MITIGATED NEGATIVE DECLARATION / INITIAL STUDY

HOTEL SEBASTOPOL

6828 Depot Street
6826 Depot Street
6824 Depot Street
215 Brown Street
225 Brown Street

CITY OF SEBASTOPOL
PLANNING DEPARTMENT
CITY HALL
7120 BODEGA AVENUE
SEBASTOPOL, CALIFORNIA 95472

AUGUST 9, 2016

I. Environmental Checklist Forms - Mitigated Negative Declaration

1. Project Title	Hotel Sebastopol
2. Lead Agency Name and Address	City of Sebastopol Planning Department 7120 Bodega Avenue, Sebastopol, CA 95472 http://ci.sebastopol.ca.us
3. Contact Person and Phone Number	Kenyon Webster, Planning Director (707) 823-6167 kwebster@cityofsebastopol.org
4. Project Location	6828 Depot Street (004-052-001) 6826 Depot Street (004-061-007) 6824 Depot Street (004-061-008) 215 Brown Street (004-061-009) 225 Brown Street (004-061-010)
5. Project Sponsor's Name and Address	Piazza Hospitality Group 414 Healdsburg Avenue Healdsburg, CA 95448
6. General Plan Designation	Downtown Core
7. Zoning	CD: Downtown Core
8. Description of Project	The project involves the development of a 66-room hotel, which will consist of multiple buildings, ranging from two to four stories with a height of 50 feet at its highest elevation. The hotel will contain the following amenities and mix of uses: A lobby and reception area, hostel rooms, retail space, artist-maker studios, restaurant, bar, lounge, wellness center, public courtyard, private gardens, outdoor rooftop decks, meeting rooms, and various other hotel amenities.
9. Surrounding Land Uses and Setting	The site is mostly surrounded by commercial and recreational uses. Rialto Cinemas and a City park area and public parking lot are located north of the site across McKinley Street. Commercial and industrial uses, including The Barlow, an adaptive reuse and light industrial development, are located to the east of the site. Commercial uses are located to the south of the site across Depot Street. Commercial uses and the Mario Savio Free Speech Town Plaza are located west of the site across Petaluma Avenue.
10. Other public agencies whose approval is required (Permits, financing approval, or participation agreement.)	California Department of Transportation (Caltrans) • Caltrans Encroachment Permit Department of Alcoholic Beverage Control (ABC) • Type 47 ABC License

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.

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

The Initial Study finds that construction-period activities during site preparation and grading would temporarily generate fugitive dust, including disturbed soils at the construction site and trucks carrying uncovered loads of soils. It also finds that vehicles leaving the project site would deposit mud on local streets, creating an additional source of airborne dust after it dries, if not properly controlled. The project will have a less-than-significant impact as it relates to community risk caused by construction activities, after the following mitigation measure is implemented:

- *Mitigation Measure AQ-1: Include basic measures to control dust and exhaust during construction. During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:*

  1. *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.*

  2. *All haul trucks transporting soil, sand, and other loose material off-site shall be covered.*

  3. *All visible mud or dirt track-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 is prohibited.*

  4. *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).*

  5. *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*

  6. *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*

7. *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.*

8. *Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.*

The Initial Study finds that construction equipment and heavy-duty truck traffic generate diesel exhaust, which is a known as TAC (Toxic Air Contaminant), a potentially significant impact. The project will have a less-than-significant impact as it relates to community risk caused by construction activities, after the following mitigation measure is implemented:

- *Mitigation Measure AQ-2: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.*

  1. *All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.*

DETERMINATION: 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 will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will 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 will be prepared.

☐ I find that the proposed project 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 although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have 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.

Kenyon Webster 8/9/16

Signature Date

Kenyon Webster, CEQA Coordinator

II. Project Description

The project involves the development of a 66-room hotel, which will consist of multiple buildings, ranging from two to four stories with a height of 50 feet at its highest elevation. The hotel will contain the following amenities and mix of uses: A lobby and reception area, hostel rooms, retail space, artist-maker studios, restaurant, bar, lounge, wellness center, public courtyard, private gardens, outdoor rooftop decks, meeting rooms, and various other hotel amenities.

The project also involves the provision of 122 parking spaces. 92 of the spaces will be surface parking in a tandem format, located east of Brown Street at 6826 and 6824 Depot Street and 215 and 225 Brown Street. An additional 30 on-street parking space, which may be counted by the Zoning Ordinance as project parking, are also provided, for a total parking supply of 122 spaces.

The project also proposes that Brown Street be converted to one-way (southbound), and that on-street parking be provided on the west side of Brown Street. While it is currently two-way along the project frontage, Brown Street is currently a one-way street (southbound) one block to the south.

Building massing will be broken up into smaller buildings to establish compatibility with the existing site context and be oriented around the public courtyard and private gardens. The hotel will contain multiple passages, which will improve pedestrian circulation in and around the site.

III. Evaluation of Potential Environmental Impacts

I. AESTHETICS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion:

Item a: The Sebastopol General Plan requires an evaluation of impacts to significant visual elements of the land. The General Plan does not identify the site as a scenic resource or as having a 'Scenic View Corridor.' There are no significant scenic views from the existing site to other scenic resources, such as the Laguna de Santa Rosa or the mountains east of Santa Rosa, due to the existing surrounding urban development, low elevation, and flat topography of the site.

The site was initially developed as the Diamond Match Company, a lumberyard, which was in operation for decades before the Sebastopol Tractor Company, the current business, began its operation. The site does not any natural features with the exception of a few mature trees.

Program 40.2 as contained in the Community Identity Element of the General Plan requires the following: "Analyze proposed structures within 1,250 feet of the Laguna de Santa Rosa for their effect on the views of and from the Laguna de Santa Rosa." The site is within 1,250 feet of the City's Laguna de Santa Rosa Wetlands Preserve. A large portion of the Wetlands Preserve is located behind industrial and utility uses, which front the east side of Morris Street, with some of them elevated with 10 feet or more of fill. A narrow strip of semi-natural Wetlands Preserve, which includes both non-native and native plant and tree species, extends to Morris Street on the south side of the City's wastewater lift station.

Views of the Wetlands Preserve and greater Laguna de Santa Rosa from the existing site and adjacent properties are nonexistent due its low topography, elevation, and intervening urban development. The proposed project, at two to four stories in height, would alter the visual environment of the area, and upper portions of the buildings will be marginally visible from a distance, including potentially visible from the Laguna plain to the east. View impacts will likely

be similar to those of the adjacent three-story Rialto Cinemas building. Based on this analysis, visual effects on scenic vistas will be less than significant.

Item b: The existing building is estimated to have been constructed in 1935 as the Diamond Match Company, according to the *Western Sonoma County Historic Resources Survey of the City of Sebastopol Area* (1981), and there have limited subsequent site improvements. While the building is listed in the *Historic Resources Survey*, it is not identified as a historic or architecturally-significant structure. The existing building will be demolished once construction of the hotel commences. Based on this analysis, visual effects on scenic resources will be less than significant.

Item c: The project sites, the primary property fronting on Petaluma Avenue, and the proposed parking sites on Brown Street, are surrounded by commercial, industrial, and recreational uses. Rialto Cinemas and a City park area and public parking lot are located north of the site across McKinley Street. Commercial and industrial uses, including The Barlow and Bohemian Stoneworks, are located to the east of the site. Commercial uses are located to the south of the site across Depot Street. Commercial uses and the Mario Savio Free Speech Town Plaza are located west of the site across Petaluma Avenue.

As it currently exists, the project site presents a relatively, poor visual appearance, with a chain-link fence along its frontage, and a yard area with a clutter of equipment and other stored items. Access to the project site is also currently minimal.

The proposed hotel, which will include new buildings, site improvements, and signage, is subject to the City's Design Review process to ensure acceptable design and visual quality.

The hotel site is home to an existing building, which serves both retail and warehouse functions, with the Brown Street components of the project being vacant lots, the southerly lots being used for informal parking for a nearby real estate business. The project will substantially change the visual appearance of the sites, with the development of two- to four-story hotel building and the surface parking lot on Brown Street. Development of the sites as a hotel and the Brown Street lots as improved surface parking will represent an improvement of the current conditions in that it will bring buildings and activity to the street front in a fashion that is consistent with an urban, downtown setting, as well as helping to frame the Town Plaza. Parking lot development will include screening landscaping along frontages.

Removal of the chain link fencing and inactive large paved and building areas that currently exist on the hotel site represents an improvement from current conditions that is consistent with Sebastopol's downtown design objectives. The design review process will ensure an appropriate level of design quality. Impacts to visual character will be less than significant.

Item d: The hotel will include exterior lighting, which will be reviewed by the Design Review Board to ensure that there is no substantial increase in light levels on adjacent properties and to minimize overspill and impacts on the night sky. No substantial light or glare will result. There will be less than significant impacts regarding light or glare.

II. **AGRICULTURE AND FOREST RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 nonagricultural 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?	☐	☐	☐	☒

Discussion:

Item a: The project is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the California Resource Agency. There are no impacts.

Item b: The site does not have an agricultural zoning designation nor is it under a Williamson Act contract in that it is zoned CD: Downtown Core. There are no impacts.

Item c: The site does not contain forestland and its development will not conflict with existing zoning nor will it cause the rezoning of forestland. There are no impacts.

Item d: The site is surrounded by urban uses and does not contain forestland nor is it adjacent to forestland. There are no impacts.

Item e: The site is not located in close proximity to farmland or forestland. There are no impacts.

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion:

Illingworth & Rodkin, Inc., a City consultant, prepared a detailed air quality and greenhouse gas emissions study, which is incorporated into this Initial Study and attached (see Exhibits).

Item a: The study finds that the project will not exceed thresholds of significance of the Bay Area Air Quality Management District (BAAQMD) nor will it obstruct air quality plans. There will be no significant impacts. Impacts will be less than significant.

Item b: The study finds that the project will not violate any BAAQMD standard nor will it contribute substantially to an existing or projected air quality violation (see Exhibits). Impacts will be less than significant.

