A
Southbound (Emeritus Cir W) Approach	*9.6*	*A*	*10.0*	*A*
11. Elliott Ave/Emeritus Cir E	2.5	A	1.9	A
Southbound (Emeritus Cir E) Approach	*11.5*	*B*	*10.0*	*B*
12. Elliott Ave/Salem Ave	1.0	A	1.9	A
Southbound (Salem Ave) Approach	*10.3*	*B*	*12.1*	*B*
13. Elliott Ave/Mendocino Ave	11.0	B	17.8	B
14. Bear Cub Way/Armory Dr	10.0	A	9.3	A
15. Bear Cub Way-Pacific Ave/Mendocino Ave	21.5	C	20.6	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Future Conditions

Segment volumes for the horizon year of 2040 were obtained from the gravity demand model maintained by the Sonoma County Transportation Authority (SCTA) and translated to peak hour turning movement volumes at the study intersection using the "Furness" method. The Furness method is an iterative process that employs existing turn movement data, existing link volumes, and future link volumes to project likely future turning movement volumes at intersections.

Under the anticipated Future volumes, the study intersections are expected to operate acceptably with the exception of Steele Lane-Lewis Road/Mendocino Avenue, which is projected to operate at LOS E during the p.m. peak hour. To achieve acceptable operation a second northbound left-turn lane would be needed. While the paved width of approximately 64 feet is adequate to accommodate six travel lanes, this would result in the loss of the bike lanes on both sides of the street, which would have a negative impact on this alternative mode. It is again

noted that while the Nordyke Avenue approach to Steele Lane is expected to operate at LOS F, this is considered acceptable under the criteria applied. Operating conditions are summarized in Table 6 and Future volumes are shown in Figure 3.

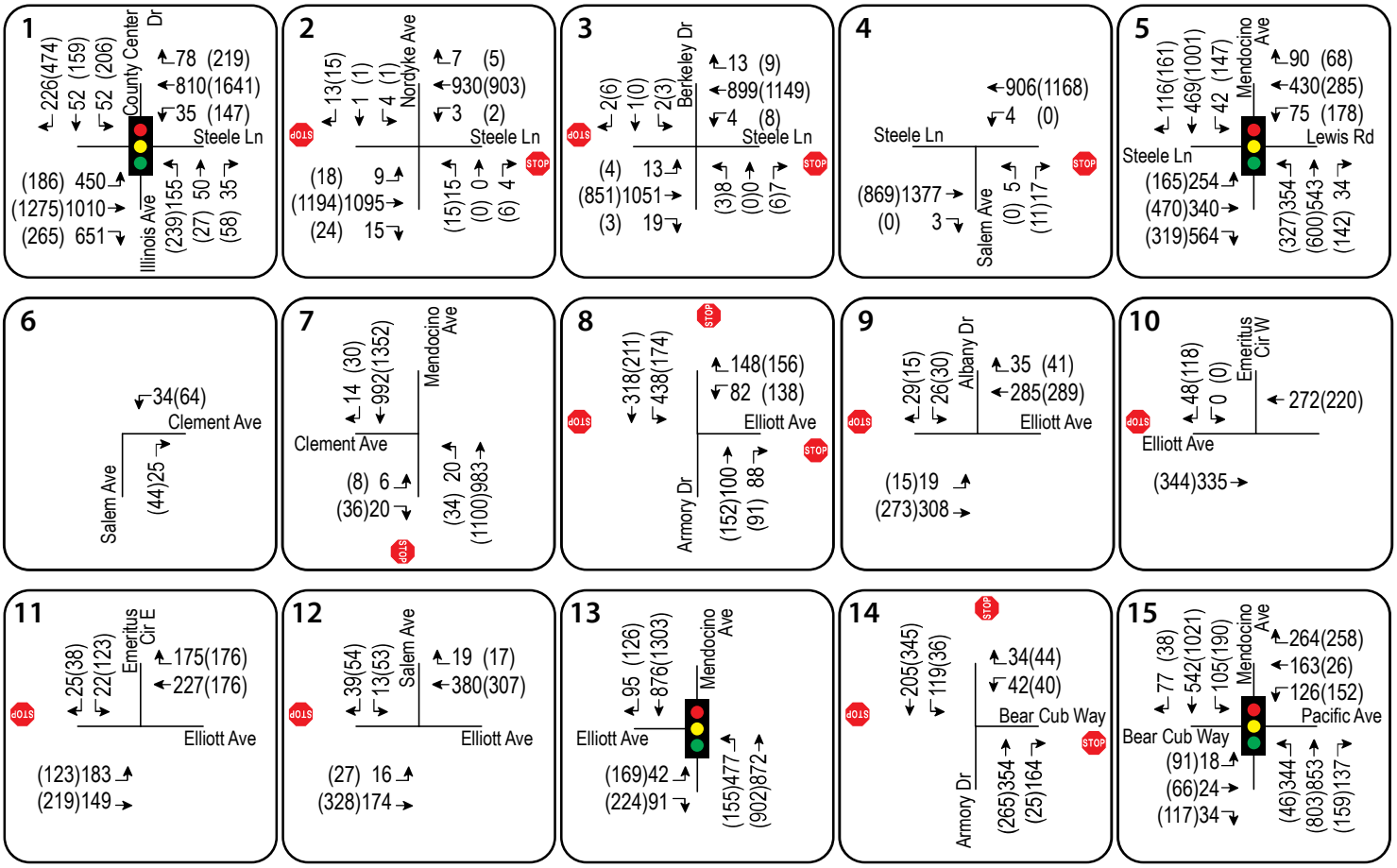
Table 6 – Future Peak Hour Intersection Levels of Service

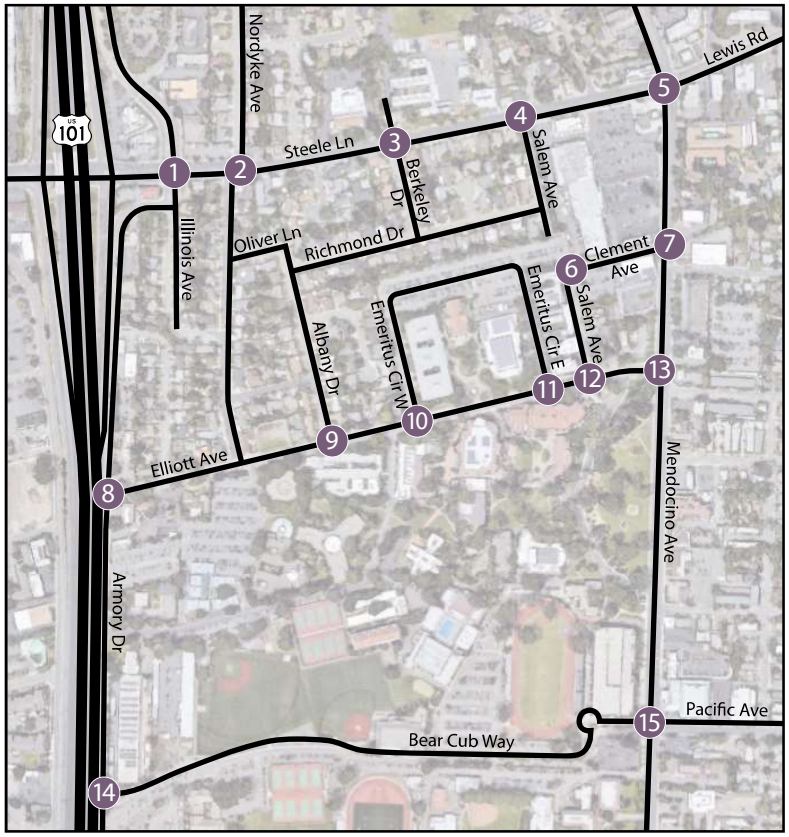
Study Intersection *Approach*	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Steele Ln/Illinois Ave-County Center Dr	18.8	B	50.9	D
2. Steele Ln/Nordyke Ave	0.8	A	0.9	A
Northbound (Nordyke Ave) Approach	*61.0*	*F*	*72.1*	*F*
3. Steele Ln/Berkeley Dr	0.5	A	0.3	A
Northbound (Berkeley Dr) Approach	*38.1*	*E*	*23.49*	*C*
4. Steele Ln/Salem Ave	0.3	A	0.1	A
Northbound (Salem Dr) Approach	*27.2*	*D*	*11.5*	*B*
5. Steele Ln-Lewis Rd/Mendocino Ave	33.6	D	**60.8**	**E**
6. Clement Ave/Salem Ave	n/a	A	n/a	A
7. Clement Ave/Mendocino Ave	0.4	A	0.7	*A*
Eastbound (Clement Ave) Approach	*19.8*	*C*	*32.7*	*D*
8. Elliott Ave/Armory Dr	*16.2*	*C*	11.2	B
9. Elliott Ave/Albany Dr	*1.2*	*A*	1.0	B
Southbound (Albany Dr) Approach	*12.3*	*B*	*12.6*	*B*
10. Elliott Ave/Emeritus Cir W	0.7	A	1.75	A
Southbound (Emeritus Cir W) Approach	*10.0*	*B*	*10.1*	*B*
11. Elliott Ave/Emeritus Cir E	2.9	A	4.9	A
Southbound (Emeritus Cir E) Approach	*14.6*	*B*	*19.8*	*B*
12. Elliott Ave/Salem Ave	1.2	A	2.2	A
Southbound (Salem Ave) Approach	*11.6*	*B*	*13.8*	*C*
13. Elliott Ave/Mendocino Ave	21.0	C	27.5	C
14. Bear Cub Way/Armory Dr	12.7	B	11.0	B
15. Bear Cub Way-Pacific Ave/Mendocino Ave	23.7	C	22.5	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation

Project Description

The proposed project would close the segment of road between West Emeritus Circle Way and East Emeritus Circle Way on Elliott Ave to vehicular traffic, in addition to creating a connection to the Emeritus Parking lot from the intersection of Salem Avenue/Clement Avenue. The closed section if Elliott Avenue would be used for pedestrians and bicyclists only. Impacts to the surrounding transportation network as a result of re-routing the trips that currently use this section of Elliott Avenue were evaluated. The proposed lane configurations with the street closure are shown in Figure 4.





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

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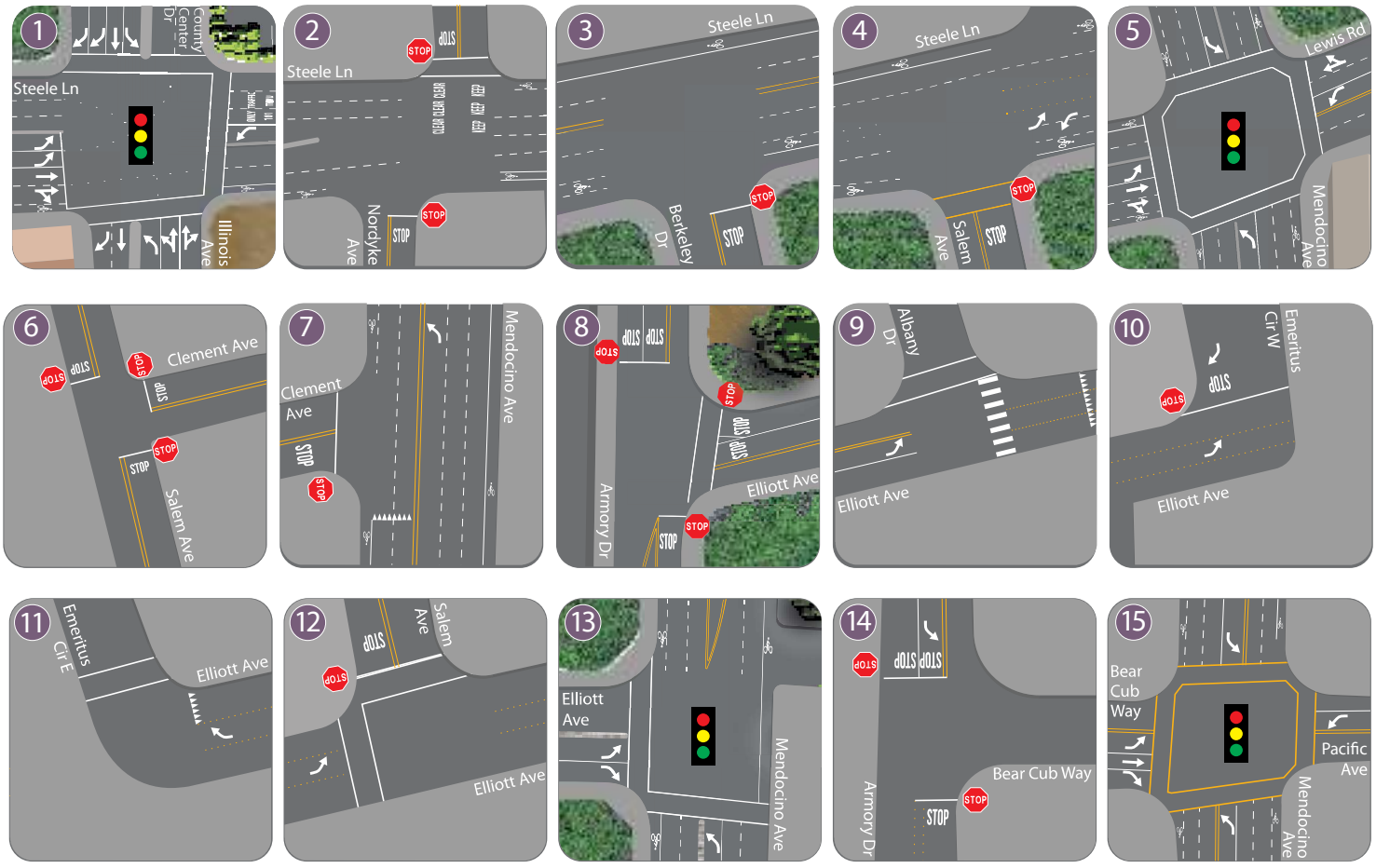
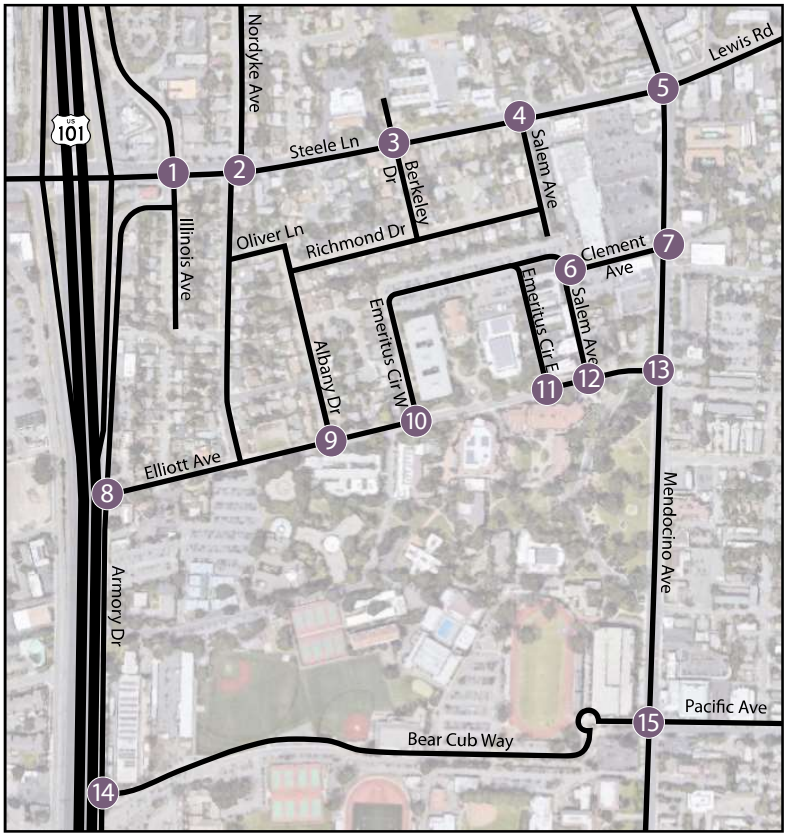
Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 3 – Future Traffic Volumes

W-Trans





LEGEND
Study Intersection

North
Not to Scale

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Circulation Study for the Elliott Avenue Pilot Closure Project
Figure 4 – Proposed Lane Configurations

W-Trans

Trip Redistribution

For the purpose of redistributing the existing volumes on Elliott Avenue, it was assumed that the eastbound left turns at Emeritus Circle East would occur at Emeritus Circle West due to the parking lot improvements that would make Emeritus Circle West bidirectional; this change is expected to be completed this summer. The southbound right turns out of Emeritus Circle East were assumed to occur at Emeritus Circle West and the southbound left turns at Emeritus Circle West were assumed to occur at Emeritus Circle East. The through movements that would no longer be accommodated at Emeritus Circle East and West were redistributed away from the two intersections to the west toward Armory Drive and to the east toward Mendocino Avenue, while taking into consideration the new connection to the parking lot that would be constructed at the Salem Avenue/Clement Avenue intersection. It was assumed that about ten percent of the existing trips from campus to destinations on Mendocino Avenue would occur at the new parking lot connection, and the rest would occur via Elliott Avenue. Because the additional lane would result in a non-standard configuration if it were stop-controlled, it was conservatively assumed that all approaches would be stop-controlled. The lane configurations with the proposed closure are shown in Figure 4.

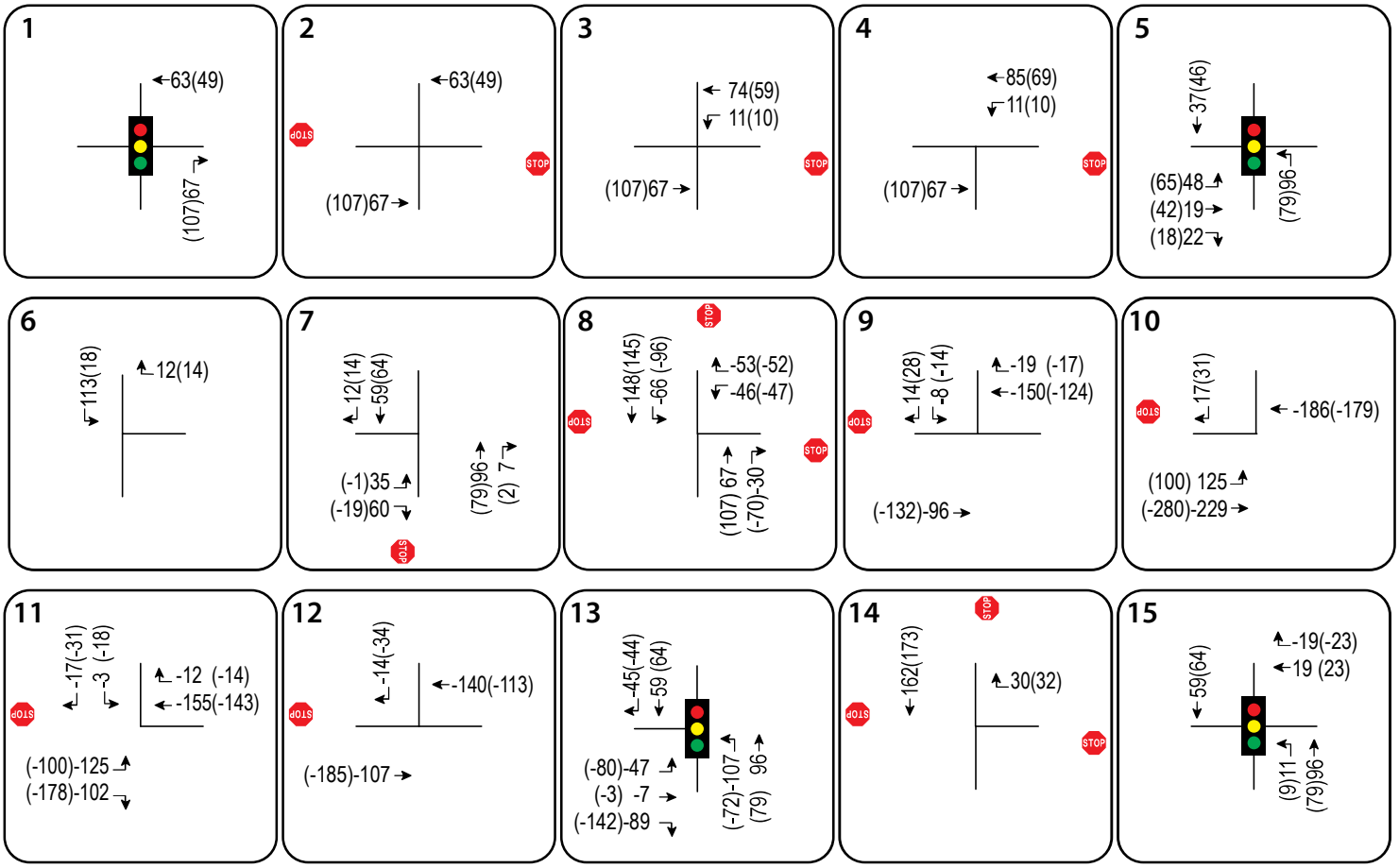
The volumes were extrapolated away from the street closure based on the proportion of vehicles making the preceding movement from the prior intersection. Based on the existing volumes, a proportional ratio was used to redistribute vehicles from Elliott Avenue to Steele Lane or Bear Cub Way, including trips to the neighborhood between campus and Steele Lane. Trips to and from the neighborhood to destinations on Mendocino Avenue south of campus that would previously use Elliott Avenue and Albany Drive were redistributed to Steele Lane and either Berkeley Drive or Salem Avenue. It was also assumed that 10 percent of the existing westbound right turns at Mendocino Avenue/Pacific Avenue would now be through movements due to motorists using Bear Cub Way to reach the west side of campus, instead of Elliott Avenue.

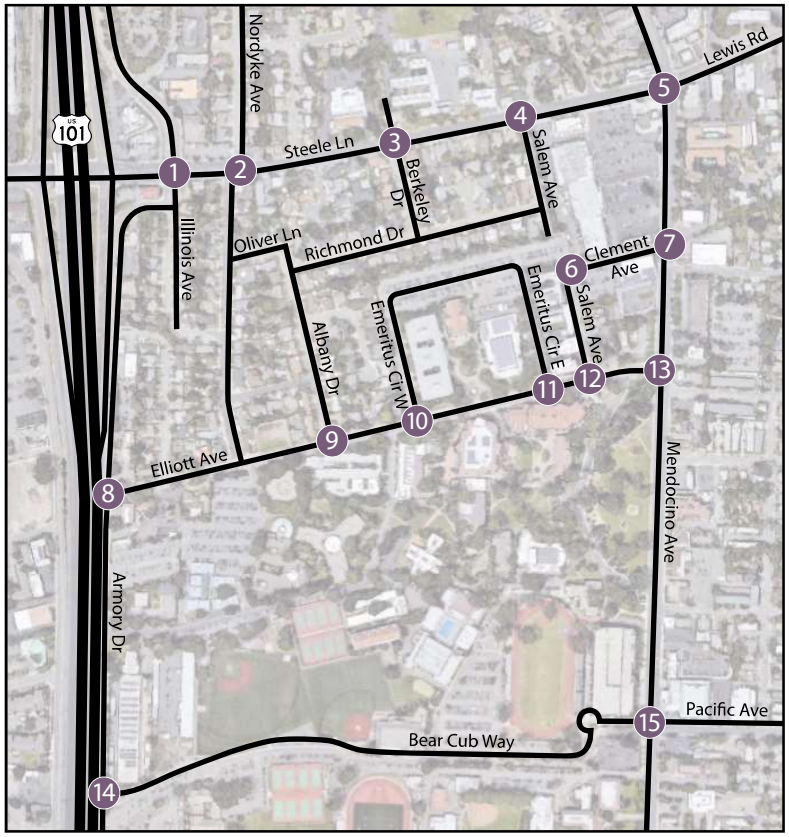
The City of Santa Rosa General Plan states: "An impact is considered adverse if the project has the potential to alter community character by significantly increasing cut-through traffic, unexpected vehicle maneuvers or commercial vehicle trips in a residential area." It is noted that although this project would be expected to redistribute existing traffic, such trips consist primarily of residential traffic from the neighborhood north of the Santa Rosa Junior College that currently uses Elliott Avenue as a connector from Armory Drive to Mendocino Avenue. As these are neighborhood trips, they would not result in cut-through traffic. Therefore, the proposed project would not be in conflict with the General Plan.

Intersection Operation

Existing plus Project Conditions

Upon redistribution of the existing volumes, the study intersections are expected to continue operating acceptably. Existing rerouted volumes are shown in Figure 5 and Existing plus Project volumes are shown in Figure 6. These results are summarized in Table 7.





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

North
Not to Scale

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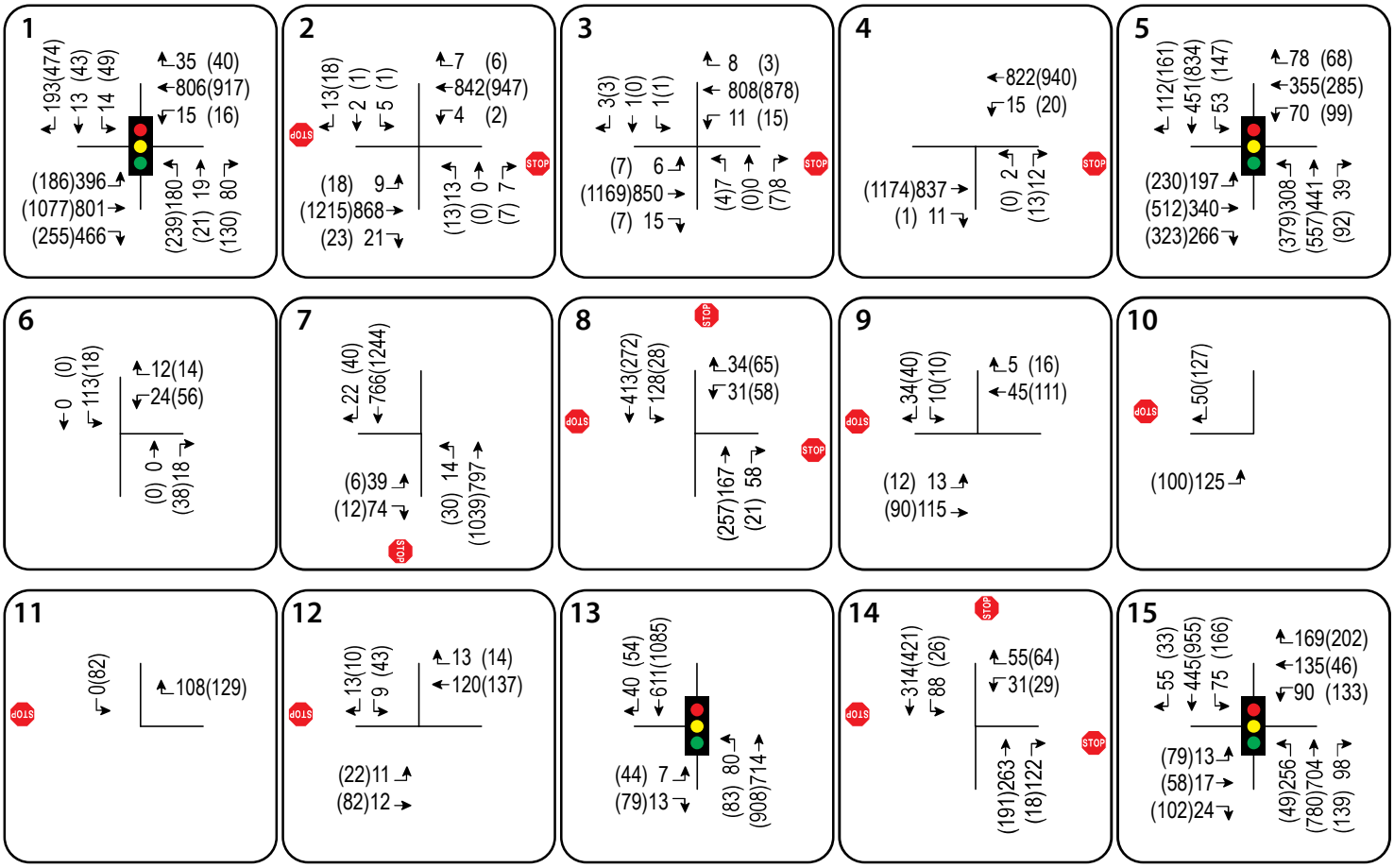
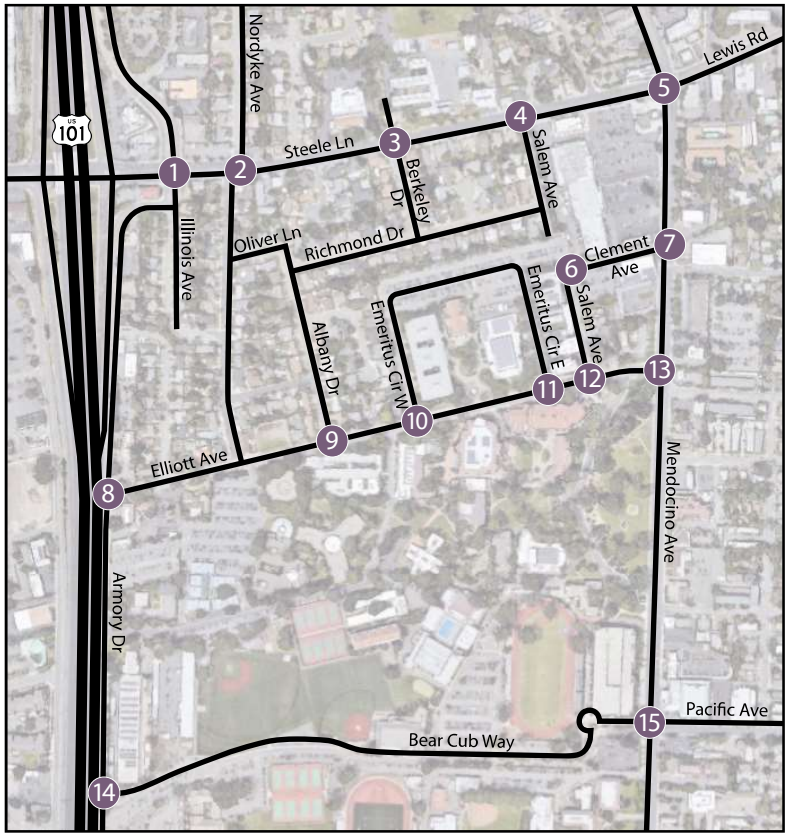
Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 5 – Existing Rerouted Volumes

W-Trans





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

North
Not to Scale

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Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 6 – Existing plus Project Traffic Volumes

W-Trans

Table 7 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Steele Ln/Illinois Ave-County Center Dr	16.4	B	25.9	C	17.1	B	26.5	C
2. Steele Ln/Nordyke Ave	0.7	A	0.8	A	0.7	A	0.9	A
NB (Nordyke Ave) Approach	*28.2*	*D*	*54.4*	*F*	*32.8*	*D*	*71.1*	*F*
3. Steele Ln/Berkeley Dr	0.3	A	0.3	A	0.4	A	0.3	A
NB (Berkeley Dr) Approach	*20.7*	*C*	*26.9*	*D*	*24.4*	*C*	*33.5*	*D*
4. Steele Ln/Salem Ave	0.1	A	0.1	A	0.2	D	0.2	A
NB (Salem Dr) Approach	*13.0*	*B*	*12.5*	*B*	*14.0*	*B*	*13.2*	*B*
5. Steele Ln-Lewis Rd/Mendocino Ave	19.2	B	33.3	D	23.5	C	46.0	D
6. Clement Ave/Salem Ave	n/a	A	n/a	A	7.5	A	7.2	A
7. Clement Ave/Mendocino Ave	0.3	A	0.6	A	1.5	A	0.41	A
EB (Clement Ave) Approach	*13.6*	*B*	*23.5*	*C*	*21.8*	*C*	*33.4*	*D*
8. Elliott Ave/Armory Dr	10.5	B	10.0	A	11.8	B	10.7	B
9. Elliott Ave/Albany Dr	1.1	A	0.9	A	2.2	A	2.0	A
SB (Albany Dr) Approach	*10.6*	*B*	*11.5*	*B*	*8.9*	*A*	*9.3*	*A*
10. Elliott Ave/Emeritus Cir W	0.8	A	1.7	A	0.0	A	0.0	A
SB (Emeritus Cir W) Approach	*9.6*	*A*	*10.0*	*A*	*0.0*	*A*	*0.0*	*A*
11. Elliott Ave/Emeritus Cir E	2.5	A	1.9	A	0.0	A	0.0	A
SB (Emeritus Cir E) Approach	*11.5*	*B*	*10.0*	*B*	*0.0*	*A*	*0.0*	*A*
12. Elliott Ave/Salem Ave	1.0	A	1.9	A	*1.6*	*A*	*2.3*	*A*
SB (Salem Ave) Approach	*10.3*	*B*	*12.1*	*B*	*9.2*	*A*	*10.25*	*A*
13. Elliott Ave/Mendocino Ave	11.0	B	17.8	B	*8.0*	*A*	*14.1*	*B*
14. Bear Cub Way/Armory Dr	10.0	A	9.3	A	11.2	B	12.1	B
15. Bear Cub Way-Pacific Ave/Mendocino Ave	21.5	C	20.6	C	21.5	C	21.2	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation

It is noted that Elliot Avenue/Albany Drive was analyzed as a two-way stop-controlled intersection since this was the configuration when the traffic study was initiated. The intersection was re-analyzed with all-way stop controls to match the current control type and it was determined that it operates acceptably at LOS A during both peak hours, as was noted for the configuration evaluated. Since the change in controls had minimal effect on the intersection's operation, no further analysis was performed for this intersection with the change to all-way stop controls.

Finding – The study intersections are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic. While the Nordyke Avenue approach to Steele Lane would continue to operate at LOS F and would be expected to have more than a 5-second increase in delay due to the addition of "project-generated" traffic, because the overall operation remains at LOS A and the side-street volume is substantially less than that required to indicated need for a traffic signal, this condition is considered acceptable.

Future plus Project Conditions

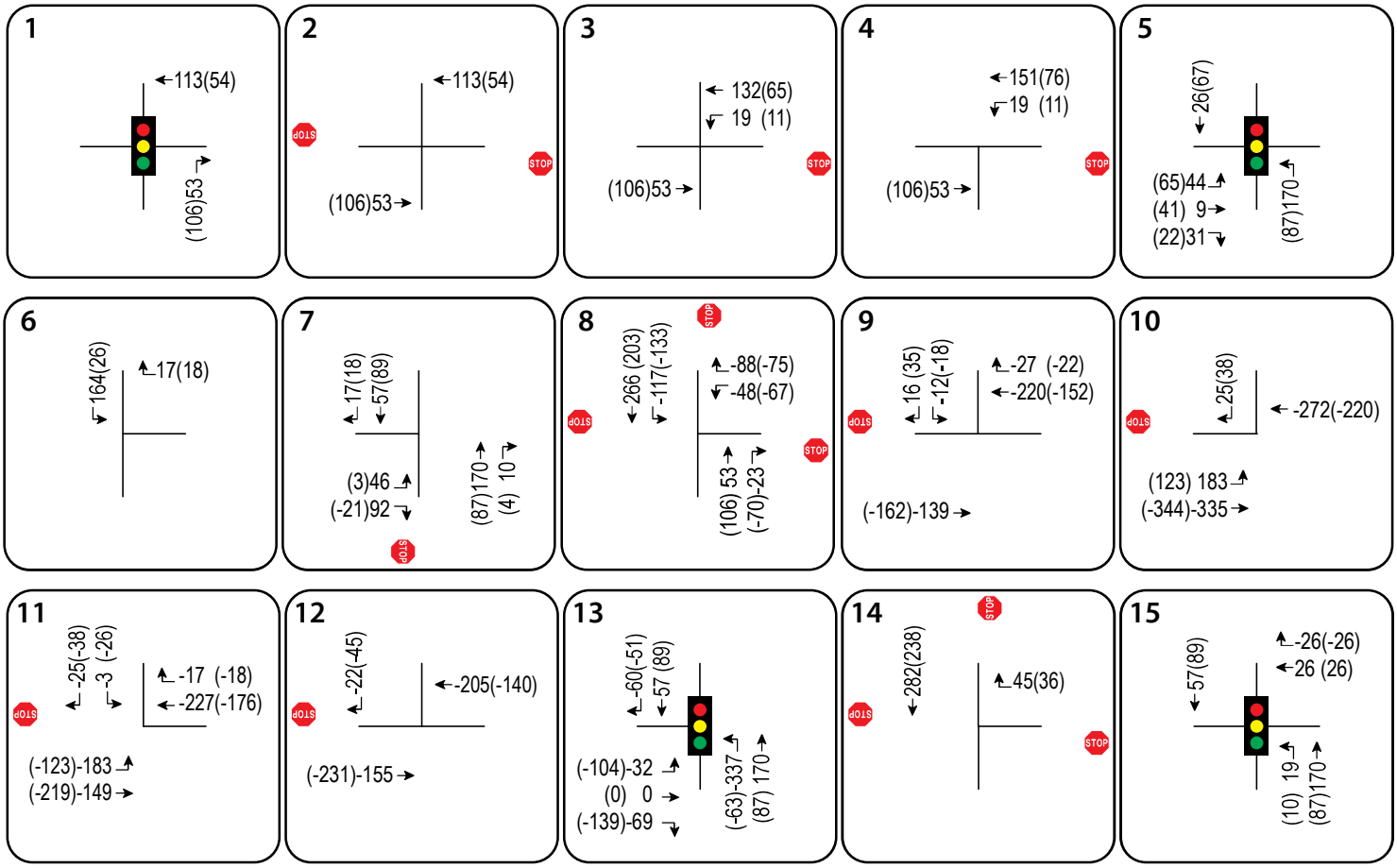
Upon the addition of project-generated traffic to the anticipated Future volumes, the study intersections are expected to operate acceptably with the exception of Steele Lane-Lewis Road/Mendocino Avenue, which is expected to continue operating at LOS E during the evening peak hour and Lane/Illinois Avenue-County Center Drive where operation would be expected to deteriorate from LOS D to E during the evening peak hour. The project would be expected to have an adverse impact under the City's criteria applied. These results are summarized in Table 8. Future rerouted volumes are shown in Figure 7 and Future plus Project volumes are shown in Figure 8.