Item c: The study finds that operational-period emissions for the project would be less than significant due to its size. It also finds that the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The study finds that construction-period activities during site preparation and grading would temporarily generate fugitive dust, including disturbed soils at the construction site and trucks carrying uncovered loads of soils. The study also finds that vehicles leaving the project site would deposit mud on local streets, creating an additional source of airborne dust after it dries, if not properly controlled. The study recommends the following mitigation measure:

- *Mitigation Measure AQ-1: Include basic measures to control dust and exhaust during construction. During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:*

  1. *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.*

  2. *All haul trucks transporting soil, sand, and other loose material off-site shall be covered.*

  3. *All visible mud or dirt track-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 is prohibited.*

  4. *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).*

  5. *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*

  6. *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*

  7. *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.*

  8. *Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.*

The project will have a less-than-significant impact as it relates to community risk caused by construction activities, after this mitigation measure is implemented.

Item d: The study finds that construction equipment and heavy-duty truck traffic generate diesel exhaust, which is a known as TAC (Toxic Air Contaminant), a potentially significant impact. The study recommends the following condition:

- *Mitigation Measure AQ-2: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.*

    1. *All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.*

The project will have a less-than-significant impact as it relates to community risk caused by construction activities, after this mitigation measure is implemented.

Item e: The study finds that the project will generate localized emissions from diesel exhaust from construction equipment and truck activity, which may occasionally be noticeable by nearby uses. The study determines that the project does not include any sources of significant odors that would have a detrimental impact on surrounding uses. Impacts will be less than significant.

IV. BIOLOGICAL RESOURCES: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 federally protected wetlands as defined by Section 404 of the Clean Water Act (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?	☐	☐	☐	☒

Discussion:

Item a: The project site has been developed for decades and is surrounded by an urban area. There are no natural biological resources at the project site with the exception of a limited number of trees, most of which will be preserved as part of the hotel development. The project would not result in habitat modifications. There are no significant impacts.

Item b: *See 'Item a' for the response.* There are no significant impacts.

Item c: *See 'Item a' for the response.* There are no significant impacts.

Item d: *See 'Item a' for the response.* There are no significant impacts.

Item e: The City has a Tree Protection Ordinance that protects certain types of trees based on size and species. Site trees at 6868 Depot Street are anticipated to be retained as part of the hotel while at least five (5) native trees at 6826 and 6824 Depot Street will be removed for the parking improvements. Native trees protected by the Tree Ordinance will require a Tree Removal Permit, subject to Tree Board approval, if they have diameter(s) at breast height of 10 inches or more. Landscaping improvements at the entire project site will be implemented, which will involve the addition of a number of trees and landscape plantings, subject to Design Review Board approval. Impacts will be less than significant.

Item f: The site is not subject to any habitat conservation plan or other special habitat plan. There are no impacts.

V. CULTURAL RESOURCES: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☒	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion:

Item a: The existing building at 6828 Depot Street is estimated to have been constructed in 1935 for the Diamond Match Company, according to the *Historic Resources Survey* (1981). The building served as an industrial warehouse when the site was home to a lumberyard for decades. The existing building will be demolished once construction of the hotel commences. While the building is reminiscent of a period in Sebastopol when there were numerous industrial and agricultural operations in and around the area, it is not a City, State, or national landmark nor is it listed in the State or National Register of Historic Resources.

The building is listed in the *Historic Resources Survey* (1981) but it is not associated with events that have made a significant contribution to California's history or cultural heritage; the lives of persons important in the past; does not include distinctive building characteristics or represent the work of an important creative individual or possess high artistic values. Furthermore, the

building has not yielded or is likely to yield important information in prehistory or history. There are no known cultural resources at the project site. Impacts are less than significant.

Item b: There are no known archeological resources at the project site. There are no significant impacts.

Item c: There are no known paleontological or geological resources at the project site or within its vicinity. There are no significant impacts.

Item d: There are no known human remains at the project site or within its vicinity. A condition of approval will be added to this project, which requires all activities to cease and the Planning Director to be contacted, if any human remains are encountered during construction. There are no significant impacts.

VI. GEOLOGY AND SOILS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to 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 risks to life or property?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion:

Item a: Other than known and Earthquake-related risks (discussed below), the project development is not expected to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as it relates to the following:

Item i: The project site is not located within an Earthquake Fault Study Zone and no known fault traces traverse the site. Therefore, the risk of ground rupture within the limits of the project site

is low. The Uniform Building Code does not require any special structural engineering beyond the code requirements for construction, given that the project site is not located within an Earthquake Fault Study Zone. The new buildings will be constructed with the current California Building Code, which is intended to ensure appropriate earthquake safety. Impacts are less than significant.

Item ii: The Healdsburg-Rodgers Creek and the San Andreas Fault, which are the nearest active faults, are located approximately 8 miles northeast and 12 miles southeast of Sebastopol. The project site will be subjected to very strong ground-shaking during a major to moderate earthquake along these faults. It is reasonable to assume on the basis of current technology and historical evidence that the project site will be subjected to at least one moderate to severe earthquake that could produce potentially damaging ground-shaking. Furthermore, it is anticipated that the project site will periodically experience small to moderate magnitude earthquakes. Adherence to the Building Code will reduce potential impacts from seismic activity at the project site to a less than significant level.

Item iii: The project site is located in an area with low susceptibility to liquefaction according to the 'Liquefaction Hazard Map' as published by the Association of Bay Area Governments. The new buildings will be developed to address potential impacts from seismic-related ground failure, including liquefaction, and will be required to comply with current Building Code seismic safety standards. Impacts are less than significant.

Item iv: The project site has flat terrain with no identified landslide hazards. There are no significant impacts.

Item b: The potential for erosion at the project site is considered to be very low due to its flat topography and that it will be designed to mitigate urban runoff and include storm-water control measures. The applicant will be required to submit an erosion control plan as part of the Improvement Plan submittal, as conditioned by the Engineering Department. Impacts are less than significant.

Item c: *See 'Item iii' and 'Item iv' for the response.* There are no significant impacts.

Item d: The applicant may be required to submit a detailed soils report to the City for its review, which is certified by an engineer, who is registered in the State of California and qualified to perform soils work, as conditioned by the Engineering Department. The soils report would include a minimum geotechnical investigation with regards to liquefaction, expansive soils, and seismic safety, if it is required. Adherence to the recommendations of the engineer and the Building Code will reduce potential impacts from seismic activity at the project site to a less than significant level. There are no significant impacts.

Item e: The project will be connected to the City's wastewater system. Septic tanks and other alternative systems are not permitted so this issue is not applicable to the project. There are no significant impacts.

VII. GREENHOUSE GAS EMISSIONS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Discussion:

Item a: The study finds that there will be no impacts, relative to conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions. Impacts are less than significant.

Item b: The study finds that the project would not conflict with statewide GHG reduction measures identified in the California Air Resources Board's Scoping Plan, and would comply with Green Building Code requirements. Impacts are less than significant.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

Item a: None of the project's anticipated uses would involve the transport, use, emission, or disposal of hazardous materials. Furthermore, short-term construction and normal commercial operations do not require the routine transport, use, or disposal of hazardous materials. There are no significant impacts

Item b: The project does not pose any significant hazards to the public or the environment from the potential accidental release of hazardous materials in that it does not contain any. There are no significant impacts

Item c: *See 'Item a' for the response.* There are no significant impacts.

Item d: The site is not so listed. There are no significant impacts.

Item e: The project is not located within an airport land use plan and there no public airstrips or airfields located within two miles of the City of Sebastopol. There are no significant impacts.

Item f: The project is not located within vicinity of private airstrips or airfields. There are no significant impacts.

Item g: The project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Internal access to the site will be improved, and street access will be maintained. There are no significant impacts.

Item h: The site is not adjacent to wildlands. The project will be required to meet fire safety requirements, including fire sprinklers. There are no significant impacts.

IX. HYDROLOY AND WATER QUALITY: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e. 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?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☒	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

Item a: As a project involving construction of new buildings and a parking lot on existing sites which have no natural water features and with the hotel site currently almost entirely covered with a combination of buildings and impervious surfaces, this development would not create any unusual water quality impacts. The project will be required to abide by the City's urban runoff/stormwater standards. The project will be required to meet all City of Sebastopol storm water requirements as set forth in the Municipal Code and in addition may be required to obtain a Construction General Storm Water Permit from the State Regional Water Quality Control Board to ensure compliance with State requirements. Significant impacts would not occur.

Item b: The project is within long-term, planned parameters of water use identified by the General Plan. The total annual water production was approximately 25% of maximum potential production in 2015, according to the 2015 Level of Service Report. There is substantial remaining production capacity sufficient to accommodate the proposed project. The City has determined that there is adequate water system capacity, production and distribution to accommodate this project. The project will be required to include on-site water detention and pervious paving where feasible to promote recharge, and will be required to provide low-water use fixtures to reduce impacts of the project. Impacts are less than significant.

Item c: The project site does not contain any naturally occurring creeks or bodies of water. The project does not appear to have potential for any substantial erosion in that it will be developed on an existing urbanized site which has been previously developed, and the parking lot will be improved in accordance with City standards which limit storm water pollution. If determined necessary by the City Engineer, a condition of approval will require the applicant to submit an Erosion Control Plan. Impacts are less than significant.

Items d: Currently, most of the hotel site is occupied by buildings and impervious surfaces. The parking lot site is undeveloped. If determined necessary by the City Engineer, a condition of approval will require any increased amount of surface run-off related to the impervious surface of the development to be collected in a detention facilities, or addressed through other appropriate means, and conducted to the city's storm water drainage system at a rate that can be accommodated by the existing system per City standards. This will represent an improvement from existing conditions in that the existing sites were developed prior to such standards. In addition to City review and requirements, the project may require a Construction General Storm Water Permit from the North Coast Regional Water Quality Control Board. As a result of the nature of the proposed project and the required drainage improvements, there are no significant storm water-related impacts.

Item e: *See 'Item d' for the response.* Impacts are less than significant.

Item f: *See 'Item a' for the response.* Impacts are less than significant.

Item g: The primary development area, the hotel site, is not within a designated flood hazard area. A portion of the proposed surface parking lot development site is located in the 100-year special flood hazard area (Zone AE). The site is not within the floodway, and the project would not make changes to the existing site improvements which would impede flood flows. The planned use of the property, a surface parking lot, does not create high flood risk in that no structures would be developed, and vehicles can be readily moved in a flood situation. Further, in conjunction with site development, a minor amount of grading or fill may elevate the site

above the 100-year flood hazard area. The Building Official will determine if a Floodplain Development Permit is required. This permit provides a context for any appropriate development-specific requirements for construction or operation of the use. Impacts are less than significant.

Item h: *See 'Item g' for the response.* Impacts are less than significant.

Item i: *See 'Item g' for the response.* Impacts are less than significant.

Item j: *See 'Item g' for the response.* The parking lot project site is located within a 100-year floodplain but will be subject to review to comply with the City's flood hazard requirements, and is a low-risk use, as described above. The project is not located in an area that is susceptible to inundation by seiche, tsunami, or mudflow. Impacts are less than significant.

X. LAND USE AND PLANNING: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☒	☐
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

Discussion:

Item a: The project site is presently located within the City of Sebastopol. The project is an infill development that will not physically divide an established community. The project is expected to have positive connectivity impacts on the area and nearby businesses in that it will enhance pedestrian connections between Downtown Sebastopol and The Barlow; will have overnight guests staying in the area; and will generally promote visitors to the Sebastopol area. The project will include various points of entry (more than the current development) and will also include development of new sidewalks on Brown Street, and on the project frontage on McKinley Street. As recommended by the traffic analysis, the project will also be required to implement a pedestrian crossing improvement at Petaluma/McKinley. All of these improvements will enhance connections between the site and surrounding areas. The project also proposes that Brown Street be converted to a one-way street (southbound) along its frontage. This would reduce circulation options for vehicles. However, the street one block

south is already one-way south; has low traffic volumes; and therefore the effect of conversion is expected to be minimal. Impacts will be less than significant.

Item b: The project site is located within the CD: Downtown Core District and has a General Plan Land Use designation of Downtown Core. The hotel is classified as a 'Transient Habitation involving 50 or more rooms' use, which is conditionally-permitted and requires a Use Permit in the CD District. The project also involves the sale of beer, wine, and distilled spirits on the hotel premises with a Type 47 ABC license from the Department of Alcoholic Beverage Control, which requires an Alcohol Use Permit. The Use Permit and Alcohol Use Permit both require Planning Commission approval. With these approvals, the project is consistent with the General Plan and Zoning Ordinance in terms of land use.

The project will feature hotel buildings, which will have a maximum height of fifty (50) feet at four (4) stories. The project exceeds the maximum building height in the CD District of forty (40) feet and three (3) stories. Piazza Hospitality has submitted a Zoning Amendment application in conjunction with the project, which would increase the maximum building height to fifty (50) feet and four (4) stories in the CD District. The Planning Commission will review the Zoning Amendment request and make a recommendation to the City Council for final action. The project will be consistent with this Zoning Ordinance component, if the City Council approves the Zoning Amendment application. The draft General Plan, in preparation for a number of years and currently in the final stages of review and adoption, contains policies that call for higher densities and greater height allowance in the Downtown Core, including a maximum height of four stories in the Downtown Core, so the proposal is consistent with the City's proposed policy vision for the downtown.

The project also requires Design Review Board approval, following Planning Commission and City Council review, to ensure that it is consistent with the City's design objectives in terms of architecture and landscape design. Impacts will be less than significant.

Item c: The City has not adopted a habitat conservation plan or natural community conservation plan. There are no significant impacts.

XI. MINERAL RESOURCES: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?	☐	☐	☐	☒
b. 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?	☐	☐	☐	☒

Discussion:

Item a: There are no known mineral resources at the project site. There are no significant impacts.

Item b: There are no locally-imported mineral resource recovery sites delineated in the General Plan. There are no significant impacts.

XII. NOISE: Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

Item a: The City's noise ordinance calls for daytime levels of 55 dBa, and nighttime levels of 45 dBa or lower in commercial zones. The General Plan Update EIR provided estimated noise levels for the adjacent segment of Petaluma Avenue, estimated at 65.1 dB, LDN. Thus, due primarily to traffic-related noise from State Highway 116, existing noise levels already exceed objectives. The General Plan EIR indicates that with General Plan buildout, noise levels would increase to 66.7 dB.

Construction activities will result in a temporary increase in noise levels, however construction hours will be subject to City ordinance limits and there are no nearby sensitive land uses such as residences.

In terms of long-term effects, operation of a hotel is not identified as a significant noise generator and therefore the development of this project will not result in the generation of noise levels that contribute substantially to the noise environment. No operations are anticipated that will generate excessive groundborne vibration or noise levels. The existing use at the hotel site, a tractor and small equipment sales/repair business, currently generates some noise related to its customers and employees and equipment testing. Overall it would appear that the hotel project will have higher activity due primarily to vehicle trips. There may be an increase in ambient noise levels in the project vicinity due primarily to vehicles related to the project development, but given the nature of typical hotel operations and the lack of sensitive land uses in the immediate area of the hotel, this is expected to be minor in effect. In any case, the noise level that will be generated by the new use will not be substantial.

Noise levels in the project area are primarily generated by existing high traffic volumes on Petaluma Avenue (Highway 116), which may affect hotel guests if not appropriately addressed While guests would generally be aware of the urban environment of the site, patrons could be impacted by Petaluma Avenue traffic noise, or by noise generated by nearby industrial and commercial uses, including HVAC equipment, truck deliveries, and the like, or by periodic special events at the Barlow, such as the Street Fair, music at the Community Market stage, or music at the Barlow event center. Given the potential for hotel patrons to be disturbed by various potential noise sources, it would appear advisable for the applicant to ensure an appropriate level of noise reduction in the design of the hotel rooms, such as multi-panel windows and additional insulation. The Building Department may require a noise study in the Building permit process; as it appears that ambient levels are 65 decibels or more, a higher level of noise transmission reduction would be an automatic Building Code requirement. Design measures and existing code requirements will ensure an appropriate interior noise environment for hotel guests. Impacts will be less than significant.

Item b: *See 'Item a' for the response.* Impacts will be less than significant.

Item c: *See 'Item a' for the response.* Impacts will be less than significant.

Item d: *See 'Item a' for the response.* Impacts will be less than significant.

Item e: The project site is not located near any public or private airfields or airstrips, nor is it located within an airport land use plan, so there would be no impact on the people residing in the project area. There are no significant impacts.

Item f: *See 'Item e' for the response.* There are no significant impacts.

XIII. POPULATION AND HOUSING: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Discussion:

Item a: The project site is located in a populated area within the City of Sebastopol, which contains an array of commercial and industrial uses. The project does not increase infrastructure capacity or remove key obstacles to growth, nor is it growth-inducing. Impacts will be less than significant.

Item b: The project site does not contain any housing so no housing will be removed, nor will replacement housing be necessary. Impacts will be less than significant.

Item c: 6828 Depot Street is currently home to the Sebastopol Tractor Company, a tenant which will vacate the premises before construction commences. While the existing business will be required to vacate the project site as a result of the hotel, no persons are being displaced in terms of housing nor will replacement housing be required. Impacts will be less than significant.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

Item a: The Project can be adequately serviced by existing police and fire facilities and services, and would not have a significant effect on acceptable service ratios, response times, or other performance objectives, according to the City's Police Department, and the Fire Department. The new buildings will be required to have fire sprinklers. The project involves an Alcohol Use Permit for a Type 47 ABC License from the Department of Alcoholic Beverage Control, which will permit the sale of beer, wine, and distilled spirits on the hotel premises. These types of uses have not generated significant public service impacts in Sebastopol. Standard conditions of approval will address security and requirements for alcohol awareness training for all service staff.

Construction of this project will not contribute to the addition of school-aged children to the local school population. However, the project will contribute to school resources via payment of a standard school impact fee, which is paid on net new square footage. The project is also subject to payment of the Park In-Lieu fee on a per-room basis, and such revenues are used for capital improvements in City parks. Impacts to the City parks are expected to be modest in scope in that this is a relatively small hotel. Routine maintenance of City parks and public facilities can be accommodated by existing public facilities and City staff. Impacts will be less than significant.

XV. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project 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. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion:

Item a: The project includes 66 hotel rooms, as well as a pool and exercise and spa facilities. However, some patrons are likely to utilize City parks and other recreational facilities to a limited extent, such as attending an event at the Town Plaza or walking the Laguna Wetlands Preserve trails. The project is unlikely to have any substantial impacts on City parks and other recreational facilities, given the relatively small size of the hotel and its onsite recreational amenities. The project will be required to pay Park Impact In-Lieu fees for each hotel room, in addition, and revenues will be used by the City for park capital improvements. Impacts will be less than significant.

Item b: The project includes some recreational facilities, which will be available to hotel patrons: Pool, spa, and fitness center. There is no aspect of the project, which will require the construction or expansion of public recreational facilities, given anticipated impacts. Impacts will be less than significant.

XVI. TRANSPORTATION/TRAFFIC: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☐	☐	☐	☒
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Discussion:

W-Trans, a traffic engineer consultant for the City of Sebastopol, prepared a detailed traffic impact study, which is attached and incorporated into this Initial Study. The study reviews the existing setting and project impacts related to the roadway network; traffic conditions; transit conditions; pedestrian conditions; bicycle conditions; parking conditions; and site access and circulation. The study evaluated conditions and impacts at intersections in the project area, including cumulative conditions in future years. The study utilized City standards, policies, and methodologies for its analysis.

Item a: According to the W-Trans study, the proposed Hotel Sebastopol mixed-use project would include a 66-room hotel with a 2,964 square foot restaurant and 4,240 square feet of commercial retail space. The project site is located at 6828 Depot Street and is currently occupied by Sebastopol Tractor, a tractor sales store, which would be demolished upon completion of the proposed project. As part of the project, Brown Street will be converted to one-way along the project frontage. The site will be served with a valet service and a total of 92 off-street tandem parking spaces in the hotel's parking lot on Brown Street and 30 on-street spaces around the perimeter of the project site. The 92 off-street spaces would only be accessible via the hotel's valet program.

The project's anticipated trip generation, with existing trips and internal capture deductions applied, includes up to 709 net new daily trips, with 58 trips during the A.M. peak hour and 64 trips during the P.M. peak hour.