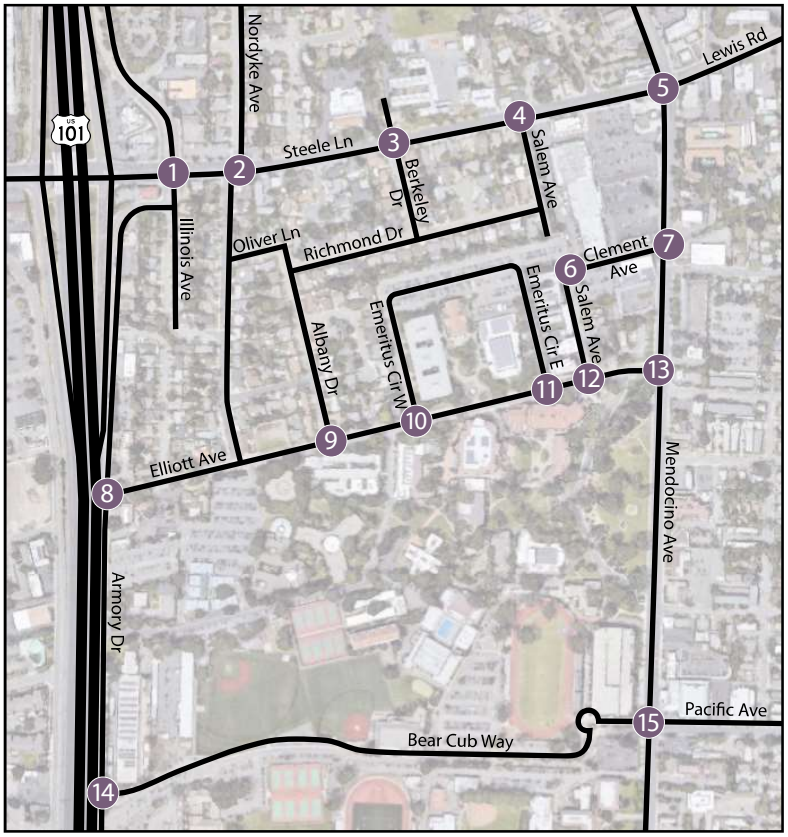
Table 8 – Future and Future plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Future Conditions				Future plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Steele Ln/Illinois Ave-County Center Dr	18.8	B	50.9	D	28.1	C	**67.2**	**E**
2. Steele Ln/Nordyke Ave	0.8	A	0.9	A	1.0	A	1.1	A
NB (Nordyke Ave) Approach	*61.0*	*F*	*72.1*	*F*	*76.9*	*F*	*97.7*	*F*
3. Steele Ln/Berkeley Dr	0.5	A	0.3	A	0.6	A	0.4	A
NB (Berkeley Dr) Approach	*38.1*	*E*	*23.49*	*C*	*51.1*	*F*	*29.1*	*D*
4. Steele Ln/Salem Ave	0.3	A	0.1	A	0.4	A	0.1	A
NB (Salem Dr) Approach	*27.2*	*D*	*11.5*	*B*	*33.8*	*D*	*12.0*	*B*
5. Steele Ln-Lewis Rd/Mendocino Ave	33.6	D	**60.8**	**E**	53.6	D	**75.4**	**E**
6. Clement Ave/Salem Ave	n/a	A	n/a	A	7.7	A	7.3	A
7. Clement Ave/Mendocino Ave	0.4	A	0.7	*A*	5.73	A	0.9	A
EB (Clement Ave) Approach	*19.8*	*C*	*32.7*	*D*	*83.1*	*F*	*69.1*	*F*
8. Elliott Ave/Armory Dr	*16.2*	*C*	11.2	B	19.0	C	13.4	B
9. Elliott Ave/Albany Dr	*1.2*	*A*	1.0	B	*2.1*	*A*	*2.1*	*A*
SB (Albany Dr) Approach	*12.3*	*B*	*12.6*	*B*	*9.3*	*A*	*9.6*	*A*
10. Elliott Ave/Emeritus Cir W	0.7	A	1.75	A	0.0	A	0.0	A
SB (Emeritus Cir W) Approach	*10.0*	*B*	*10.1*	*B*	*0.0*	*A*	*0.0*	*A*
11. Elliott Ave/Emeritus Cir E	2.9	A	4.9	A	0.0	A	0.0	A
SB (Emeritus Cir E) Approach	*14.6*	*B*	*19.8*	*B*	*0.0*	*A*	*0.0*	*A*
12. Elliott Ave/Salem Ave	1.2	A	2.2	A	1.6	A	2.4	A
SB (Salem Ave) Approach	*11.6*	*B*	*13.8*	*C*	*9.7*	*A*	*10.8*	*B*
13. Elliott Ave/Mendocino Ave	21.0	C	27.5	C	10.1	B	21.0	C
14. Bear Cub Way/Armory Dr	12.7	B	11.0	B	18.4	C	21.0	C
15. Bear Cub Way-Pacific Ave/Mendocino Ave	23.7	C	22.5	C	25.5	C	23.9	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation

Finding – The study intersections would be expected to continue operating acceptably with the redistribution of traffic, at the same Levels of Service as without it with the exception of Steele Lane-Lewis Road/Mendocino Avenue





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

North
Not to Scale

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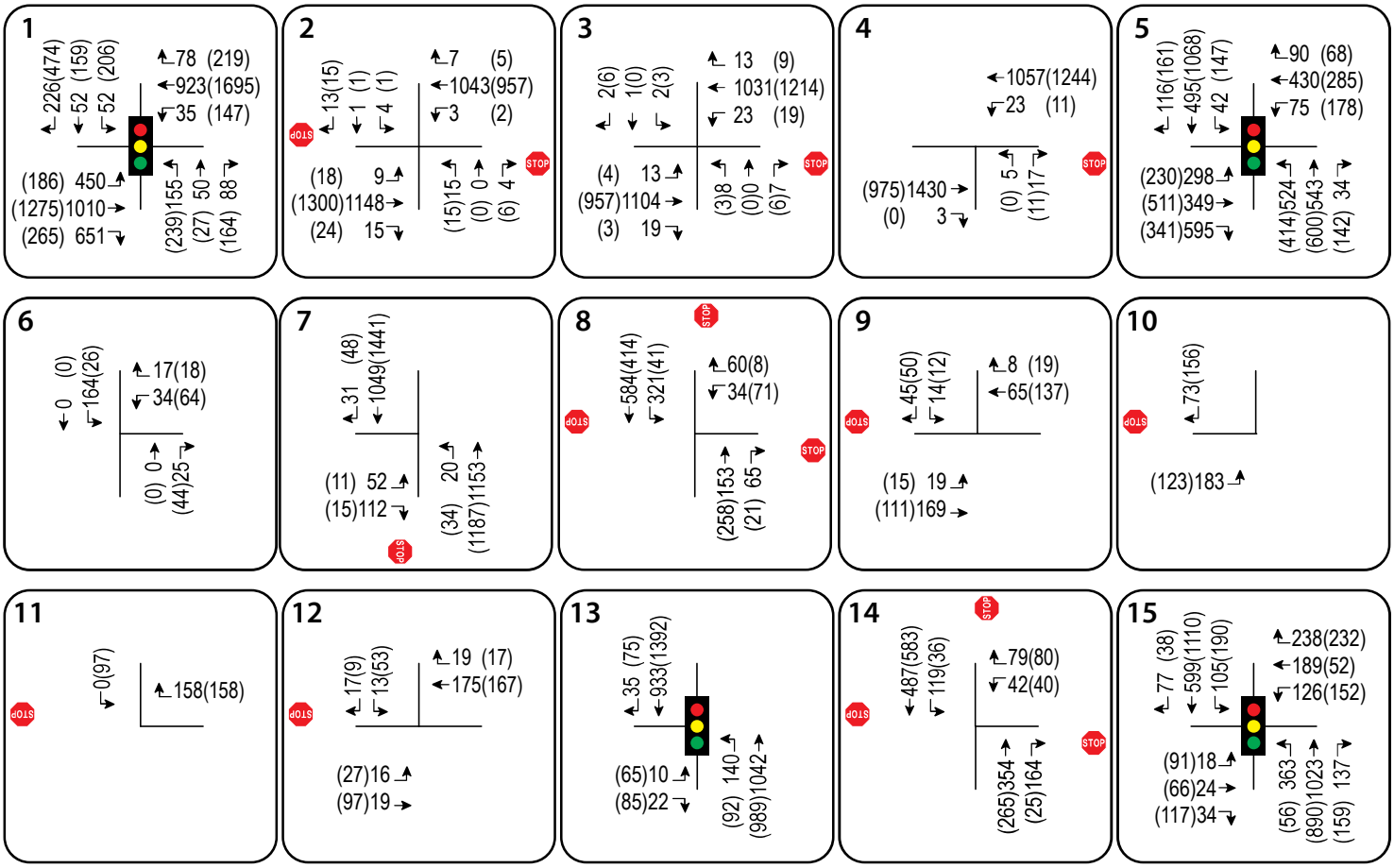
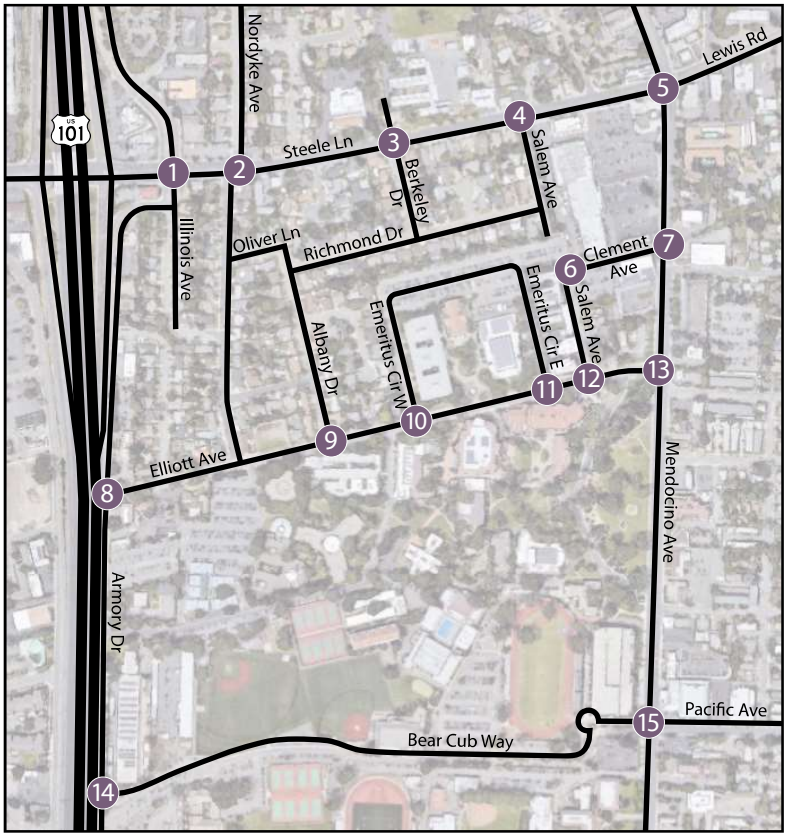
Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 7 – Future Rerouted Volumes

W-Trans





LEGEND
- Study Intersection
- xx AM Peak Hour Volume
- (xx) PM Peak Hour Volume

North
Not to Scale

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Circulation Study for the Elliott Avenue Pilot Closure Project

Figure 8 – Future plus Project Traffic Volumes

W-Trans

and Steele Lane/Illinois Avenue-County Center Drive, both of which would operate at LOS E during the evening peak hour. Because the increase in delay at Steele Lane-Lewis Road/Mendocino Avenue exceeds five seconds and operation at Steele Lane/Illinois Avenue-County Center Drive would deteriorate from LOS D to LOS E, these changes are considered adverse impacts requiring mitigation under the City's policies.

Recommendations – To achieve acceptable operation under Future plus Project volumes the following improvements would be needed.

- Steele Lane/Illinois Avenue-County Center Drive would operate acceptably with a right-turn lane added to the eastbound approach. The road width on the eastbound side is currently about 50 feet, so is adequate for five 10-foot travel lanes. However, this would result in the elimination of the existing bike lane, which would trigger a significant impact under CEQA. Because the curb lane is currently about 12 feet wide, when added to the 5-foot bike lane there is sufficient width for many drivers to make the right turn by moving to the right and using the bike lane. While the theoretical results indicate an adverse impact, because many right-turning drivers would be expected to take advantage of the extra width to create a *de facto* right-turn lane, actual operation may remain in the range that is considered acceptable, and analysis using a narrow (8-foot) right-turn lane indicates that acceptable operation would be achieved.

- Steele Lane-Lewis Road/Mendocino Avenue could achieve acceptable operation by adding a second northbound left-turn lane. As noted above, while the roadway is wide enough for the additional lane, it could only be accommodated by eliminating the bike lanes, resulting in a significant impact under CEQA.

Because the improvements would result in impacts that are considered significant under CEQA while the impacts as identified under the City's General Plan are technically not significant, the City could determine that the adverse impacts are acceptable to achieve their overall transportation goals. At both intersections, to avoid a significant impact on the system of bicycle facilities, physical widening that would require acquisition of right-of-way that is not currently controlled by the School District or the City would be necessary. General Plan Policy T-D-1 provides an exception to meeting the LOS standard in locations where attainment would result in significant environmental degradation (for instance, the loss of bike lanes).

Alternative Modes

Given the location of the project on the campus of Santa Rosa Junior College and that the primary purpose of the project is to improve pedestrian and bicycle access, the proposed project is expected to have positive impact on alternative modes. Currently, some incentives are in place to encourage use of these modes. For example, SRJC students are able to ride Santa Rosa CityBus and Sonoma County Transit free of charge by showing a student ID. Students also have the opportunity to purchase discounted passes for the Sonoma Marin Area Rail Transit (SMART) train.

Pedestrian Facilities

Sidewalks are present along the project frontages on Elliott Avenue and Armory Street. With the proposed pilot project, no improvements to the existing sidewalk infrastructure are proposed, though pedestrians would be able to use the entire street as a pedestrian walkway since vehicular traffic would be eliminated. The proposed project and the proposed pedestrian/bicycle overcrossing over US 101 would enhance pedestrian access between various locations on the SRJC campus and provide connectivity to the west side of US 101.

There were no collisions between vehicles and pedestrians or bicyclists reported on Elliott Avenue during the five-year study period, though it is understood that District staff has observed "near collisions" on many occasions. The closure of the roadway to vehicular traffic would be expected to have a beneficial impact on safety for alternative modes since it would eliminate conflict with motor vehicles between Emeritus Circle East and West, thereby allowing for greater connectivity for alternative modes. Because the project would split the existing approximately 0.46-mile continuous segment of Elliott Avenue into two shorter segments of about 450 feet and 0.25 miles, which would reduce the amount of travel way available for vehicles to accelerate in a single action, it would also be reasonable to expect a reduction in travel speeds on the two remaining segments of Elliott Avenue on either side of the closure.

According to the *2016 Facilities Master Plan and Guidelines,* Elliot Avenue is stated to be a "serious challenge" for pedestrian traffic due to the presence of vehicle traffic on the street. This proposed pilot project would address the desire to promote a walkable campus and is consistent with planning documents that have been prepared.

Finding – Pedestrian facilities serving the project site are adequate in terms of providing connectivity to nearby destinations and would be improved with the proposed project.

Bicycle Facilities

Existing bicycle facilities together with planned improvements and shared use of minor streets would provide adequate access for bicyclists. The existing bike lanes on Mendocino Avenue and bicycle boulevard on Humboldt Street provide connections to destinations north and south of the campus. The potential pedestrian/bicycle bridge over US 101 would enhance bicycle access to and from destinations including the Santa Rosa North SMART station and Coddingtown Mall.

Based on review of the May 2019 counts, there were few to no bicyclists turning at either Emeritus Circle West or East. It is assumed bicyclists would prefer not turn onto either of these streets as they are mostly for the vehicle parking lots so cyclists would more likely turn at the pedestrian traffic signal to access the bicycle racks that are available on both sides of Elliott Avenue near all three crossings mentioned previously, with the exception of the south side of Elliott Avenue near Emeritus Circle West. Bicyclists are not allowed to bike through campus; however, the street closure would still allow bicyclists to ride through and would therefore enhance campus accessibility.

Finding – Existing and planned bicycle facilities serving campus are adequate for anticipated demand and connectivity for bicyclists would be improved by the project.

Transit

Mendocino Avenue is a major north-south transit corridor in Santa Rosa, providing students with access to destinations via numerous bus routes. Stops are located within one-half mile of the site. While a quarter-mile walking distance is typically considered ideal, one-half mile is considered an acceptable walking distance to transit facilities. Regional transit service is also available.

Finding – Transit facilities serving the project site are adequate.

Conclusions and Recommendations

Conclusions

- The proposed closure of Elliott Avenue would not be expected to generate any new traffic; rather, it would result in the redistribution of existing traffic. Most of the traffic that would be diverted through the adjacent traffic is generated by the neighborhood and consists of local residents using Elliott Avenue to travel out of their neighborhood; these trips would occur along other routes instead, including through the neighborhood to Steele Lane. Minimal new traffic through the neighborhood would be expected.

- Four of the 15 study intersections had collision rates that exceed the statewide average for similar facilities. All four are signalized and experience substantial congestion. Additional speed enforcement could have a positive impact on the incidence of crashes at these locations.

- Upon redistribution of existing trips all study intersections are expected to operate acceptably at the same levels of service. While the Nordyke Avenue approach to Steele Lane would continue to operate at LOS F and would be expected to have more than a 5-second increase in delay due to the addition of "project-generated" traffic, because the overall operation would remain at LOS A and the side-street volume is substantially less than that required to indicate need for a traffic signal, this condition is considered acceptable.

- Under Future volumes all study intersections are expected to operate acceptably except Steele Lane-Lewis Road/Mendocino Avenue. This intersection would operate at LOS E during the p.m. peak hour under the anticipated volumes without or with the project. Acceptable operation could be achieved by adding a second northbound left-turn lane, though to accommodate this lane in the existing paved width would require elimination of the bike lane, which would be a significant impact under CEQA.

- Under Future plus Project volumes, the project would be expected to have an adverse impact on operation at Steele Lane-Lewis Road/Mendocino Avenue and Steele Lane/Illinois Avenue-County Center Drive under the City's criteria. Acceptable operation could be achieved by providing a second northbound left-turn lane at Steele Lane-Lewis Road/Mendocino Avenue and a separate eastbound right-turn lane at Steele Lane/Illinois Avenue-County Center Drive. However, while such improvements could be accommodated within the available pavement width, this would require elimination of the bike lanes at both locations, resulting in a significant impact to alternative mode facilities.

- The proposed project would have positive impact on alternative modes by expanding facilities for pedestrians and bicyclists.

Recommendations

- Because attainment of acceptable operation at Steele Lane-Lewis Road/Mendocino Avenue and Steele Lane/Illinois Avenue-County Center Drive would require either elimination of bike lanes or acquisition of additional right-of-way, such improvements are infeasible. The City could consider allowing the impacts on operation at these two intersections under the exceptions identified in General Plan Policy T-D-1.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
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Editing/Formatting	Alex Scrobonia
Quality Control	Dalene J. Whitlock, PE, PTOE

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Appendix A

Collision Rate Calculations

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Intersection Collision Rate Calculations

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 1: Steele Ln & Illinois Ave-County Center Dr

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 23
Number of Injuries: 9
Number of Fatalities: 0
ADT: 32900
Start Date: November 15, 2014
End Date: November 14, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{23 \times 1{,}000{,}000}{32{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.38 c/mve**	**0.0%**	**39.1%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 2: Steele Ln & Nordyke Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 5
Number of Injuries: 3
Number of Fatalities: 0
ADT: 21200
Start Date: November 15, 2014
End Date: November 14, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{5 \times 1{,}000{,}000}{21{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.13 c/mve**	**0.0%**	**60.0%**
Statewide Average*	**0.13 c/mve**	**1.1%**	**43.8%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 3: Steele Ln & Berkeley Dr

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 3
Number of Injuries: 2
Number of Fatalities: 0
ADT: 19600
Start Date: November 15, 2014
End Date: November 14, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{3 \times 1{,}000{,}000}{19{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.08 c/mve**	**0.0%**	**66.7%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 4: Steele Ln & Salem Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 3
Number of Injuries: 1
Number of Fatalities: 0
ADT: 19800
Start Date: November 15, 2014
End Date: November 14, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{3 \times 1{,}000{,}000}{19{,}800 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.08 c/mve**	**0.0%**	**33.3%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 5: Steele Ln-Lewis St & Mendocino Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 18
Number of Injuries: 9
Number of Fatalities: 0
ADT: 34400
Start Date: November 15, 2014
End Date: November 14, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{18 \times 1{,}000{,}000}{34{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.29 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 6: Clement Ave & Salem Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 940
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Other
Control Type: No Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{940 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.05 c/mve**	**0.9%**	**29.5%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 7: Clement Ave & Mendocino Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 2
Number of Injuries: 1
Number of Fatalities: 0
ADT: 22500
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{2 \times 1{,}000{,}000}{22{,}500 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.05 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 8: Elliott Ave & Armory Dr

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 22300
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{22{,}300 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 9: Elliott Ave & Albany Dr

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 5400
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{5{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 10: Elliott Ave & Emeritus Cir West

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 5700
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{5{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 11: Elliott Ave & Emeritus Cir East

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 7000
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{7{,}000 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 12: Elliott Ave & Salem Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 6400
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{6{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 13: Elliott Ave & Mendocino Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 9
Number of Injuries: 5
Number of Fatalities: 0
ADT: 24600
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{9 \times 1{,}000{,}000}{24{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.20 c/mve**	**0.0%**	**55.6%**
Statewide Average*	**0.19 c/mve**	**0.4%**	**46.8%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 14: Bear Cub Way & Armory Dr

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 5400
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{5{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Circulation Study for the Elliott Ave Pilot Closure

Intersection # 15: Bear Cub Way-Pacific Ave & Mendocino Ave

Date of Count: Wednesday, May 01, 2019

Number of Collisions: 17
Number of Injuries: 9
Number of Fatalities: 0
ADT: 25900
Start Date: November 14, 2014
End Date: November 15, 2019
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{17 \times 1{,}000{,}000}{25{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.36 c/mve**	**0.0%**	**52.9%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**44.6%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

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Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	180	19	13	14	13	193	396	801	466	15	743	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	180	19	5	14	13	105	396	801	432	15	743	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	1	4	3	26	99	200	108	4	186	9
Total Analysis Volume [veh/h]	180	19	5	14	13	105	396	801	432	15	743	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1			9			0			2		
Bicycle Volume [bicycles/h]	0			1			4			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	30	32	0	9	11	0	46	70	0	9	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	10	12	2	7	7	16	88	88	2	73	73
g / C, Green / Cycle	0.15	0.08	0.10	0.02	0.06	0.06	0.14	0.73	0.73	0.02	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.06	0.07	0.01	0.01	0.01	0.04	0.11	0.34	0.37	0.01	0.14	0.15
s, saturation flow rate [veh/h]	1596	1250	1633	1388	1863	2758	3445	1863	1623	1774	3547	1815
c, Capacity [veh/h]	328	222	168	60	103	153	473	1359	1184	30	2160	1106
d1, Uniform Delay [s]	45.29	43.36	48.99	60.02	53.92	55.66	47.75	0.47	0.48	58.17	4.78	4.79
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	1.19	0.38	1.95	0.54	5.37	4.02	1.16	1.53	12.37	0.26	0.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.41	0.14	0.23	0.13	0.69	0.84	0.47	0.50	0.50	0.24	0.24
d, Delay for Lane Group [s/veh]	45.74	44.55	49.38	61.97	54.46	61.04	51.77	1.64	2.01	70.54	5.04	5.30
Lane Group LOS	D	D	D	E	D	E	D	A	A	E	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.42	2.46	0.67	0.46	0.39	1.66	5.66	0.82	0.86	0.55	1.39	1.51
50th-Percentile Queue Length [ft/ln]	60.56	61.38	16.75	11.51	9.68	41.59	141.61	20.46	21.45	13.73	34.66	37.68
95th-Percentile Queue Length [veh/ln]	4.36	4.42	1.21	0.83	0.70	2.99	9.57	1.47	1.54	0.99	2.50	2.71
95th-Percentile Queue Length [ft/ln]	109.01	110.48	30.16	20.72	17.42	74.86	239.19	36.83	38.62	24.71	62.38	67.83

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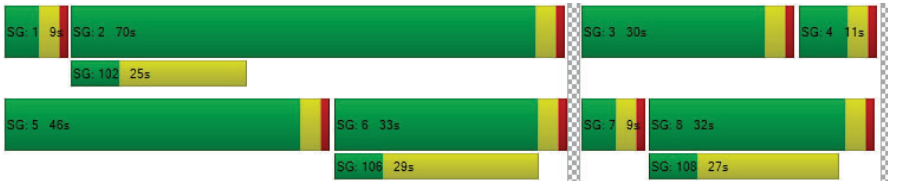
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.14	49.38	49.38	61.97	54.46	61.04	51.77	1.71	2.01	70.54	5.12	5.30
Movement LOS	D	D	D	E	D	E	D	A	A	E	A	A
d_A, Approach Delay [s/veh]	45.64			60.49			13.96			6.37		
Approach LOS	D			E			B			A		
d_I, Intersection Delay [s/veh]	16.35											
Intersection LOS	B											
Intersection V/C	0.461											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	42.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	13	0	7	5	2	13	9	801	21	4	779	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	7	5	2	13	9	801	21	4	779	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	1	1	3	2	200	5	1	195	2
Total Analysis Volume [veh/h]	13	0	7	5	2	13	9	801	21	4	779	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.01	0.04	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	35.91	43.80	13.73	32.92	42.74	12.15	9.39	0.00	0.00	9.50	0.00	0.00
Movement LOS	E	E	B	D	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.38	0.38	0.38	0.25	0.25	0.25	0.03	0.02	0.00	0.02	0.01	0.00
95th-Percentile Queue Length [ft/ln]	9.47	9.47	9.47	6.36	6.36	6.36	0.82	0.41	0.00	0.38	0.19	0.00
d_A, Approach Delay [s/veh]	28.15			20.40			0.10			0.05		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	0.66											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	37.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	7	0	8	1	1	3	6	783	15	0	734	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	0	8	1	1	3	6	783	15	0	734	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	0	0	1	2	196	4	0	184	2
Total Analysis Volume [veh/h]	7	0	8	1	1	3	6	783	15	0	734	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	30.73	37.94	11.96	28.94	37.43	11.05	9.21	0.00	0.00	9.39	0.00	0.00
Movement LOS	D	E	B	D	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.06	0.06	0.06	0.02	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.88	4.88	4.88	1.55	1.55	1.55	0.53	0.26	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.72			19.91			0.07			0.00		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.30											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	2	12	770	11	4	737
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	12	770	11	4	737
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	3	193	3	1	184
Total Analysis Volume [veh/h]	2	12	770	11	4	737
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	24.20	11.16	0.00	0.00	9.35	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.34	2.34	0.00	0.00	0.36	0.18
d_A, Approach Delay [s/veh]	13.02		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.465

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	212	441	39	53	414	112	149	321	244	70	355	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	212	441	31	53	414	98	149	321	158	70	355	64
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	110	8	13	104	25	37	80	40	18	89	16
Total Analysis Volume [veh/h]	212	441	31	53	414	98	149	321	158	70	355	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	8			10			4			21		
Bicycle Volume [bicycles/h]	7			2			0			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	38	0	9	26	0	16	32	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	48	48	48	48	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	15	15	3	10	10	5	12	12	3	9	9
g / C, Green / Cycle	0.16	0.31	0.31	0.05	0.21	0.21	0.11	0.24	0.24	0.06	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.12	0.13	0.13	0.03	0.14	0.14	0.08	0.14	0.14	0.04	0.11	0.12
s, saturation flow rate [veh/h]	1774	1863	1810	1774	1863	1727	1774	1863	1647	1774	1863	1746
c, Capacity [veh/h]	280	581	565	95	387	359	201	448	396	113	355	333
d1, Uniform Delay [s]	19.50	13.14	13.15	22.36	17.69	17.75	20.77	16.15	16.21	22.09	17.91	17.97
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.19	0.46	0.48	5.10	2.10	2.41	5.30	1.11	1.32	5.42	1.64	1.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

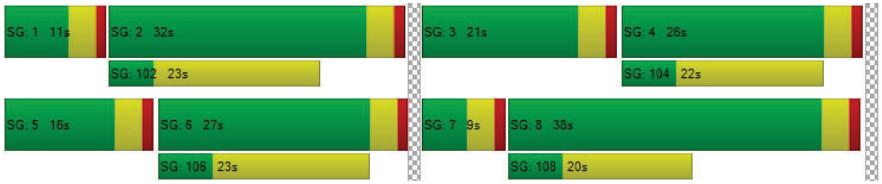
X, volume / capacity	0.76	0.41	0.41	0.56	0.68	0.69	0.74	0.56	0.57	0.62	0.60	0.62
d, Delay for Lane Group [s/veh]	23.69	13.60	13.64	27.46	19.80	20.17	26.07	17.26	17.52	27.51	19.55	19.83
Lane Group LOS	C	B	B	C	B	C	C	B	B	C	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.29	1.75	1.71	0.66	2.52	2.42	1.72	2.19	2.01	0.89	2.14	2.07
50th-Percentile Queue Length [ft/ln]	57.32	43.64	42.83	16.41	63.10	60.53	43.04	54.87	50.22	22.25	53.42	51.87
95th-Percentile Queue Length [veh/ln]	4.13	3.14	3.08	1.18	4.54	4.36	3.10	3.95	3.62	1.60	3.85	3.73
95th-Percentile Queue Length [ft/ln]	103.18	78.54	77.10	29.54	113.59	108.96	77.47	98.77	90.39	40.05	96.16	93.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.69	13.62	13.64	27.46	19.93	20.17	26.07	17.32	17.52	27.51	19.66	19.83
Movement LOS	C	B	B	C	B	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	16.74			20.68			19.45			20.80		
Approach LOS	B			C			B			C		
d_I, Intersection Delay [s/veh]	19.24											
Intersection LOS	B											
Intersection V/C	0.465											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Salem Ave	Clement Ave
Approach	Northbound	Westbound
Lane Configuration	⌜	⌝
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Salem Ave	Clement Ave
Base Volume Input [veh/h]	18	24
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	18	24
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	6
Total Analysis Volume [veh/h]	18	24
Pedestrian Volume [ped/h]	0	0

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Version 7.00-05

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	14	701	707	10	4	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	701	707	10	4	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	175	177	3	1	4
Total Analysis Volume [veh/h]	14	701	707	10	4	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	9.16	0.00	0.00	0.00	22.82	11.00
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft/ln]	1.21	0.00	0.00	0.00	3.23	3.23
d_A, Approach Delay [s/veh]	0.18		0.00		13.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	100	88	194	265	77	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	88	194	265	77	87
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	22	49	66	19	22
Total Analysis Volume [veh/h]	100	88	194	265	77	87
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	712	630	691	547	670
Degree of Utilization, x	0.26	0.31	0.38	0.14	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.06	1.30	1.81	0.49	0.45
95th-Percentile Queue Length [ft]	26.47	32.60	45.16	12.18	11.13
Approach Delay [s/veh]	9.86	11.04		9.57	
Approach LOS	A	B		A	
Intersection Delay [s/veh]	10.47				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	18	20	13	211	195	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	20	13	211	195	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	5	3	53	49	6
Total Analysis Volume [veh/h]	18	20	13	211	195	24
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.67	9.63	7.69	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.42	4.42	0.73	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.60		0.45		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	3	33	125	229	186	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	33	125	229	186	120
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	8	31	57	47	30
Total Analysis Volume [veh/h]	3	33	125	229	186	120
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.26	9.40	0.00	0.00	0.00	0.00
Movement LOS	B	A		A	A	
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.41	3.41	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.56		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.76					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	15	17	125	102	155	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	17	125	102	155	120
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	4	31	26	39	30
Total Analysis Volume [veh/h]	15	17	125	102	155	120
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.02	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.58	9.72	8.10	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.34	4.34	8.04	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.53		4.46		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	9	27	11	119	260	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	27	11	119	260	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	3	30	65	3
Total Analysis Volume [veh/h]	9	27	11	119	260	13
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.32	9.93	7.81	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.95	3.95	0.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.27		0.66		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.326

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	187	618	43	6	552	85	54	8	102	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	187	618	43	6	552	78	54	8	18	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	155	11	2	138	20	14	2	5	1	0	3
Total Analysis Volume [veh/h]	187	618	43	6	552	78	54	8	18	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	75			0			1			0		
Bicycle Volume [bicycles/h]	11			2			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	29	90	0	0	61	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	41	41	41	41	41	41	41	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	6	22	22	12	12	11	11	
g / C, Green / Cycle	0.14	0.53	0.53	0.29	0.29	0.27	0.27	
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.18	0.18	0.19	0.03	0.01	
s, saturation flow rate [veh/h]	1774	1863	1813	1840	1609	1785	1435	
c, Capacity [veh/h]	251	988	962	625	468	488	392	
d1, Uniform Delay [s]	16.78	5.47	5.48	12.52	12.59	11.15	10.90	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.34	0.20	0.21	0.73	1.46	0.12	0.05	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.74	0.34	0.34	0.54	0.64	0.13	0.05	
d, Delay for Lane Group [s/veh]	21.12	5.67	5.69	13.25	14.04	11.26	10.95	
Lane Group LOS	C	A	A	B	B	B	B	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.68	0.95	0.93	2.15	1.99	0.37	0.11	
50th-Percentile Queue Length [ft/ln]	41.92	23.72	23.26	53.67	49.65	9.29	2.65	
95th-Percentile Queue Length [veh/ln]	3.02	1.71	1.67	3.86	3.58	0.67	0.19	
95th-Percentile Queue Length [ft/ln]	75.46	42.70	41.86	96.60	89.38	16.72	4.78	

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.12	5.68	5.69	13.25	13.56	14.04	11.26	11.26	10.95	0.00	0.00	0.00
Movement LOS	C	A	A	B	B	B	B	B	B			
d_A, Approach Delay [s/veh]	9.08			13.62			11.19			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	11.04											
Intersection LOS	B											
Intersection V/C	0.326											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	263	122	88	152	31	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	122	88	152	31	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	31	22	38	8	6
Total Analysis Volume [veh/h]	263	122	88	152	31	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	845	659	726	701
Degree of Utilization, x	0.46	0.13	0.21	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.41	0.46	0.79	0.26
95th-Percentile Queue Length [ft]	60.30	11.48	19.64	6.49
Approach Delay [s/veh]	10.78	8.98		8.58
Approach LOS	B	A		A
Intersection Delay [s/veh]	9.97			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Base Volume Input [veh/h]	245	608	98	75	386	55	13	17	24	90	116	188
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	608	98	75	386	55	13	17	24	90	116	188
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	152	25	19	97	14	3	4	6	23	29	47
Total Analysis Volume [veh/h]	245	608	98	75	386	55	13	17	24	90	116	188
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	41	52	0	12	23	0	0	26	41	0	26	12
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	16	54	54	8	46	46	16	16	36	16	28
g / C, Green / Cycle	0.18	0.60	0.60	0.09	0.51	0.51	0.18	0.18	0.40	0.18	0.31
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.22	0.05	0.13	0.14	0.01	0.01	0.02	0.15	0.13
s, saturation flow rate [veh/h]	1597	1676	1596	1597	1676	1605	1144	1676	1425	1379	1425
c, Capacity [veh/h]	284	1011	962	143	863	826	87	292	565	298	439
d1, Uniform Delay [s]	35.95	9.05	9.05	39.17	12.24	12.26	44.86	30.99	16.67	36.40	24.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.70	0.99	1.04	2.98	0.73	0.77	0.78	0.08	0.03	2.86	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

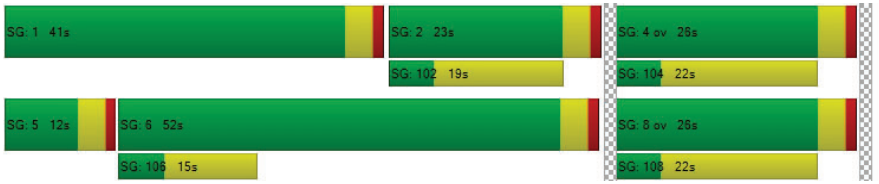
X, volume / capacity	0.86	0.36	0.36	0.53	0.26	0.26	0.15	0.06	0.04	0.69	0.43
d, Delay for Lane Group [s/veh]	43.66	10.04	10.09	42.15	12.98	13.04	45.65	31.08	16.70	39.26	25.48
Lane Group LOS	D	B	B	D	B	B	D	C	B	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.66	3.43	3.28	1.67	2.52	2.44	0.31	0.32	0.31	4.60	3.25
50th-Percentile Queue Length [ft/ln]	141.45	85.68	81.91	41.64	62.91	61.08	7.74	7.88	7.70	115.09	81.21
95th-Percentile Queue Length [veh/ln]	9.56	6.17	5.90	3.00	4.53	4.40	0.56	0.57	0.55	8.12	5.85
95th-Percentile Queue Length [ft/ln]	238.97	154.22	147.44	74.95	113.25	109.94	13.92	14.18	13.85	203.05	146.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.66	10.06	10.09	42.15	13.00	13.04	45.65	31.08	16.70	39.26	39.26	25.48
Movement LOS	D	B	B	D	B	B	D	C	B	D	D	C
d_A, Approach Delay [s/veh]	18.72			17.24			28.20			32.68		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.46											
Intersection LOS	C											
Intersection V/C	0.438											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	15.268

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	239	21	23	49	43	474	186	1077	255	16	868	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	239	21	15	49	43	386	186	1077	221	16	868	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	5	4	12	11	97	47	269	55	4	217	10
Total Analysis Volume [veh/h]	239	21	15	49	43	386	186	1077	221	16	868	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	3			14			0			10		
Bicycle Volume [bicycles/h]	2			2			5			5		

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	32	0	9	18	0	11	35	0	9	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	7	15	5	14	14	6	48	48	2	43	43
g / C, Green / Cycle	0.28	0.09	0.18	0.05	0.17	0.17	0.08	0.56	0.56	0.02	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.00	0.40	0.01	0.04	0.02	0.14	0.05	0.36	0.37	0.01	0.17	0.17
s, saturation flow rate [veh/h]	1486	621	1427	1385	1863	2762	3445	1863	1737	1774	3547	1815
c, Capacity [veh/h]	517	217	253	85	317	470	260	1043	973	33	1785	913
d1, Uniform Delay [s]	22.12	25.45	29.09	42.51	29.96	34.02	37.36	6.59	6.69	41.05	7.95	7.96
k, delay calibration	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	110.31	0.11	6.10	0.19	3.63	3.68	2.96	3.40	10.59	0.51	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

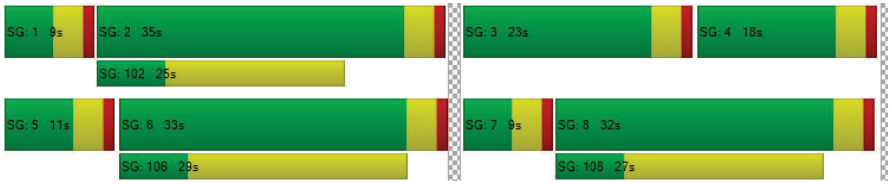
X, volume / capacity	0.01	1.16	0.07	0.58	0.14	0.82	0.72	0.64	0.65	0.48	0.34	0.34
d, Delay for Lane Group [s/veh]	22.13	135.76	29.20	48.61	30.15	37.65	41.04	9.55	10.09	51.64	8.46	8.96
Lane Group LOS	C	F	C	D	C	D	D	A	B	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.10	10.06	0.29	1.19	0.74	3.94	1.92	4.33	4.26	0.42	2.04	2.23
50th-Percentile Queue Length [ft/ln]	2.56	251.58	7.24	29.64	18.56	98.38	48.02	108.17	106.61	10.48	51.05	55.73
95th-Percentile Queue Length [veh/ln]	0.18	16.08	0.52	2.13	1.34	7.08	3.46	7.74	7.65	0.75	3.68	4.01
95th-Percentile Queue Length [ft/ln]	4.61	402.08	13.03	53.36	33.41	177.08	86.43	193.45	191.28	18.86	91.89	100.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	132.58	125.29	29.20	48.61	30.15	37.65	41.04	9.76	10.09	51.64	8.62	8.96
Movement LOS	F	F	C	D	C	D	D	A	B	D	A	A
d_A, Approach Delay [s/veh]	126.16			38.10			13.73			9.38		
Approach LOS	F			D			B			A		
d_I, Intersection Delay [s/veh]	25.92											
Intersection LOS	C											
Intersection V/C	15.268											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	76.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	13	0	7	1	1	18	18	1108	23	2	898	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	7	1	1	18	18	1108	23	2	898	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	0	0	5	5	277	6	1	225	2
Total Analysis Volume [veh/h]	13	0	7	1	1	18	18	1108	23	2	898	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.01	0.01	0.02	0.03	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	71.24	84.90	23.15	50.15	76.11	12.28	9.93	0.00	0.00	10.89	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.76	0.76	0.76	0.20	0.20	0.20	0.07	0.04	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	19.10	19.10	19.10	5.12	5.12	5.12	1.85	0.92	0.00	0.25	0.12	0.00
d_A, Approach Delay [s/veh]	54.41			17.37			0.16			0.02		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	0.78											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	50.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	4	0	7	1	0	3	7	1062	7	5	819	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	0	7	1	0	3	7	1062	7	5	819	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	0	0	1	2	266	2	1	205	1
Total Analysis Volume [veh/h]	4	0	7	1	0	3	7	1062	7	5	819	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	49.99	61.09	13.72	40.82	60.09	11.31	9.52	0.00	0.00	10.60	0.00	0.00
Movement LOS	E	F	B	E	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.05	0.05	0.05	0.03	0.01	0.00	0.02	0.01	0.00
95th-Percentile Queue Length [ft/ln]	4.97	4.97	4.97	1.14	1.14	1.14	0.66	0.33	0.00	0.58	0.29	0.00
d_A, Approach Delay [s/veh]	26.90			18.69			0.06			0.06		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	0.26											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	0	13	1067	1	10	871
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	13	1067	1	10	871
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	267	0	3	218
Total Analysis Volume [veh/h]	0	13	1067	1	10	871
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-05

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	38.95	12.54	0.00	0.00	10.64	0.00
Movement LOS	E	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.05	0.02
95th-Percentile Queue Length [ft/ln]	2.04	2.04	0.00	0.00	1.17	0.59
d_A, Approach Delay [s/veh]	12.54		0.00		0.12	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	33.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	300	557	92	147	788	161	165	470	305	99	285	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	300	557	84	147	788	147	165	470	219	99	285	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	139	21	37	197	37	41	118	55	25	71	14
Total Analysis Volume [veh/h]	300	557	84	147	788	147	165	470	219	99	285	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	14			13			11			18		
Bicycle Volume [bicycles/h]	2			4			2			0		

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Version 7.00-05

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	52	0	20	43	0	21	35	0	13	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	82	82	82	82	82	82	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	32	32	9	24	24	10	20	20	6	16	16
g / C, Green / Cycle	0.20	0.39	0.39	0.11	0.29	0.29	0.12	0.24	0.24	0.07	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.18	0.08	0.26	0.26	0.09	0.20	0.20	0.06	0.09	0.10
s, saturation flow rate [veh/h]	1774	1863	1764	1774	1863	1745	1774	1863	1628	1774	1863	1749
c, Capacity [veh/h]	348	719	680	187	550	515	207	448	392	130	368	345
d1, Uniform Delay [s]	31.98	18.83	18.87	35.88	27.55	27.64	35.37	29.46	29.64	37.40	29.22	29.29
k, delay calibration	0.11	0.11	0.11	0.11	0.24	0.24	0.11	0.11	0.12	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.31	0.45	0.49	7.06	9.21	10.58	6.80	3.61	5.01	8.74	0.94	1.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.46	0.46	0.78	0.87	0.88	0.80	0.81	0.83	0.76	0.47	0.48
d, Delay for Lane Group [s/veh]	38.28	19.29	19.35	42.95	36.76	38.23	42.17	33.07	34.65	46.15	30.15	30.33
Lane Group LOS	D	B	B	D	D	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.10	4.43	4.24	3.14	9.80	9.48	3.49	6.86	6.32	2.25	3.08	2.97
50th-Percentile Queue Length [ft/ln]	152.58	110.66	105.99	78.43	244.89	237.11	87.22	171.57	158.03	56.32	76.88	74.30
95th-Percentile Queue Length [veh/ln]	10.15	7.88	7.62	5.65	14.93	14.54	6.28	11.16	10.44	4.05	5.54	5.35
95th-Percentile Queue Length [ft/ln]	253.86	196.92	190.40	141.18	373.22	363.38	156.99	278.97	261.12	101.37	138.39	133.74

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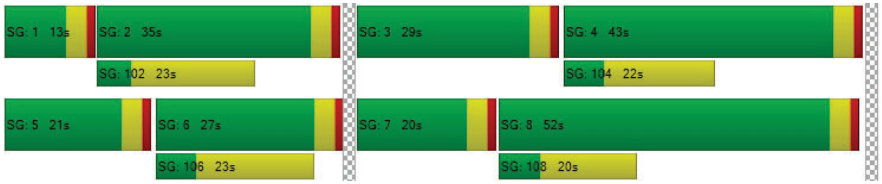
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.28	19.32	19.35	42.95	37.33	38.23	42.17	33.43	34.65	46.15	30.22	30.33
Movement LOS	D	B	B	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	25.37			38.22			35.43			33.83		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	33.27											
Intersection LOS	C											
Intersection V/C	0.685											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Salem Ave	Clement Ave
Approach	Northbound	Westbound
Lane Configuration	⌜	⌝
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Salem Ave	Clement Ave
Base Volume Input [veh/h]	38	56
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	38	56
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	14
Total Analysis Volume [veh/h]	38	56
Pedestrian Volume [ped/h]	0	0

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Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	56.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	30	960	1180	26	7	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	960	1180	26	7	31
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	240	295	7	2	8
Total Analysis Volume [veh/h]	30	960	1180	26	7	31
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.00	0.09	0.07
d_M, Delay for Movement [s/veh]	11.61	0.00	0.00	0.00	56.17	16.16
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.16	0.00	0.00	0.00	0.57	0.57
95th-Percentile Queue Length [ft/ln]	4.12	0.00	0.00	0.00	14.35	14.35
d_A, Approach Delay [s/veh]	0.35		0.00		23.53	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.56					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.338

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	150	91	124	127	105	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	91	124	127	105	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	23	31	32	26	29
Total Analysis Volume [veh/h]	150	91	124	127	105	117
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	713	609	665	573	710
Degree of Utilization, x	0.34	0.20	0.19	0.18	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.49	0.76	0.70	0.66	0.59
95th-Percentile Queue Length [ft]	37.35	18.96	17.52	16.62	14.69
Approach Delay [s/veh]	10.60	9.75		9.53	
Approach LOS	B	A		A	
Intersection Delay [s/veh]	9.97				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	24	12	12	222	235	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	12	12	222	235	33
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	3	56	59	8
Total Analysis Volume [veh/h]	24	12	12	222	235	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.22	9.97	7.80	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.84	4.84	0.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.47		0.40		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.94					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	10	96	107	280	179	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	96	107	280	179	146
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	24	27	70	45	37
Total Analysis Volume [veh/h]	10	96	107	280	179	146
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.11	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.07	9.81	0.00	0.00	0.00	0.00
Movement LOS	B	A		A	A	
95th-Percentile Queue Length [veh/ln]	0.44	0.44	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	11.05	11.05	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.03		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.88					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

Intersection Setup

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	100	31	100	178	143	143
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	31	100	178	143	143
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	8	25	45	36	36
Total Analysis Volume [veh/h]	100	31	100	178	143	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.04	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.04	12.06	8.06	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.08	1.08	0.25	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	26.96	26.96	6.37	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.10		2.90		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	43	44	22	267	250	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	44	22	267	250	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	11	6	67	63	4
Total Analysis Volume [veh/h]	43	44	22	267	250	14
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.06	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.60	10.65	7.82	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.51	0.51	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.78	12.78	1.29	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.11		0.60		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	155	829	2	0	1021	98	124	5	221	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	155	829	2	0	1021	91	124	5	137	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	207	1	0	255	23	31	1	34	1	0	3
Total Analysis Volume [veh/h]	155	829	2	0	1021	91	124	5	137	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	129			0			14			0		
Bicycle Volume [bicycles/h]	6			3			4			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	30	60	0	0	30	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	62	62	62	62	62	62	62	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	7	34	34	23	23	20	20	
g / C, Green / Cycle	0.11	0.55	0.55	0.37	0.37	0.32	0.32	
(v / s)_i Volume / Saturation Flow Rate	0.09	0.22	0.22	0.32	0.32	0.07	0.10	
s, saturation flow rate [veh/h]	1774	1863	1861	1863	1630	1777	1374	
c, Capacity [veh/h]	203	1025	1024	750	607	572	442	
d1, Uniform Delay [s]	26.87	8.14	8.14	18.05	18.13	15.51	15.97	
k, delay calibration	0.11	0.11	0.11	0.20	0.21	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.89	0.26	0.26	3.44	6.78	0.20	0.39	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.76	0.41	0.41	0.79	0.86	0.23	0.31	
d, Delay for Lane Group [s/veh]	32.76	8.40	8.40	21.49	24.91	15.70	16.37	
Lane Group LOS	C	A	A	C	C	B	B	
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	
50th-Percentile Queue Length [veh/ln]	2.41	2.58	2.58	7.44	7.11	1.30	1.43	
50th-Percentile Queue Length [ft/ln]	60.29	64.57	64.52	186.06	177.70	32.43	35.82	
95th-Percentile Queue Length [veh/ln]	4.34	4.65	4.65	11.92	11.48	2.33	2.58	
95th-Percentile Queue Length [ft/ln]	108.53	116.23	116.14	297.91	287.00	58.37	64.48	

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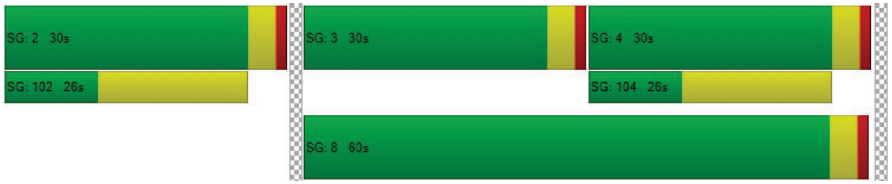
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.76	8.40	8.40	21.49	22.93	24.91	15.70	15.70	16.37	0.00	0.00	0.00
Movement LOS	C	A	A	C	C	C	B	B	B			
d_A, Approach Delay [s/veh]	12.23			23.10			16.05			0.00		
Approach LOS	B			C			B			A		
d_I, Intersection Delay [s/veh]	17.77											
Intersection LOS	B											
Intersection V/C	0.507											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.334

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	191	18	26	248	29	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	18	26	248	29	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	5	7	62	7	8
Total Analysis Volume [veh/h]	191	18	26	248	29	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	811	674	743	748
Degree of Utilization, x	0.26	0.04	0.33	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.03	0.12	1.47	0.27
95th-Percentile Queue Length [ft]	25.71	3.01	36.71	6.64
Approach Delay [s/veh]	8.98	9.79		8.24
Approach LOS	A	A		A
Intersection Delay [s/veh]	9.31			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.513

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Base Volume Input [veh/h]	40	701	139	166	891	33	79	58	102	133	23	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	701	139	166	891	33	79	58	102	133	23	225
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	175	35	42	223	8	20	15	26	33	6	56
Total Analysis Volume [veh/h]	40	701	139	166	891	33	79	58	102	133	23	225
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	10	19	0	45	54	0	0	26	10	0	26	45
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	4	44	44	13	52	52	22	22	30	22	39
g / C, Green / Cycle	0.05	0.48	0.48	0.14	0.57	0.57	0.24	0.24	0.34	0.24	0.43
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.26	0.10	0.28	0.28	0.06	0.03	0.07	0.15	0.16
s, saturation flow rate [veh/h]	1597	1676	1581	1597	1676	1655	1244	1676	1425	1032	1425
c, Capacity [veh/h]	77	810	764	223	962	950	161	410	480	326	610
d1, Uniform Delay [s]	41.84	16.22	16.22	37.24	11.31	11.31	42.01	26.65	21.32	32.71	17.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.27	2.51	2.66	4.92	1.73	1.76	2.29	0.16	0.22	1.09	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

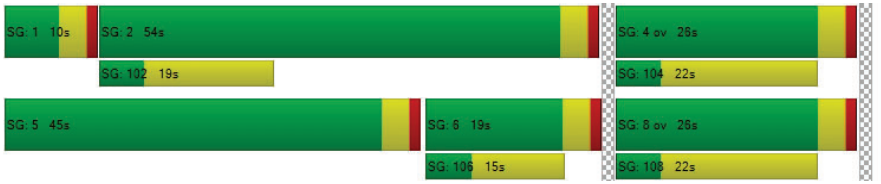
X, volume / capacity	0.52	0.53	0.53	0.75	0.48	0.48	0.49	0.14	0.21	0.48	0.37
d, Delay for Lane Group [s/veh]	47.10	18.73	18.88	42.16	13.04	13.07	44.29	26.80	21.54	33.80	17.87
Lane Group LOS	D	B	B	D	B	B	D	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.96	6.28	5.96	3.72	5.30	5.24	1.85	0.99	1.56	3.19	3.18
50th-Percentile Queue Length [ft/ln]	24.08	156.93	148.93	92.95	132.54	131.06	46.25	24.84	39.03	79.67	79.43
95th-Percentile Queue Length [veh/ln]	1.73	10.39	9.96	6.69	9.08	9.00	3.33	1.79	2.81	5.74	5.72
95th-Percentile Queue Length [ft/ln]	43.34	259.66	249.00	167.31	226.95	224.94	83.26	44.71	70.25	143.41	142.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.10	18.79	18.88	42.16	13.05	13.07	44.29	26.80	21.54	33.80	33.80	17.87
Movement LOS	D	B	B	D	B	B	D	C	C	C	C	B
d_A, Approach Delay [s/veh]	20.09			17.49			30.34			24.39		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.57											
Intersection LOS	C											
Intersection V/C	0.513											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	155	50	35	52	52	226	450	1010	651	35	810	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	155	50	27	52	52	138	450	1010	617	35	810	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	13	7	13	13	35	113	253	154	9	203	20
Total Analysis Volume [veh/h]	155	50	27	52	52	138	450	1010	617	35	810	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1			9			0			2		
Bicycle Volume [bicycles/h]	0			1			4			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	33	0	10	33	0	41	67	0	10	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	24	0	0	10	0	0	21	0	0	27	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	9	6	9	9	18	85	85	3	70	70
g / C, Green / Cycle	0.16	0.16	0.08	0.05	0.08	0.08	0.15	0.71	0.71	0.03	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.05	0.04	0.03	0.05	0.13	0.44	0.50	0.02	0.17	0.17
s, saturation flow rate [veh/h]	1522	802	1592	1349	1863	2761	3445	1863	1613	1774	3547	1771
c, Capacity [veh/h]	307	229	125	60	148	219	528	1319	1142	53	2072	1035
d1, Uniform Delay [s]	44.06	48.45	53.57	60.03	52.35	53.57	46.45	1.18	1.27	57.08	6.14	6.15
k, delay calibration	0.32	0.50	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	3.99	4.87	28.00	1.42	2.98	4.00	2.17	3.79	13.58	0.35	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.34	0.62	0.86	0.35	0.63	0.85	0.62	0.71	0.67	0.28	0.29
d, Delay for Lane Group [s/veh]	45.30	52.44	58.45	88.04	53.78	56.55	50.45	3.35	5.07	70.66	6.49	6.86
Lane Group LOS	D	D	E	F	D	E	D	A	A	E	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.12	2.41	2.40	2.10	1.53	2.10	6.39	1.90	2.33	1.23	1.94	2.07
50th-Percentile Queue Length [ft/ln]	52.94	60.15	60.08	52.60	38.37	52.38	159.80	47.59	58.17	30.80	48.60	51.68
95th-Percentile Queue Length [veh/ln]	3.81	4.33	4.33	3.79	2.76	3.77	10.54	3.43	4.19	2.22	3.50	3.72
95th-Percentile Queue Length [ft/ln]	95.30	108.26	108.15	94.68	69.07	94.28	263.46	85.66	104.71	55.45	87.49	93.02

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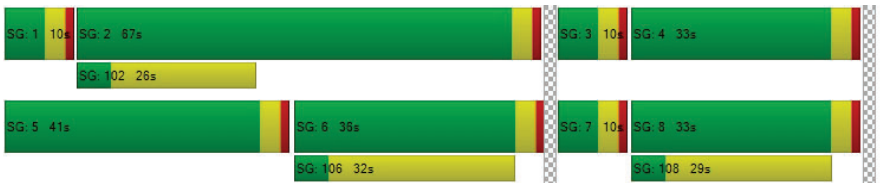
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.87	58.45	58.45	88.04	53.78	56.55	50.45	3.68	5.07	70.66	6.59	6.86
Movement LOS	D	E	E	F	D	E	D	A	A	E	A	A
d_A, Approach Delay [s/veh]	52.05			62.72			14.23			9.04		
Approach LOS	D			E			B			A		
d_I, Intersection Delay [s/veh]	18.75											
Intersection LOS	B											
Intersection V/C	0.705											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	75.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	15	0	4	4	1	13	9	1095	15	3	930	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	4	4	1	13	9	1095	15	3	930	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	1	0	3	2	274	4	1	233	2
Total Analysis Volume [veh/h]	15	0	4	4	1	13	9	1095	15	3	930	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.00	0.01	0.05	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	70.55	85.86	25.07	51.16	75.63	13.52	10.02	0.00	0.00	10.79	0.00	0.00
Movement LOS	F	F	D	F	F	B	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.81	0.81	0.81	0.30	0.30	0.30	0.04	0.02	0.00	0.01	0.01	0.00
95th-Percentile Queue Length [ft/ln]	20.27	20.27	20.27	7.53	7.53	7.53	0.94	0.47	0.00	0.36	0.18	0.00
d_A, Approach Delay [s/veh]	60.98			25.34			0.08			0.03		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	0.83											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	70.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	8	0	7	2	1	2	13	1051	19	4	899	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	7	2	1	2	13	1051	19	4	899	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	1	0	1	3	263	5	1	225	3
Total Analysis Volume [veh/h]	8	0	7	2	1	2	13	1051	19	4	899	13
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.00	0.01	0.02	0.02	0.00	0.02	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	57.13	72.48	16.33	48.38	70.27	13.02	9.93	0.00	0.00	10.60	0.00	0.00
Movement LOS	F	F	C	E	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.40	0.40	0.40	0.14	0.14	0.14	0.05	0.03	0.00	0.02	0.01	0.00
95th-Percentile Queue Length [ft/ln]	10.06	10.06	10.06	3.47	3.47	3.47	1.34	0.67	0.00	0.47	0.23	0.00
d_A, Approach Delay [s/veh]	38.09			38.61			0.12			0.05		
Approach LOS	E			E			A			A		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	62.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	5	17	1377	3	4	906
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	17	1377	3	4	906
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	4	344	1	1	227
Total Analysis Volume [veh/h]	5	17	1377	3	4	906
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.04	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	62.04	16.92	0.00	0.00	12.37	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.40	0.40	0.00	0.00	0.02	0.01
95th-Percentile Queue Length [ft/ln]	9.98	9.98	0.00	0.00	0.61	0.31
d_A, Approach Delay [s/veh]	27.17		0.00		0.05	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	33.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	354	543	34	42	469	116	254	340	564	75	430	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	354	543	26	42	469	102	254	340	478	75	430	76
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	136	7	11	117	26	64	85	120	19	108	19
Total Analysis Volume [veh/h]	354	543	26	42	469	102	254	340	478	75	430	76
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	8			10			4			21		
Bicycle Volume [bicycles/h]	7			2			0			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	40	0	10	26	0	19	46	0	9	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	32	32	3	16	16	14	28	28	5	18	18
g / C, Green / Cycle	0.23	0.38	0.38	0.04	0.20	0.20	0.17	0.33	0.33	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.20	0.15	0.15	0.02	0.16	0.16	0.14	0.18	0.30	0.04	0.14	0.14
s, saturation flow rate [veh/h]	1774	1863	1827	1774	1863	1735	1774	1863	1572	1774	1863	1749
c, Capacity [veh/h]	402	718	704	66	366	340	301	615	519	99	403	378
d1, Uniform Delay [s]	31.24	18.67	18.68	39.65	32.04	32.14	33.64	22.94	26.95	38.89	29.79	29.88
k, delay calibration	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.34	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.30	0.36	0.37	9.51	4.12	4.78	6.45	0.78	18.20	11.10	1.71	1.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

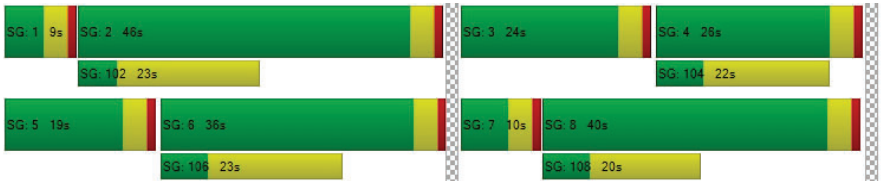
X, volume / capacity	0.88	0.40	0.40	0.63	0.80	0.82	0.84	0.55	0.92	0.76	0.64	0.65
d, Delay for Lane Group [s/veh]	38.54	19.03	19.05	49.16	36.16	36.92	40.09	23.72	45.15	49.99	31.50	31.80
Lane Group LOS	D	B	B	D	D	D	D	C	D	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.36	3.85	3.79	1.00	5.82	5.58	5.32	5.29	11.14	1.81	4.84	4.66
50th-Percentile Queue Length [ft/ln]	184.09	96.14	94.71	25.02	145.39	139.48	132.98	132.33	278.60	45.24	121.07	116.61
95th-Percentile Queue Length [veh/ln]	11.81	6.92	6.82	1.80	9.77	9.45	9.10	9.07	16.62	3.26	8.45	8.21
95th-Percentile Queue Length [ft/ln]	295.35	173.06	170.47	45.03	244.26	236.32	227.54	226.66	415.47	81.43	211.30	205.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.54	19.04	19.05	49.16	36.44	36.92	40.09	23.72	45.15	49.99	31.62	31.80
Movement LOS	D	B	B	D	D	D	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	26.52			37.40			37.15			34.01		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	33.55											
Intersection LOS	C											
Intersection V/C	0.706											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Salem Ave	Clement Ave
Approach	Northbound	Westbound
Lane Configuration	⌜	¬
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Salem Ave	Clement Ave
Base Volume Input [veh/h]	25	34
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	25	34
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	9
Total Analysis Volume [veh/h]	25	34
Pedestrian Volume [ped/h]	0	0

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	40.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	20	983	992	14	6	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	983	992	14	6	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	246	248	4	2	5
Total Analysis Volume [veh/h]	20	983	992	14	6	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	10.42	0.00	0.00	0.00	40.87	13.42
Movement LOS	B	A	A	A	E	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.00	0.32	0.32
95th-Percentile Queue Length [ft/ln]	2.26	0.00	0.00	0.00	7.91	7.91
d_A, Approach Delay [s/veh]	0.21		0.00		19.76	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	100	88	438	318	82	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	88	438	318	82	148
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	22	110	80	21	37
Total Analysis Volume [veh/h]	100	88	438	318	82	148
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	642	598	653	495	594
Degree of Utilization, x	0.29	0.73	0.49	0.17	0.25

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.22	6.25	2.68	0.59	0.98
95th-Percentile Queue Length [ft]	30.42	156.15	66.90	14.74	24.50
Approach Delay [s/veh]	10.92	19.14		11.00	
Approach LOS	B	C		B	
Intersection Delay [s/veh]	16.23				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	26	29	19	308	285	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	29	19	308	285	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	7	5	77	71	9
Total Analysis Volume [veh/h]	26	29	19	308	285	35
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.04	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.14	10.61	7.95	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.33	0.33	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.30	8.30	1.17	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.28		0.46		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.18					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	0	48	125	335	272	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	48	125	335	272	120
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	31	84	68	30
Total Analysis Volume [veh/h]	0	48	125	335	272	120
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.15	10.01	0.00	0.00	0.00	0.00
Movement LOS	B	B		A	A	
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.00	5.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.01		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.73					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

Intersection Setup

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	22	25	183	149	227	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	25	183	149	227	175
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	6	46	37	57	44
Total Analysis Volume [veh/h]	22	25	183	149	227	175
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.03	0.16	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.63	11.02	8.70	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.37	0.37	0.56	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	9.32	9.32	14.03	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.59		4.79		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.92					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	13	39	16	174	380	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	39	16	174	380	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	10	4	44	95	5
Total Analysis Volume [veh/h]	13	39	16	174	380	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.40	11.04	8.15	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.29	0.29	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.16	7.16	1.05	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.63		0.69		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	477	872	0	0	876	95	42	0	91	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	477	872	0	0	876	88	42	0	7	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	218	0	0	219	22	11	0	2	1	0	3
Total Analysis Volume [veh/h]	477	872	0	0	876	88	42	0	7	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	75			0			1			0		
Bicycle Volume [bicycles/h]	11			2			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	25	55	0	0	30	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	71	71	71	71	71	71	71	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	21	48	48	23	23	15	15	
g / C, Green / Cycle	0.30	0.67	0.67	0.32	0.32	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.27	0.23	0.23	0.28	0.28	0.02	0.00	
s, saturation flow rate [veh/h]	1774	1863	1863	1863	1630	1774	1400	
c, Capacity [veh/h]	532	1254	1254	642	518	381	301	
d1, Uniform Delay [s]	23.98	4.98	4.98	22.97	23.01	22.59	22.16	
k, delay calibration	0.19	0.13	0.13	0.20	0.20	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	9.20	0.19	0.19	4.21	8.27	0.13	0.03	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

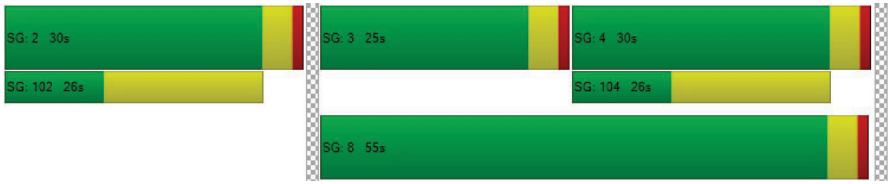
X, volume / capacity	0.90	0.35	0.35	0.80	0.87	0.11	0.02	
d, Delay for Lane Group [s/veh]	33.18	5.17	5.17	27.18	31.28	22.71	22.19	
Lane Group LOS	C	A	A	C	C	C	C	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	8.39	1.98	1.98	8.12	7.69	0.57	0.09	
50th-Percentile Queue Length [ft/ln]	209.76	49.61	49.61	203.12	192.24	14.22	2.34	
95th-Percentile Queue Length [veh/ln]	13.14	3.57	3.57	12.80	12.24	1.02	0.17	
95th-Percentile Queue Length [ft/ln]	328.52	89.29	89.29	319.99	305.93	25.60	4.20	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.18	5.17	5.17	27.18	28.88	31.28	22.71	22.71	22.19	0.00	0.00	0.00
Movement LOS	C	A	A	C	C	C	C	C	C			
d_A, Approach Delay [s/veh]	15.07			29.10			22.64			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	20.96											
Intersection LOS	C											
Intersection V/C	0.569											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	354	164	119	205	42	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	354	164	119	205	42	34
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	41	30	51	11	9
Total Analysis Volume [veh/h]	354	164	119	205	42	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	812	636	699	643
Degree of Utilization, x	0.64	0.19	0.29	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.69	0.68	1.22	0.40
95th-Percentile Queue Length [ft]	117.34	17.08	30.57	10.01
Approach Delay [s/veh]	14.92	9.86		9.35
Approach LOS	B	A		A
Intersection Delay [s/veh]	12.68			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Base Volume Input [veh/h]	344	853	137	105	542	77	18	24	34	126	163	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	344	853	137	105	542	77	18	24	34	126	163	264
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	213	34	26	136	19	5	6	9	32	41	66
Total Analysis Volume [veh/h]	344	853	137	105	542	77	18	24	34	126	163	264
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	31	43	0	11	23	0	0	26	31	0	26	11
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	19	42	42	7	30	30	19	19	42	19	30
g / C, Green / Cycle	0.24	0.52	0.52	0.09	0.37	0.37	0.24	0.24	0.53	0.24	0.38
(v / s)_i Volume / Saturation Flow Rate	0.22	0.30	0.30	0.07	0.19	0.19	0.02	0.01	0.02	0.21	0.19
s, saturation flow rate [veh/h]	1597	1676	1597	1597	1676	1605	1096	1676	1425	1374	1425
c, Capacity [veh/h]	386	881	839	141	624	597	98	397	753	390	534
d1, Uniform Delay [s]	29.34	12.90	12.93	35.63	19.45	19.46	39.89	23.67	9.13	29.98	19.22
k, delay calibration	0.14	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.00	2.71	2.89	7.66	2.92	3.07	0.89	0.06	0.02	3.31	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

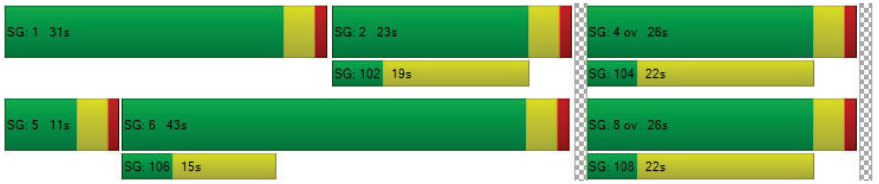
X, volume / capacity	0.89	0.57	0.58	0.75	0.51	0.51	0.18	0.06	0.05	0.74	0.49
d, Delay for Lane Group [s/veh]	38.34	15.61	15.82	43.29	22.37	22.53	40.78	23.73	9.16	33.29	19.93
Lane Group LOS	D	B	B	D	C	C	D	C	A	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.99	6.05	5.86	2.23	4.73	4.57	0.38	0.35	0.28	5.62	3.74
50th-Percentile Queue Length [ft/ln]	174.85	151.36	146.41	55.71	118.37	114.25	9.41	8.87	6.93	140.46	93.62
95th-Percentile Queue Length [veh/ln]	11.33	10.09	9.83	4.01	8.30	8.08	0.68	0.64	0.50	9.51	6.74
95th-Percentile Queue Length [ft/ln]	283.28	252.24	245.63	100.28	207.59	201.90	16.94	15.97	12.48	237.64	168.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.34	15.70	15.82	43.29	22.44	22.53	40.78	23.73	9.16	33.29	33.29	19.93
Movement LOS	D	B	B	D	C	C	D	C	A	C	C	B
d_A, Approach Delay [s/veh]	21.55			25.47			21.25			26.91		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.70											
Intersection LOS	C											
Intersection V/C	0.615											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	50.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	239	27	58	206	159	474	186	1275	265	147	1641	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	239	27	50	206	159	386	186	1275	231	147	1641	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	7	13	52	40	97	47	319	58	37	410	55
Total Analysis Volume [veh/h]	239	27	50	206	159	386	186	1275	231	147	1641	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	3			14			0			10		
Bicycle Volume [bicycles/h]	2			2			5			5		

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Version 7.00-05

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	31	0	38	60	0	11	37	0	14	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	50	50	12	34	41	41	7	48	48	10	51	51
g / C, Green / Cycle	0.42	0.42	0.10	0.28	0.34	0.34	0.06	0.40	0.40	0.08	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.09	0.15	0.05	0.15	0.09	0.14	0.05	0.41	0.43	0.08	0.35	0.36
s, saturation flow rate [veh/h]	1299	814	1474	1378	1863	2765	3445	1863	1748	1774	3547	1736
c, Capacity [veh/h]	560	389	153	202	641	952	203	739	694	149	1496	732
d1, Uniform Delay [s]	21.95	29.39	50.87	55.70	28.22	30.00	55.00	28.27	28.27	53.25	22.74	23.00
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.87	2.04	2.55	35.14	0.20	0.28	14.75	41.36	55.13	31.29	5.48	11.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.31	0.50	1.02	0.25	0.41	0.91	1.03	1.07	0.99	0.83	0.85
d, Delay for Lane Group [s/veh]	22.82	31.42	53.42	90.84	28.42	30.27	69.75	69.63	83.39	84.54	28.22	34.51
Lane Group LOS	C	C	D	F	C	C	E	F	F	F	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.22	2.73	2.28	8.06	3.29	4.24	3.14	26.61	27.63	5.55	13.28	14.64
50th-Percentile Queue Length [ft/ln]	55.43	68.28	57.11	201.53	82.37	106.06	78.38	665.36	690.79	138.68	332.04	366.05
95th-Percentile Queue Length [veh/ln]	3.99	4.92	4.11	12.87	5.93	7.62	5.64	35.88	38.10	9.41	19.26	20.92
95th-Percentile Queue Length [ft/ln]	99.77	122.91	102.80	321.80	148.27	190.51	141.09	896.92	952.49	235.25	481.46	522.93

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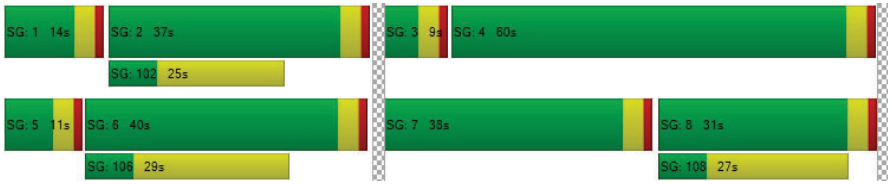
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.12	53.42	53.42	90.84	28.42	30.27	69.75	75.17	83.39	84.54	29.75	34.51
Movement LOS	C	D	D	F	C	C	E	E	F	F	C	C
d_A, Approach Delay [s/veh]	33.53			46.49			75.69			34.29		
Approach LOS	C			D			E			C		
d_I, Intersection Delay [s/veh]	50.86											
Intersection LOS	D											
Intersection V/C	0.766											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	88.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.271

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	15	0	6	1	1	15	18	1194	24	2	903	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	6	1	1	15	18	1194	24	2	903	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	0	0	4	5	299	6	1	226	1
Total Analysis Volume [veh/h]	15	0	6	1	1	15	18	1194	24	2	903	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.00	0.01	0.01	0.02	0.03	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	88.30	102.74	31.55	54.03	86.41	12.40	9.95	0.00	0.00	11.36	0.00	0.00
Movement LOS	F	F	D	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	1.03	1.03	1.03	0.20	0.20	0.20	0.07	0.04	0.00	0.01	0.01	0.00
95th-Percentile Queue Length [ft/ln]	25.78	25.78	25.78	5.00	5.00	5.00	1.85	0.93	0.00	0.26	0.13	0.00
d_A, Approach Delay [s/veh]	72.08			19.20			0.14			0.02		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	0.93											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	58.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	3	0	6	3	0	6	4	851	3	8	1149	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	6	3	0	6	4	851	3	8	1149	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	1	0	2	1	213	1	2	287	2
Total Analysis Volume [veh/h]	3	0	6	3	0	6	4	851	3	8	1149	9
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.01	0.04	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	46.35	71.31	12.07	58.89	71.58	14.22	11.05	0.00	0.00	9.66	0.00	0.00
Movement LOS	E	F	B	F	F	B	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.18	0.18	0.18	0.02	0.01	0.00	0.03	0.02	0.00
95th-Percentile Queue Length [ft/ln]	3.45	3.45	3.45	4.48	4.48	4.48	0.50	0.25	0.00	0.78	0.39	0.00
d_A, Approach Delay [s/veh]	23.49			29.11			0.05			0.07		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	0.29											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	0	11	869	0	0	1168
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	11	869	0	0	1168
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	217	0	0	292
Total Analysis Volume [veh/h]	0	11	869	0	0	1168
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	34.84	11.45	0.00	0.00	9.67	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.48	1.48	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.45		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.06					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	60.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	327	600	142	147	1001	161	165	470	319	178	285	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	327	600	134	147	1001	147	165	470	233	178	285	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	150	34	37	250	37	41	118	58	45	71	14
Total Analysis Volume [veh/h]	327	600	134	147	1001	147	165	470	233	178	285	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	14			13			11			18		
Bicycle Volume [bicycles/h]	2			4			2			0		

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Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	27	0	12	30	0	9	27	0	9	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	41	41	11	30	30	12	24	24	12	25	25
g / C, Green / Cycle	0.20	0.39	0.39	0.10	0.29	0.29	0.11	0.23	0.23	0.12	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.21	0.08	0.31	0.32	0.09	0.20	0.20	0.10	0.09	0.09
s, saturation flow rate [veh/h]	1774	1863	1727	1774	1863	1767	1774	1863	1618	1774	1863	1751
c, Capacity [veh/h]	363	730	677	182	540	512	201	429	372	214	443	416
d1, Uniform Delay [s]	40.11	24.02	24.09	45.43	36.75	36.75	44.86	38.31	38.56	44.45	33.14	33.20
k, delay calibration	0.18	0.23	0.24	0.11	0.50	0.50	0.11	0.22	0.23	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.76	1.22	1.39	8.19	63.84	69.57	8.11	10.40	14.23	8.04	0.56	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

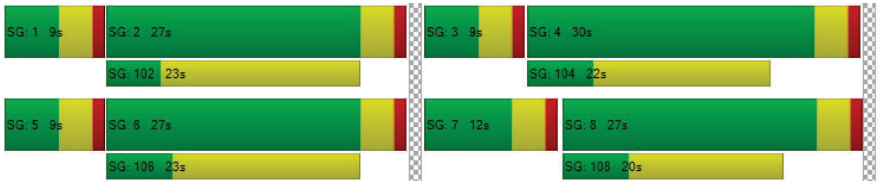
X, volume / capacity	0.90	0.52	0.53	0.81	1.09	1.10	0.82	0.87	0.89	0.83	0.39	0.40
d, Delay for Lane Group [s/veh]	52.87	25.24	25.48	53.61	100.59	106.32	52.97	48.71	52.79	52.49	33.71	33.82
Lane Group LOS	D	C	C	D	F	F	D	D	D	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.20	7.06	6.67	4.05	22.70	22.34	4.52	10.07	9.39	4.95	3.74	3.59
50th-Percentile Queue Length [ft/ln]	229.93	176.57	166.83	101.22	567.42	558.52	113.05	251.66	234.63	123.77	93.58	89.85
95th-Percentile Queue Length [veh/ln]	14.17	11.42	10.91	7.29	32.11	31.90	8.01	15.27	14.41	8.60	6.74	6.47
95th-Percentile Queue Length [ft/ln]	354.27	285.54	272.74	182.19	802.65	797.39	200.23	381.74	360.23	214.99	168.44	161.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.87	25.33	25.48	53.61	102.97	106.32	52.97	49.56	52.79	52.49	33.75	33.82
Movement LOS	D	C	C	D	F	F	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	33.84			97.75			51.07			40.21		
Approach LOS	C			F			D			D		
d_I, Intersection Delay [s/veh]	60.84											
Intersection LOS	E											
Intersection V/C	0.808											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Salem Ave	Clement Ave
Approach	Northbound	Westbound
Lane Configuration	⌜	⌝
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Salem Ave	Clement Ave
Base Volume Input [veh/h]	44	64
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	44	64
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	16
Total Analysis Volume [veh/h]	44	64
Pedestrian Volume [ped/h]	0	0

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Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	84.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.161

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	34	1100	1352	30	8	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	1100	1352	30	8	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	275	338	8	2	9
Total Analysis Volume [veh/h]	34	1100	1352	30	8	36
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.16	0.09
d_M, Delay for Movement [s/veh]	12.86	0.00	0.00	0.00	84.43	21.24
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.00	0.00	0.96	0.96
95th-Percentile Queue Length [ft/ln]	5.55	0.00	0.00	0.00	24.11	24.11
d_A, Approach Delay [s/veh]	0.39		0.00		32.73	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.73					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	152	91	174	211	138	156
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	91	174	211	138	156
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	23	44	53	35	39
Total Analysis Volume [veh/h]	152	91	174	211	138	156
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	658	579	630	540	659
Degree of Utilization, x	0.37	0.30	0.33	0.26	0.24

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.70	1.26	1.47	1.01	0.92
95th-Percentile Queue Length [ft]	42.58	31.45	36.73	25.27	22.95
Approach Delay [s/veh]	11.65	11.40		10.70	
Approach LOS	B	B		B	
Intersection Delay [s/veh]	11.24				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.067

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	30	15	15	273	289	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	15	15	273	289	41
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	4	4	68	72	10
Total Analysis Volume [veh/h]	30	15	15	273	289	41
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.65	10.59	7.96	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.28	0.28	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.12	7.12	0.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.63		0.41		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.144

Intersection Setup

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Emeritus Cir West		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	0	118	107	344	220	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	118	107	344	220	146
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	27	86	55	37
Total Analysis Volume [veh/h]	0	118	107	344	220	146
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.14	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.13	10.13	0.00	0.00	0.00	0.00
Movement LOS	B	B		A	A	
95th-Percentile Queue Length [veh/ln]	0.50	0.50	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.54	12.54	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.13		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.351

Intersection Setup

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Emeritus Cir E		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	123	38	123	219	176	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	123	38	123	219	176	176
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	10	31	55	44	44
Total Analysis Volume [veh/h]	123	38	123	219	176	176
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.35	0.05	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.13	15.50	8.32	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.88	1.88	0.34	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	47.12	47.12	8.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	19.80		2.99		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.93					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	53	54	27	328	307	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	54	27	328	307	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	14	7	82	77	4
Total Analysis Volume [veh/h]	53	54	27	328	307	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.07	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.87	11.79	7.98	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.77	0.77	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	19.36	19.36	1.67	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.81		0.61		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.15					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	155	902	0	0	1303	126	169	0	224	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	155	902	0	0	1303	119	169	0	140	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	226	0	0	326	30	42	0	35	1	0	3
Total Analysis Volume [veh/h]	155	902	0	0	1303	119	169	0	140	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	129			0			14			0		
Bicycle Volume [bicycles/h]	6			3			4			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	40	0	0	31	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	71	71	71	71	71	71	71	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	8	42	42	30	30	21	21	
g / C, Green / Cycle	0.11	0.59	0.59	0.42	0.42	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.24	0.40	0.41	0.10	0.10	
s, saturation flow rate [veh/h]	1774	1863	1863	1863	1630	1774	1360	
c, Capacity [veh/h]	201	1097	1097	832	684	531	407	
d1, Uniform Delay [s]	30.79	7.98	7.98	20.24	20.44	19.41	19.58	
k, delay calibration	0.11	0.14	0.14	0.42	0.44	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.09	0.32	0.32	13.41	27.24	0.34	0.50	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.77	0.41	0.41	0.91	0.98	0.32	0.34	
d, Delay for Lane Group [s/veh]	36.88	8.30	8.30	33.64	47.69	19.75	20.08	
Lane Group LOS	D	A	A	C	D	B	C	
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	
50th-Percentile Queue Length [veh/ln]	2.80	3.10	3.10	13.70	14.69	2.15	1.81	
50th-Percentile Queue Length [ft/ln]	70.01	77.42	77.42	342.59	367.22	53.78	45.29	
95th-Percentile Queue Length [veh/ln]	5.04	5.57	5.57	19.77	20.97	3.87	3.26	
95th-Percentile Queue Length [ft/ln]	126.03	139.36	139.36	494.37	524.35	96.80	81.53	

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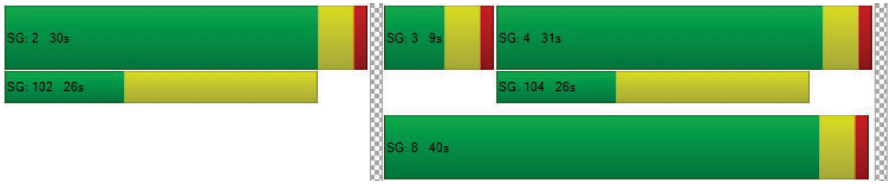
Version 7.00-05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.88	8.30	8.30	33.64	39.57	47.69	19.75	19.75	20.08	0.00	0.00	0.00
Movement LOS	D	A	A	C	D	D	B	B	C			
d_A, Approach Delay [s/veh]	12.49			40.25			19.90			0.00		
Approach LOS	B			D			B			A		
d_I, Intersection Delay [s/veh]	27.47											
Intersection LOS	C											
Intersection V/C	0.601											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.480