The study area includes the following nine intersections:
1. North Main Street (SR116)/McKinley Street
2. Petaluma Avenue (SR116)/McKinley Street/Laguna Park Way
3. Laguna Park Way/Johnson Street
4. Laguna Park Way/Morris Street
5. Bodega Avenue/Jewell Avenue
6. Sebastopol Avenue (SR 12)/North Main Street (SR116)
7. Sebastopol Avenue (SR 12)/Petaluma Avenue (SR116)
8. Sebastopol Avenue (SR 12)/Morris Street
9. Sebastopol Avenue (SR 12)/Llano Road

Analysis indicates that all study intersections, except Sebastopol Ave (SR 12)/Morris St, are expected to operate at acceptable Levels of Service (LOS) upon the addition of project-generated traffic to both existing and cumulative volumes. Under Existing conditions, Sebastopol Avenue (SR 12)/Morris Street operates unacceptably at LOS F during the a.m. peak hour. Under Cumulative conditions, the intersection operates unacceptably at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. The increase in delay would be less than five seconds with the addition or project-generated trips, which would be a less-than-significant impact.

The proposed project is also expected to generate a significant volume of pedestrian traffic on McKinley Street-Laguna Park Way and on the surrounding downtown street network. Pedestrian facilities are generally adequate; however, there are gaps in the sidewalk on the south side of McKinley Street, east of Brown Street and on the east side of Brown Street. Existing and planned bike and transit facilities are adequate and the hotel plans to provide 19 bicycle parking spaces.

The Zoning Ordinance requires 126 parking spaces. The proposed project plans to provide 122 parking spaces, with 92 off-street and 30 on-street spaces. Off-street spaces would be in a tandem format, would have a higher proportion of compact spaces, and would be utilized via a valet service, which would require a variance from standard requirements.

The project as proposed would experience a parking deficit of 4 spaces per the City of Sebastopol's Municipal Code. However, with shared parking principles applied as analyzed by the traffic report, the project would experience a peak parking demand of 85 vehicles at 1:00 p.m. on weekdays. With plans to provide 122 spaces, parking is expected to be adequate and a parking variance from standard code requirements appears merited.

In order to improve pedestrian access, continues sidewalk should be provided along the perimeter of the project, on the east side of Brown Street between McKinley Street and Depot Street, and on the south side of McKinley Street, just east of Brown Street. Additionally, either a) High-Intensity Activated Crosswalk (HAWK) beacon should be installed at the south leg crossing, or b) the approach should be narrowed to one lane and some type of warning beacons should be installed. Any improvements should be at the discretion and approval of Caltrans.

The study recommends that several conditions of approval be considered if the project is approved:

- Continuous sidewalks should be provided (1) along the perimeter of the project, (2) on the east side of Brown Street between McKinley Street and Depot Street and (3) on the south side of McKinley Street, just east of Brown Street. The project should install these sidewalk segments with consideration for reimbursement for the non-project frontage sections, should these non-project vacant parcels develop in the future.

- Either (a) "HAWK" (High-Intensity Activated Crosswalk) beacon should be installed at the south leg of Petaluma Avenue at McKinley Street, or (b) the approach should be narrowed to one lane and some type of warning beacons should be installed. Any improvements would be at the direction and approval of Caltrans.

- The City should consider a parking variance to accept the parking supply and format as proposed given the results of a shared parking analysis.

- If more parking must be obtained, on-street parking could be provided on both sides of Brown Street by converting to one-way flow in the southbound direction, which could allow 7 to 14 additional parking spaces. However, the resulting vehicle clearance would not allow for adequate emergency vehicle access and would therefore require widening to the satisfaction of City emergency services. In conjunction with a one-way conversion, provision of parking on only one side of Brown Street would allow adequate street dimensions for emergency service.

- If Brown Street were converted to one-way flow, it is recommended that traffic be oriented in the southbound direction only, which would be more conducive to the valet service on the project frontage on the west side of the street. Valet return of vehicles should be in the counter-clockwise vehicle return via Depot Street and through The Barlow parking lot in order to minimize impacts on Petaluma Avenue. This option would need to be done in cooperation with Barlow management. Alternatively, public streets could be utilized.

These recommended conditions would address several issues. However, there are no significant traffic-related impacts and traffic-related mitigation measures are not required.

Item b: *See 'Item a' for the response.* Impacts will be less than significant.

Item c: The project site is not located near any public or private airstrips. There are no significant impacts. .

Item d: The project will not substantially increase hazards to the streets or intersections studied during construction and operation. There are no significant impacts.

Item e: The site is served by existing roadways which provide emergency access. In its current dimension, and with two-way traffic, Brown Street is too narrow to allow for approval of on-street parking (although some routinely currently occurs on the west side of Brown Street on the project frontage). Conversion of Brown Street adjacent to the project to one-way traffic flow, if done in conjunction with development of on-street parking on both sides of the street, would cause an access concern. A condition of approval is recommended to allow parking on only one side, should the City Council approve one-way flow. With this scenario, the Fire Department and Police Department have reviewed the site access and determined that this access will be sufficient for circulation and emergency access and therefore no significant impacts would occur.

Item f: The project will not conflict with adopted City of Sebastopol policies, plans, or programs supporting alternative transportation. Impacts will be less than significant.

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e. 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?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion:

Item a:.Based on the 2015 annual Level of Service Report provided to the City Council (incorporated by reference), ample capacity remains in the City of Sebastopol's waste water treatment allocation to serve this development and meet applicable requirements of the Regional Water Quality Control Board. The Level of Service report indicates that 2015 City-wide wastewater flows were at approximately 40% of treatment capacity. That figure includes allowances for known undeveloped projects. The project is within the planned growth identified in the General Plan. Impacts will be less than significant.

Item b: The site is currently improved with water and sewer connections. New connections may be necessary, given the scope of the project. The project will be required to inspect existing connections and evaluate any specific water or sewer line improvements needed to meet current code requirements, and to provide such improvements as part of an Improvement Plan. Once connected, per the 2015 Level of Service report, there is ample capacity in the City of Sebastopol's water and sewer systems to accommodate this project. Impacts will be less than significant.

Item c: An Engineering Department condition of approval will require the applicant to submit to the City of Sebastopol for review and approval by the City Engineer, a hydrology study, hydraulic calculations and drainage plans prepared by a Registered Civil Engineer licensed in the State of California, in accord with applicable City standards. In addition, a Regional Water Quality Board Construction General storm water permit may be required to ensure compliance with State storm water requirements. Impacts will be less than significant.

Item d: *See 'Item b' for the response.* Based on the 2015 annual Level of Service Report provided to the City Council (incorporated by reference), ample capacity remains in the City of Sebastopol's water system to serve the proposed development. The Level of Service report indicates that 2015 water production was at approximately 25% of pumping capacity. Impacts will be less than significant.

Item e: *See 'Item a' for the response.* Impacts will be less than significant.

Item f: The solid waste from the development will be collected and disposed of by the City's franchise hauler Redwood Empire Disposal. There is sufficient capacity in the disposal system to accommodate the additional solid waste that will be generated by this project. Impacts will be less than significant.

Item g: The solid waste generated by the development will be handled in compliance with federal, state, and local statutes. Impacts will be less than significant.

XVIII. 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 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, 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 will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion:

Item a: Please refer to all sections of the Initial Study, including but not limited to Section IV, Biological Resources, and Section V, Cultural Resources. The project will not create significant biotic, cultural or other effects referenced by this question.

Item b: This Initial Study identifies potential cumulative adverse air-related impacts associated with the construction of the project. Mitigation measures will reduce impacts to less-than-significant levels. Mitigation Measures include the following:

- *Mitigation Measure AQ-1: Include basic measures to control dust and exhaust during construction. During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:*

1. *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.*

2. *All haul trucks transporting soil, sand, and other loose material off-site shall be covered.*

3. *All visible mud or dirt track-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 is prohibited.*

4. *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).*

5. *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*

6. *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*

7. *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.*

8. *Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.*

- *Mitigation Measure AQ-2: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.*

    1. *All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.*

Item c: This Initial Study does not identify any potential substantial adverse impacts on human beings associated with the project.

EXHIBITS

- Project Submittal
- *Western Sonoma County Historic Resources Survey of the City of Sebastopol Area* (1981) 6828 Depot Street
- Traffic Impact Study (without appendices available at Planning Department)
- Air Quality Impact Study (without appendices available at Planning Department)

DOCUMENTS INCORPORATED BY REFERENCE

Documents available for review at the Sebastopol Planning Department
7120 Bodega Avenue, Sebastopol, CA 95472

- 2015 Annual Level of Service and General Plan Report
- 2016 Environmental Impact Report on the proposed Sebastopol General Plan

City of Sebastopol

Planning Department
7120 Bodega Avenue
Sebastopol, CA 95472
(707) 823-6167 (Phone) or (707) 823-1135 (Fax)
www.ci.sebastopol.ca.us

MASTER PLANNING APPLICATION FORM

PROJECT INFORMATION:

ADDRESS:	6828/6826/6824 Depot Street & 215/225 Brown Sebastopol, CA 95472
PARCEL #:	004-052-001, 004-061-007, & 004-061-008 004-061-009 & 004-061-010
PARCEL AREA:	004-052-001 = 51,851sf 004-061-007/008 = 12,460sf 004-061-009/010 = 9,470sf

FOR CITY USE ONLY

PLANNING FILE #: 2016 / 57

DATE FILED: 08/08/16

TOTAL FEES PAID: $ 8,565 Deposit

RECEIVED BY: JA

DATE APPLICATION DEEMED COMPLETE: _____

APPLICANT OR AGENT:

Name: Piazza Hospitality Group (Paolo Petrone)

Email Address: paolo@hotelhealdsburg.com

Mailing Address: 414 Healdsburg Ave

City/State/Zip: Healdsburg, CA 95448

Phone: 415-302-2697

Fax: 707-433-3269

Business License #: _____

Signature: _____

Date: 7/16/18

OWNER OF PROPERTY *IF OTHER THAN APPLICANT*:

Name: Bella Commercial Management, LLC and Marigold, LLC

Email Address: ronbasso@gmail.com

Mailing Address: 186 North Main Street, Suite 260

City/State/Zip: Sebastopol, CA 95472

Phone: 707-829-3133

Fax: 707-829-3461

Business License #: _____

Signature: _____

I certify that this application is being made with my consent.

Date: 7-19-16.

OTHER PERSONS TO BE NOTIFIED: (Include Agents, Architects, Engineers, etc.).

Name: David Baker Architects (Brett Randall Jones)

Email Address: brettjones@dbarchitect.com

Mailing Address: 461 2nd Street, Loft c-127

City/State/Zip: San Francisco, CA 94107

Phone: 415-799-4581

Fax: 415-896-6103

Name: N/A

Email Address: N/A

Mailing Address: N/A

City/State/Zip: N/A

Phone: N/A

Fax: N/A

RECEIVED
AUG 08 2016
BY: JA

PROJECT DESCRIPTION:

DESCRIBE IN DETAIL, the proposed project and permit request. (Attach additional pages, if needed):

The project's proposed uses include a 66-room hotel, hotel amenity spaces, restaurant, meeting/event space, wellness center, gardens, & retail/artist/maker space. The site layout strives to spread the project's uses over the site in several smaller buildings that vary in height, type, bulk, & aesthetics, in order to fit well within the context of smaller-scale buildings in downtown Sebastopol. The buildings all face their respective street frontages and surround both a public courtyard plaza and private gardens. The project is also set back from the property lines to provide generous sidewalks and save the existing street trees.

This application includes the checklist for the type of application requested: ☒ Yes ☐ No

Please indicate the type(s) of application that is being requested (example: Use Permit, Design Review, Variance, Planned Community Rezone, etc.):

Use Permit, Zoning Code Amendments, Design Review

Please describe existing uses (businesses, residences, etc.) and other structures on the property:

Sebastopol Tractor Company (previously Diamond Lumberyard)

DEVELOPMENT DATA:

SQUARE FEET BUILDING EXISTING:	~23,814sf	☐ N / A
SQUARE FEET BUILDING DEMOLISHED:	~23,814sf	☐ N / A
SQUARE FEET BUILDING NEW:	68,825sf	☐ N / A
NET CHANGE IN BUILDING SQUARE FEET:	45,011sf	☐ N / A
NUMBER OF DWELLING UNITS EXISTING:	☐ 0 Bedrooms ☐ 2 Bedrooms ☐ 4+ Bedrooms	☐ 1 Bedrooms ☐ 3 Bedrooms ☒ N / A
NUMBER OF DWELLING UNITS PROPOSED:	☐ 0 Bedrooms ☐ 2 Bedrooms ☐ 4+ Bedrooms	☐ 1 Bedrooms ☐ 3 Bedrooms ☒ N / A
NET CHANGE IN DWELLING UNITS:		☒ N / A
SETBACKS:	**Existing:** ☐ Front Yard _____ ☐ Side Yard _____ ☐ Rear Yard _____ ☒ N / A	**Proposed:** ☐ Front Yard _____ ☐ Side Yard _____ ☐ Rear Yard _____ ☒ N / A

004-052-007/008 Front: 120.19' Rear: 110.45' Left: 108.0' Right: 108.0'	009/010 = 9,470sf Front: 98.17" Rear: 91.7' Left: 95.34' Right: 104.45'	**EXISTING LOT DIMENSIONS:**	004-052-001 Front: 119.85' Rear: 217.6' Left: 345.05' Right: 287.18'	☐ N / A
Front: 120.19' Rear: 110.45' Left: 108.0' Right: 108.0'		**PROPOSED LOT DIMENSIONS:**	Front: 119.85' Rear: 217.6' Left: 345.05' Right: 287.18'	☐ N / A
12,460sf	009/010 = 9,470sf	**EXISTING LOT AREA:**	51,851sf Square Feet	☐ N / A
12,460sf	009/010 = 9,470sf	**PROPOSED LOT AREA:**	51,851sf Square Feet	☐ N / A
N/A		**BUILDING HEIGHT:**	Existing: ~20' Proposed: 50'	☐ N / A
N/A		**NUMBER OF STORIES:**	Existing: 1 Proposed: 4	☐ N / A
N/A		**PARKING SPACE (S):**	Existing: 9 Proposed: 118	☐ N / A
N/A		**ZONING**	Existing: CD Proposed: CD	☐ N / A

Will the project involve a new curb cut or driveway? ☒ Yes ☐ No

Are there existing easements on the property? ☐ Yes ☒ No

Will Trees be removed? ☒ Yes ☐ No

*If yes, please describe (**Example:** Type, Size, Location on property, etc.)*

- All street trees will be preserved upon inspection by an arborist.
- (5) naturally-grown native trees will be removed on the 004-052-007/008 lot to make room for the required parking.
- Type: Unknown
- Size (Dia): 13-20"
- Location: Within property lines

Will Existing Landscaping be revised? ☒ Yes ☐ No

If yes, what is square footage of new or revised landscaping?

- Entire site will be revised.

Will Signs be Changed or Added? ☒ Yes ☐ No

Business: Hours of Operation? Open: 24/7 Close: N/A

Is alcohol service proposed? ☒ Yes ☐ No

If yes, what type of State alcohol license is proposed? On-sale liquor/wine/beer

If yes, have you applied to the State Alcoholic Beverage Control for a license? ☐ Yes ☒ No

If this is a restaurant, café or other food service, bar, or nightclub, please indicate total number of seats: 75

Is any live entertainment proposed? ☐ Yes ☒ No

If yes, please describe: N/A

INDEMNIFICATION AGREEMENT

As part of this application, applicant agrees to defend, indemnify, release and hold harmless the City, its agents, officers, attorneys, employees, boards and commissions from any claim, action or proceeding brought against any of the foregoing individuals or entities, the purpose of which is to attack, set aside, void or annul the approval of this application or the adoption of the environmental document which accompanies it or otherwise arises out of or in connection with the City's action on this application. This indemnification shall include, but not be limited to, damages, costs, expenses, attorney fees or expert witness fees that may be asserted by any person or entity, including the applicant, arising out of or in connection with the City's action on this application, whether or not there is concurrent passive or active negligence on the part of the City.

If, for any reason any portion of this indemnification agreement is held to be void or unenforceable by a court of competent jurisdiction, the remainder of the agreement shall remain in full force and effect.

Applicant's Signature	7/18/16 Date Signed	2016-57 Planning File Number

NOTE: The purpose of the indemnification agreement is to allow the City to be held harmless in terms of potential legal costs and liabilities in conjunction with permit processing and approval.

NOTICE OF MAILING:

Email addresses or facsimiles will be used for sending out staff reports and agendas to applicants, their representatives, property owners, and others to be notified.

Please sign and acknowledge you have been notified of the Notice of Mailing for applications and have provided an email address or fax number.

Signature	Paolo Petrone Printed Name

NOTE: It is the responsibility of the applicant and their representative to be aware of an abide by City laws and policies. City staff, Boards, Commissions, and the City Council will review applications as required by law; however the applicant has responsibility for determining and following applicable regulations.

NEIGHBOR NOTIFICATION

In the interest of being a good neighbor, it is highly recommended that you contact those homes or businesses directly adjacent to, or within the area of your project. Please inform them of the proposed project, including construction activity and possible impacts such as noise, traffic interruptions, dust, larger structures, tree removals, etc.

Many projects in Sebastopol are remodel projects which when initiated bring concern to neighboring property owners, resident and businesses. Construction activities can be disruptive, and additions or new buildings can affect privacy, sunlight or landscaping. Some of these concerns can be alleviated by neighbor-to-neighbor contacts early in the design and construction process.

It is a "good neighbor policy" to inform your neighbors so that they understand your project. This will enable you to begin your construction with the understanding of your neighbors and will help promote good neighborhood relationships.

Many times development projects can have an adverse effect on the tranquility of neighborhoods and tarnish relationships along the way. If you should have questions about who to contact or need property owner information in your immediate vicinity, please contact the Building and Safety Department for information at (707) 823-8597, or the Planning Department at (707) 823-6167.

I have informed site neighbors of my proposed project: ☑ Yes ☐ No

If yes, or if you will inform neighbors in the future, please describe outreach efforts:

We hosted two public community meeting where we presented the project and listened to the community's ideas and concerns. The meetings were advertised in local press. Also, a project notice board will be installed at the project site.
URL for Project Website: **http://piazzahospitality.com/hotel-sebastopol/**

WEBSITE REQUIRED FOR MAJOR PROJECTS

Applicants for major development projects (which involves proposed development of 25,000 square feet of new floor area or greater, or 25 or more dwelling units), are required to create a project website in conjunction with submittal of an application for Planning approval (including but not limited to Subdivisions, Use Permits, Rezoning's, and Design Review). Required information may be provided on an existing applicant web site.

The website address shall be provided as part of the application. The website shall be maintained and updated, as needed until final discretionary approvals are obtained for the project.

Such website shall include, at a minimum, the following information:

- ✓ √ Project description
- ✓ √ Contact information for the applicant, including address, phone number, and email address
- ✓ √ Map showing project location
- ✓ √ Photographs of project site
- ✓ √ Project plans and drawings

URL for Project Website:
http://piazzahospitality.com/hotel-sebastopol/

City of Sebastopol

JUSTIFICATION FOR GENERAL PLAN OR TEXT AMENDMENT

Prepared by: Brett Randall Jones, AIA, LEED AP - David Baker Architects

Property Address: 6828/6826/6824 Depot Street & 215/225 Brown Street, Sebastopol, CA 95472

Assessor's Parcel Number: 004-052-001, 004-061-007, 004-061-008, 004-061-009, & 004-061-010

Please give your written response for each of the questions listed below. Use added pages if necessary.

1. Why do you want the General Plan or Zoning Ordinance text changed?

We are requesting two Zoning Code Amendments; the first is an increase in stories/height to 4 stories/50' for this site within the Downtown Core and the second is the allowance of 8'-6" wide tandem parking spaces to achieve a project's parking requirements. The two amendments would allow our project to be financially & logistically viable, and allows a greater flexibility for the massing possible on the site to achieve a scale of buildings more appropriate for each frontage and it's surrounding context.