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	265	25	36	345	40	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	265	25	36	345	40	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	6	9	86	10	11
Total Analysis Volume [veh/h]	265	25	36	345	40	44
Pedestrian Volume [ped/h]	0		0		0	

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Version 7.00-05

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	774	653	719	686
Degree of Utilization, x	0.37	0.06	0.48	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.75	0.17	2.62	0.42
95th-Percentile Queue Length [ft]	43.73	4.36	65.46	10.41
Approach Delay [s/veh]	10.42	11.88		8.98
Approach LOS	B	B		A
Intersection Delay [s/veh]	11.00			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Base Volume Input [veh/h]	46	803	159	190	1021	38	91	66	117	152	26	258
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	803	159	190	1021	38	91	66	117	152	26	258
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	201	40	48	255	10	23	17	29	38	7	65
Total Analysis Volume [veh/h]	46	803	159	190	1021	38	91	66	117	152	26	258
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	11	19	0	45	53	0	0	26	11	0	26	45
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	5	42	42	14	51	51	22	22	31	22	40
g / C, Green / Cycle	0.06	0.47	0.47	0.16	0.57	0.57	0.24	0.24	0.35	0.24	0.45
(v / s)_i Volume / Saturation Flow Rate	0.03	0.30	0.30	0.12	0.32	0.32	0.07	0.04	0.08	0.18	0.18
s, saturation flow rate [veh/h]	1597	1676	1581	1597	1676	1655	1241	1676	1425	1009	1425
c, Capacity [veh/h]	91	780	736	251	947	936	135	410	493	321	636
d1, Uniform Delay [s]	41.24	18.28	18.28	36.34	12.48	12.49	43.86	26.76	20.99	33.67	16.88
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.28	3.92	4.15	4.67	2.41	2.45	5.81	0.18	0.25	1.50	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

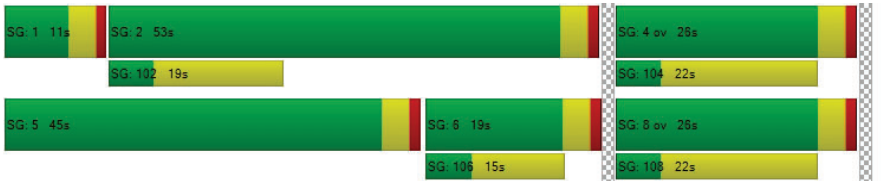
X, volume / capacity	0.51	0.63	0.63	0.76	0.56	0.56	0.68	0.16	0.24	0.55	0.41
d, Delay for Lane Group [s/veh]	45.52	22.20	22.43	41.01	14.89	14.94	49.67	26.94	21.23	35.17	17.33
Lane Group LOS	D	C	C	D	B	B	D	C	C	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.08	8.05	7.65	4.20	6.68	6.61	2.25	1.14	1.78	3.75	3.61
50th-Percentile Queue Length [ft/ln]	26.98	201.34	191.13	105.08	166.95	165.31	56.29	28.41	44.57	93.72	90.25
95th-Percentile Queue Length [veh/ln]	1.94	12.71	12.18	7.57	10.92	10.83	4.05	2.05	3.21	6.75	6.50
95th-Percentile Queue Length [ft/ln]	48.56	317.70	304.49	189.14	272.91	270.74	101.32	51.14	80.23	168.70	162.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.52	22.28	22.43	41.01	14.91	14.94	49.67	26.94	21.23	35.17	35.17	17.33
Movement LOS	D	C	C	D	B	B	D	C	C	D	D	B
d_A, Approach Delay [s/veh]	23.37			18.88			32.05			24.62		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	22.47											
Intersection LOS	C											
Intersection V/C	0.591											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	180	19	80	14	13	193	396	801	466	15	806	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	180	19	72	14	13	105	396	801	432	15	806	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	18	4	3	26	99	200	108	4	202	9
Total Analysis Volume [veh/h]	180	19	72	14	13	105	396	801	432	15	806	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1			9			0			2		
Bicycle Volume [bicycles/h]	0			1			4			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	30	32	0	9	11	0	46	70	0	9	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	10	12	2	7	7	16	88	88	2	73	73
g / C, Green / Cycle	0.15	0.08	0.10	0.02	0.06	0.06	0.14	0.73	0.73	0.02	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.06	0.07	0.06	0.01	0.01	0.04	0.11	0.34	0.37	0.01	0.16	0.16
s, saturation flow rate [veh/h]	1596	1250	1480	1388	1863	2758	3445	1863	1623	1774	3547	1819
c, Capacity [veh/h]	328	222	153	60	103	153	473	1359	1184	30	2160	1108
d1, Uniform Delay [s]	45.29	43.36	51.44	60.02	53.92	55.66	47.75	0.47	0.48	58.17	4.82	4.83
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	1.19	3.68	1.95	0.54	5.37	4.02	1.16	1.53	12.37	0.29	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.41	0.60	0.23	0.13	0.69	0.84	0.47	0.50	0.50	0.26	0.26
d, Delay for Lane Group [s/veh]	45.74	44.55	55.12	61.97	54.46	61.04	51.77	1.64	2.01	70.54	5.11	5.39
Lane Group LOS	D	D	E	E	D	E	D	A	A	E	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.42	2.46	2.75	0.46	0.39	1.66	5.66	0.82	0.86	0.55	1.51	1.64
50th-Percentile Queue Length [ft/ln]	60.56	61.38	68.82	11.51	9.68	41.59	141.61	20.46	21.45	13.73	37.73	41.07
95th-Percentile Queue Length [veh/ln]	4.36	4.42	4.95	0.83	0.70	2.99	9.57	1.47	1.54	0.99	2.72	2.96
95th-Percentile Queue Length [ft/ln]	109.01	110.48	123.87	20.72	17.42	74.86	239.19	36.83	38.62	24.71	67.91	73.93

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.15	55.12	55.12	61.97	54.46	61.04	51.77	1.71	2.01	70.54	5.20	5.39
Movement LOS	D	E	E	E	D	E	D	A	A	E	A	A
d_A, Approach Delay [s/veh]	48.49			60.49			13.96			6.35		
Approach LOS	D			E			B			A		
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.461											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	50.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	13	0	7	5	2	13	9	868	21	4	842	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	7	5	2	13	9	868	21	4	842	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	1	1	3	2	217	5	1	211	2
Total Analysis Volume [veh/h]	13	0	7	5	2	13	9	868	21	4	842	7
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.01	0.04	0.02	0.02	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	42.35	52.30	15.11	38.16	50.67	12.85	9.64	0.00	0.00	9.78	0.00	0.00
Movement LOS	E	F	C	E	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.45	0.30	0.30	0.30	0.03	0.02	0.00	0.02	0.01	0.00
95th-Percentile Queue Length [ft/ln]	11.29	11.29	11.29	7.40	7.40	7.40	0.87	0.43	0.00	0.40	0.20	0.00
d_A, Approach Delay [s/veh]	32.81			22.96			0.10			0.05		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	0.69											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	46.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	7	0	8	1	1	3	6	850	15	11	808	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	0	8	1	1	3	6	850	15	11	808	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	0	0	1	2	213	4	3	202	2
Total Analysis Volume [veh/h]	7	0	8	1	1	3	6	850	15	11	808	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	37.65	47.52	12.74	35.37	46.74	11.53	9.49	0.00	0.00	9.72	0.00	0.00
Movement LOS	E	E	B	E	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.24	0.08	0.08	0.08	0.02	0.01	0.00	0.04	0.02	0.00
95th-Percentile Queue Length [ft/ln]	5.99	5.99	5.99	1.90	1.90	1.90	0.56	0.28	0.00	1.08	0.54	0.00
d_A, Approach Delay [s/veh]	24.37			23.34			0.07			0.13		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.38											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	28.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	2	12	837	11	15	822
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	12	837	11	15	822
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	3	209	3	4	206
Total Analysis Volume [veh/h]	2	12	837	11	15	822
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	28.86	11.53	0.00	0.00	9.67	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.00	0.00	0.06	0.03
95th-Percentile Queue Length [ft/ln]	2.62	2.62	0.00	0.00	1.46	0.73
d_A, Approach Delay [s/veh]	14.00		0.00		0.17	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	308	441	39	53	451	112	197	340	266	70	355	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	308	441	31	53	451	98	197	340	180	70	355	64
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	110	8	13	113	25	49	85	45	18	89	16
Total Analysis Volume [veh/h]	308	441	31	53	451	98	197	340	180	70	355	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	8			10			4			21		
Bicycle Volume [bicycles/h]	7			2			0			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	38	0	9	26	0	16	32	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	22	22	3	12	12	9	16	16	3	11	11
g / C, Green / Cycle	0.21	0.37	0.37	0.05	0.20	0.20	0.14	0.26	0.26	0.06	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.17	0.13	0.13	0.03	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.12
s, saturation flow rate [veh/h]	1774	1863	1811	1774	1863	1735	1774	1863	1638	1774	1863	1745
c, Capacity [veh/h]	373	682	663	87	382	356	253	489	430	102	331	310
d1, Uniform Delay [s]	22.82	13.93	13.94	28.18	22.52	22.59	25.00	19.28	19.33	27.96	23.10	23.18
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.66	0.31	0.32	6.71	2.81	3.21	5.13	1.01	1.19	7.91	2.12	2.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

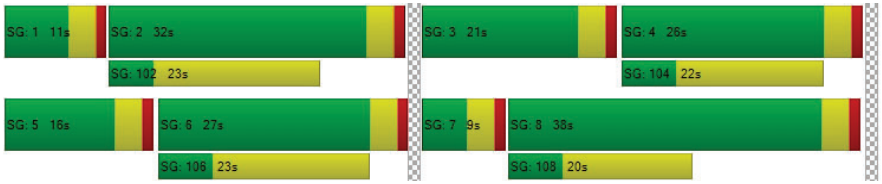
X, volume / capacity	0.83	0.35	0.35	0.61	0.74	0.75	0.78	0.56	0.57	0.69	0.65	0.66
d, Delay for Lane Group [s/veh]	27.47	14.24	14.26	34.89	25.33	25.80	30.13	20.29	20.52	35.87	25.23	25.61
Lane Group LOS	C	B	B	C	C	C	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.26	2.11	2.07	0.86	3.69	3.54	2.86	3.12	2.81	1.18	2.88	2.80
50th-Percentile Queue Length [ft/ln]	106.40	52.86	51.79	21.57	92.25	88.53	71.39	77.96	70.23	29.53	72.02	69.91
95th-Percentile Queue Length [veh/ln]	7.64	3.81	3.73	1.55	6.64	6.37	5.14	5.61	5.06	2.13	5.19	5.03
95th-Percentile Queue Length [ft/ln]	190.98	95.15	93.22	38.82	166.05	159.35	128.49	140.32	126.42	53.15	129.64	125.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.47	14.25	14.26	34.89	25.51	25.80	30.13	20.34	20.52	35.87	25.38	25.61
Movement LOS	C	B	B	C	C	C	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	19.47			26.38			23.08			26.91		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.48											
Intersection LOS	C											
Intersection V/C	0.556											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.126

Intersection Setup

Name	Salem Ave				Clement Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name	Salem Ave				Clement Ave	
Base Volume Input [veh/h]	0	18	113	0	24	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	18	113	0	24	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	28	0	6	3
Total Analysis Volume [veh/h]	0	18	113	0	24	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	986	899	856
Degree of Utilization, x	0.02	0.13	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.06	0.43	0.13
95th-Percentile Queue Length [ft]	1.39	10.73	3.29
Approach Delay [s/veh]	6.72	7.58	7.39
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.45		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.224

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	14	797	766	22	39	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	797	766	22	39	74
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	199	192	6	10	19
Total Analysis Volume [veh/h]	14	797	766	22	39	74
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.22	0.12
d_M, Delay for Movement [s/veh]	9.43	0.00	0.00	0.00	31.46	16.70
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.00	1.51	1.51
95th-Percentile Queue Length [ft/ln]	1.29	0.00	0.00	0.00	37.67	37.67
d_A, Approach Delay [s/veh]	0.16		0.00		21.80	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.565

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	167	58	128	413	31	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	58	128	413	31	34
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	15	32	103	8	9
Total Analysis Volume [veh/h]	167	58	128	413	31	34
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	730	663	731	532	646
Degree of Utilization, x	0.31	0.19	0.57	0.06	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.31	0.71	3.58	0.19	0.17
95th-Percentile Queue Length [ft]	32.74	17.76	89.50	4.63	4.16
Approach Delay [s/veh]	10.11	12.80		9.21	
Approach LOS	B	B		A	
Intersection Delay [s/veh]	11.79				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	10	34	13	115	45	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	34	13	115	45	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	9	3	29	11	1
Total Analysis Volume [veh/h]	10	34	13	115	45	5
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.72	8.70	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.60	3.60	0.63	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.93		0.74		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.20					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Emeritus Cir West	Elliott Ave
Approach	Southbound	Eastbound
Lane Configuration	⌜	¬
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Emeritus Cir West	Elliott Ave
Base Volume Input [veh/h]	50	125
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	50	125
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	31
Total Analysis Volume [veh/h]	50	125
Pedestrian Volume [ped/h]	0	0

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Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Emeritus Cir E	Elliott Ave
Approach	Southbound	Westbound
Lane Configuration		
Turning Movement	Left	Right
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Crosswalk	Yes	No

Volumes

Name	Emeritus Cir E	Elliott Ave
Base Volume Input [veh/h]	15	108
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	15	108
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	27
Total Analysis Volume [veh/h]	15	108
Pedestrian Volume [ped/h]	0	0

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Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	9	13	11	12	120	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	13	11	12	120	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	3	3	3	30	3
Total Analysis Volume [veh/h]	9	13	11	12	120	13
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.47	9.00	7.50	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.92	1.92	0.57	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.19		3.59		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.60					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	8.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.236

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	80	714	43	6	611	40	7	1	13	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	80	714	43	6	611	33	7	1	0	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	179	11	2	153	8	2	0	0	1	0	3
Total Analysis Volume [veh/h]	80	714	43	6	611	33	7	1	0	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	75			0			1			0		
Bicycle Volume [bicycles/h]	11			2			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	29	90	0	0	61	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	36	36	36	36	36	36	36	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	3	19	19	13	13	9	9	
g / C, Green / Cycle	0.08	0.54	0.54	0.35	0.35	0.24	0.24	
(v / s)_i Volume / Saturation Flow Rate	0.05	0.21	0.21	0.19	0.19	0.00	0.00	
s, saturation flow rate [veh/h]	1774	1863	1819	1839	1659	1785	1583	
c, Capacity [veh/h]	137	1003	979	745	581	428	380	
d1, Uniform Delay [s]	16.08	4.84	4.84	9.33	9.36	10.47	0.00	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.89	0.24	0.25	0.44	0.76	0.02	0.00	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.58	0.38	0.38	0.46	0.53	0.02	0.00	
d, Delay for Lane Group [s/veh]	19.97	5.08	5.09	9.77	10.12	10.48	0.00	
Lane Group LOS	B	A	A	A	B	B	A	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	0.66	0.79	0.77	1.50	1.41	0.04	0.00	
50th-Percentile Queue Length [ft/ln]	16.47	19.69	19.37	37.56	35.15	1.04	0.00	
95th-Percentile Queue Length [veh/ln]	1.19	1.42	1.39	2.70	2.53	0.08	0.00	
95th-Percentile Queue Length [ft/ln]	29.64	35.44	34.86	67.61	63.26	1.88	0.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.97	5.08	5.09	9.77	9.93	10.12	10.48	10.48	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	B	B	B	A			
d_A, Approach Delay [s/veh]	6.50			9.93			10.48			0.00		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	8.02											
Intersection LOS	A											
Intersection V/C	0.236											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	263	122	88	314	31	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	122	88	314	31	55
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	31	22	79	8	14
Total Analysis Volume [veh/h]	263	122	88	314	31	55
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	794	644	708	673
Degree of Utilization, x	0.49	0.14	0.44	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.69	0.47	2.28	0.44
95th-Percentile Queue Length [ft]	67.13	11.78	57.11	10.92
Approach Delay [s/veh]	11.73	11.20		9.13
Approach LOS	B	B		A
Intersection Delay [s/veh]	11.23			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.472

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Base Volume Input [veh/h]	256	704	98	75	445	55	13	17	24	90	135	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	704	98	75	445	55	13	17	24	90	135	169
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	176	25	19	111	14	3	4	6	23	34	42
Total Analysis Volume [veh/h]	256	704	98	75	445	55	13	17	24	90	135	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	41	52	0	12	23	0	0	26	41	0	26	12
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	17	53	53	8	45	45	17	17	37	17	29
g / C, Green / Cycle	0.18	0.59	0.59	0.09	0.50	0.50	0.18	0.18	0.41	0.18	0.32
(v / s)_i Volume / Saturation Flow Rate	0.16	0.24	0.24	0.05	0.15	0.15	0.01	0.01	0.02	0.16	0.12
s, saturation flow rate [veh/h]	1597	1676	1606	1597	1676	1613	1124	1676	1425	1417	1425
c, Capacity [veh/h]	295	997	955	143	837	805	86	306	587	315	451
d1, Uniform Delay [s]	35.63	9.78	9.78	39.17	13.29	13.31	44.88	30.38	15.84	35.99	23.87
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.69	1.25	1.31	2.98	0.93	0.98	0.79	0.07	0.03	3.03	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

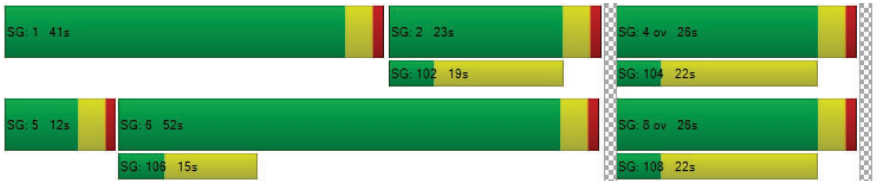
X, volume / capacity	0.87	0.41	0.41	0.53	0.30	0.31	0.15	0.06	0.04	0.71	0.37
d, Delay for Lane Group [s/veh]	43.32	11.03	11.09	42.15	14.23	14.29	45.68	30.46	15.87	39.02	24.38
Lane Group LOS	D	B	B	D	B	B	D	C	B	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.90	4.16	4.00	1.67	3.04	2.95	0.31	0.31	0.30	5.03	2.83
50th-Percentile Queue Length [ft/ln]	147.43	103.99	100.01	41.64	75.95	73.84	7.74	7.78	7.46	125.70	70.75
95th-Percentile Queue Length [veh/ln]	9.88	7.49	7.20	3.00	5.47	5.32	0.56	0.56	0.54	8.71	5.09
95th-Percentile Queue Length [ft/ln]	246.99	187.18	180.01	74.96	136.72	132.91	13.93	14.01	13.43	217.63	127.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.32	11.06	11.09	42.15	14.25	14.29	45.68	30.46	15.87	39.02	39.02	24.38
Movement LOS	D	B	B	D	B	B	D	C	B	D	D	C
d_A, Approach Delay [s/veh]	18.87			17.90			27.64			32.74		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.45											
Intersection LOS	C											
Intersection V/C	0.472											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.639

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	239	21	130	49	43	474	186	1077	255	16	917	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	239	21	122	49	43	386	186	1077	221	16	917	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	5	31	12	11	97	47	269	55	4	229	10
Total Analysis Volume [veh/h]	239	21	122	49	43	386	186	1077	221	16	917	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	3			14			0			10		
Bicycle Volume [bicycles/h]	2			2			5			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	46	0	12	49	0	29	53	0	9	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	17	8	20	20	9	77	77	2	70	70
g / C, Green / Cycle	0.24	0.24	0.14	0.07	0.17	0.17	0.07	0.64	0.64	0.02	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.08	0.11	0.10	0.04	0.02	0.14	0.05	0.36	0.37	0.01	0.18	0.18
s, saturation flow rate [veh/h]	1458	1060	1427	1385	1863	2761	3445	1863	1738	1774	3547	1818
c, Capacity [veh/h]	420	349	201	60	311	460	252	1193	1112	32	2076	1064
d1, Uniform Delay [s]	37.03	40.93	49.23	60.03	42.67	48.46	53.06	4.03	4.08	58.03	6.14	6.15
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.69	2.67	4.59	22.22	0.20	4.15	4.21	1.87	2.13	11.32	0.38	0.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

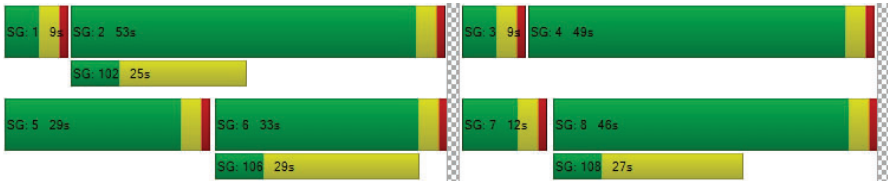
X, volume / capacity	0.28	0.34	0.71	0.81	0.14	0.84	0.74	0.56	0.57	0.50	0.30	0.31
d, Delay for Lane Group [s/veh]	38.73	43.60	53.82	82.25	42.87	52.61	57.27	5.91	6.20	69.36	6.52	6.89
Lane Group LOS	D	D	D	F	D	D	E	A	A	E	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.04	3.28	4.31	1.90	1.10	5.80	2.80	3.40	3.33	0.58	2.08	2.25
50th-Percentile Queue Length [ft/ln]	76.02	82.05	107.86	47.41	27.60	145.12	70.12	84.89	83.15	14.43	51.96	56.26
95th-Percentile Queue Length [veh/ln]	5.47	5.91	7.72	3.41	1.99	9.76	5.05	6.11	5.99	1.04	3.74	4.05
95th-Percentile Queue Length [ft/ln]	136.83	147.68	193.03	85.33	49.68	243.90	126.22	152.80	149.68	25.97	93.53	101.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.01	53.82	53.82	82.25	42.87	52.61	57.27	6.02	6.20	69.36	6.64	6.89
Movement LOS	D	D	D	F	D	D	E	A	A	E	A	A
d_A, Approach Delay [s/veh]	45.90			54.77			12.47			7.68		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	21.01											
Intersection LOS	C											
Intersection V/C	0.639											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	94.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	13	0	7	1	1	18	18	1215	23	2	947	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	7	1	1	18	18	1215	23	2	947	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	2	0	0	5	5	304	6	1	237	2
Total Analysis Volume [veh/h]	13	0	7	1	1	18	18	1215	23	2	947	6
Pedestrian Volume [ped/h]	0			0			0			0		

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.26	0.00	0.02	0.01	0.02	0.03	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	92.92	109.86	30.62	59.19	94.72	12.77	10.15	0.00	0.00	11.47	0.00	0.00
Movement LOS	F	F	D	F	F	B	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.98	0.98	0.98	0.23	0.23	0.23	0.08	0.04	0.00	0.01	0.01	0.00
95th-Percentile Queue Length [ft/ln]	24.39	24.39	24.39	5.87	5.87	5.87	1.93	0.97	0.00	0.27	0.13	0.00
d_A, Approach Delay [s/veh]	71.12			19.18			0.15			0.02		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	0.89											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	65.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	4	0	7	1	0	3	7	1169	7	15	878	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	0	7	1	0	3	7	1169	7	15	878	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	0	0	1	2	292	2	4	220	1
Total Analysis Volume [veh/h]	4	0	7	1	0	3	7	1169	7	15	878	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop		Stop		Free		Free	
Flared Lane	No		No					
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance	No		No					
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.02	0.01	0.00	0.01	0.01	0.01	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	65.55	80.81	15.24	50.94	79.04	11.67	9.76	0.00	0.00	11.26	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.26	0.26	0.26	0.05	0.05	0.05	0.03	0.01	0.00	0.08	0.04	0.00
95th-Percentile Queue Length [ft/ln]	6.44	6.44	6.44	1.37	1.37	1.37	0.69	0.35	0.00	1.96	0.98	0.00
d_A, Approach Delay [s/veh]	33.54			21.49			0.06			0.19		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	0.33											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	0	13	1174	1	20	940
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	13	1174	1	20	940
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	294	0	5	235
Total Analysis Volume [veh/h]	0	13	1174	1	20	940
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	49.62	13.19	0.00	0.00	11.31	0.00
Movement LOS	E	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.11	0.05
95th-Percentile Queue Length [ft/ln]	2.21	2.21	0.00	0.00	2.63	1.31
d_A, Approach Delay [s/veh]	13.19		0.00		0.24	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.19					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	46.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	379	557	92	147	834	161	230	512	323	99	285	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	379	557	84	147	834	147	230	512	237	99	285	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	139	21	37	209	37	58	128	59	25	71	14
Total Analysis Volume [veh/h]	379	557	84	147	834	147	230	512	237	99	285	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	14			13			11			18		
Bicycle Volume [bicycles/h]	2			4			2			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	52	0	20	43	0	21	35	0	13	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	101	101	101	101	101	101	101	101	101	101	101	101
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	43	43	10	29	29	15	25	25	7	17	17
g / C, Green / Cycle	0.23	0.42	0.42	0.10	0.29	0.29	0.15	0.24	0.24	0.07	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.21	0.18	0.18	0.08	0.27	0.27	0.13	0.21	0.22	0.06	0.09	0.10
s, saturation flow rate [veh/h]	1774	1863	1765	1774	1863	1751	1774	1863	1629	1774	1863	1746
c, Capacity [veh/h]	416	789	747	182	543	510	268	453	397	128	306	287
d1, Uniform Delay [s]	37.60	20.37	20.40	44.33	34.74	34.87	41.78	36.68	36.90	46.03	38.85	38.96
k, delay calibration	0.24	0.15	0.15	0.11	0.38	0.39	0.11	0.24	0.25	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.50	0.49	0.54	8.22	20.13	22.78	7.78	10.96	14.54	9.50	1.63	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

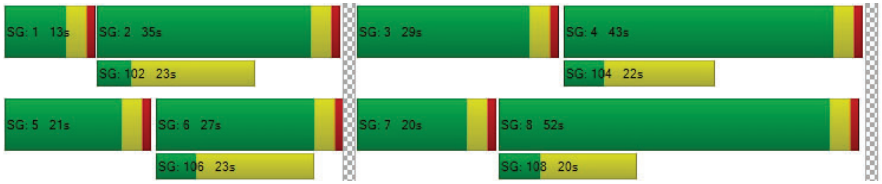
X, volume / capacity	0.91	0.42	0.42	0.81	0.93	0.94	0.86	0.87	0.89	0.77	0.56	0.58
d, Delay for Lane Group [s/veh]	53.09	20.86	20.94	52.54	54.86	57.66	49.56	47.64	51.44	55.52	40.49	40.80
Lane Group LOS	D	C	C	D	D	E	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.62	5.29	5.07	3.94	14.56	14.22	6.04	10.45	9.76	2.78	4.09	3.95
50th-Percentile Queue Length [ft/ln]	265.44	132.29	126.75	98.56	364.04	355.47	150.89	261.23	244.00	69.55	102.20	98.86
95th-Percentile Queue Length [veh/ln]	15.96	9.06	8.76	7.10	20.82	20.40	10.06	15.75	14.88	5.01	7.36	7.12
95th-Percentile Queue Length [ft/ln]	399.04	226.60	219.07	177.42	520.49	510.07	251.62	393.77	372.08	125.18	183.96	177.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.09	20.89	20.94	52.54	55.97	57.66	49.56	48.51	51.44	55.52	40.61	40.80
Movement LOS	D	C	C	D	E	E	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	32.86			55.74			49.47			44.01		
Approach LOS	C			E			D			D		
d_I, Intersection Delay [s/veh]	46.03											
Intersection LOS	D											
Intersection V/C	0.759											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	All-way stop	Delay (sec / veh):	7.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

Intersection Setup

Name	Salem Ave				Clement Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name	Salem Ave				Clement Ave	
Base Volume Input [veh/h]	0	38	18	0	56	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	18	0	56	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	5	0	14	4
Total Analysis Volume [veh/h]	0	38	18	0	56	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	1021	884	860
Degree of Utilization, x	0.04	0.02	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.12	0.06	0.26
95th-Percentile Queue Length [ft]	2.90	1.56	6.62
Approach Delay [s/veh]	6.66	7.16	7.55
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.23		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	65.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	30	1039	1244	40	6	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	1039	1244	40	6	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	260	311	10	2	3
Total Analysis Volume [veh/h]	30	1039	1244	40	6	12
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					No	
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.01	0.00	0.10	0.03
d_M, Delay for Movement [s/veh]	12.11	0.00	0.00	0.00	65.86	17.14
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.18	0.00	0.00	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	4.43	0.00	0.00	0.00	10.38	10.38
d_A, Approach Delay [s/veh]	0.34		0.00		33.38	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	257	21	28	272	58	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	257	21	28	272	58	65
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	5	7	68	15	16
Total Analysis Volume [veh/h]	257	21	28	272	58	65
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	717	636	698	558	686
Degree of Utilization, x	0.39	0.04	0.39	0.10	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.84	0.14	1.85	0.35	0.31
95th-Percentile Queue Length [ft]	45.89	3.45	46.27	8.65	7.81
Approach Delay [s/veh]	11.15	10.88		9.15	
Approach LOS	B	B		A	
Intersection Delay [s/veh]	10.68				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Albany Dr		Elliott Ave			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Albany Dr		Elliott Ave			
Base Volume Input [veh/h]	10	40	12	90	111	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	40	12	90	111	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	10	3	23	28	4
Total Analysis Volume [veh/h]	10	40	12	90	111	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.05	9.10	7.49	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.46	4.46	0.62	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.29		0.88		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritus Cir W

Control Type:	Signalized	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name		
Approach	Southbound	Eastbound
Lane Configuration	⌜	⌝
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Curb Present	No	No
Crosswalk	Yes	Yes

Volumes

Name		
Base Volume Input [veh/h]	127	100
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Right-Turn on Red Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	127	100
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	25
Total Analysis Volume [veh/h]	127	100
Presence of On-Street Parking	No	No
On-Street Parking Maneuver Rate [/h]	0	0
Local Bus Stopping Rate [/h]	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0
v_co, Outbound Pedestrian Volume crossing minor stree	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0
Bicycle Volume [bicycles/h]	0	0

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Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive
Signal Group	0	0
Auxiliary Signal Groups		
Lead / Lag	-	-
Minimum Green [s]	0	0
Maximum Green [s]	0	0
Amber [s]	0.0	0.0
All red [s]	0.0	0.0
Split [s]	0	0
Vehicle Extension [s]	0.0	0.0
Walk [s]	0	0
Pedestrian Clearance [s]	0	0
Rest In Walk		
I1, Start-Up Lost Time [s]	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0
Minimum Recall		
Maximum Recall		
Pedestrian Recall		
Detector Location [ft]	0.0	0.0
Detector Length [ft]	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group Results

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS		
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	
Intersection V/C	0.000	

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	45.00	45.00
l_p,int, Pedestrian LOS Score for Intersection	1.725	1.725
Crosswalk LOS	A	A
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0
d_b, Bicycle Delay [s]	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.132
Bicycle LOS	D	D

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Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Emeritus Cir E	Elliott Ave
Approach	Southbound	Westbound
Lane Configuration		
Turning Movement	Left	Right
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Crosswalk	Yes	No

Volumes

Name	Emeritus Cir E	Elliott Ave
Base Volume Input [veh/h]	82	129
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	82	129
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	32
Total Analysis Volume [veh/h]	82	129
Pedestrian Volume [ped/h]	0	0

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

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Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	43	10	22	82	137	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	10	22	82	137	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	3	6	21	34	4
Total Analysis Volume [veh/h]	43	10	22	82	137	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.46	9.36	7.56	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.78	5.78	1.17	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.25		1.60		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.395

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	83	908	2	0	1085	54	44	2	79	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	83	908	2	0	1085	47	44	2	0	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	227	1	0	271	12	11	1	0	1	0	3
Total Analysis Volume [veh/h]	83	908	2	0	1085	47	44	2	0	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	129			0			14			0		
Bicycle Volume [bicycles/h]	6			3			4			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	30	60	0	0	30	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	54	54	54	54	54	54	54	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	4	28	28	21	21	17	17	
g / C, Green / Cycle	0.07	0.53	0.53	0.39	0.39	0.32	0.32	
(v / s)_i Volume / Saturation Flow Rate	0.05	0.24	0.24	0.32	0.32	0.03	0.00	
s, saturation flow rate [veh/h]	1774	1863	1861	1863	1662	1778	1583	
c, Capacity [veh/h]	118	986	985	791	646	572	510	
d1, Uniform Delay [s]	24.60	7.88	7.88	14.80	14.83	12.70	0.00	
k, delay calibration	0.11	0.11	0.11	0.14	0.14	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	7.41	0.34	0.34	1.91	3.61	0.06	0.00	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

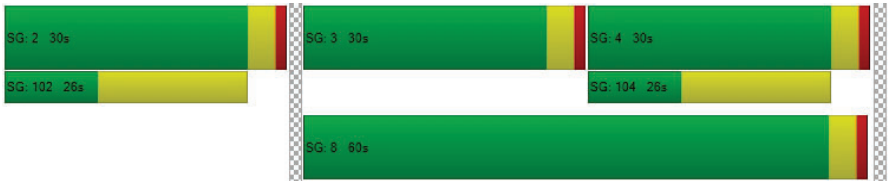
X, volume / capacity	0.70	0.46	0.46	0.75	0.83	0.08	0.00	
d, Delay for Lane Group [s/veh]	32.01	8.22	8.22	16.70	18.44	12.76	0.00	
Lane Group LOS	C	A	A	B	B	B	A	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.18	2.45	2.44	5.70	5.39	0.36	0.00	
50th-Percentile Queue Length [ft/ln]	29.60	61.14	61.10	142.40	134.72	9.04	0.00	
95th-Percentile Queue Length [veh/ln]	2.13	4.40	4.40	9.61	9.20	0.65	0.00	
95th-Percentile Queue Length [ft/ln]	53.28	110.05	109.97	240.26	229.90	16.27	0.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.01	8.22	8.22	16.70	17.48	18.44	12.76	12.76	0.00	0.00	0.00	0.00
Movement LOS	C	A	A	B	B	B	B	B	A			
d_A, Approach Delay [s/veh]	10.21			17.52			12.76			0.00		
Approach LOS	B			B			B			A		
d_I, Intersection Delay [s/veh]	14.08											
Intersection LOS	B											
Intersection V/C	0.395											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	191	18	26	421	29	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	18	26	421	29	64
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	5	7	105	7	16
Total Analysis Volume [veh/h]	191	18	26	421	29	64
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	758	659	725	704
Degree of Utilization, x	0.28	0.04	0.58	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.12	0.12	3.78	0.45
95th-Percentile Queue Length [ft]	28.11	3.08	94.43	11.34
Approach Delay [s/veh]	9.55	13.96		8.89
Approach LOS	A	B		A
Intersection Delay [s/veh]	12.10			
Intersection LOS	B			

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Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Base Volume Input [veh/h]	49	780	139	166	955	33	79	58	102	133	46	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	780	139	166	955	33	79	58	102	133	46	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	195	35	42	239	8	20	15	26	33	12	51
Total Analysis Volume [veh/h]	49	780	139	166	955	33	79	58	102	133	46	202
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	10	19	0	45	54	0	0	26	10	0	26	45
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	5	44	44	12	51	51	22	22	31	22	38
g / C, Green / Cycle	0.05	0.49	0.49	0.13	0.57	0.57	0.24	0.24	0.34	0.24	0.42
(v / s)_i Volume / Saturation Flow Rate	0.03	0.28	0.28	0.10	0.30	0.30	0.06	0.03	0.07	0.16	0.14
s, saturation flow rate [veh/h]	1597	1676	1589	1597	1676	1657	1219	1676	1425	1094	1425
c, Capacity [veh/h]	85	821	779	211	954	942	151	410	488	337	600
d1, Uniform Delay [s]	41.64	16.31	16.31	37.85	11.90	11.90	42.71	26.63	20.98	32.70	17.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.95	2.91	3.07	6.33	2.03	2.06	2.81	0.16	0.21	1.30	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

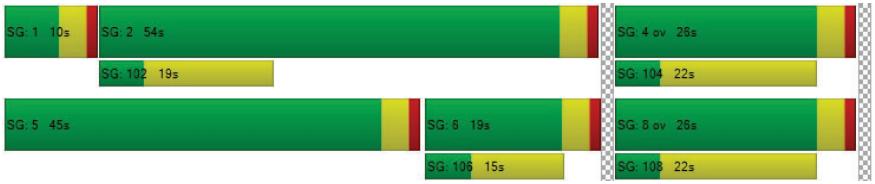
X, volume / capacity	0.57	0.57	0.57	0.79	0.52	0.52	0.52	0.14	0.21	0.53	0.34
d, Delay for Lane Group [s/veh]	47.59	19.22	19.38	44.17	13.93	13.96	45.53	26.79	21.19	33.99	17.91
Lane Group LOS	D	B	B	D	B	B	D	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.18	6.99	6.66	3.82	5.94	5.88	1.88	0.99	1.55	3.69	2.84
50th-Percentile Queue Length [ft/ln]	29.55	174.75	166.51	95.45	148.52	147.02	47.09	24.84	38.66	92.35	70.99
95th-Percentile Queue Length [veh/ln]	2.13	11.33	10.89	6.87	9.94	9.86	3.39	1.79	2.78	6.65	5.11
95th-Percentile Queue Length [ft/ln]	53.19	283.14	272.32	171.82	248.45	246.45	84.77	44.71	69.58	166.23	127.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.59	19.28	19.38	44.17	13.95	13.96	45.53	26.79	21.19	33.99	33.99	17.91
Movement LOS	D	B	B	D	B	B	D	C	C	C	C	B
d_A, Approach Delay [s/veh]	20.73			18.30			30.59			25.47		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.22											
Intersection LOS	C											
Intersection V/C	0.549											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	28.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	155	50	88	52	52	226	450	1010	651	35	923	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	155	50	80	52	52	138	450	1010	617	35	923	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	13	20	13	13	35	113	253	154	9	231	20
Total Analysis Volume [veh/h]	155	50	80	52	52	138	450	1010	617	35	923	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1			9			0			2		
Bicycle Volume [bicycles/h]	0			1			4			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	31	0	37	59	0	18	39	0	13	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	12	11	18	18	14	77	77	3	67	67
g / C, Green / Cycle	0.23	0.23	0.10	0.09	0.15	0.15	0.12	0.65	0.65	0.03	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.08	0.04	0.03	0.05	0.13	0.44	0.50	0.02	0.19	0.19
s, saturation flow rate [veh/h]	1457	1089	1502	1349	1863	2765	3445	1863	1613	1774	3547	1781
c, Capacity [veh/h]	390	321	154	62	281	417	404	1201	1040	53	1976	992
d1, Uniform Delay [s]	37.78	41.53	52.33	60.03	44.53	45.56	50.66	4.23	4.82	57.08	7.83	7.84
k, delay calibration	0.48	0.50	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.20	2.10	6.84	25.21	0.31	0.46	59.90	3.08	5.87	13.58	0.46	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