2. What changes or events have occurred or what new evidence has arisen since the General Plan or Zoning Ordinance was adopted which now warrant a change?

The Planning Dept has been working on the GPAC Draft General Plan (Dec 2015) which has expressed it's intention to promote greater heights and *"higher density uses focused within the Downtown Core."* It specifically calls to revise the Zoning Code to allow building heights up to four stories/50 feet in the Downtown Core in an attempt to *"Emphasize and Advance Sebastopol's Role as a Market and Service Center for the West County by Providing for a Vibrant Downtown, Diversified Uses, and Community Services and Facilities."*

3. Describe the effect the proposed change will have on the surrounding uses.

The proposed change will allow the project to provide varied heights across the site to better match the heights of the surrounding buildings at each frontage (e.g. four stories adjacent to the theatre and 2 stories adjacent to smaller scale retail storefronts, instead of three stories across the entire site). The parking amendment will allow the project to meet it's parking needs in a much smaller area, causing less expansive surface parking in the downtown area and allowing more opportunity for other uses.

4. Describe how the proposed change will affect achievement of the General Plan goals or the objectives of the Zoning Ordinance in this and the surrounding area.

As stating previously, the Four story/50' height code amendment is a direct goal of the Draft General Plan.

The parking amendment will "Ensure that parking strategies in the Downtown Core enhance the visual landscape, reduce the visibility of parking facilities, and the amount of land required for parking purposes."

Allowing these zoning code amendments will make this project more viable; the project as a whole achieves a large amount of the Draft General Plan's goals; It is an infill development located in an area that is readily accessible by pedestrians, bicyclists, and transit, provides public spaces and spaces for community gathering and social interaction through art/maker spaces, public outdoor plazas and courtyards, and makes improvements to streetscapes and pedestrian safety.

City of Sebastopol

ENVIRONMENTAL INFORMATION/ASSESSMENT FORM

(To be completed by applicant)

The submittal information shall be provided to the Planning Department.

Date Filed: 2016-07-15

General Information:

1. Name of developer or project sponsor: Piazza Hospitality Group (Paolo Petrone)
   Address of developer or project sponsor: 414 Healdsburg Ave, Healdsburg, CA 95448

2. Address of project: 6828/6826/6824 Depot Street & 215/225 Brown Street, Sebastopol, CA 95472

   Assessor's Block and Lot Number: 004-052-001, 004-061-007, 004-061-008, 004-061-009 , & 004-061-010

3. Name of person to be contacted concerning this project:: Paolo Petrone
   Address of person to be contacted concerning this project: paolo@hotelhealdsburg.com
   Telephone Number of person to be contacted concerning this project: 415-302-2697

4. Indicate number of the permit application for the project to which this form pertains: 2016 - 08

5. List and describe any other related permits and other public approvals required for this project, including those required by City, Regional, State and Federal Agencies:

   Use Permit, Zoning Code Amendments, Design Review (City of Sebastopol)

6. Existing Zoning District: CD Existing General Plan Designation: CD

7. Propose Use of Site (Project for which this form is filed): Transient Habitation involving 50 or more rooms.

PROJECT DESCRIPTION:

8. Site Size: 004-052-001 = 51,851sf; 004-061-007/008 = 12,460sf; 004-061-009/010 = 9,470sf

9. Square Footage: 68,825sf

10. Number of floors of construction: 4 floors

11. Amount of off-street parking: 92 spaces

12. Attach plans

13. Proposed scheduling: We intend to continue through the various city approvals for the remainder of 2016. Starting in early 2017, we will continue working with the DRB while concurrently developing the design and drawings. Construction start late 2017/early 2018 for a completion date in 2019.

14. Associated project

15. Anticipated incremental development:

16. If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household size expected.

17. If commercial, indicate the type, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities. City & Regionally oriented commercial uses, approx 13,500sf

18. If industrial, indicate type, estimated employment per shift, and loading facilities.

19. If institutional, indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project.

20. If the project involves a variance, conditional use or rezoning application, state this and indicate clearly why the application is required. - Use Permit for Transient Habitation involving 50 or more rooms.
- Zoning Code Amendments (stories/height & tandem parking)

Are the following items applicable to the project or its effects? Discuss below all items checked yes (attach additional sheets as necessary).

21.	Change in existing features of any bays, tidelands, beaches or hills, or substantial alternation of ground contour.	Yes ☐	No ☑
22.	Change in scenic views or vistas from existing residential areas or public lands or roads.	Yes ☐	No ☑
23.	Change in pattern, scale or character of general area of project.	Yes ☐	No ☑
24.	Significant amounts of solid waste or litter.	Yes ☐	No ☑
25.	Change in dust, ash, smoke, fumes or odors in vicinity.	Yes ☐	No ☑
26.	Change in ocean, bay, lake, stream or ground water quality or	Yes	No ✓

	quantity, or alteration of existing drainage patterns.	❑	✓
27.	Substantial change in existing noise or vibration levels in the vicinity.	Yes ❑	No ✓
28.	Site on filled land or on slope of 10 percent or more.	Yes ❑	No ✓
30.	Substantial change in demand for municipal services (police, fire, water, sewage, etc).	Yes ❑	No ✓
31.	Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc).	Yes ❑	No ✓
32.	Relationship to a larger project or series of projects.	Yes ❑	No ✓

Environmental Setting: Currently, there is an existing one-story building. There is also a small concrete parking area and the remainder of the site is vacant and covered in intermittent gravel/paving used mostly for equipment storage and tractor parking. Street trees are present and a few trees on the site; no other plants or animals of note. No cultural, hstorical, or scenic aspects of note. See photos within drawing set.

33. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals, and any cultural, historical or scenic aspects. Describe any existing structures on the site, and the use of the structures. Attach photographs of the site. Snapshots or Polaroid photos will be accepted.

34. Describe the surrounding properties, including information on plant and animals and any cultural historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc), intensity of land use (one-family, apartment houses, shops, department stores, etc), and scale of development (height, frontage, set-back, rear yard, etc). Attach photographs of the site. Snapshots or Polaroid photos will be accepted.

	YES	NO
A. Does the Project involve any of the following?	✓	
1. No change in the square footage to the existing structure?		✓
2. An addition of more than 50% of square footage to the existing structure?		✓
3. An addition of more than 2500 square feet to the existing structure?		✓
4. An addition of more than 10,000 square feet to the existing structure?		✓
5. Demolition of the existing structure?	✓	
	YES	NO
B. Does the Project involve the replacement or reconstruction of existing structures or facilities at the site which:	✓	
1. Will have substantially the same purpose and capacity as existing structures at the site?		✓
2. Will result in an increase in square footage or capacity as compared to the existing structure?	✓	

	YES	NO
C. Does the Project involve new construction of:	✓	
1. 35 or more dwelling units?		✓
2. More than 15,000 square feet of commercial, industrial, governmental, or institutional floor area?		✓
3. Stores, motels, offices, restaurants, and similar structures designed for an occupant load of more than 30 persons?	✓	
	YES	NO
D. Does the Project involve division of property into more than four parcels or consolidation of more than four parcels?		✓
	YES	NO
E. Will the Project require issuance of a Variance, Use Permit, Zoning Ordinance Amendment, Zoning Map Amendment, or General Plan Amendment?	✓	
	YES	NO
F. Will the Project result in a change in use at the site (for example: from residential to commercial or from office to restaurant?)	✓	
	YES	NO
G. Is this Project:		✓
1. Similar to the other projects for which you have received permits in the last two years in the City of Sebastopol?		✓
2. Similar to other projects, which you are planning to develop within two years in the City of Sebastopol?		✓
	YES	NO
H. Does the Project involve changes to an official City landmark?		✓
	YES	NO
I. Does the Project involve use of disposal of potentially hazardous materials, such as toxic substances, flammables, or explosives?		✓
	YES	NO
J. If the Project is located within 500 feet of a residential zone or noise-sensitive land uses, will the construction of the project involve the use of pile driving, night time track hauling, blasting, 24 hour pumping, or other equipment that creates high noise levels and or vibrations?		✓
	YES	NO
K. Does the Project involve the construction, substantial remodel, or 50% or more addition to the following types of uses?		✓
Mobile home, amphitheater, concert hall, auditorium, meeting hall, hospital, church, library, school classrooms, or day care?		✓

I certify that the information in this form is correct to the best of my knowledge.

Applicant Signature

7/18/16
Date

Certification:

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information represented are true and correct to the best of my knowledge and belief.

Date: 7/18/16

Signature: _____

Printed Name: Paolo Petrone

For: Applicant

david baker architects
dbarchitect.com
461 second street loft 127
san francisco california 94107
v.415.896.6700 f.415.896.6103

Title Sheet
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.00

PROJECT DESCRIPTION

The proposed project at 6828 Depot Street will be a small, design-oriented boutique hotel with 66 rooms. The hotel will operate 24 hours a day, 7 days a week, year-round. The Hotel will also include a lobby and reception area, retail, artist/maker studios, restaurant, bar, lounge, wellness center, public courtyard, private gardens, outdoor rooftop decks, meeting rooms, & other hotel amenties. A total of 92 parking spaces for the project will be located across Brown Street on two combined parcels (6824/6826 Depot and 215 Brown Street), and will be provided as tandem spaces accessible only via our valet parking program. It is our intention to develop this paved surface parking lot at a later date.

Designed using feedback from the community, the buildings will be FSC redwood siding and vertical slats, carbonized redwood siding, textured concrete, a light-colored species wood siding, weathered steel panels, and covered in vine planting. The materials reference the local natural palate and rely on naturally sustainable materials.

The massing of the buildings is broken up to match the smaller scale of the surrounding buildings and context. This provides a finer grain that matches that of the town. The highest portion of the building is positioned across from the tallest adjacent building, the Rialto cinema, and then steps down two stories towards the south corner to adjust to the height of the neighboring building and allow more sunlight into the public courtyard.

Landscaping will be featured in the public coutyard, private gardens, passage, roof decks, green roofs, and streetscapes. It will be composed of plant species that are antive to the area and will be maintained with a rainwater collection system or low-water drip irrigation. Concrete paving and permeable pavers provide a hardscape. The public courtyard will be mostly open to accomodate people and seating, and the private gardens will be an intimate space for the pool and wellness center.

Signage for the project will be located on both McKinley St and the corner of Petaluma and Depot. It will be placed at street level and will be legible and well-lit.

This project will take a sustainable green approach to construction and operations, included in the plan are solar roof panels for water heating to conserve electricity, storm water management, renewable/reused materials, and rainwater collection. The project goal is to achieve a LEED certification.

PROJECT DIRECTORY

OWNER
Piazza Hospitality Group
414 Healdsburg Ave
Healdsburg, CA 95448
t. 415-302-2697
f. 707-433-3269

contact: Paolo Petrone
e: paolo@hotelhealdsburg.com
t: 415-302-2697

ARCHITECT
David Baker Architects
461 Second Street, Loft c127
San Francisco, CA 94107
t: 415.896.6700
f: 415.896.6103

contact: Brett Randall Jones, AIA
e: brettjones@dbarchitect.com
t: 415.799.4581

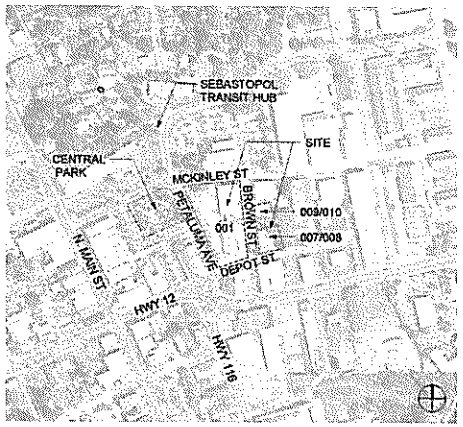
SHEET INDEX

G.00	Title Sheet	A.00	Site Analysis
G.01	Project Information	A.01	Site Plan
G.10	Code Notes	A.11	Floor Plan - Level 1
G.20	Site Aerial	A.12	Floor Plan - Level 2
G.21	Site Photos	A.13	Floor Plan - Level 3
G.30 - G.43	3D Views	A.14	Floor Plan - Level 4
L.00	Landscape Plan	A.15	Floor Plans - Basement & Parking Lot
L.01	Roof Deck Plan	A.20	Street Elevations - Petaluma Avenue & McKinley Street
L.10	Inspiration Images	A.21	Street Elevations - Brown Street & Depot Street
L.20	Plant Palette	S.00	Site Survey
L.21	Plant Palette		

PROJECT INFORMATION

ADDRESS:	6828 & 6826/6824 DEPOT STREET & 215/225 BROWN
PARCEL:	004-052-001 & 004-061-007/008 & 004-061-009/010
ZONING:	CD (DOWNTOWN CORE)
PARCEL AREAS:	004-052-001 = 51,851 SF 004-061-007/008 = 12,460 SF 004-061-009/010 = 9,470 SF
TOTAL PARCEL AREA:	73,781 SF
GROSS BUILDING AREA:	68,825 SF
SITE COVERAGE:	20,520 SF
ALLOWED F.A.R.:	2.0 MAX.
PROPOSED F.A.R.:	1.33 (68,825 SF / 51,851 SF)
SETBACKS:	NONE REQUIRED.
ALLOWED BUILDING HEIGHT:	3 STORIES / 40 FEET
PROPOSED BUILDING HEIGHT:	4 STORIES / 50 FEET* (NOT INCLUDING EQUIPMENT, PARAPETS, & PENTHOUSES)
GUEST ROOMS ALLOWED:	49 ROOMS** ** 50 OR MORE ROOMS ARE ALLOWED UNDER CONDITIONALLY PERMITTED USES
GUEST ROOMS PROPOSED:	36 STANDARD ROOMS 13 JUNIOR SUITES 5 SUITES 6 HOSTEL ROOMS (24-BUNK CAPACITY) 6 WALK-UP ROOMS 66 TOTAL GUEST ROOMS
PARKING REQUIRED:	1 SPACE / 400 SF OF NET FLOOR AREA (NET AREA = GROSS AREA - 15%) LESS 20% (DISCRETIONARY UNDER 17.220.020-D) 68,825 SF X .85 = 58,501 SF 58,501 SF / 400SF X .80*** = 117 117 REQUIRED PARKING SPACES (UP TO 40% COMPACT SPACES)
PARKING PROVIDED:	92 TANDEM PARKING SPACES***** 30 STREET SPACES**** 122 PROVIDED PARKING SPACES
BIKE PARKING REQUIRED:	15% OF PARKING REQUIREMENT 117 x .15 = 18 15 REQUIRED BIKE SPACES
BIKE PARKING PROVIDED:	36 STREET SPACES 26 BIKE ROOM SPACES 62 PROVIDED BIKE SPACES
USE PERMITS / VARIANCES / TEXT AMENDMENTS	*1. ALLOWABLE HEIGHT & STORY INCREASE **2. TRANSIENT HABITATION W/ 50 OR MORE ROOMS ***3. 20% DISCRETIONERY PARKING DECREASE ****4. USE STREET FRONTAGE PARKING AS PROVIDED OFF-STREET PARKING *****5. TANDEM PARKING SPACES ******6. PARKING SPACE WIDTH

VICINITY MAP



GROSS BUILDING AREA

Level	Area
Basement	6620 SF
Level 1	20520 SF
Level 2	21977 SF
Level 3	14354 SF
Level 4	5355 SF
	68825 SF

NET BUILDING AREA BY OCCUPANCY

Occupancy	Area
Circulation	11,903 SF
Hotel Amenities	8,912 SF
Hotel Guest Room	26,636 SF
Open Space	4,852 SF
POR/Retail (Commercial)	2,244 SF
Restaurant (Commercial)	4,310 SF
Retail (Commercial)	2,933 SF
Service / Utility	6,160 SF
Spa (Commercial)	4,128 SF
	72,077 SF

OPEN SPACE

Level	Name	SF
Level 1	Garden Courtyard	6613 SF
Level 1	Plaza	4755 SF
Level 1	Public Courtyard	8119 SF
Level 1	Streetscape	17311 SF
Level 2	Balconies	1372 SF
Level 2	Deck	273 SF
Level 2	Terrace	1251 SF
Level 3	Balconies	1116 SF
Level 4	Balconies	357 SF
Level 4	Roof Deck	3166 SF
		44358 SF

BICYCLE PARKING

Type	Location	Number of Bicycles
Hotel Guest	Bike Room	26
Public	Streetscape	36
		62

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Project Information
Sebastopol Hotel

project number 21416
scale
date 2016-08-08
drawn by BRJ

G.01

PARKING

This project plans to provide 122 parking spaces – 92 off-street tandem spaces in our paved surface lot on Brown Street and 30 on-street spaces around the perimeter of our building. This is fewer than the 146 spaces required. As such, this project requests a 20% discretionary decrease of parking by Use Permit per 17.220.020 D. The project meets several of the reasons under the 'Decrease in Parking Requirements' section of the planning code that warrants a decrease (Items 1, 4 & 5)

1) Due to special circumstances associated with the operation of the use at its location, the proposed use will generate a parking demand significantly different from the standards specified.

The parking requirement is based on the square footage of the building and applies a constant requirement over several types of uses in the building. However, a large percentage of the building area is amenity & accessory spaces for use exclusively for hotel room guests and will not increase the number of people with automobiles beyond the actual number of guest rooms. For example, there is 12,000sf of circulation space exclusively used for hotel guests to get to their guest room (17% of the building area) and 8,400sf of hotel amenity space for hotel guests (12% of the building area). So, nearly 1/3 of the building area will not directly require a parking need.

Its location further alleviates parking needs. The urban form of downtown Sebastopol is a walkable, pedestrian-supportive environment, with buildings close to the street, continuous block faces, minimal driveways, attractive landscaping, mostly comfortable street crossings, limited crossing delays, etc., therefore parking efficiencies from captive market sharing are very likely. ITE (Institute of Transportation Engineers) estimates that typically an average of about 31% of parking demand is attributable to captive market effects in mixed-use walkable districts.

Additionally, the Sebastopol Transit Hub is located less than 1 block from the site and provides bus access that further alleviates parking needs (Routes, 20, 22, 24, 26).

4) In addition, prior to approving a decrease in the parking capacity required, the Commission must determine that adequate provisions have been made to accommodate any possible subsequent change in the use or occupancy which may require a greater parking capacity than that allowed by the Commission. Such provisions include, but are not limited to, transit facilities, off-site parking or similar measures.

There is no intention for a future change in the use or occupancy of the site that would require a greater parking need.

Additionally, beyond the nearby transit hub that provides public bus access, the project also provides 313% more bike parking than is required. The project and the hotel management will encourage both guests and workers to bike or walk to the hotel.

5) The location of several types of uses or occupancies in the same building or on the same site may constitute a special circumstance warranting the reduction of parking requirements.

The project does contain several types of uses and occupancies on the site. This allows for the project to take advantage of two basic types of shared parking opportunities that lower overall parking demand:

1. Staggered peaks sharing—i.e. different uses each have different peaks and patterns of demand, and there are efficiencies to be gained if they share a parking facility; and
2. Captive market sharing—i.e. the notion that patrons who, having already parked, travel between uses within a district and/or building without accessing their vehicle.

Our planned mixed uses are rather complimentary. For example, retail demand peaks during the day, whereas hotel demand peaks at night.

Restaurants and retail services are particularly effective generators of captive market effects in mixed-use developments, as they serve office employees, customers, hotel guests, and residents within the same district. In other words, our hotel guests will access the hotel restaurant, spa, and shops without needing a parking space, as they'll already be parked. Outside retail/restaurant costumers may be downtown office workers, residents, or visitors who have already parked prior to visiting our building.
For comparison, one of Piazza's other hotels, Hotel Healdsburg, which includes many mixed-uses (2 restaurants, 5 retails spaces, & a spa) operates with 45 parking spaces for 56 rooms (~.8 spaces per room). Another, H2 Hotel has 28 spaces for 36 rooms (~.77 spaces per room). Currently, the Sebastopol parking requirement places our parking required at 2.21 spaces per room. Our request for a 20% decrease would still provide 1.77 spaces per room, more than double what our past hotels have needed.