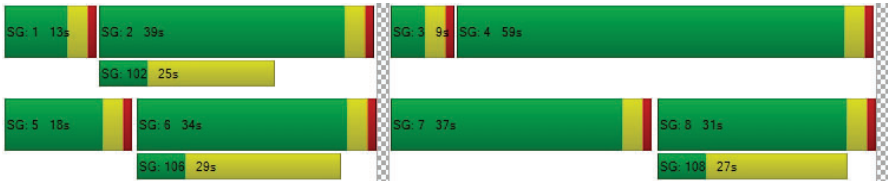
X, volume / capacity	0.21	0.27	0.74	0.84	0.19	0.33	1.12	0.68	0.78	0.67	0.34	0.34
d, Delay for Lane Group [s/veh]	38.98	43.64	59.17	85.24	44.84	46.02	110.56	7.32	10.69	70.66	8.29	8.77
Lane Group LOS	D	D	E	F	D	D	F	A	B	E	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.11	2.42	3.60	2.01	1.37	1.86	9.10	4.39	5.17	1.23	2.64	2.80
50th-Percentile Queue Length [ft/ln]	52.77	60.52	90.07	50.26	34.33	46.45	227.38	109.79	129.26	30.80	66.02	70.10
95th-Percentile Queue Length [veh/ln]	3.80	4.36	6.48	3.62	2.47	3.34	14.66	7.83	8.90	2.22	4.75	5.05
95th-Percentile Queue Length [ft/ln]	94.98	108.93	162.12	90.47	61.80	83.61	366.59	195.70	222.49	55.45	118.84	126.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.85	54.24	59.17	85.24	44.84	46.02	110.56	7.97	10.69	70.66	8.42	8.77
Movement LOS	D	D	E	F	D	D	F	A	B	E	A	A
d_A, Approach Delay [s/veh]	48.50			54.20			31.01			10.55		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	28.10											
Intersection LOS	C											
Intersection V/C	0.655											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	95.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	15	0	4	4	1	13	9	1148	15	3	1043	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	4	4	1	13	9	1148	15	3	1043	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	1	1	0	3	2	287	4	1	261	2
Total Analysis Volume [veh/h]	15	0	4	4	1	13	9	1148	15	3	1043	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.00	0.01	0.06	0.02	0.03	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	88.87	111.60	32.07	64.37	95.80	15.12	10.54	0.00	0.00	11.07	0.00	0.00
Movement LOS	F	F	D	F	F	C	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	1.00	1.00	1.00	0.38	0.38	0.38	0.04	0.02	0.00	0.02	0.01	0.00
95th-Percentile Queue Length [ft/ln]	24.89	24.89	24.89	9.39	9.39	9.39	1.04	0.52	0.00	0.38	0.19	0.00
d_A, Approach Delay [s/veh]	76.91			30.55			0.08			0.03		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	0.95											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	100.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	8	0	7	2	1	2	13	1104	19	23	1031	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	7	2	1	2	13	1104	19	23	1031	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	1	0	1	3	276	5	6	258	3
Total Analysis Volume [veh/h]	8	0	7	2	1	2	13	1104	19	23	1031	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	No			No								
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance	No			No								
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.00	0.01	0.03	0.03	0.00	0.02	0.01	0.00	0.04	0.01	0.00
d_M, Delay for Movement [s/veh]	78.35	104.75	19.98	69.17	100.93	15.31	10.55	0.00	0.00	11.05	0.00	0.00
Movement LOS	F	F	C	F	F	C	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.55	0.55	0.55	0.20	0.20	0.20	0.06	0.03	0.00	0.12	0.06	0.00
95th-Percentile Queue Length [ft/ln]	13.68	13.68	13.68	5.00	5.00	5.00	1.50	0.75	0.00	2.90	1.45	0.00
d_A, Approach Delay [s/veh]	51.11			53.98			0.12			0.24		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	0.64											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	84.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	5	17	1430	3	23	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	17	1430	3	23	1057
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	4	358	1	6	264
Total Analysis Volume [veh/h]	5	17	1430	3	23	1057
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.05	0.01	0.00	0.05	0.01
d_M, Delay for Movement [s/veh]	84.18	18.94	0.00	0.00	13.05	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.51	0.51	0.00	0.00	0.15	0.08
95th-Percentile Queue Length [ft/ln]	12.79	12.79	0.00	0.00	3.85	1.92
d_A, Approach Delay [s/veh]	33.76		0.00		0.28	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	F					

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Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	53.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	524	543	34	42	495	116	298	349	595	75	430	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	524	543	26	42	495	102	298	349	509	75	430	76
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	136	7	11	124	26	75	87	127	19	108	19
Total Analysis Volume [veh/h]	524	543	26	42	495	102	298	349	509	75	430	76
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	8			10			4			21		
Bicycle Volume [bicycles/h]	7			2			0			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	28	0	11	27	0	9	27	0	9	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	6	0	0	6	0	0	5	0	0	6	0
Pedestrian Clearance [s]	0	14	0	0	16	0	0	18	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	46	46	3	20	20	19	32	32	6	18	18
g / C, Green / Cycle	0.29	0.45	0.45	0.03	0.19	0.19	0.19	0.31	0.31	0.05	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.30	0.15	0.15	0.02	0.16	0.17	0.17	0.19	0.32	0.04	0.14	0.14
s, saturation flow rate [veh/h]	1774	1863	1827	1774	1863	1740	1774	1863	1571	1774	1863	1746
c, Capacity [veh/h]	517	838	822	60	359	335	332	570	480	97	322	302
d1, Uniform Delay [s]	36.44	18.38	18.39	49.16	40.10	40.22	40.81	30.50	35.70	47.97	40.83	40.97
k, delay calibration	0.46	0.11	0.11	0.11	0.13	0.14	0.14	0.19	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.59	0.24	0.25	13.64	6.90	8.36	10.63	1.86	57.81	12.19	4.65	5.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

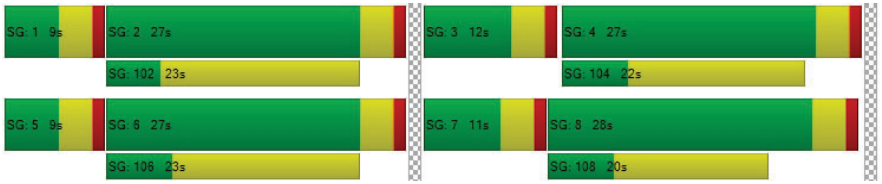
X, volume / capacity	1.01	0.34	0.34	0.70	0.85	0.87	0.90	0.61	1.06	0.77	0.80	0.82
d, Delay for Lane Group [s/veh]	78.03	18.62	18.64	62.80	47.01	48.58	51.43	32.36	93.51	60.17	45.48	46.42
Lane Group LOS	F	B	B	E	D	D	D	C	F	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	18.50	4.34	4.27	1.28	8.02	7.75	8.20	7.49	19.30	2.24	6.73	6.51
50th-Percentile Queue Length [ft/ln]	462.42	108.44	106.83	32.09	200.50	193.77	204.88	187.22	482.54	55.98	168.13	162.81
95th-Percentile Queue Length [veh/ln]	25.78	7.75	7.66	2.31	12.66	12.32	12.89	11.98	27.50	4.03	10.98	10.70
95th-Percentile Queue Length [ft/ln]	644.59	193.83	191.58	57.76	316.61	307.92	322.25	299.42	687.52	100.76	274.46	267.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.03	18.63	18.64	62.80	47.60	48.58	51.43	32.36	93.51	60.17	45.86	46.42
Movement LOS	F	B	B	E	D	D	D	C	F	E	D	D
d_A, Approach Delay [s/veh]	47.11			48.76			64.20			47.78		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	53.22											
Intersection LOS	D											
Intersection V/C	0.829											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.184

Intersection Setup

Name	Salem Ave				Clement Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name	Salem Ave				Clement Ave	
Base Volume Input [veh/h]	0	25	164	0	34	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	164	0	34	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	41	0	9	4
Total Analysis Volume [veh/h]	0	25	164	0	34	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	949	893	843
Degree of Utilization, x	0.03	0.18	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.08	0.67	0.19
95th-Percentile Queue Length [ft]	2.03	16.77	4.82
Approach Delay [s/veh]	6.89	7.94	7.55
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.75		
Intersection LOS	A		

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Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	107.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	20	1153	1049	31	52	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1153	1049	31	52	112
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	288	262	8	13	28
Total Analysis Volume [veh/h]	20	1153	1049	31	52	112
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.63	0.23
d_M, Delay for Movement [s/veh]	10.79	0.00	0.00	0.00	107.71	71.64
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.00	6.33	6.33
95th-Percentile Queue Length [ft/ln]	2.41	0.00	0.00	0.00	158.31	158.31
d_A, Approach Delay [s/veh]	0.18		0.00		83.07	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	5.73					
Intersection LOS	F					

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Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	19.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	153	65	321	584	34	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	153	65	321	584	34	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	16	80	146	9	15
Total Analysis Volume [veh/h]	153	65	321	584	34	60
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	685	647	712	486	581
Degree of Utilization, x	0.32	0.50	0.82	0.07	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.37	2.76	8.84	0.22	0.34
95th-Percentile Queue Length [ft]	34.26	69.12	221.03	5.62	8.60
Approach Delay [s/veh]	10.70	21.97		9.99	
Approach LOS	B	C		A	
Intersection Delay [s/veh]	19.03				
Intersection LOS	C				

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Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Albany Dr		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Albany Dr		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	14	45	19	169	65	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	45	19	169	65	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	11	5	42	16	2
Total Analysis Volume [veh/h]	14	45	19	169	65	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.38	8.90	7.39	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.22	5.22	0.94	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.25		0.75		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritius Cir W

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Emeritus Cir West	Elliott Ave
Approach	Southbound	Eastbound
Lane Configuration	⌜	¬
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	25.00	25.00
Grade [%]	0.00	0.00
Crosswalk	No	No

Volumes

Name	Emeritus Cir West	Elliott Ave
Base Volume Input [veh/h]	73	183
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	73	183
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	46
Total Analysis Volume [veh/h]	73	183
Pedestrian Volume [ped/h]	0	0

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

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Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Emeritus Cir E	Elliott Ave
Approach	Southbound	Westbound
Lane Configuration		
Turning Movement	Left	Right
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Crosswalk	Yes	No

Volumes

Name	Emeritus Cir E	Elliott Ave
Base Volume Input [veh/h]	15	158
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	15	158
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	40
Total Analysis Volume [veh/h]	15	158
Pedestrian Volume [ped/h]	0	0

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

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Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	13	17	16	19	175	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	17	16	19	175	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	4	5	44	5
Total Analysis Volume [veh/h]	13	17	16	19	175	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.01	9.37	7.64	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.90	2.90	0.88	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.65		3.49		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.59					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.357

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	140	1042	0	0	933	35	10	0	22	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	140	1042	0	0	933	28	10	0	0	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	261	0	0	233	7	3	0	0	1	0	3
Total Analysis Volume [veh/h]	140	1042	0	0	933	28	10	0	0	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	75			0			1			0		
Bicycle Volume [bicycles/h]	11			2			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	90	0	0	81	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	40	40	40	40	40	40	40	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	4	22	22	14	14	9	9	
g / C, Green / Cycle	0.11	0.56	0.56	0.35	0.35	0.24	0.24	
(v / s)_i Volume / Saturation Flow Rate	0.08	0.28	0.28	0.27	0.27	0.01	0.00	
s, saturation flow rate [veh/h]	1774	1863	1863	1863	1674	1774	1583	
c, Capacity [veh/h]	190	1046	1046	750	593	420	375	
d1, Uniform Delay [s]	17.21	5.30	5.30	11.38	11.39	11.64	0.00	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.51	0.37	0.37	1.06	2.13	0.02	0.00	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

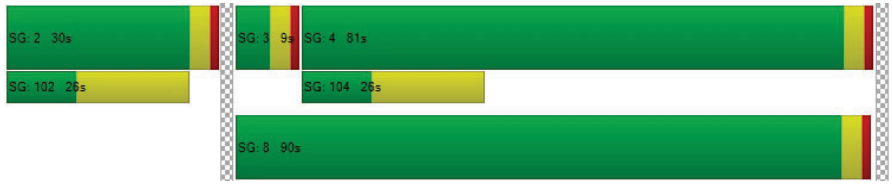
X, volume / capacity	0.74	0.50	0.50	0.67	0.77	0.02	0.00	
d, Delay for Lane Group [s/veh]	22.71	5.67	5.67	12.44	13.51	11.66	0.00	
Lane Group LOS	C	A	A	B	B	B	A	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.31	1.34	1.34	2.99	2.85	0.06	0.00	
50th-Percentile Queue Length [ft/ln]	32.77	33.61	33.61	74.87	71.20	1.51	0.00	
95th-Percentile Queue Length [veh/ln]	2.36	2.42	2.42	5.39	5.13	0.11	0.00	
95th-Percentile Queue Length [ft/ln]	58.98	60.50	60.50	134.76	128.17	2.72	0.00	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.71	5.67	5.67	12.44	12.93	13.51	11.66	11.66	0.00	0.00	0.00	0.00
Movement LOS	C	A	A	B	B	B	B	B	A			
d_A, Approach Delay [s/veh]	7.69			12.95			11.66			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	10.05											
Intersection LOS	B											
Intersection V/C	0.357											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	354	164	119	487	42	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	354	164	119	487	42	79
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	41	30	122	11	20
Total Analysis Volume [veh/h]	354	164	119	487	42	79
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	728	608	664	590
Degree of Utilization, x	0.71	0.20	0.73	0.21

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	6.03	0.72	6.40	0.76
95th-Percentile Queue Length [ft]	150.75	18.06	160.03	19.09
Approach Delay [s/veh]	19.21	19.28		10.67
Approach LOS	C	C		B
Intersection Delay [s/veh]	18.41			
Intersection LOS	C			

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Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way			Pacific Ave		
Base Volume Input [veh/h]	363	1023	137	105	599	77	18	24	34	126	189	238
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	363	1023	137	105	599	77	18	24	34	126	189	238
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	256	34	26	150	19	5	6	9	32	47	60
Total Analysis Volume [veh/h]	363	1023	137	105	599	77	18	24	34	126	189	238
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	31	44	0	10	23	0	0	26	31	0	26	10
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	20	42	42	6	28	28	20	20	44	20	30
g / C, Green / Cycle	0.25	0.53	0.53	0.08	0.35	0.35	0.25	0.25	0.55	0.25	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.35	0.36	0.07	0.21	0.21	0.02	0.01	0.02	0.22	0.17
s, saturation flow rate [veh/h]	1597	1676	1608	1597	1676	1610	1071	1676	1425	1408	1425
c, Capacity [veh/h]	404	884	848	121	586	563	96	415	784	411	531
d1, Uniform Delay [s]	28.90	13.79	13.89	36.61	21.31	21.32	39.95	23.00	8.28	29.54	18.89
k, delay calibration	0.16	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.38	3.95	4.27	16.82	4.28	4.47	0.93	0.06	0.02	4.26	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.67	0.67	0.87	0.59	0.59	0.19	0.06	0.04	0.77	0.45
d, Delay for Lane Group [s/veh]	39.27	17.74	18.16	53.43	25.60	25.79	40.88	23.05	8.31	33.80	19.48
Lane Group LOS	D	B	B	D	C	C	D	C	A	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.51	7.69	7.59	2.52	5.63	5.44	0.38	0.35	0.26	6.21	3.31
50th-Percentile Queue Length [ft/ln]	187.63	192.28	189.66	63.10	140.65	136.08	9.43	8.72	6.49	155.30	82.65
95th-Percentile Queue Length [veh/ln]	12.00	12.24	12.10	4.54	9.52	9.27	0.68	0.63	0.47	10.30	5.95
95th-Percentile Queue Length [ft/ln]	299.96	305.99	302.58	113.59	237.90	231.73	16.97	15.69	11.69	257.49	148.76

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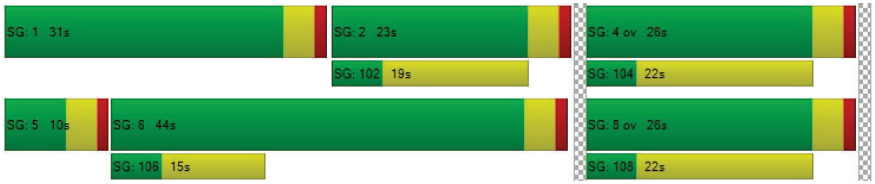
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.27	17.92	18.16	53.43	25.68	25.79	40.88	23.05	8.31	33.80	33.80	19.48
Movement LOS	D	B	B	D	C	C	D	C	A	C	C	B
d_A, Approach Delay [s/veh]	23.03			29.42			20.68			27.64		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.54											
Intersection LOS	C											
Intersection V/C	0.657											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report

Intersection 1: Steele Ln/Illinois Ave-County Center Dr

Control Type:	Signalized	Delay (sec / veh):	67.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	145.00	130.00	100.00	100.00	60.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Illinois Ave			County Center Dr			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	239	27	164	206	159	474	186	1275	265	147	1695	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	88	0	0	34	0	0	0
Total Hourly Volume [veh/h]	239	27	156	206	159	386	186	1275	231	147	1695	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	7	39	52	40	97	47	319	58	37	424	55
Total Analysis Volume [veh/h]	239	27	156	206	159	386	186	1275	231	147	1695	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	3			14			0			10		
Bicycle Volume [bicycles/h]	2			2			5			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	31	0	39	61	0	11	46	0	14	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	0	0	0	18	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	60	60	21	35	51	51	7	48	48	10	51	51
g / C, Green / Cycle	0.46	0.46	0.16	0.27	0.39	0.39	0.05	0.37	0.37	0.08	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.09	0.14	0.13	0.15	0.09	0.14	0.05	0.41	0.43	0.08	0.36	0.37
s, saturation flow rate [veh/h]	1287	873	1431	1378	1863	2766	3445	1863	1748	1774	3547	1739
c, Capacity [veh/h]	604	444	229	197	726	1078	188	691	649	138	1398	685
d1, Uniform Delay [s]	20.63	27.55	52.62	60.20	26.46	28.12	60.25	32.85	32.85	58.29	28.82	29.21
k, delay calibration	0.50	0.50	0.12	0.13	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.73	1.48	7.21	44.61	0.15	0.20	28.23	65.88	83.23	55.56	10.63	21.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

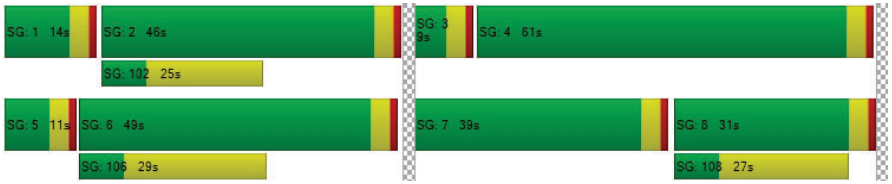
X, volume / capacity	0.20	0.27	0.80	1.04	0.22	0.36	0.99	1.10	1.15	1.07	0.91	0.93
d, Delay for Lane Group [s/veh]	21.36	29.03	59.83	104.81	26.61	28.32	88.48	98.72	116.08	113.85	39.45	50.31
Lane Group LOS	C	C	E	F	C	C	F	F	F	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.23	2.72	6.17	8.95	3.32	4.27	3.73	31.92	33.08	6.49	17.98	20.23
50th-Percentile Queue Length [ft/ln]	55.68	67.90	154.36	223.84	82.98	106.85	93.18	798.06	827.02	162.25	449.44	505.72
95th-Percentile Queue Length [veh/ln]	4.01	4.89	10.25	14.19	5.97	7.66	6.71	44.08	46.61	10.91	24.93	27.61
95th-Percentile Queue Length [ft/ln]	100.22	122.22	256.24	354.86	149.37	191.61	167.72	1101.9	1165.3	272.78	623.29	690.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.76	59.83	59.83	104.81	26.61	28.32	88.48	105.70	116.08	113.85	42.14	50.31
Movement LOS	C	E	E	F	C	C	F	F	F	F	D	D
d_A, Approach Delay [s/veh]	40.22			48.94			105.23			48.12		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	67.18											
Intersection LOS	E											
Intersection V/C	0.786											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Steele Ln/Nordyke Ave

Control Type:	Two-way stop	Delay (sec / veh):	118.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.344

Intersection Setup

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Nordyke Ave			Nordyke Ave			Steele Ln			Steele Ln		
Base Volume Input [veh/h]	15	0	6	1	1	15	18	1300	24	2	957	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	6	1	1	15	18	1300	24	2	957	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	2	0	0	4	5	325	6	1	239	1
Total Analysis Volume [veh/h]	15	0	6	1	1	15	18	1300	24	2	957	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.00	0.01	0.02	0.03	0.03	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	118.76	137.03	45.04	64.38	108.52	12.99	10.19	0.00	0.00	11.98	0.00	0.00
Movement LOS	F	F	E	F	F	B	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	1.31	1.31	1.31	0.23	0.23	0.23	0.08	0.04	0.00	0.01	0.01	0.00
95th-Percentile Queue Length [ft/ln]	32.83	32.83	32.83	5.84	5.84	5.84	1.95	0.97	0.00	0.29	0.15	0.00
d_A, Approach Delay [s/veh]	97.70			21.63			0.14			0.02		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	1.12											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 3: Steele Ln/Berkeley Dr

Control Type:	Two-way stop	Delay (sec / veh):	75.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name	Berkeley Dr						Steele Ln			Steele Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name	Berkeley Dr						Steele Ln			Steele Ln		
Base Volume Input [veh/h]	3	0	6	3	0	6	4	957	3	19	1214	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	6	3	0	6	4	957	3	19	1214	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	2	1	0	2	1	239	1	5	304	2
Total Analysis Volume [veh/h]	3	0	6	3	0	6	4	957	3	19	1214	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.01	0.06	0.00	0.01	0.01	0.01	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	60.95	95.58	13.13	75.54	95.97	15.39	11.41	0.00	0.00	10.19	0.00	0.00
Movement LOS	F	F	B	F	F	C	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.22	0.22	0.22	0.02	0.01	0.00	0.08	0.04	0.00
95th-Percentile Queue Length [ft/ln]	4.47	4.47	4.47	5.62	5.62	5.62	0.53	0.27	0.00	2.05	1.03	0.00
d_A, Approach Delay [s/veh]	29.07			35.44			0.05			0.16		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	0.37											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Steele Ln/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Salem Ave		Steele Ln		Steele Ln	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Salem Ave		Steele Ln		Steele Ln	
Base Volume Input [veh/h]	0	11	975	0	11	1244
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	11	975	0	11	1244
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	244	0	3	311
Total Analysis Volume [veh/h]	0	11	975	0	11	1244
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	44.38	11.99	0.00	0.00	10.20	0.00
Movement LOS	E	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.05	0.02
95th-Percentile Queue Length [ft/ln]	1.60	1.60	0.00	0.00	1.19	0.60
d_A, Approach Delay [s/veh]	11.99		0.00		0.09	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Steele Ln-Lewis Rd/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	75.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.893

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	495.00	100.00	100.00	210.00	100.00	100.00	75.00	100.00	100.00	65.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Steele Ln			Lewis Rd		
Base Volume Input [veh/h]	414	600	142	147	1068	161	230	511	341	178	285	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	8	0	0	14	0	0	86	0	0	14
Total Hourly Volume [veh/h]	414	600	134	147	1068	147	230	511	255	178	285	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	150	34	37	267	37	58	128	64	45	71	14
Total Analysis Volume [veh/h]	414	600	134	147	1068	147	230	511	255	178	285	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	14			13			11			18		
Bicycle Volume [bicycles/h]	2			4			2			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	36	32	0	54	50	0	22	36	0	18	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	19	0	0	21	0	0	21	0	0	19	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	64	64	14	46	46	18	32	32	14	28	28
g / C, Green / Cycle	0.23	0.46	0.46	0.10	0.33	0.33	0.13	0.23	0.23	0.10	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.23	0.20	0.21	0.08	0.33	0.34	0.13	0.22	0.22	0.10	0.09	0.09
s, saturation flow rate [veh/h]	1774	1863	1729	1774	1863	1773	1774	1863	1617	1774	1863	1749
c, Capacity [veh/h]	405	857	795	173	614	584	228	424	368	178	371	348
d1, Uniform Delay [s]	54.00	25.60	25.68	62.13	46.94	46.94	61.00	53.37	53.74	63.00	49.50	49.60
k, delay calibration	0.47	0.50	0.50	0.11	0.50	0.50	0.16	0.42	0.44	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	48.73	1.65	1.82	10.76	38.28	42.83	35.77	30.46	39.00	32.08	0.92	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

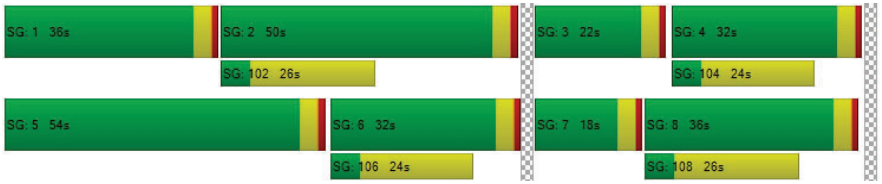
X, volume / capacity	1.02	0.44	0.45	0.85	1.01	1.02	1.01	0.96	0.98	1.00	0.47	0.48
d, Delay for Lane Group [s/veh]	102.73	27.25	27.50	72.89	85.22	89.77	96.76	83.83	92.73	95.07	50.42	50.61
Lane Group LOS	F	C	C	E	F	F	F	F	F	F	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	19.62	8.89	8.41	5.64	27.55	26.96	10.33	17.54	16.47	7.96	5.53	5.31
50th-Percentile Queue Length [ft/ln]	490.57	222.31	210.31	141.09	688.84	674.03	258.15	438.39	411.80	199.01	138.29	132.80
95th-Percentile Queue Length [veh/ln]	27.22	13.78	13.17	9.54	36.36	36.01	15.65	24.40	23.13	12.60	9.39	9.09
95th-Percentile Queue Length [ft/ln]	680.56	344.57	329.23	238.49	909.07	900.30	391.31	610.08	578.20	315.04	234.72	227.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	102.73	27.34	27.50	72.89	87.14	89.77	96.76	85.67	92.73	95.07	50.49	50.61
Movement LOS	F	C	C	E	F	F	F	F	F	F	D	D
d_A, Approach Delay [s/veh]	54.55			85.88			90.04			65.85		
Approach LOS	D			F			F			E		
d_I, Intersection Delay [s/veh]	75.40											
Intersection LOS	E											
Intersection V/C	0.893											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 6: Clement Ave/Salem Ave

Control Type:	All-way stop	Delay (sec / veh):	7.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name	Salem Ave				Clement Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name	Salem Ave				Clement Ave	
Base Volume Input [veh/h]	0	44	26	0	64	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	44	26	0	64	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	11	7	0	16	5
Total Analysis Volume [veh/h]	0	44	26	0	64	18
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	1008	878	857
Degree of Utilization, x	0.04	0.03	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.14	0.09	0.32
95th-Percentile Queue Length [ft]	3.42	2.29	7.91
Approach Delay [s/veh]	6.73	7.22	7.64
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.31		
Intersection LOS	A		

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Intersection Level Of Service Report
Intersection 7: Clement Ave/Mendocino Ave

Control Type:	Two-way stop	Delay (sec / veh):	115.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mendocino Ave		Mendocino Ave		Clement Ave	
Base Volume Input [veh/h]	34	1187	1441	48	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	1187	1441	48	11	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	297	360	12	3	4
Total Analysis Volume [veh/h]	34	1187	1441	48	11	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	0.28	0.04
d_M, Delay for Movement [s/veh]	13.71	0.00	0.00	0.00	115.80	34.76
Movement LOS	B	A	A	A	F	D
95th-Percentile Queue Length [veh/ln]	0.25	0.00	0.00	0.00	1.20	1.20
95th-Percentile Queue Length [ft/ln]	6.14	0.00	0.00	0.00	30.11	30.11
d_A, Approach Delay [s/veh]	0.38		0.00		69.05	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	0.83					
Intersection LOS	F					

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Intersection Level Of Service Report
Intersection 8: Elliott Ave/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Armory Dr		Armory Dr		Elliott Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	85.00	100.00	100.00	78.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Armory Dr		Armory Dr		Elliott Ave	
Base Volume Input [veh/h]	258	21	41	414	71	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	21	41	414	71	81
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	5	10	104	18	20
Total Analysis Volume [veh/h]	258	21	41	414	71	81
Pedestrian Volume [ped/h]	0		0		2	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	674	619	678	523	635
Degree of Utilization, x	0.41	0.07	0.61	0.14	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.04	0.21	4.18	0.47	0.44
95th-Percentile Queue Length [ft]	50.90	5.30	104.48	11.68	10.90
Approach Delay [s/veh]	12.07	15.35		9.88	
Approach LOS	B	C		A	
Intersection Delay [s/veh]	13.38				
Intersection LOS	B				

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Intersection Level Of Service Report
Intersection 9: Elliott Ave/Albany Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Albany Dr		Elliott Ave			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Albany Dr		Elliott Ave			
Base Volume Input [veh/h]	12	50	15	111	137	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	50	15	111	137	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	13	4	28	34	5
Total Analysis Volume [veh/h]	12	50	15	111	137	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.06	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.51	9.33	7.56	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.03	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.87	5.87	0.80	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.56		0.90		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.05					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 10: Elliott Ave/Emeritus Cir W

Control Type:	Signalized	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name		
Approach	Southbound	Eastbound
Lane Configuration	⌜	¬
Turning Movement	Right	Left
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Curb Present	No	No
Crosswalk	Yes	Yes

Volumes

Name		
Base Volume Input [veh/h]	156	123
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Right-Turn on Red Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	156	123
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	31
Total Analysis Volume [veh/h]	156	123
Presence of On-Street Parking	No	No
On-Street Parking Maneuver Rate [/h]	0	0
Local Bus Stopping Rate [/h]	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0
v_co, Outbound Pedestrian Volume crossing minor stree	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0
Bicycle Volume [bicycles/h]	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive
Signal Group	0	0
Auxiliary Signal Groups		
Lead / Lag	-	-
Minimum Green [s]	0	0
Maximum Green [s]	0	0
Amber [s]	0.0	0.0
All red [s]	0.0	0.0
Split [s]	0	0
Vehicle Extension [s]	0.0	0.0
Walk [s]	0	0
Pedestrian Clearance [s]	0	0
Rest In Walk		
I1, Start-Up Lost Time [s]	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0
Minimum Recall		
Maximum Recall		
Pedestrian Recall		
Detector Location [ft]	0.0	0.0
Detector Length [ft]	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

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Lane Group Calculations

Lane Group Results

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS		
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	
Intersection V/C	0.000	

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	45.00	45.00
I_p,int, Pedestrian LOS Score for Intersection	1.725	1.725
Crosswalk LOS	A	A
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0
d_b, Bicycle Delay [s]	45.00	45.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.132
Bicycle LOS	D	D

Intersection Level Of Service Report
Intersection 11: Elliott Ave/Emeritus Cir E

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Emeritus Cir E	Elliott Ave
Approach	Southbound	Westbound
Lane Configuration	⌜	⌜
Turning Movement	Left	Right
Lane Width [ft]	12.00	12.00
No. of Lanes in Pocket	0	0
Pocket Length [ft]	100.00	100.00
Speed [mph]	30.00	30.00
Grade [%]	0.00	0.00
Crosswalk	Yes	No

Volumes

Name	Emeritus Cir E	Elliott Ave
Base Volume Input [veh/h]	97	158
Base Volume Adjustment Factor	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00
Growth Factor	1.0000	1.0000
In-Process Volume [veh/h]	0	0
Site-Generated Trips [veh/h]	0	0
Diverted Trips [veh/h]	0	0
Pass-by Trips [veh/h]	0	0
Existing Site Adjustment Volume [veh/h]	0	0
Other Volume [veh/h]	0	0
Total Hourly Volume [veh/h]	97	158
Peak Hour Factor	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	40
Total Analysis Volume [veh/h]	97	158
Pedestrian Volume [ped/h]	0	0

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Free	Free
Flared Lane		
Storage Area [veh]	0	0
Two-Stage Gap Acceptance		
Number of Storage Spaces in Median	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00
Movement LOS	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00
d_A, Approach Delay [s/veh]	0.00	0.00
Approach LOS	A	A
d_I, Intersection Delay [s/veh]	0.00	
Intersection LOS	A	

Intersection Level Of Service Report
Intersection 12: Elliott Ave/Salem Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

Intersection Setup

Name	Salem Ave		Elliott Ave		Elliott Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

Volumes

Name	Salem Ave		Elliott Ave		Elliott Ave	
Base Volume Input [veh/h]	53	9	27	97	167	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	9	27	97	167	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	2	7	24	42	4
Total Analysis Volume [veh/h]	53	9	27	97	167	17
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 7.00-05

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.03	9.68	7.64	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.30	0.06	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.51	7.51	1.48	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.83		1.66		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Elliott Ave/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Mendocino Ave			Mendocino Ave			Elliott Ave			Driveway		
Base Volume Input [veh/h]	92	989	0	0	1392	75	65	0	85	2	0	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	7	0	0	84	0	0	10
Total Hourly Volume [veh/h]	92	989	0	0	1392	68	65	0	1	2	0	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	247	0	0	348	17	16	0	0	1	0	3
Total Analysis Volume [veh/h]	92	989	0	0	1392	68	65	0	1	2	0	10
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	129			0			14			0		
Bicycle Volume [bicycles/h]	6			3			4			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Permis	Split	Split	Split	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	2	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	5	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	30	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Split [s]	14	100	0	0	86	0	30	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	10	0	10	10	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	16	0	16	16	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R	
C, Cycle Length [s]	64	64	64	64	64	64	64	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	4	37	37	29	29	19	19	
g / C, Green / Cycle	0.07	0.58	0.58	0.45	0.45	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.05	0.27	0.27	0.41	0.42	0.04	0.00	
s, saturation flow rate [veh/h]	1774	1863	1863	1863	1659	1774	1359	
c, Capacity [veh/h]	123	1078	1078	890	743	527	404	
d1, Uniform Delay [s]	29.49	7.79	7.79	16.76	16.87	16.55	15.95	
k, delay calibration	0.11	0.14	0.14	0.37	0.37	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	8.81	0.38	0.38	8.36	16.02	0.10	0.00	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

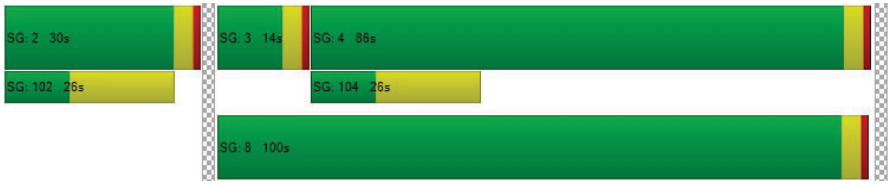
X, volume / capacity	0.75	0.46	0.46	0.86	0.93	0.12	0.00	
d, Delay for Lane Group [s/veh]	38.31	8.17	8.17	25.12	32.89	16.65	15.96	
Lane Group LOS	D	A	A	C	C	B	B	
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh/ln]	1.61	3.09	3.09	10.93	11.32	0.68	0.01	
50th-Percentile Queue Length [ft/ln]	40.36	77.34	77.34	273.29	282.97	17.10	0.25	
95th-Percentile Queue Length [veh/ln]	2.91	5.57	5.57	16.35	16.84	1.23	0.02	
95th-Percentile Queue Length [ft/ln]	72.65	139.20	139.20	408.85	420.91	30.78	0.46	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.31	8.17	8.17	25.12	28.60	32.89	16.65	16.65	15.96	0.00	0.00	0.00
Movement LOS	D	A	A	C	C	C	B	B	B			
d_A, Approach Delay [s/veh]	10.74			28.80			16.64			0.00		
Approach LOS	B			C			B			A		
d_I, Intersection Delay [s/veh]	21.00											
Intersection LOS	C											
Intersection V/C	0.505											

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Bear Cub Way/Armory Dr

Control Type:	All-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Armory Dr		Armory Dr		Bear Club Way	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Armory Dr		Armory Dr		Bear Club Way	
Base Volume Input [veh/h]	265	25	36	583	40	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	265	25	36	583	40	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	6	9	146	10	20
Total Analysis Volume [veh/h]	265	25	36	583	40	80
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	706	634	696	627
Degree of Utilization, x	0.41	0.06	0.84	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.01	0.18	9.34	0.70
95th-Percentile Queue Length [ft]	50.31	4.51	233.60	17.53
Approach Delay [s/veh]	11.60	27.57		10.08
Approach LOS	B	D		B
Intersection Delay [s/veh]	21.03			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 15: Bear Cub Way/Mendocino Ave

Control Type:	Signalized	Delay (sec / veh):	23.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mendocino Ave			Mendocino Ave			Bear Club Way					
Base Volume Input [veh/h]	56	890	159	190	1110	38	91	66	117	152	52	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	890	159	190	1110	38	91	66	117	152	52	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	223	40	48	278	10	23	17	29	38	13	58
Total Analysis Volume [veh/h]	56	890	159	190	1110	38	91	66	117	152	52	232
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Overla	Permis	Permis	Overla
Signal Group	1	6	0	5	2	0	0	8	1	0	4	5
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	5	0	5	5
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	10	19	0	35	44	0	0	26	10	0	26	35
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	17	0	0	17	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No		No	No			No	No		No	No
Maximum Recall	No	No		No	No			No	No		No	No
Pedestrian Recall	No	No		No	No			No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	5	34	34	12	41	41	22	22	31	22	38
g / C, Green / Cycle	0.06	0.42	0.42	0.15	0.52	0.52	0.27	0.27	0.38	0.27	0.48
(v / s)_i Volume / Saturation Flow Rate	0.04	0.32	0.32	0.12	0.34	0.34	0.08	0.04	0.08	0.19	0.16
s, saturation flow rate [veh/h]	1597	1676	1589	1597	1676	1657	1212	1676	1425	1088	1425
c, Capacity [veh/h]	93	711	674	242	867	857	166	461	546	377	678
d1, Uniform Delay [s]	36.80	19.57	19.58	32.74	14.25	14.26	37.95	21.92	16.60	27.83	13.13
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.08	7.40	7.81	5.61	4.03	4.09	2.81	0.14	0.19	1.20	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.76	0.76	0.79	0.67	0.67	0.55	0.14	0.21	0.54	0.34
d, Delay for Lane Group [s/veh]	42.88	26.97	27.38	38.35	18.28	18.35	40.77	22.06	16.79	29.03	13.42
Lane Group LOS	D	C	C	D	B	B	D	C	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.19	9.14	8.75	3.78	7.67	7.61	1.91	0.94	1.44	3.62	2.55
50th-Percentile Queue Length [ft/ln]	29.82	228.59	218.85	94.43	191.79	190.37	47.78	23.58	36.00	90.53	63.73
95th-Percentile Queue Length [veh/ln]	2.15	14.10	13.61	6.80	12.21	12.14	3.44	1.70	2.59	6.52	4.59
95th-Percentile Queue Length [ft/ln]	53.67	352.56	340.16	169.97	305.35	303.50	86.00	42.44	64.81	162.96	114.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.88	27.13	27.38	38.35	18.31	18.35	40.77	22.06	16.79	29.03	29.03	13.42
Movement LOS	D	C	C	D	B	B	D	C	B	C	C	B
d_A, Approach Delay [s/veh]	27.97			21.16			26.02			20.73		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.91											
Intersection LOS	C											
Intersection V/C	0.628											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix B - Air Quality and Greenhouse Gas Assessment

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July 23, 2020

Brian Bacciarini
Senior Environmental Scientist
GHD
2235 Mercury Way, Suite 150
Santa Rosa, CA 95407

VIA E-MAIL: **brian.bacciarini@ghd.com**

SUBJECT: **Elliott Avenue Traffic Calming Pilot Project, Santa Rosa, CA – Air Quality and Greenhouse Gas CEQA Evaluation**

Dear Brian:

The purpose of this letter is to compute changes to air quality and greenhouse gas emissions associated with the proposed Elliott Avenue Traffic Calming Pilot Project in Santa Rosa, California. The project would involve the closure of the portion of Elliott Avenue adjacent to the Santa Rosa Junior College (SRJC) campus. This would change travel patterns in the area and possibly air pollutant/greenhouse gas (GHG) emissions.

The purpose of the project is to redirect traffic away from a busy pedestrian street crossing located on the SRJC campus. This project would require the installation of 20-foot Opticom actuated gates, closing the city right-of way between the eastern and western Emeritus Hall parking lot exits, while still allowing access for emergency and utility vehicles.

It is likely that closing a portion of Elliott Avenue will affect traffic on other local roads around the campus, as vehicles will need to take different routes to get to their destinations. Elliott Avenue runs east to west, connecting Mendocino Avenue to Armory Drive. If vehicles can no longer use Elliott Avenue to pass between Mendocino Avenue and Armory drive, this traffic will be distributed to other nearby roads. The roads that could be affected include; Bear Cub Way, Clement Avenue, Salem Avenue, Albany Drive, Nordyke Avenue, Victor Drive, Oliver Lane, Illinois Avenue, and Sucher Lane. The primary environmental impact to air quality would be associated with changes to traffic that affects emissions.

Criteria pollutant (ROG, NO_X, PM_{10}, and $PM_{2.5}$) emissions, along with greenhouse gas (GHG) emissions (i.e. CO_2) were estimated for both existing conditions and conditions with the closure of a section of Elliott Avenue between West Emeritus Way and East Emeritus Way to vehicular traffic in the City of Santa Rosa near the SRJC campus. Emissions were estimated under both existing year (2020) and future year (2040) traffic conditions and the existing and "build" (i.e., closure) scenarios. To estimate emissions, average (weekday) daily traffic (ADT) was estimated for each of several roadway segments identified using the preliminary circulation study conducted by W-Trans (April 17, 2020). Roadway segments were identified between each of the 15 intersections listed in the circulation study and AM (7am to 9am) and PM (4pm to 6pm) peak hour traffic estimates for each link were developed using the intersection turning volumes provided in the preliminary report. Peak hour volumes were converted to ADT by adding the two peak hours (AM+PM) and multiplying by a factor of 5, representing the assumption the two peak hours together represent 20% of the ADT. The ADT for each segment was then multiplied by the centerline distance between each intersection (i.e., roadway segment length). Google Earth was used to estimate the length (in miles) of each segment.

Emissions factors, in grams per mile, specific to Sonoma County were developed for the criteria pollutants using EMFAC2017 for the specific posted speeds applicable to each roadway segment. EMFAC2017 was run for each year (2020 and 2040) as well as each applicable speed (15mph, 25 mph, and 35 mph). Raw EMFAC emissions factors for each speed class were aggregated first by fuel type within each vehicle classification and then by VMT for each vehicle type to develop a single factor for each pollutant representative of all the vehicle and fuels types within Sonoma County. This was done for each analysis year (i.e., 2020 and 2040). These aggregated emissions factors (in grams per mile) for each speed were then applied to the appropriate segment VMTs to produce an emission estimate for each segment. The emissions (in grams per day) associated with each segment for a given pollutant were then summed for each scenario (i.e., 2020 existing, 2020 build, 2040 existing, and 2040 build) to develop a total emission estimate for each pollutant per scenario. Emissions in grams/day were converted to pounds per day for criteria pollutants and metric tons per day for GHG.

Paved road dust emissions factors (in grams $PM_{2.5}$ and PM_{10} per VMT) for each segment were also calculated, applied to segment VMT estimates, and added to the exhaust emission to estimate total $PM_{2.5}$ and PM_{10}. CARB's March 2018 methodology for estimating paved road dust was applied assuming lower speed roadways (15mph and 25 mph) for local roadway types, while roadways with a posted speed of 35 mph were either collector or major roadway types. The Bay Area default for average weight of the vehicles on the roadway (2.4 tons) was used for the analysis, as was the default number of precipitation days for Sonoma County (69).

Tables 1 and 2 summarize the results of the emissions analysis.

Table 1: Vehicle Miles Traveled (VMT)

VMT		
2020	Existing	27,740.6
	Build	25,668.0
	Change	-2,072.6
2040	Existing	36,445.8
	Build	35,475.8
	Change	-970.0

Table 2: Emissions Estimate

Condition		ROG (lbs/day)	NOx (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)		CO_2 (metric ton/day)
2020 (lbs/day)	Existing	4.39	27.51	21.79	3.62		11.74
	Build	3.06	19.06	15.58	2.57		9.48
	Change	*-1.33*	*-8.46*	*-6.20*	*-1.06*		*-2.25*
2040 (lbs/day)	Existing	1.72	13.18	27.99	4.29		10.42
	Build	1.47	10.55	23.36	3.58		9.40
	Change	*-0.26*	*-2.63*	*-4.63*	*-0.71*		*-1.01*

* * *

This concludes our assessment of the air quality and GHG emissions from this project. If you have any questions or comments, please feel free to contact me at (707) 794-0400. We appreciate the opportunity to assist you.

Sincerely,

James A. Reyff
Principal Consultant
Illingworth & Rodkin, Inc.

I&R Job #: 19-080

Appendix C - Noise Assessment

ELLIOT AVENUE TRAFFIC CALMING PILOT PROJECT ENVIRONMENTAL NOISE ASSESSMENT

Santa Rosa, California

July 23, 2020

Prepared for:

Brian Bacciarini
GHD
2235 Mercury Way, Suite 150
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Prepared by:

Micah Black
Michael S. Thill

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Project: 19-080

INTRODUCTION

A traffic calming pilot project has been proposed for Elliot Avenue in Santa Rosa, California. The purpose of the project is to redirect traffic away from a busy pedestrian street crossing located on the Santa Rosa Junior College (SRJC) campus. This project would require the installation of 20-foot Opticom actuated gates, closing the city right-of way between the eastern and western Emeritus Hall parking lot exits, while still allowing access for emergency and utility vehicles.

It is likely that closing a portion of Elliot Avenue will affect traffic on other local roads around the campus, as vehicles will need to take different routes to get to their destinations. Elliot Avenue runs east to west, connecting Mendocino Avenue to Armory Drive. If vehicles can no longer use Elliot Avenue to pass between Mendocino Avenue and Armory drive, this traffic will be distributed to other nearby roads. The roads that could be affected include; Bear Cub Way, Clement Avenue, Salem Avenue, Albany Drive, Nordyke Avenue, Victor Drive, Oliver Lane, Illinois Avenue, and Sucher Lane. A noise study was conducted to establish noise levels due to current traffic conditions in this area, and to estimate the noise level increase if this traffic calming project is implemented.

The report is divided into two sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise, summarizes applicable regulatory criteria, and discusses the results of the ambient noise monitoring survey completed to document existing noise conditions; and, 2) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts and discusses the results of the evaluation. The project was not found to result in any significant noise impacts; therefore, mitigation was not recommended.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the *sound level meter*. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The *Day/Night Average Sound Level* (L_{dn} *or DNL*) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

Regulatory Background

The State of California and the City of Santa Rosa have established regulatory criteria that are applicable in this assessment. The State of California Environmental Quality Act (CEQA) Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. The CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

(b) Generation of excessive groundborne vibration or groundborne noise levels;

(c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

Only item (a) applies to the proposed project. The construction and operation of the project would not generate excessive groundborne vibration or groundborne noise levels because the resulting project-generated traffic will not increase levels enough to significantly impact the nearby sensitive receptors. Additionally, the project is not within the vicinity of a private airstrip or an airport land use plan where people residing or working in the project area would be exposed to excessive noise levels. Items (b) and (c) are not carried forward in the analysis.

City of Santa Rosa General Plan 2035. The City of Santa Rosa's General Plan[1] includes the Noise and Safety Element, which provides guidelines to achieve the goal of maintaining an acceptable community noise level. For context and informational purposes, goals and policies are provided below:

NS-B **Maintain an acceptable community noise level to protect the health and comfort of people living, working and/or visiting in Santa Rosa, while maintaining a visually appealing community.**

NS-B-3 Prevent new stationary and transportation noise sources from creating a nuisance in existing developed areas. Use a comprehensive program of noise prevention through planning and mitigation, and consider noise impacts as a crucial factor in project approval.

---

[1] *Santa Rosa General Plan 2035*, November 3, 2009.

The Land Use Compatibility Standards specify normally acceptable levels for community noise in various land use areas.

NS-B-4 Require new projects in the following categories to submit an acoustical study, prepared by a qualified acoustical consultant:

- All new projects proposed for areas with existing (exterior) noise above 60 dBA DNL. Mitigation shall be sufficient to reduce noise levels below 45 dBA DNL in (interior) habitable rooms and 60 dBA DNL in (interior) private and shared recreational facilities. Additions to existing housing units are exempt.

- All new projects that could generate noise whose impacts on other existing uses would be greater than those normally acceptable (as specified in the Land Use Compatibility Standards).

NS-B-5 Pursue measures to reduce noise impacts primarily through site planning. Engineering solutions for noise mitigation, such as sound walls, are the least desirable alternative.

NS-B-6 Do not permit existing uses to generate new noises exceeding normally acceptable levels unless:

- Those noises are mitigated to acceptable levels; or

- The activities are specifically exempted by the City Council on the basis of community health, safety, and welfare.

NS-B-9 Encourage developers to incorporate acoustical site planning into their projects. Recommended measures include:

- Incorporating buffers and/or landscaped earth berms;

- Orienting windows and outdoor living areas away from unacceptable noise exposure;

- Using reduced-noise pavement (rubberized-asphalt);

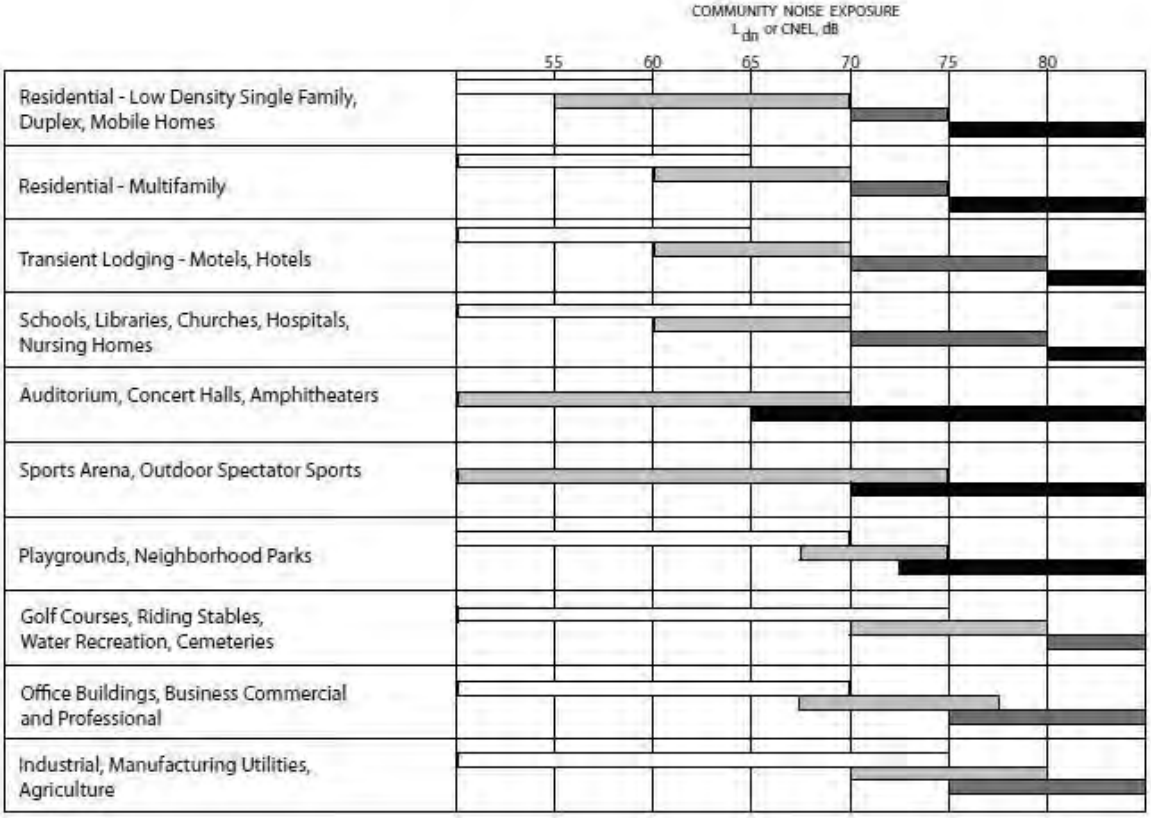
- Incorporating traffic calming measures, alternative intersection designs, and lower speed limits; and

- Incorporating state-of-the-art structural sound attenuation and setbacks.

NS-B-14 Discourage new projects that have potential to create ambient noise levels more than 5 dBA DNL above existing background, within 250 feet of sensitive receptor.

Figure 12-1

Land Use Compatibility Standards



LEGEND:

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: Environmental Science Associates, 2001

Source: Santa Rosa General Plan 2035, 2009.

Existing Noise Environment

The project site is located along Elliot Avenue between the eastern and western Emeritus Hall parking lot exits. However, the project study area extends from Bear Cub Way to Steele Lane, and from Mendocino Avenue to Armory Drive because traffic would be redistributed with the project and possibly affect surrounding neighborhoods.

Bear Cub way runs from Mendocino Avenue to Armory Drive, separating SRJC and Santa Rosa High School (SRHS). Typical noise sources are from parking lot traffic, recreation, and students. Noise levels along Steele Lane and Mendocino Avenue are dominated by vehicle traffic, and noise levels along Armory Drive are heavily influenced by U.S. Highway 101 traffic. The SRJC campus and residential areas north of Elliot Avenue are less noisy than the major roads surrounding the study area. Therefore, these two locations would likely be most affected by the changed traffic conditions.

A noise monitoring survey was performed in the study area beginning on Wednesday May 8, 2019 and concluding on Monday May 13, 2019. The monitoring survey included three long-term and two short-term noise measurements as shown in Figure 1. Local traffic noise dominates the noise environment at the surrounding land uses. Secondary noise sources include U.S. Highway 101 and Mendocino Avenue traffic noise, which establishes background noise levels throughout the project vicinity, as well as student activities.

Long-term noise measurement LT-1 was made from a tree located along Bear Cub Way, which separates the SRJC and SRHS campuses. LT-1 was approximately 20 feet south of the centerline of Bear Cub Way, 900 feet east of centerline of U.S. Highway 101, and 10 feet above the ground. This location serves to characterize the noise environment of SRHS just to the south. Hourly average noise levels at this location typically ranged from 49 to 64 dBA L_{eq} during the day, and from 46 to 61 dBA L_{eq} at night. The day-night average noise levels ranged from 60 to 63 dBA DNL. The daily trend in noise levels at LT-1 is shown in Figures 2A through 2F.

Long-term noise measurement LT-2 was made from a utility pole located along Albany Drive, which runs north from Elliot Avenue to Oliver Lane. LT-2 was approximately 20 feet west of the centerline of Albany Drive, 155 feet south of the centerline of Oliver Lane, 920 feet east of U.S. Highway 101, and 12 feet above the ground. This location serves to characterize the noise environment of Albany Drive. Hourly average noise levels at this location typically ranged from 48 to 68 dBA L_{eq} during the day, and from 38 to 57 dBA L_{eq} at night. The day-night average noise levels were 56 to 59 dBA DNL. The daily trend in noise levels at LT-2 is shown in Figures 3A through 3F.

Long-term noise measurement LT-3 was made from a utility pole located along Salem Avenue, which runs north from Elliot Avenue to Clement Avenue. LT-3 was approximately 20 feet east of the centerline of Salem Avenue, 215 feet north of the centerline of Elliot Avenue, 335 feet west of Mendocino Avenue, and 12 feet above the ground. This location serves to characterize the noise environment of Salem Avenue. Hourly average noise levels at this location typically ranged from 48 to 70 dBA L_{eq} during the day, and from 42 to 57 dBA L_{eq} at night. The day-night average noise

levels were 57 to 60 dBA DNL. The daily trend in noise levels at LT-3 is shown in Figures 4A through 4F.

Two short-term noise measurements were made on Wednesday, May 8, 2019 in 10-minute intervals, starting at 11:00 a.m. and concluding at 11:30 a.m. Short-term noise measurement ST-1 was made from 11:00 a.m. to 11:10 a.m. on Clement Avenue, approximately 20 feet north of the centerline, 260 feet west of the centerline of Mendocino Avenue, and 5 feet above the ground. The dominant source of noise was traffic on Mendocino Avenue, with occasional traffic on Clement Avenue. The ten-minute average noise level at ST-1 was 55 dBA $L_{eq(10\text{-}min)}$. Short-term noise measurement ST-2 was made from 11:20 a.m. to 11:30 a.m. on Nordyke Avenue, approximately 20 feet west of the centerline, 65 feet south of the centerline of Sucher Lane, 605 feet east of U.S. Highway 101, and 5 feet above the ground. The dominant source of noise was occasional traffic on Nordyke Avenue, with constant background traffic noise coming from U.S. Highway 101. The ten-minute average noise level at ST-1 was 56 dBA $L_{eq(10\text{-}min)}$. A summary of the short-term noise measurements can be found in Table 3.

Supplemental noise data from a previous study[2] further describes the existing noise environment along Elliot Avenue. A previous noise monitoring survey was performed in the study area beginning on Wednesday September 27, 2017 and concluding on Monday October 2, 2017. Data from two of the long-term noise measurements conducted during this survey will be used in this report as LT-4 and LT-5.

Long-term noise measurement LT-4 was made from Wednesday September 27, 2017 to Monday October 2, 2017 from a utility pole located along Elliot Avenue, which runs west from Mendocino Avenue to Armory Drive. LT-4 was approximately 18 feet north of the centerline of Elliot Avenue, 155 feet west of the centerline of Albany Drive, and 12 feet above the ground. This location serves to characterize the noise environment of Elliot Avenue. Hourly average noise levels at this location typically ranged from 56 to 70 dBA L_{eq} during the day, and from 44 to 64 dBA L_{eq} at night. The day-night average noise levels were 61 to 65 dBA DNL. The daily trend in noise levels at LT-4 is shown in Figures 5A through 5F.

Long-term noise measurement LT-5 was made from Wednesday September 27, 2017 to Friday September 29, 2017 from a tree located along the northern fence line of the vacant lot just north of LT-4. LT-5 was approximately 125 feet north of the centerline of Elliot Avenue, 110 feet east of the centerline of Nordyke Avenue, and 10 feet above the ground. This location serves to characterize the noise environment of residents just north of Elliot Avenue. Hourly average noise levels at this location typically ranged from 51 to 56 dBA L_{eq} during the day, and from 44 to 55 dBA L_{eq} at night. The day-night average noise level was 58 dBA. The daily trend in noise levels at LT-5 is shown in Figures 6A through 6C.

[2] SCIENCE & MATH REPLACEMENT PROJECT – SANTA ROSA JUNIOR COLLEGE ENVIRONMENTAL NOISE AND VIBRATION ASSESSMENT – ILLINGWORTH & RODKIN PROJECT 17-174 – NOVEMBER 2017

FIGURE 1 Noise Measurement Locations

FIGURE 2A Daily Trend in Noise Levels at LT-1

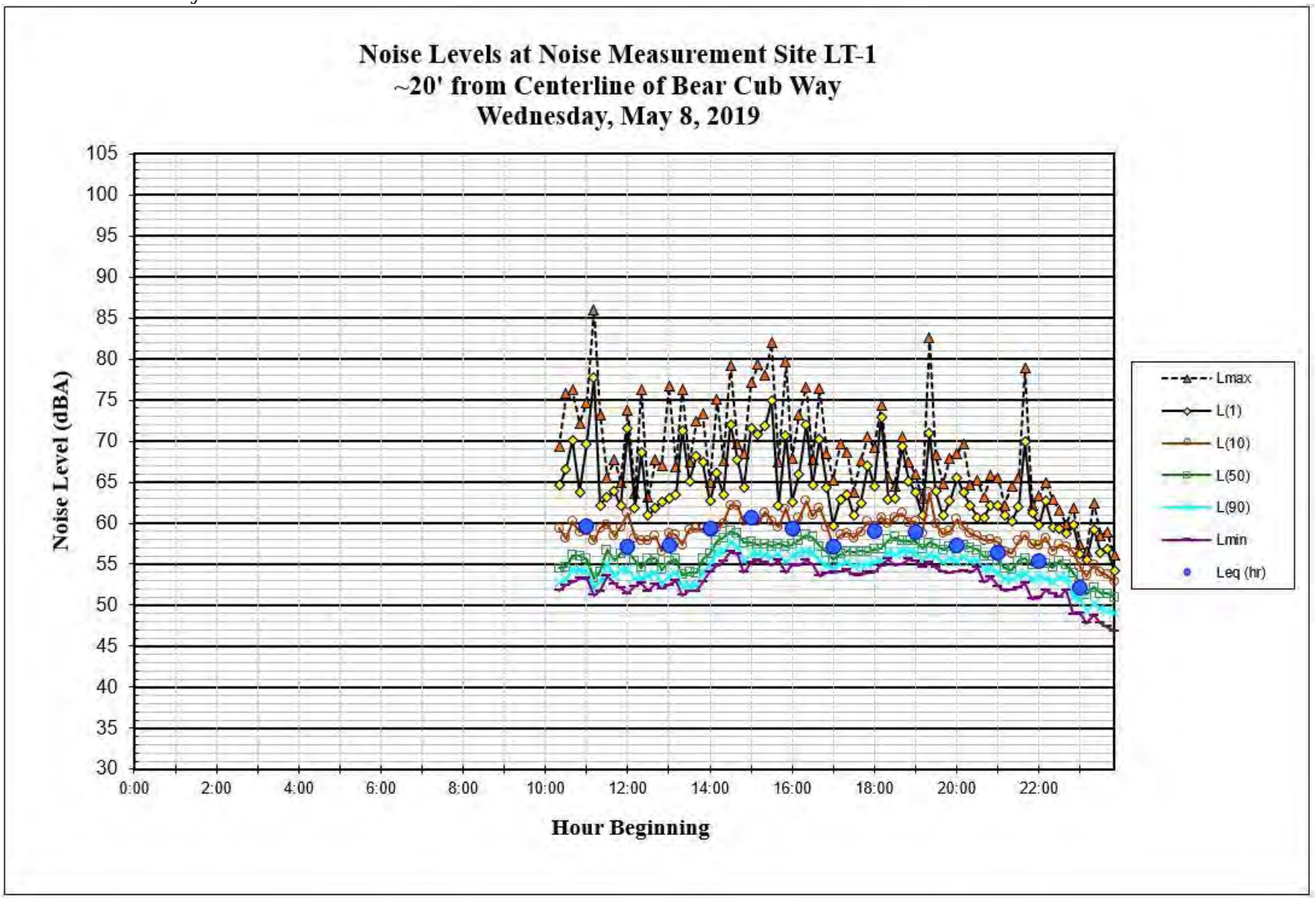


FIGURE 2B Daily Trend in Noise Levels at LT-1

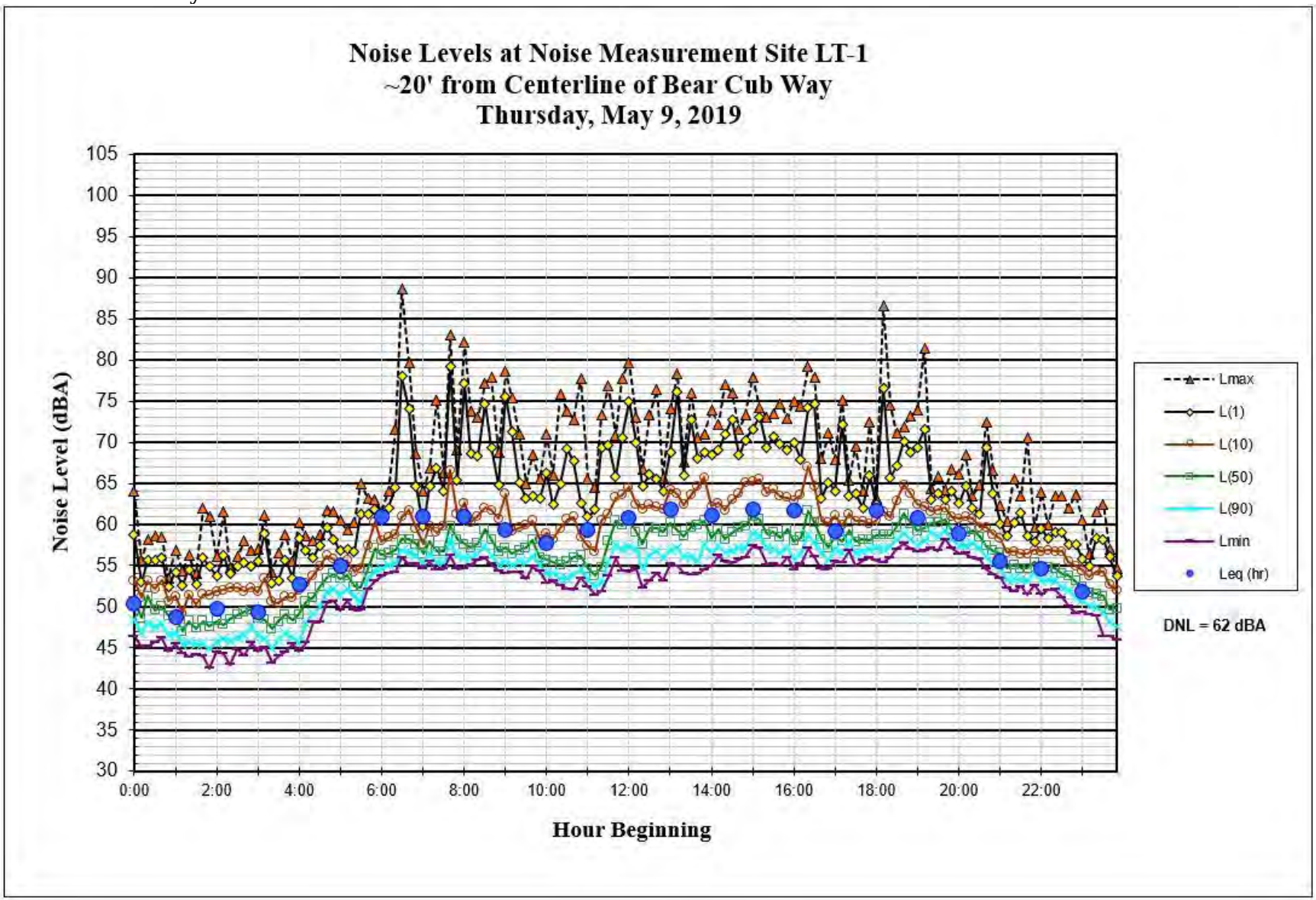


FIGURE 2C Daily Trend in Noise Levels at LT-1

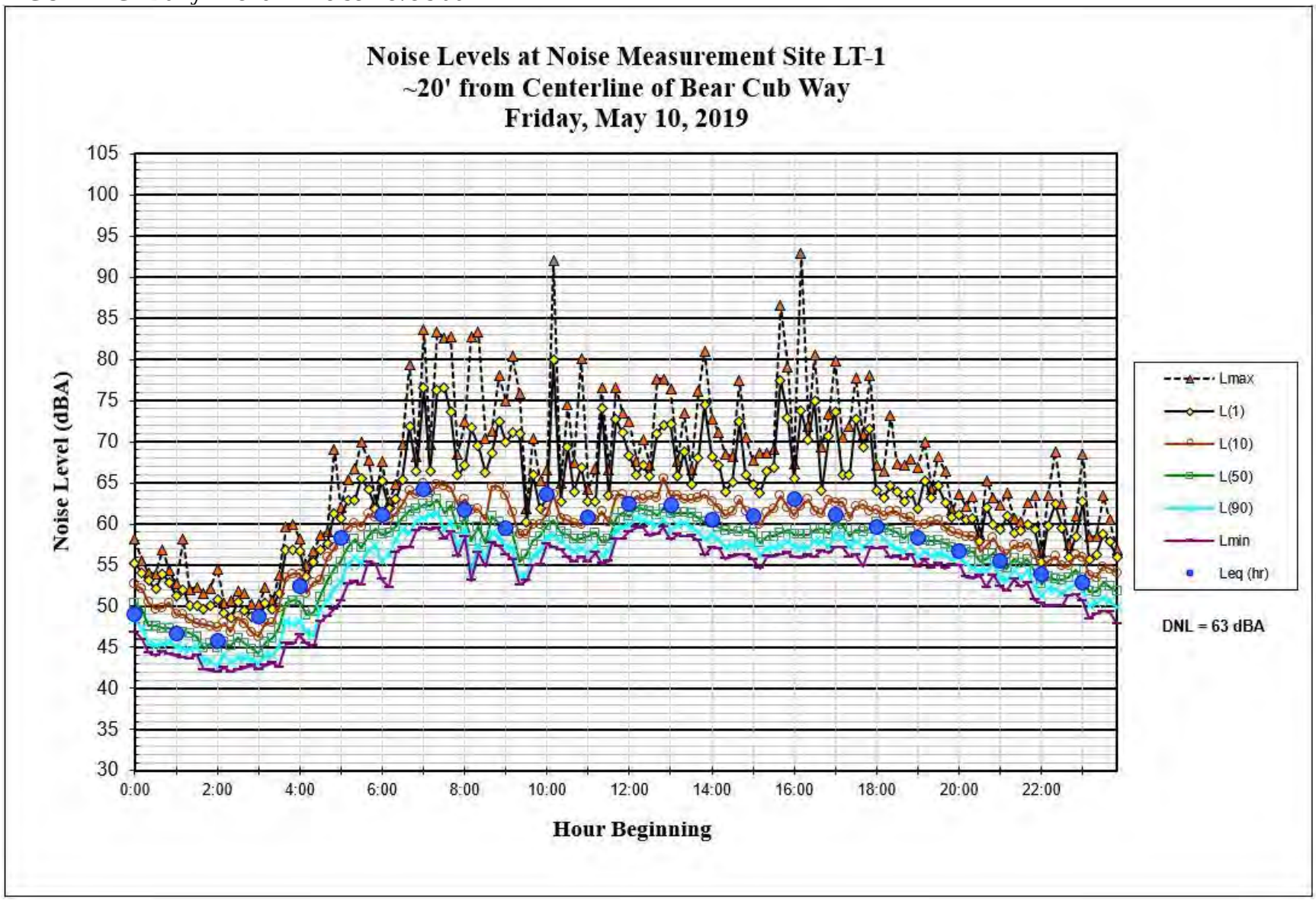


FIGURE 2D Daily Trend in Noise Levels at LT-1

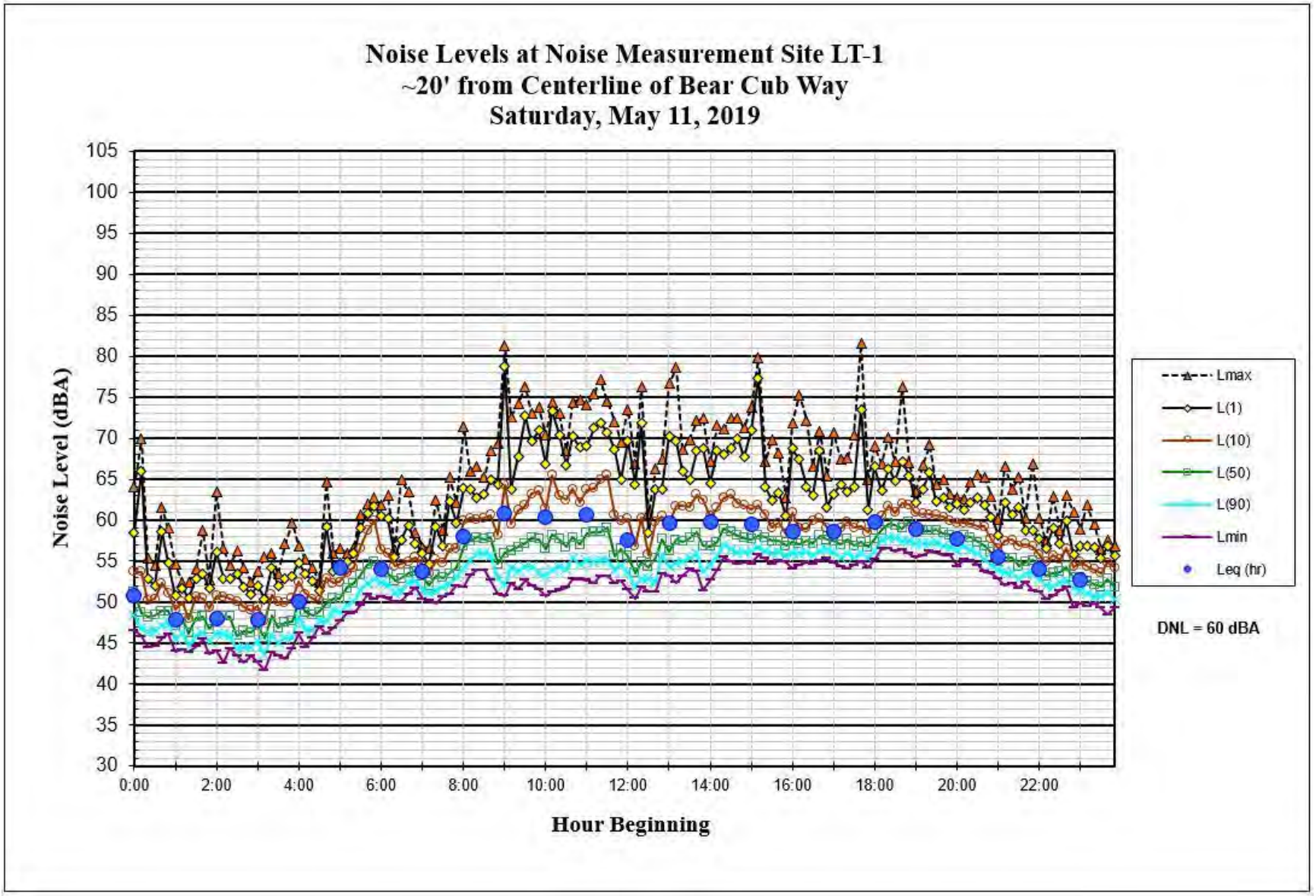


FIGURE 2E Daily Trend in Noise Levels at LT-1

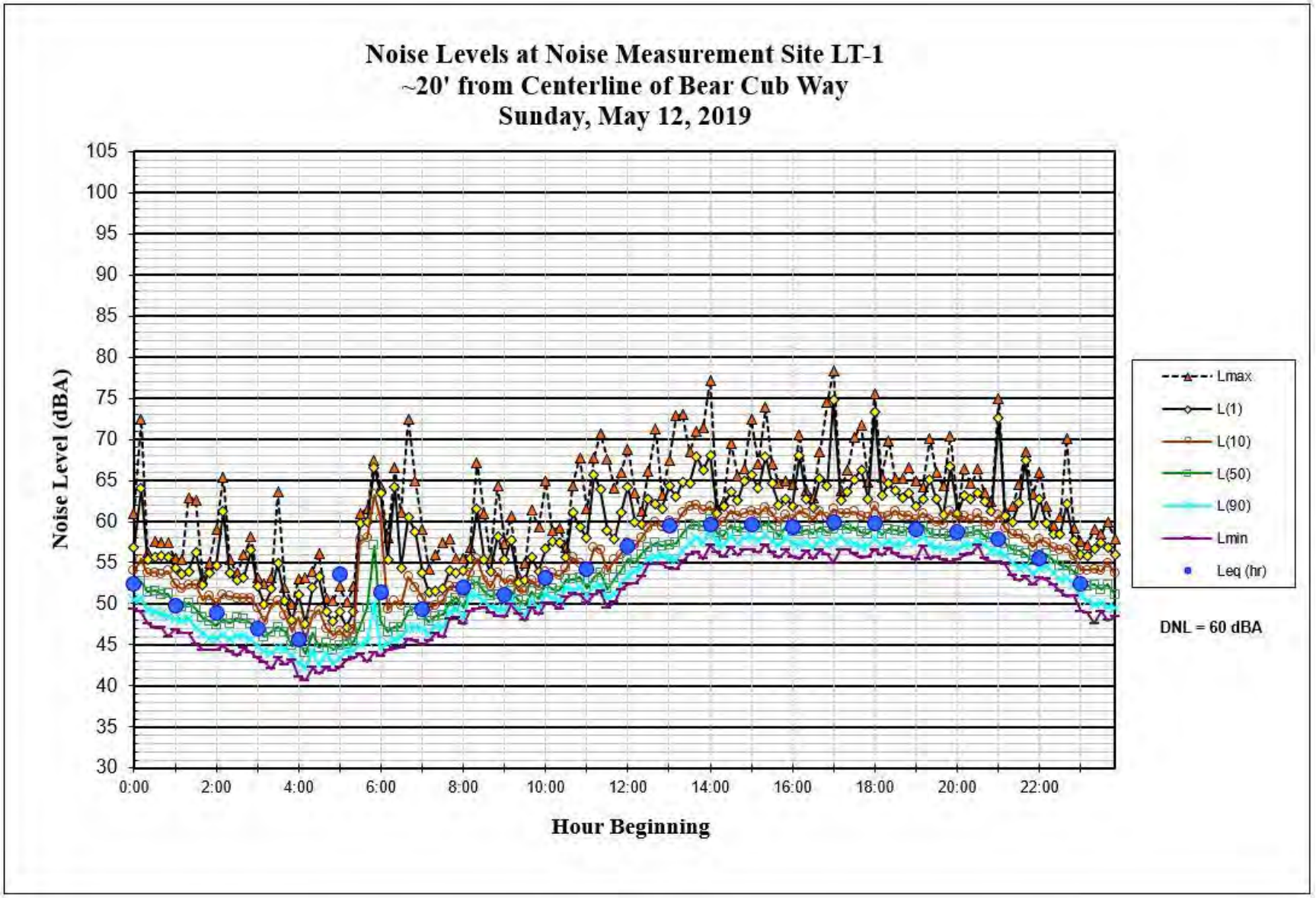


FIGURE 2F Daily Trend in Noise Levels at LT-1

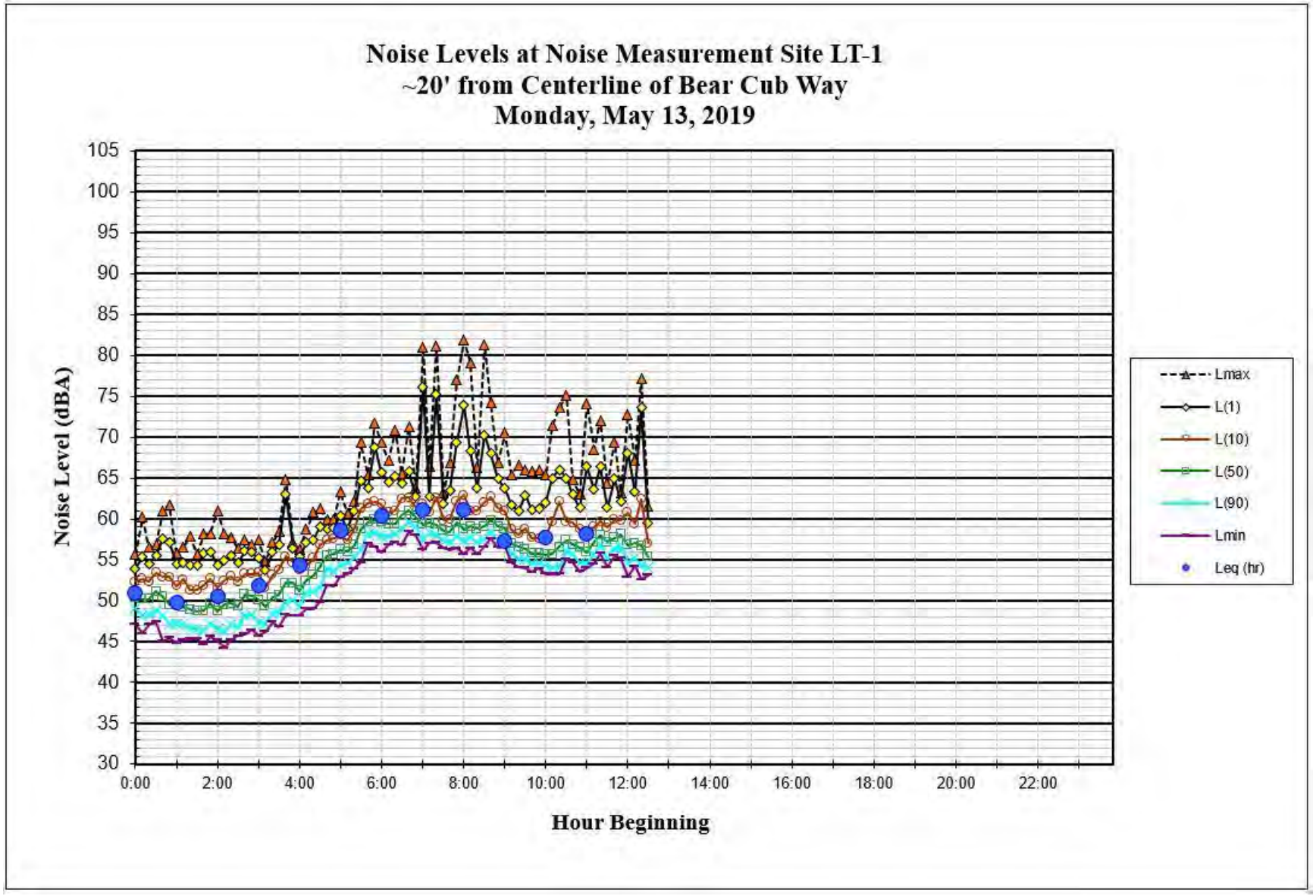


FIGURE 3A Daily Trend in Noise Levels at LT-2

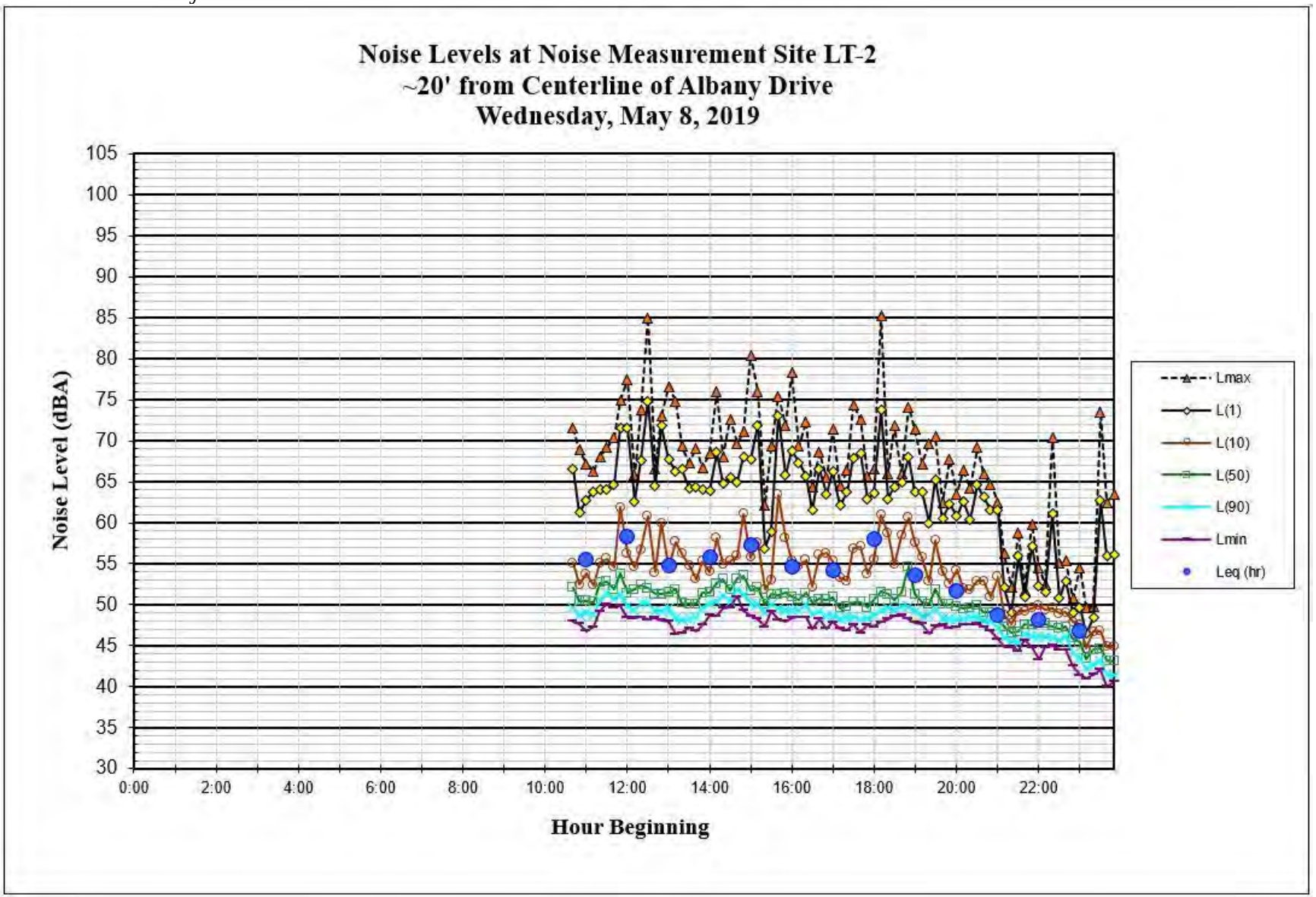


FIGURE 3B Daily Trend in Noise Levels at LT-2

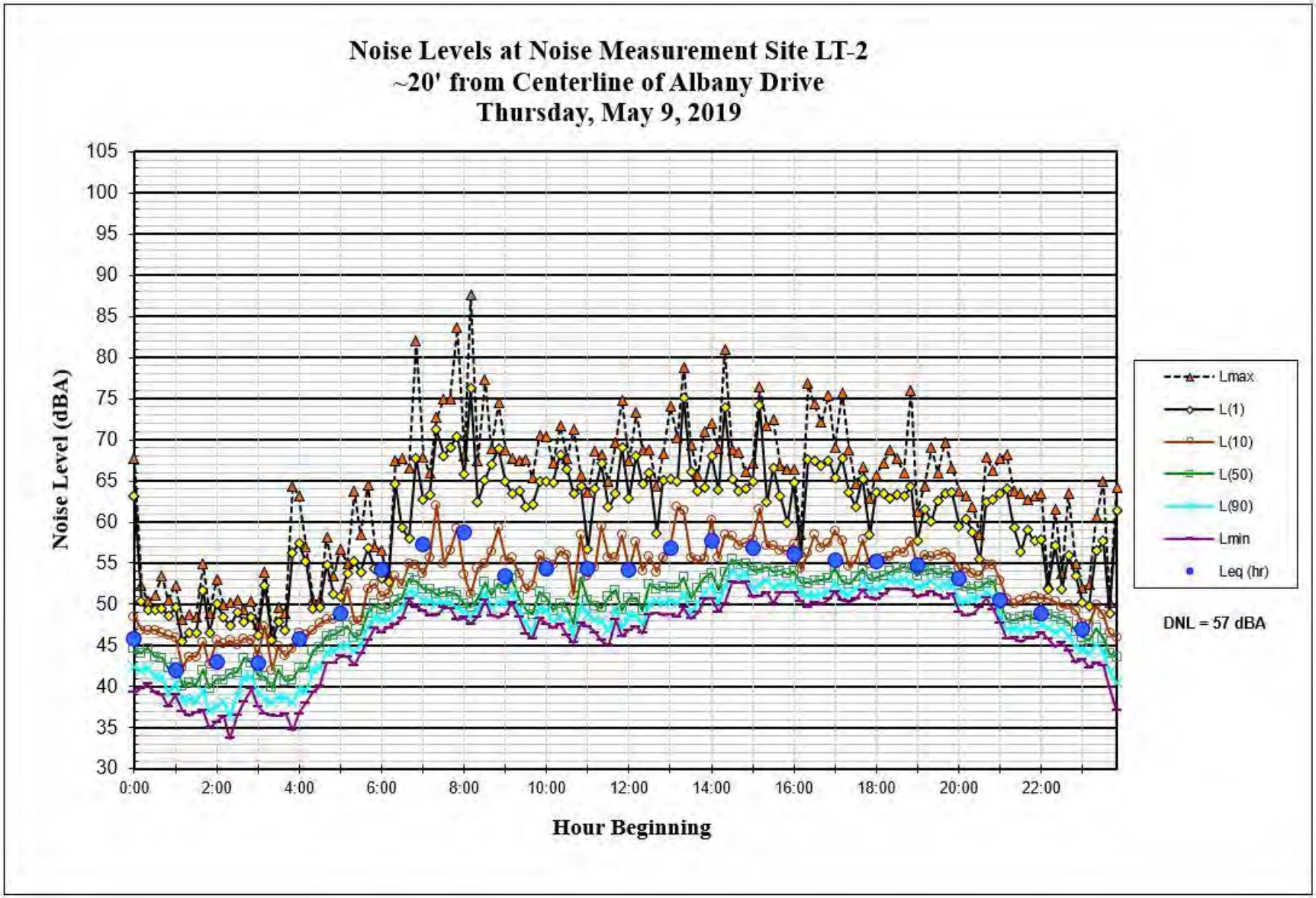


FIGURE 3C Daily Trend in Noise Levels at LT-2

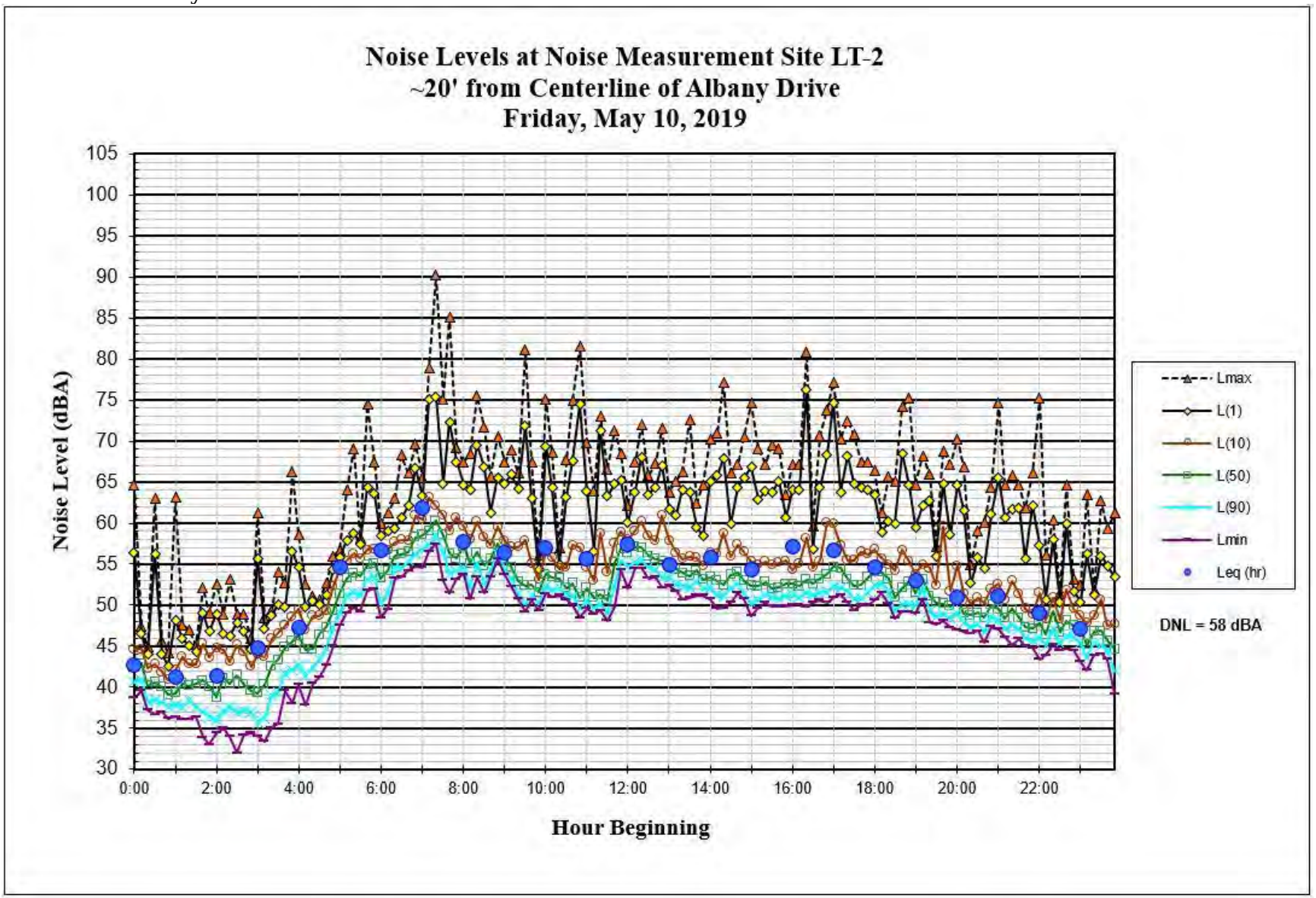


FIGURE 3D Daily Trend in Noise Levels at LT-2

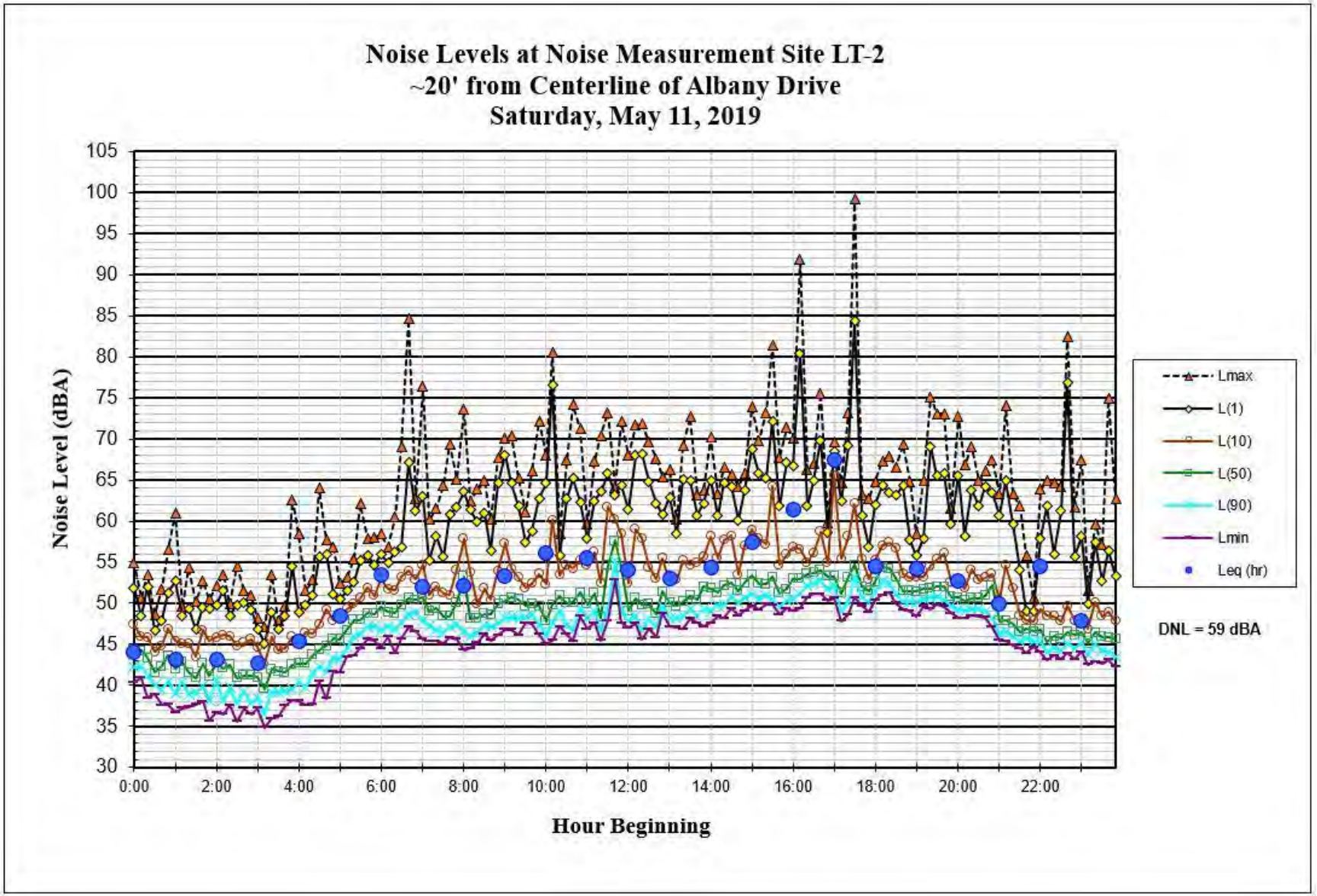


FIGURE 3E Daily Trend in Noise Levels at LT-2

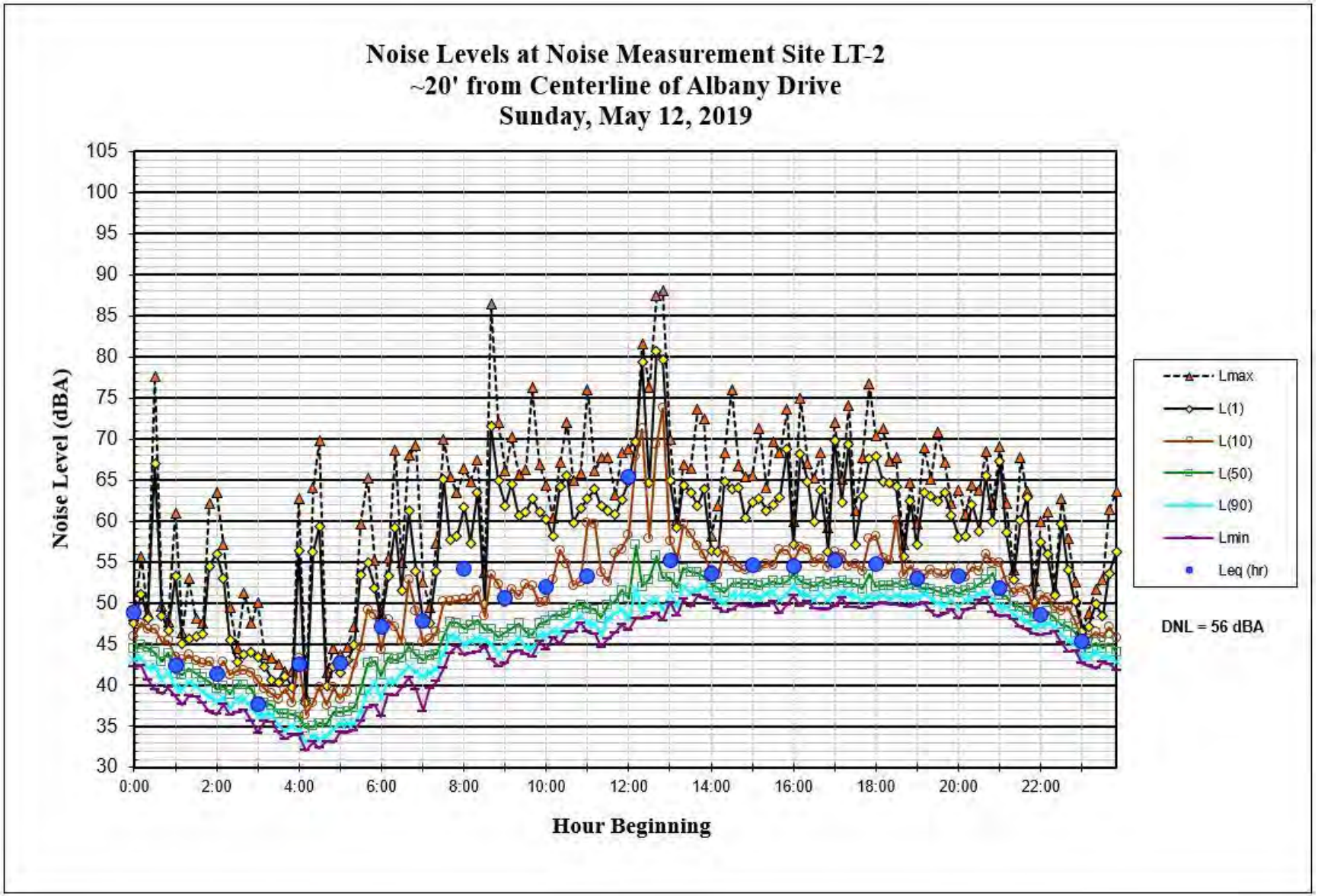


FIGURE 3F Daily Trend in Noise Levels at LT-2

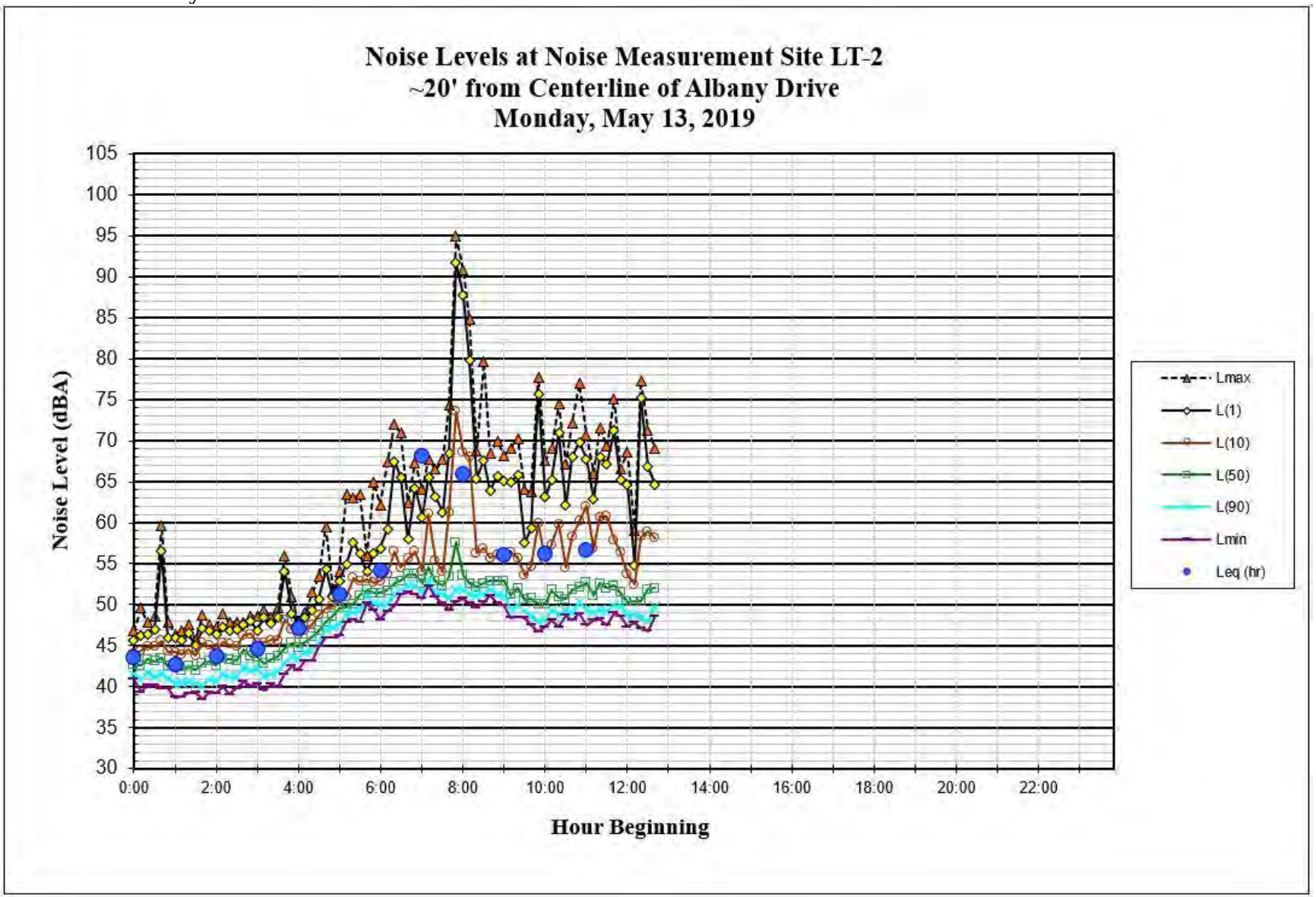


FIGURE 4A Daily Trend in Noise Levels at LT-3

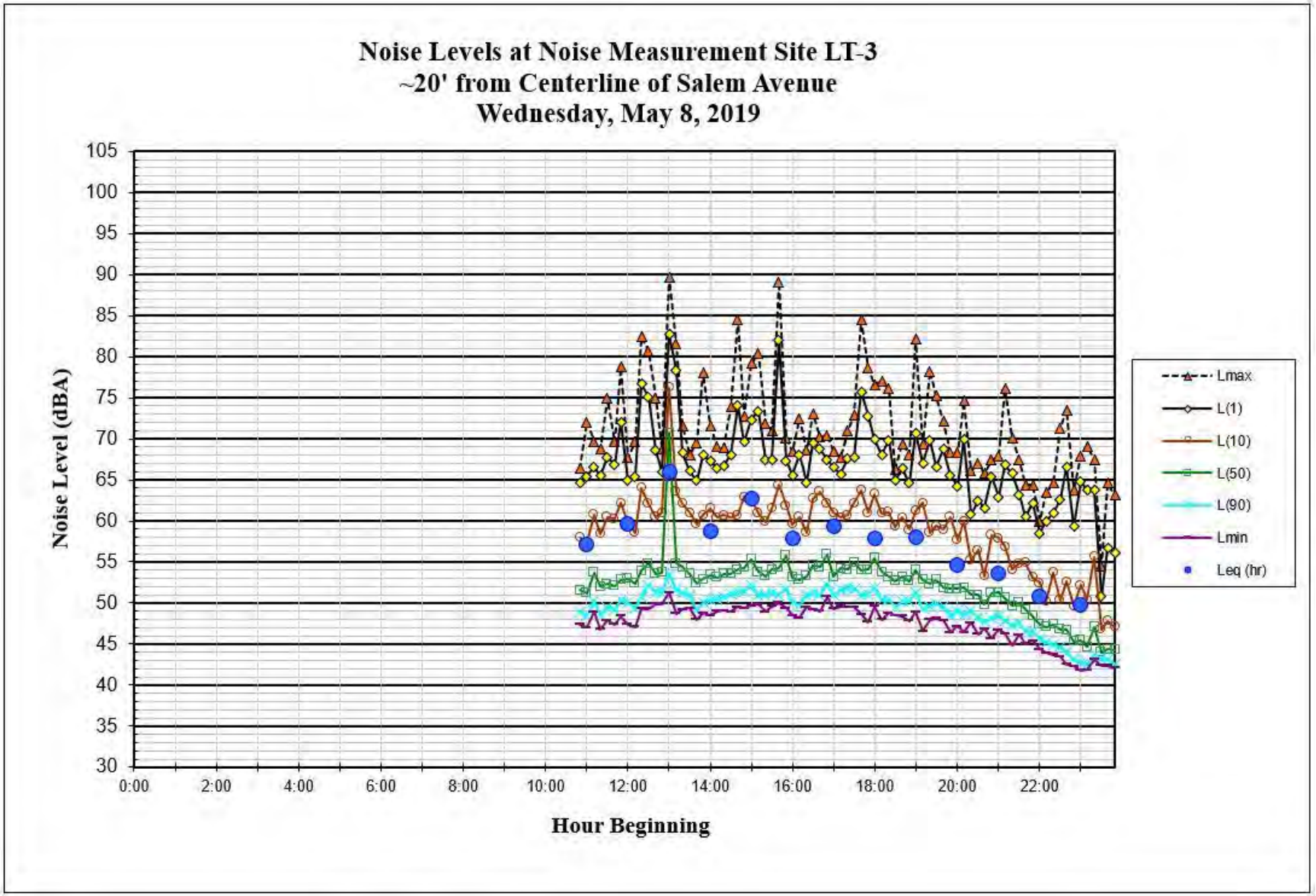


FIGURE 4B Daily Trend in Noise Levels at LT-3

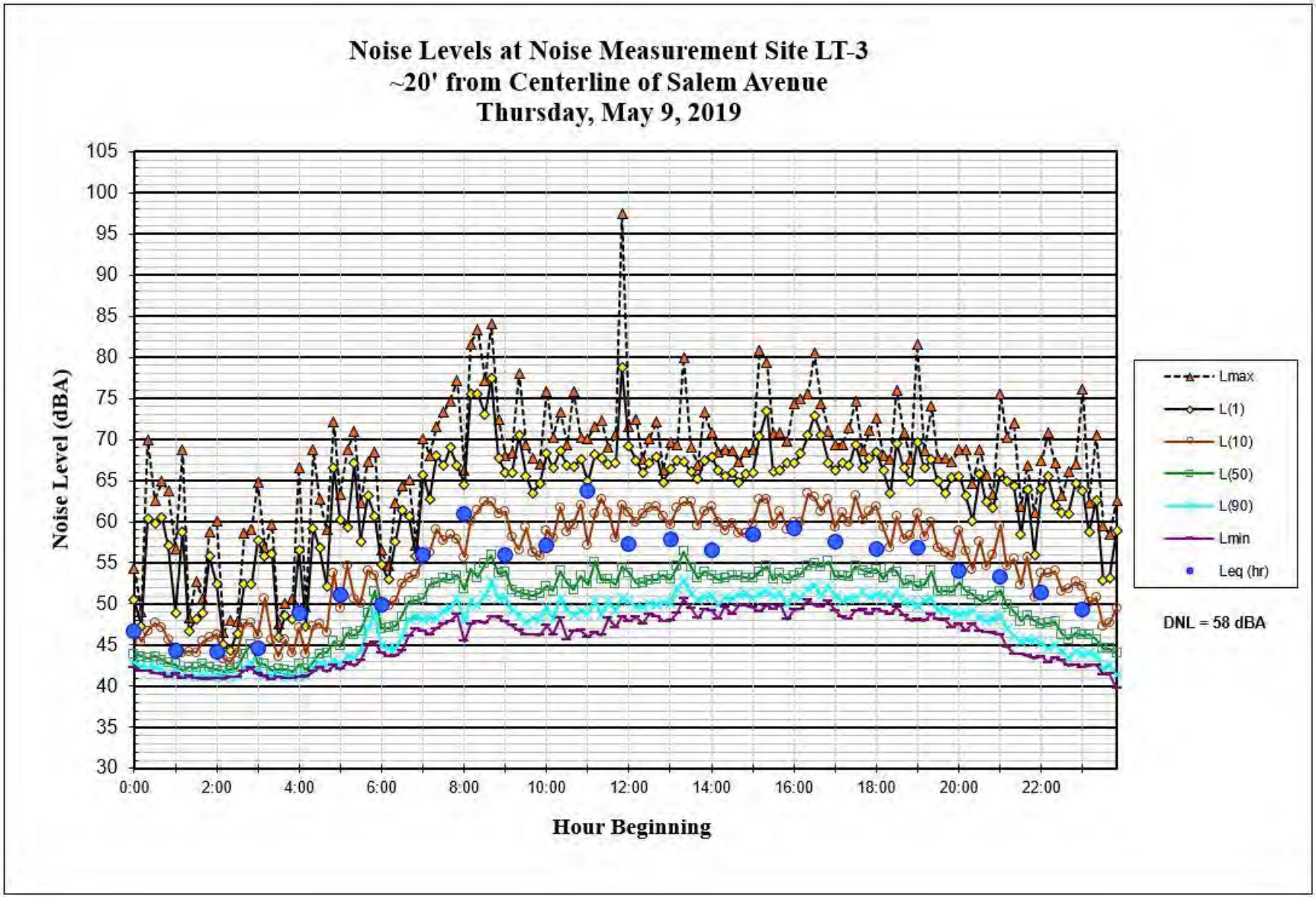


FIGURE 4C Daily Trend in Noise Levels at LT-3

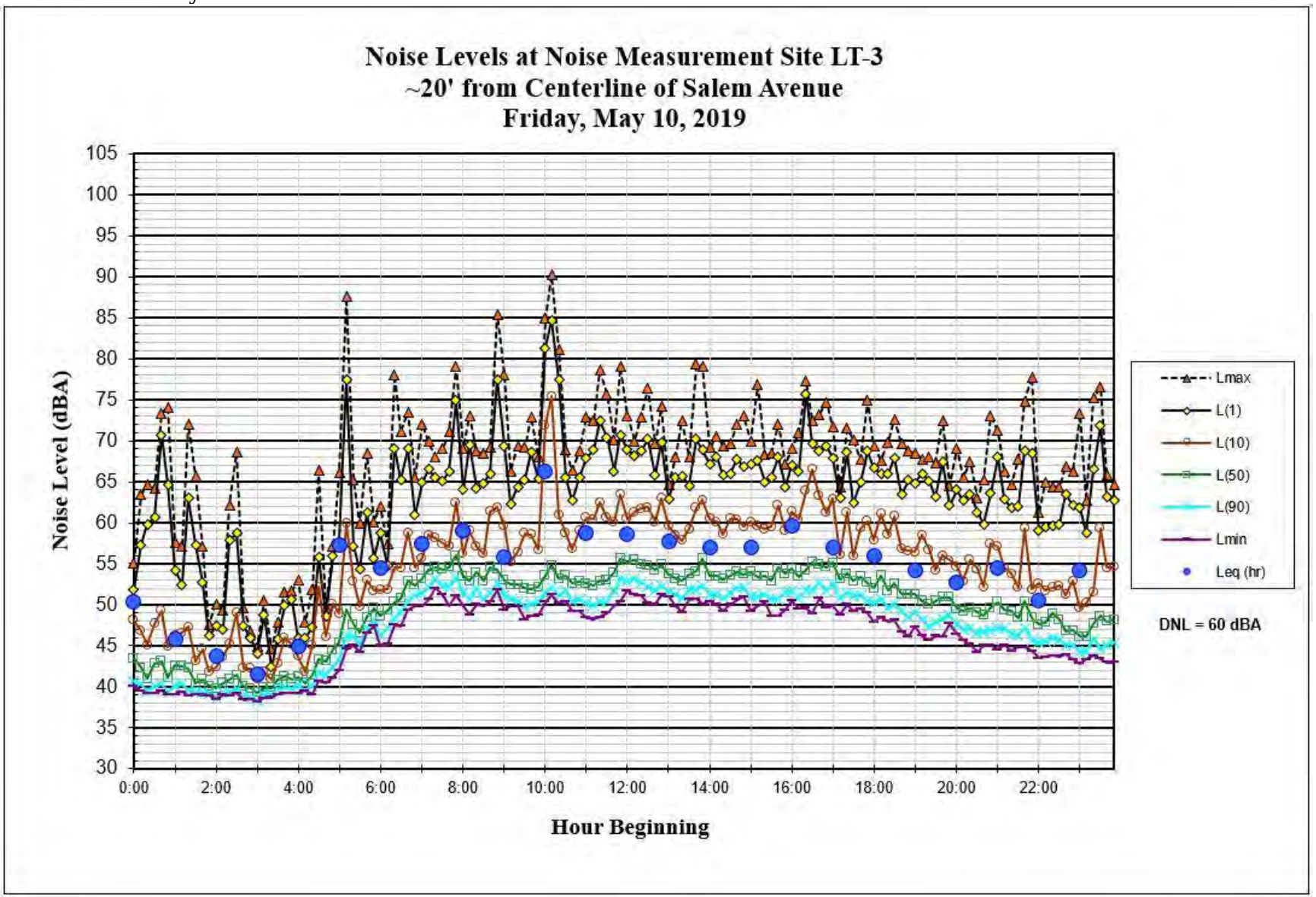


FIGURE 4D Daily Trend in Noise Levels at LT-3

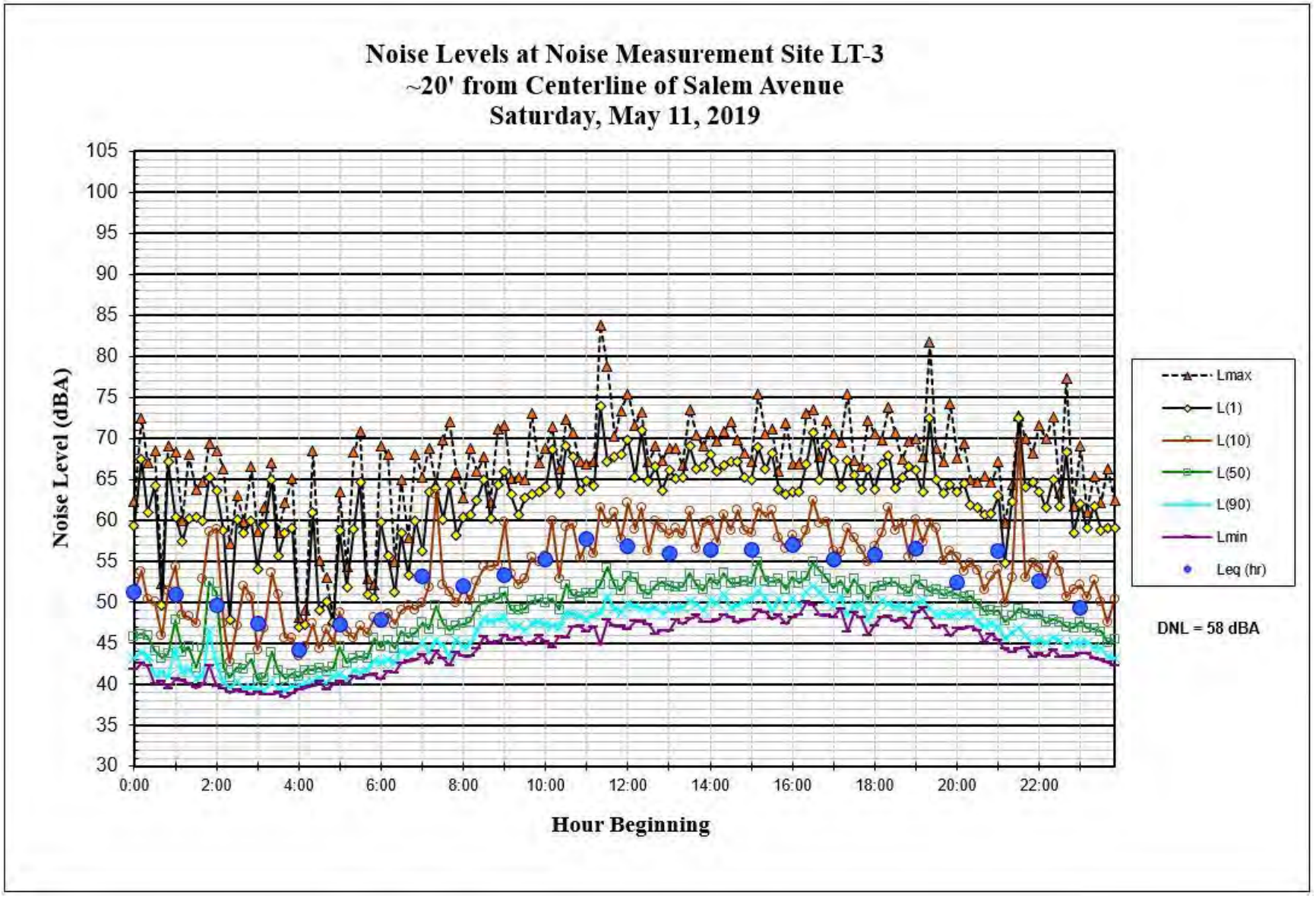


FIGURE 4E Daily Trend in Noise Levels at LT-3

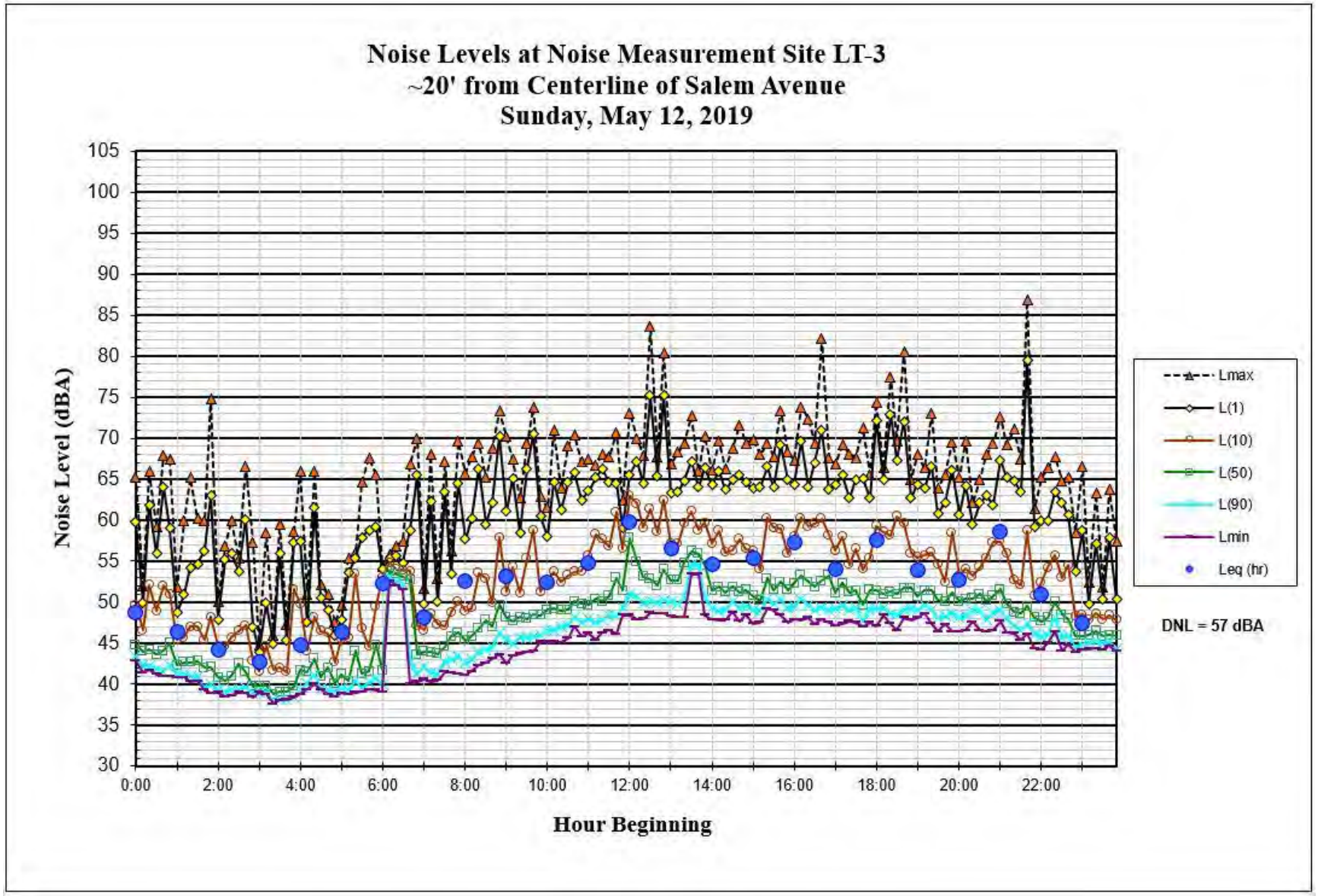


FIGURE 4F Daily Trend in Noise Levels at LT-3

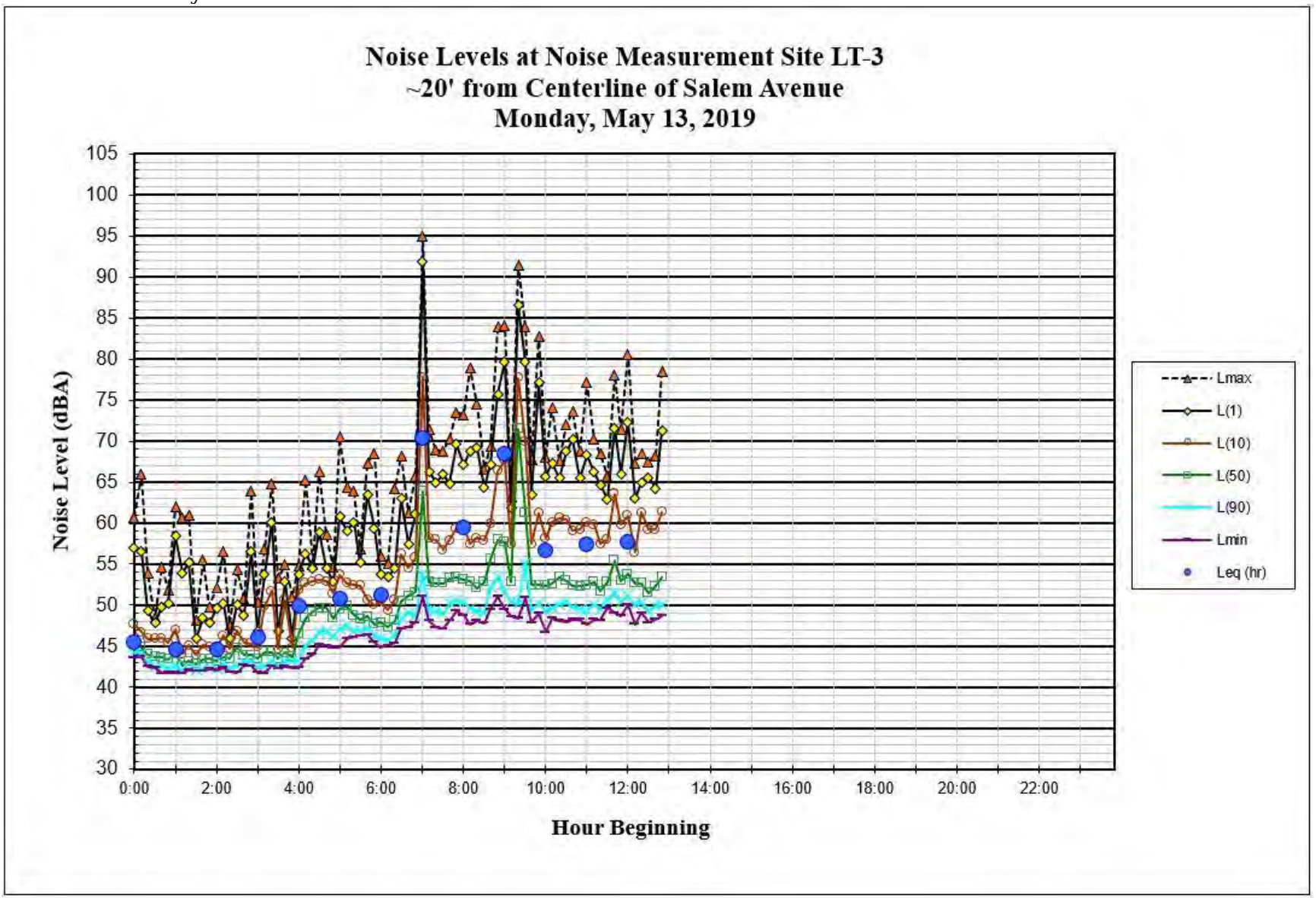


FIGURE 5A Daily Trend in Noise Levels at LT-4

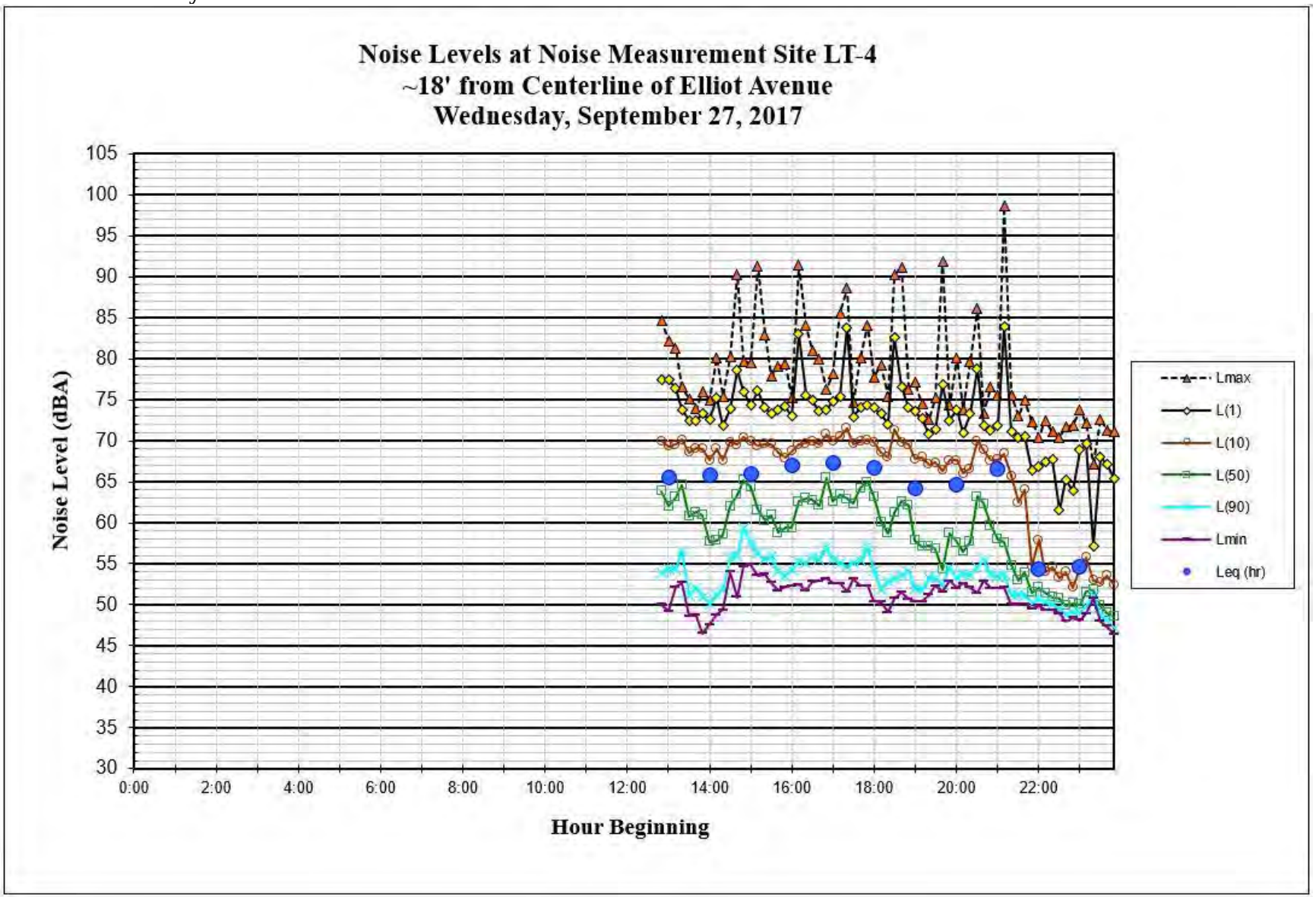


FIGURE 5B Daily Trend in Noise Levels at LT-4

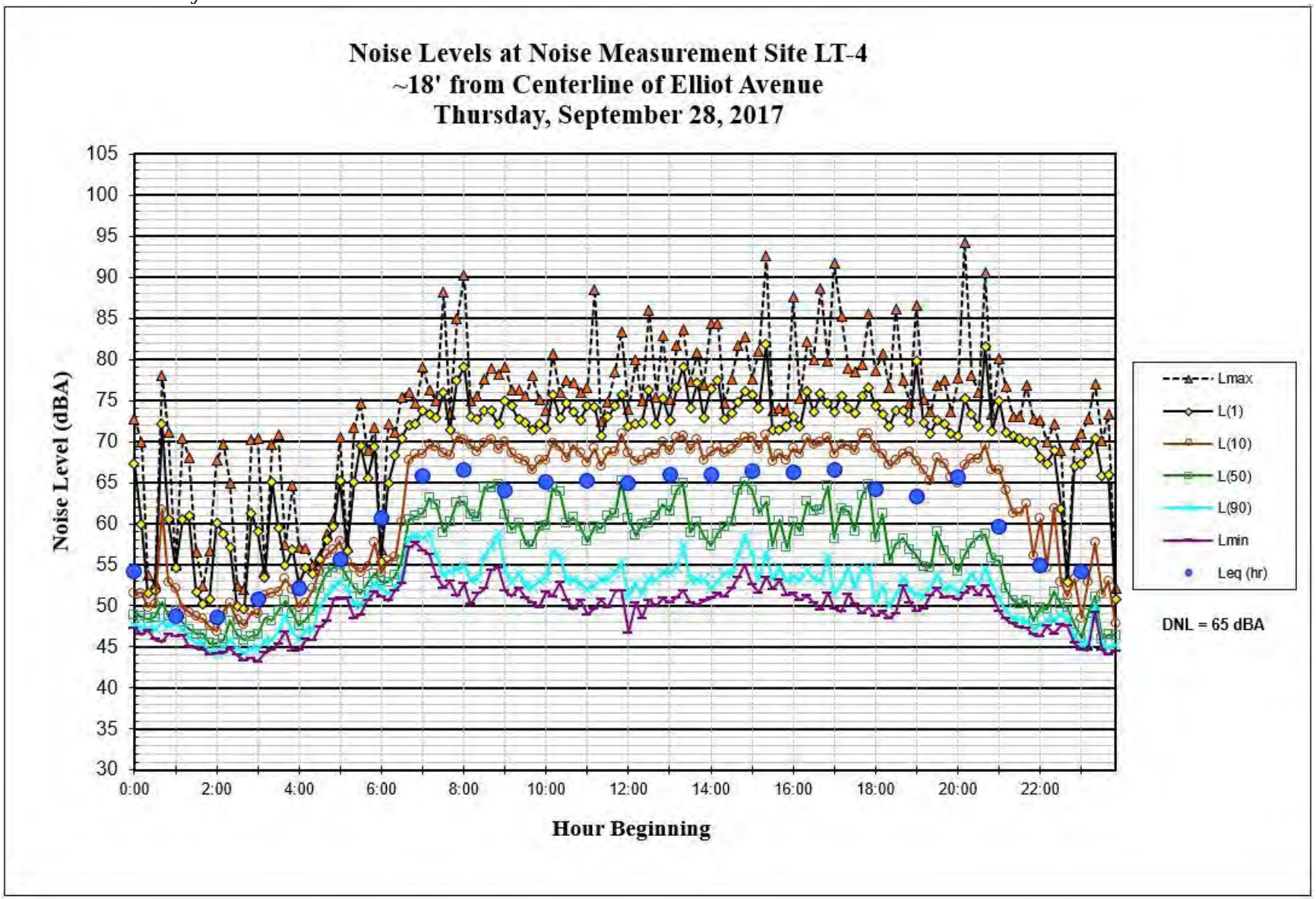


FIGURE 5C Daily Trend in Noise Levels at LT-4

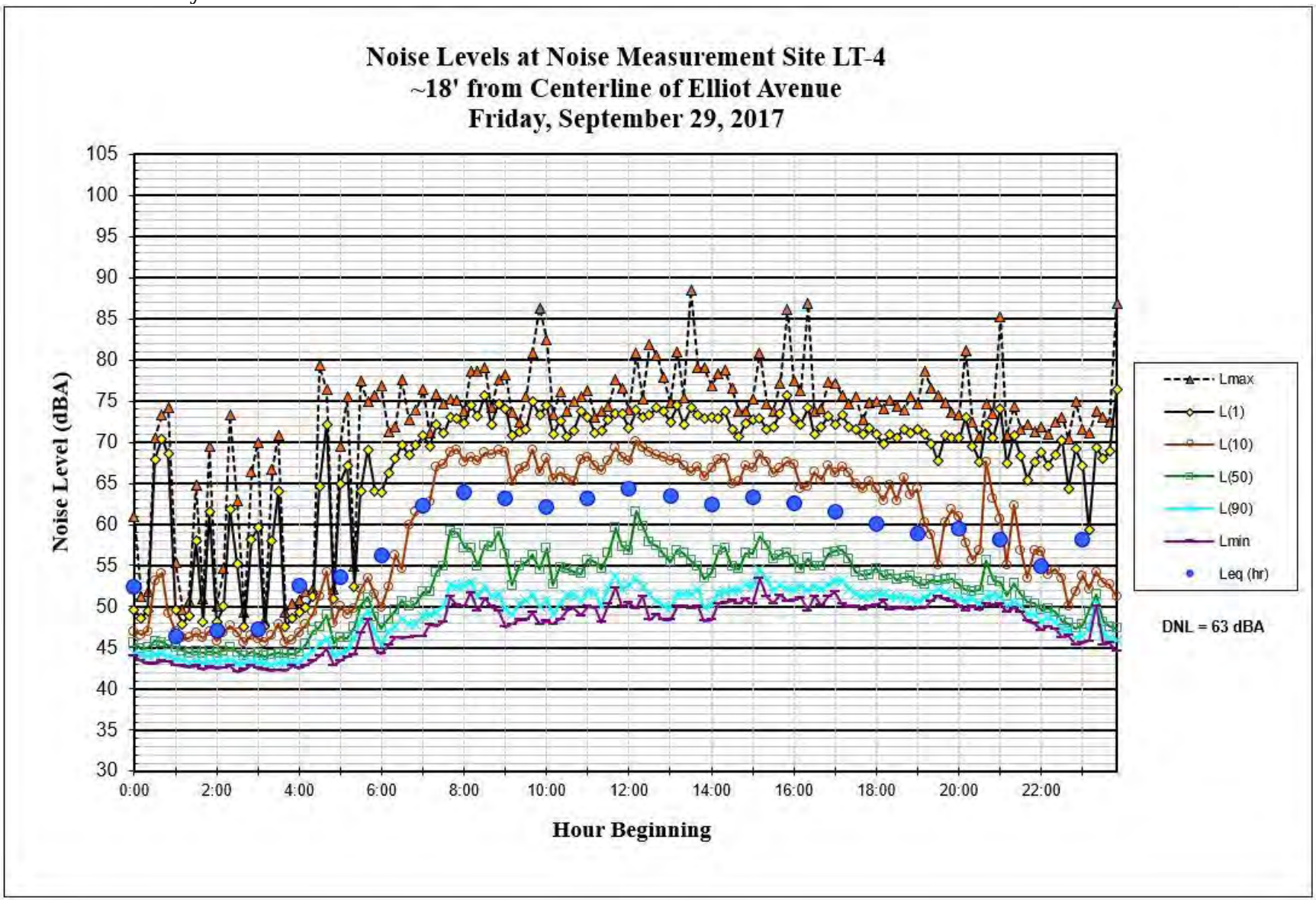


FIGURE 5D Daily Trend in Noise Levels at LT-4

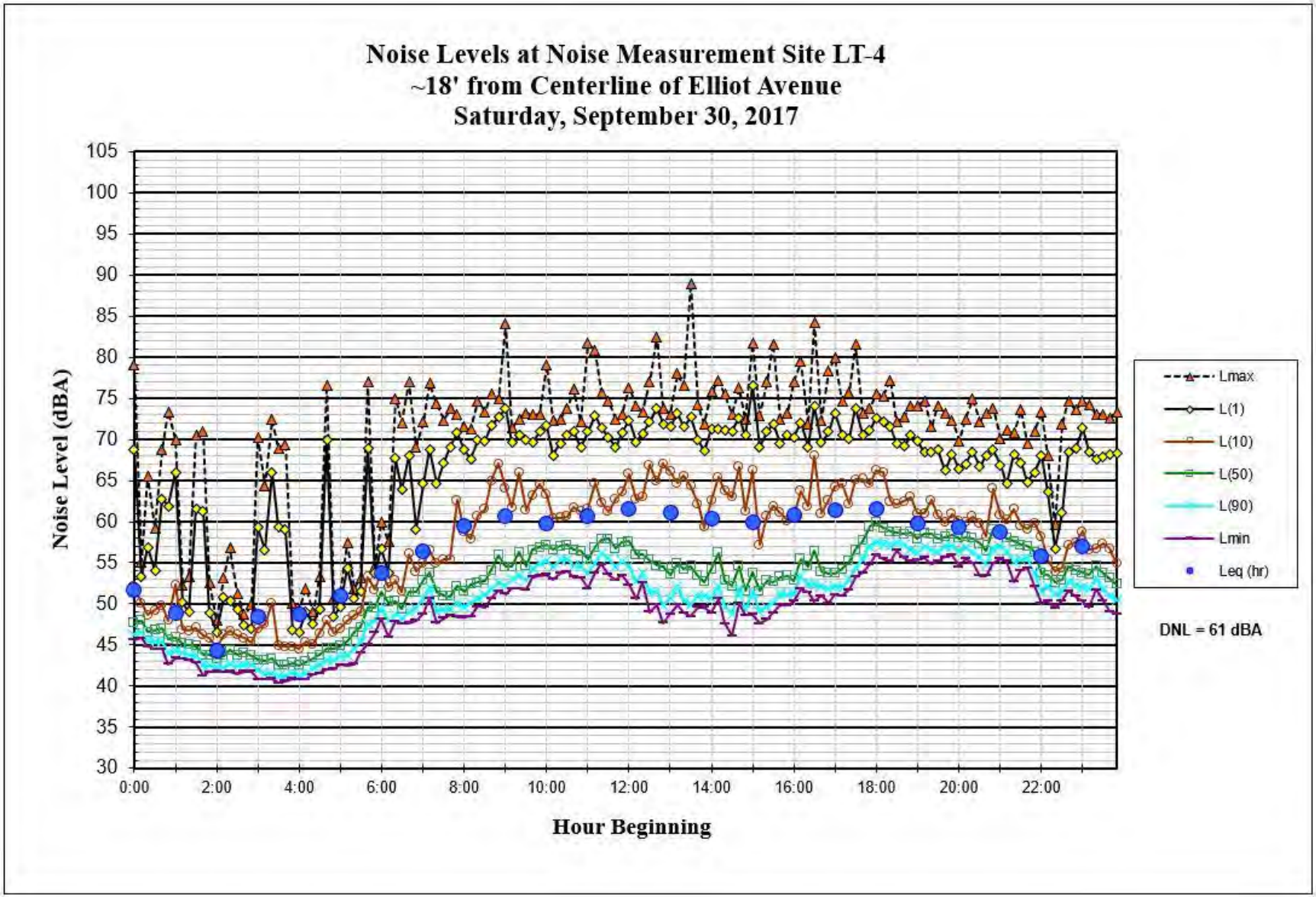


FIGURE 5E Daily Trend in Noise Levels at LT-4

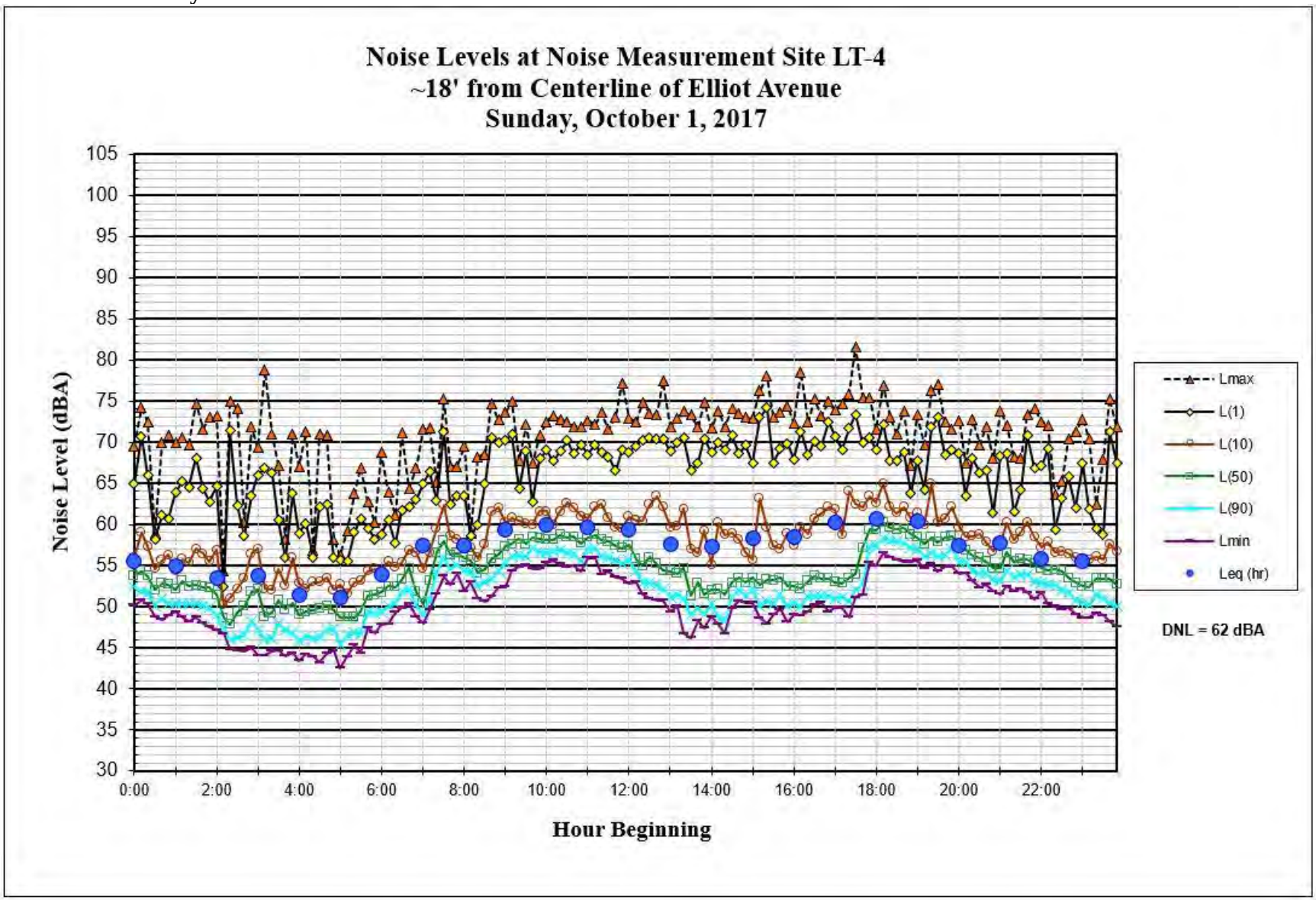


FIGURE 5F Daily Trend in Noise Levels at LT-4

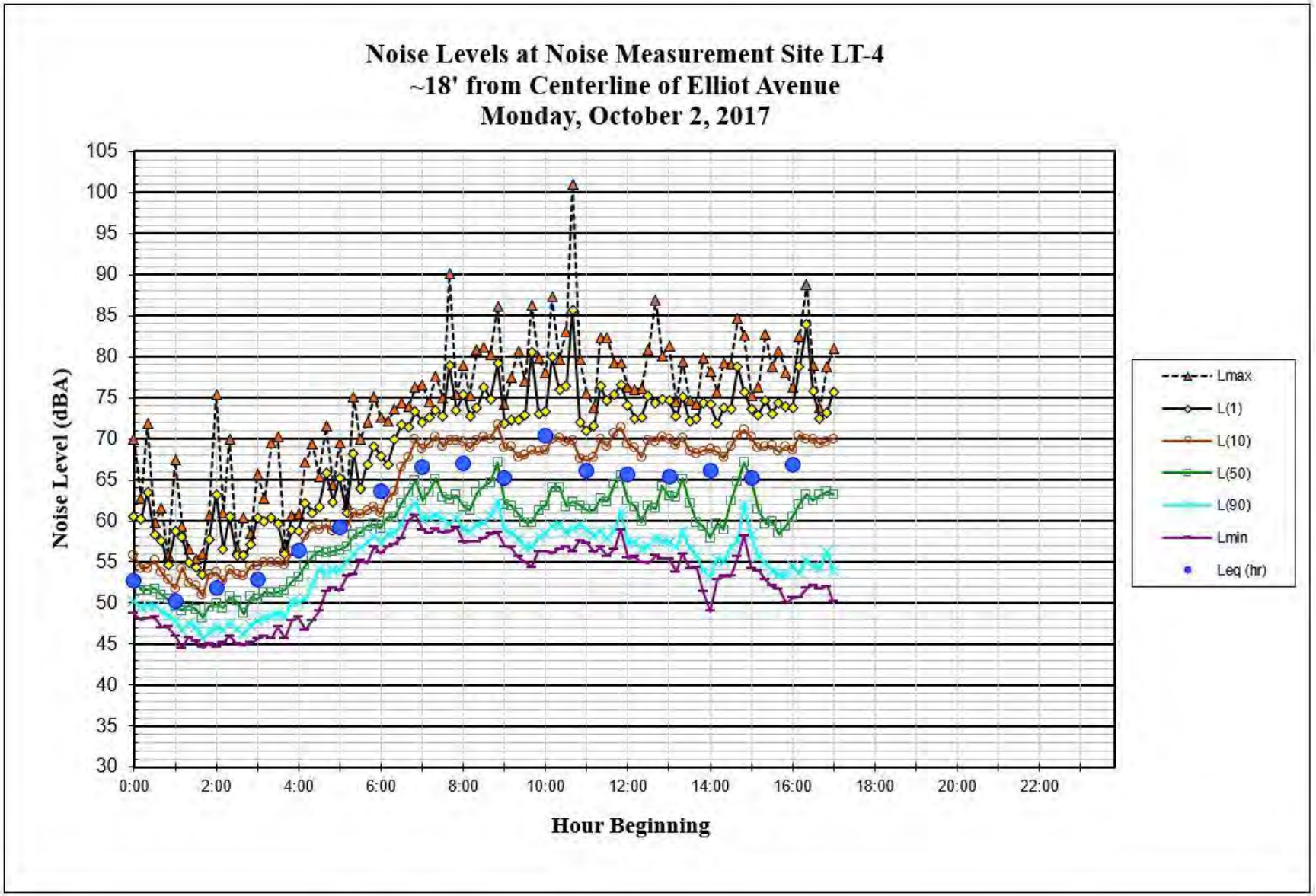


FIGURE 6A Daily Trend in Noise Levels at LT-5

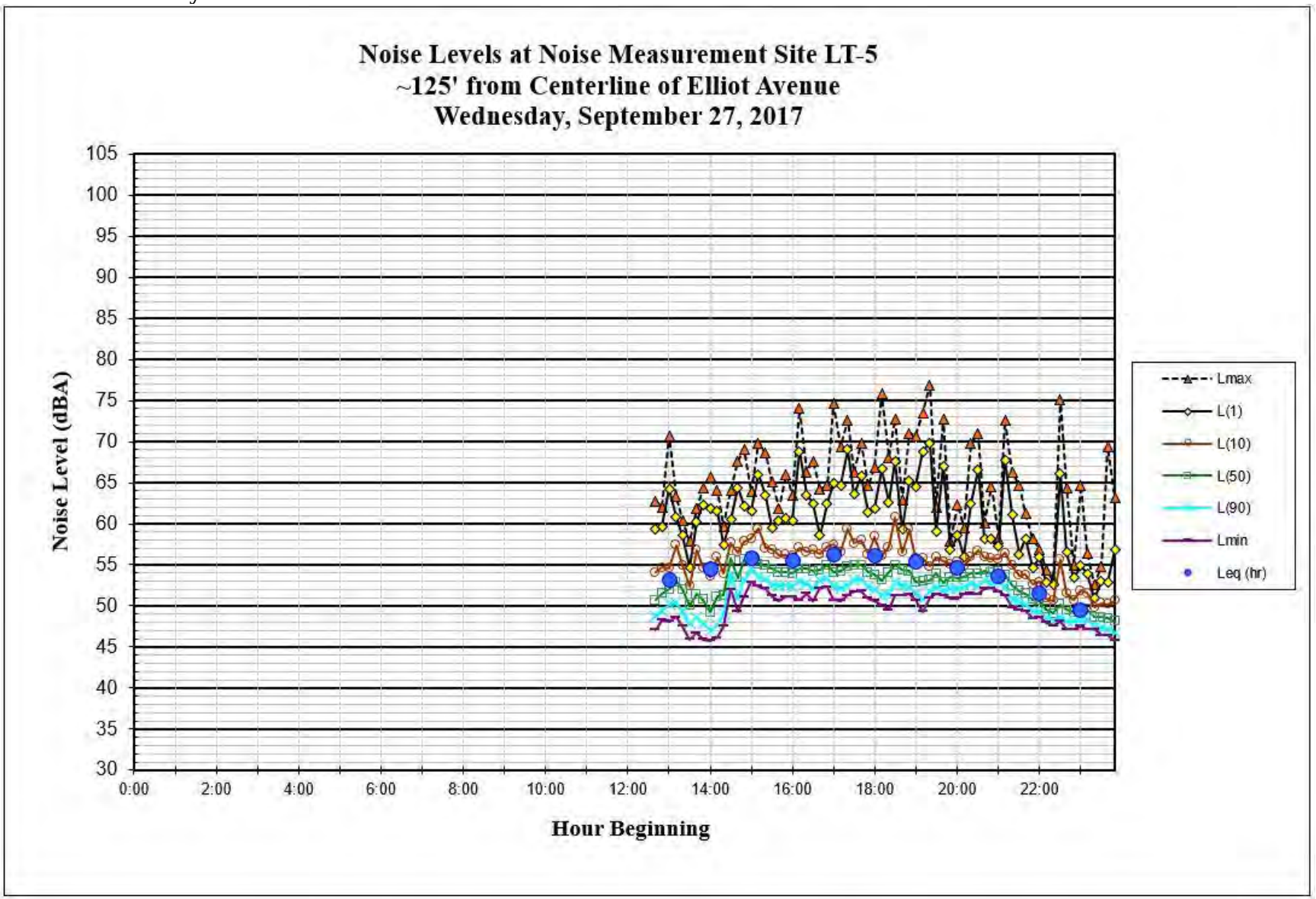


FIGURE 6B Daily Trend in Noise Levels at LT-5

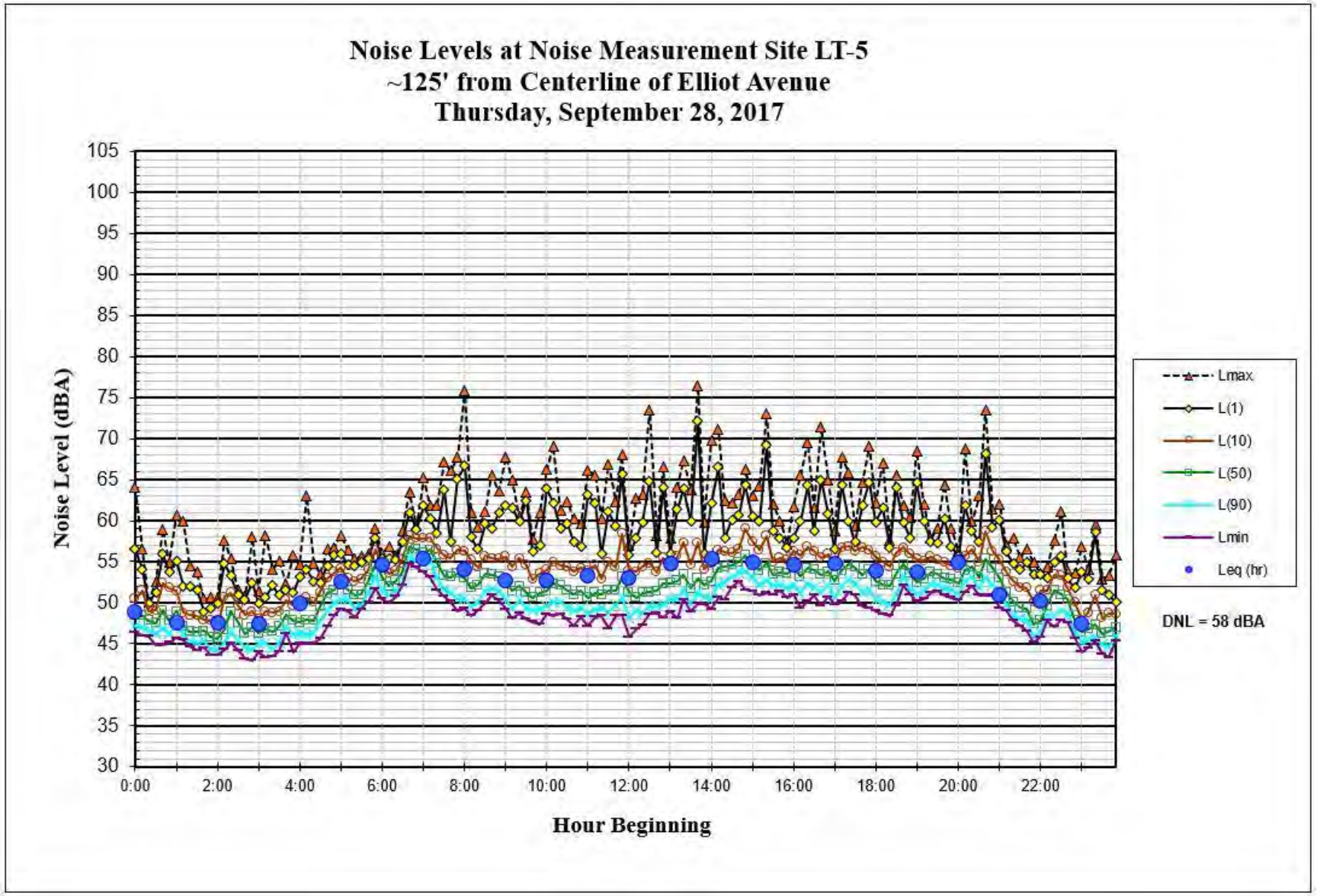


FIGURE 6C Daily Trend in Noise Levels at LT-5

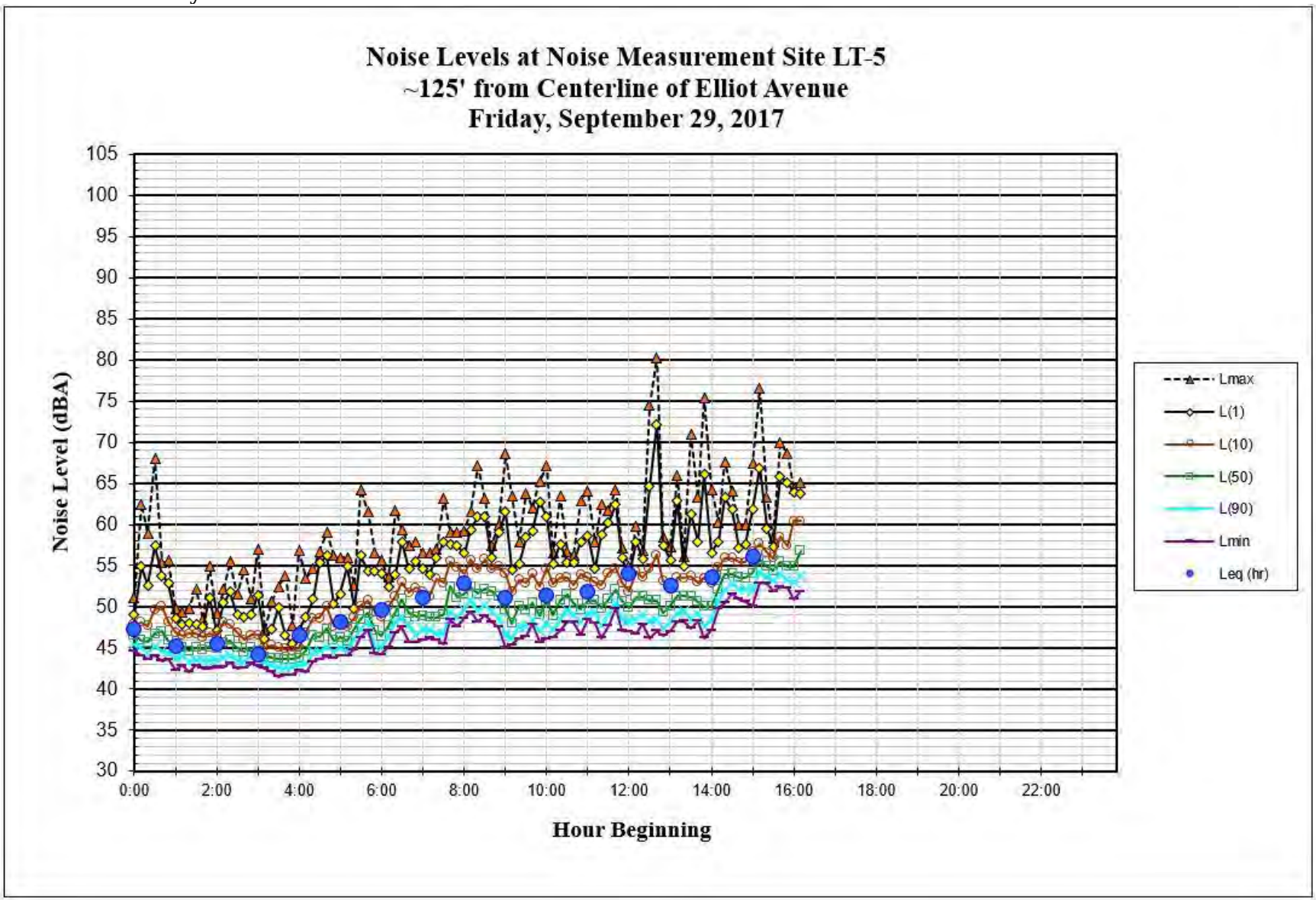


TABLE 3 Summary of Short-Term Noise Measurements (dBA)

Noise Measurement Location	Date, Time	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	$L_{eq(10\text{-}min)}$
ST-1: Clement Avenue	5/8/2019 11:00-11:10 a.m.	72	64	58	53	51	55
ST-2: Nordyke Avenue	5/8/2019 11:20-11:30 a.m.	69	64	58	54	52	56

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise resulting from the project:

- **Permanent Noise Increases in Excess of Established Standards:** A significant impact would be identified if traffic generated by the project or project improvements/operations would substantially increase noise levels at sensitive receivers in the vicinity. The City of Santa Rosa discourages new projects that have potential to create ambient noise levels more than 5 dBA DNL above existing background, within 250 feet of sensitive receptors.

Impact 1: **Permanent Noise Increases in Excess of Established Standards.** The project would not result in substantial permanent noise level increases at existing noise-sensitive land uses in the project vicinity. **This is a less than significant impact.**

Based on Policy NS-B-14 of the City of Santa Rosa General Plan, a significant impact would occur if the proposed project would result in a permanent noise level increase due to project-generated traffic of 5 dBA DNL or greater at sensitive receptors located within 250 feet of the project site. For reference, a 5 dBA DNL noise increase would be expected if the project would triple existing traffic volumes along a roadway where local roadway traffic is the primary noise source.

A review of the peak hour traffic volumes provided in the traffic study for the proposed project was conducted, and the Federal Highway Administration's (FHWA) Traffic Noise Model, version TNM 2.5, (TNM 2.5) was used to calculate noise levels under existing and existing plus project conditions. In order to provide a worst-case assessment along the major roadways in the study area, the modeling focused on weekdays when SRJC classes would be in session and did not incorporate existing buildings or barriers into the calculations. The 15 intersections included in the traffic study can be seen in Figure 7. Based on a screening review of the traffic data, it was concluded that 2 road segments had the potential for substantial increases in traffic noise resulting from re-routing traffic in the study area. The segments that had potential for substantial increases in traffic noise were Clement Avenue between Salem Avenue and Mendocino Avenue (Intersections 6 and 7), and the northern segment of the Elliot Avenue/Emeritus Circle West intersection (Intersection 10). The results of the calculations showing intersection segments with increased noise levels from rerouting traffic are summarized in Table 4.

TABLE 4 Roadway Segments with Increased Noise Levels from Project

Roadway	Segment	Noise Level Increase from Existing Conditions, dBA DNL		
		Existing	Existing Plus Project	Increase
Clement Avenue	Salem Avenue to Mendocino Avenue	59	60	1
Emeritus Circle West Parking Lot	Just North of Elliot Avenue	64	65	1
Emeritus Circle West Parking Lot	North of Elliot Avenue near Clement Avenue	57	58	1

Project traffic is expected to increase ambient noise levels by at most 1 dBA DNL along the most affected roadway study segments, and by 0 to 1 dBA DNL on the remaining roadway segments in the project area. Project traffic would not substantially increase traffic noise levels by 5 dBA DNL or more, and is considered to be a **less-than-significant** impact.

Mitigation Measures: NONE

FIGURE 7 Traffic Study Intersection Locations