So, this project's walkable location, nearby transit, complimentary mixed uses, zero-demand accessory spaces, and shared parking opportunities make this project an ideal candidate for a 20% discretionary decrease of parking by Use Permit per 17.220.020 D. The project clearly meets several of the reasons under the 'Decrease in Parking Requirements' section of the planning code that warrants a decrease and will provide the city of Sebastopol a vibrant collection of services and public open space.

NOISE

The project design team will include the expertise of an experienced acoustical engineer that will conduct a Site Noise Study and provide acoustical feedback throughout the design process and continue until the completion of the project. The acoustical consultant will have site-specific acoustic requirements, but below is the minimum requirements that will be met by the window and wall assemblies.

Window Performance Requirements:

Outside - Inside Transmission Class (OITC) Rated for not less than 27 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332, unless otherwise indicated.

Wall Performance Requirements:

All exterior walls along Petaluma Ave. a minimum of 40 STC Sound.

VALET PARKING

Guests arriving to the hotel will be instructed at time of reservation to turn onto Brown Street from the north and into the designated valet area. Once in the valet area, guests will be greeted by a valet where luggage will be unloaded and then cars will be moved south along Brown Street and into the paved surface parking lot spaces by the valet staff.

Employee parking will be accommodated within the paved surface parking lot and employees will also be encouraged to cycle to work. Adequate bicycle storage will be provided to accommodate both employee and guest bicycles.

PUBLIC R.O.W. CHANGES

Upon recommendation of the planning commisson, we are proposing that Brown Street be changed to a one-way street traveling north-to-south and that parking be added to the west side. A valet drop-off zone will be designated near the main entry of the propsed hotel, at the north end of Brown.

Also, we are proposing a curb extension bulb-out at the corners of Petaluma & McKinley and Petaluma & Depot to aid in pedestrian safety (dependent upon collaboration and approval of Caltrans and that the process doens't become an unreasonable hardship on the project).

HOSTEL ROOMS

The Hostel Rooms shown in this project are a room type only. We intend to attempt the hostel idea, but do not have enough consumer research to know if there is a market for this type of room in Sebastopol; nor do we have past experience with this room type. Because of these unknowns, we do not commit to the operation of the hostel or that it be a requirement or condition of approval for the project. If this room type is not feasible financially, they will be changed to standard rooms in the future.

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Code Notes
Sebastopol Hotel

project number	21416
scale	
date	2016-08-08
drawn by	BRJ

G.10

area development plan

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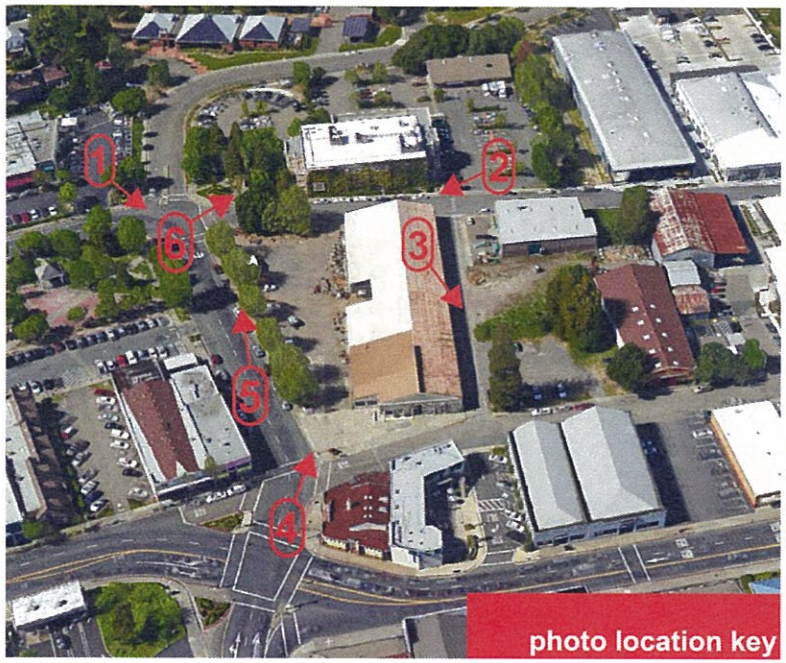
Site Aerial

Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.20



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Site Photos
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.21

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-08-08
drawn by	BRJ

G.30

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.31

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.32

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.33

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.34

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.35

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.36

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.37

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.38

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.39

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3D Views

Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.40

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.41

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3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.42

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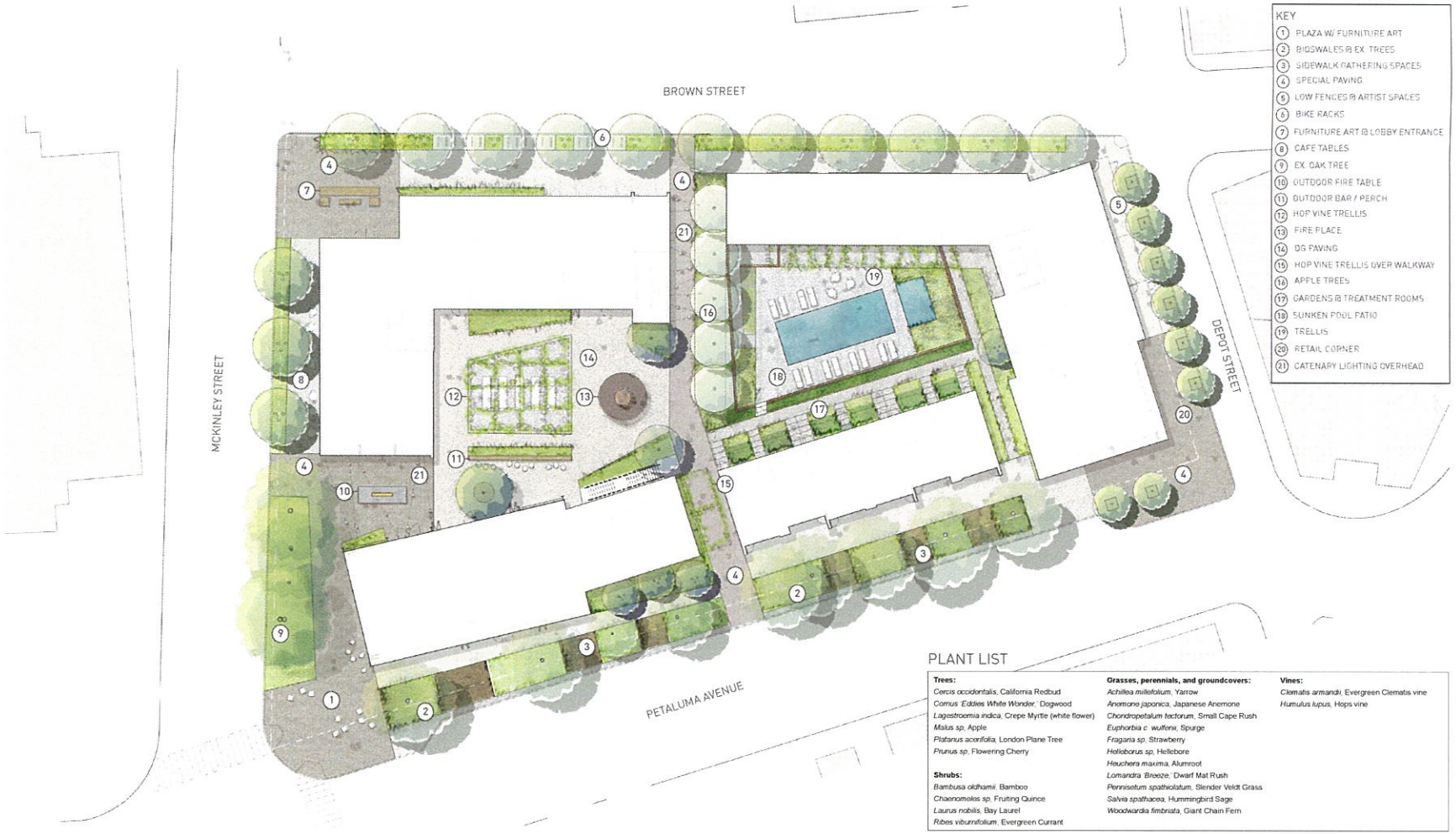
3D Views
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	BRJ

G.43



KEY

1. PLAZA W/ FURNITURE ART
2. BIOSWALES @ EX. TREES
3. SIDEWALK GATHERING SPACES
4. SPECIAL PAVING
5. LOW FENCES @ ARTIST SPACES
6. BIKE RACKS
7. FURNITURE ART @ LOBBY ENTRANCE
8. CAFE TABLES
9. EX. OAK TREE
10. OUTDOOR FIRE TABLE
11. OUTDOOR BAR / PERCH
12. HOP VINE TRELLIS
13. FIRE PLACE
14. DG PAVING
15. HOP VINE TRELLIS OVER WALKWAY
16. APPLE TREES
17. GARDENS @ TREATMENT ROOMS
18. SUNKEN POOL PATIO
19. TRELLIS
20. RETAIL CORNER
21. CATENARY LIGHTING OVERHEAD

PLANT LIST

Trees:
Cercis occidentalis, California Redbud
Cornus 'Eddies White Wonder,' Dogwood
Lagestroemia indica, Crepe Myrtle (white flower)
Malus sp, Apple
Platanus acerifolia, London Plane Tree
Prunus sp, Flowering Cherry

Shrubs:
Bambusa oldhamii, Bamboo
Chaenomeles sp, Fruiting Quince
Laurus nobilis, Bay Laurel
Ribes viburnifolium, Evergreen Currant

Grasses, perennials, and groundcovers:
Achillea millefolium, Yarrow
Anemone japonica, Japanese Anemone
Chondropetalum tectorum, Small Cape Rush
Euphorbia c. wulfenii, Spurge
Fragaria sp, Strawberry
Helleborus sp, Hellebore
Heuchera maxima, Alumroot
Lomandra 'Breeze,' Dwarf Mat Rush
Pennisetum spathiolatum, Slender Veldt Grass
Salvia spathacea, Hummingbird Sage
Woodwardia fimbriata, Giant Chain Fern

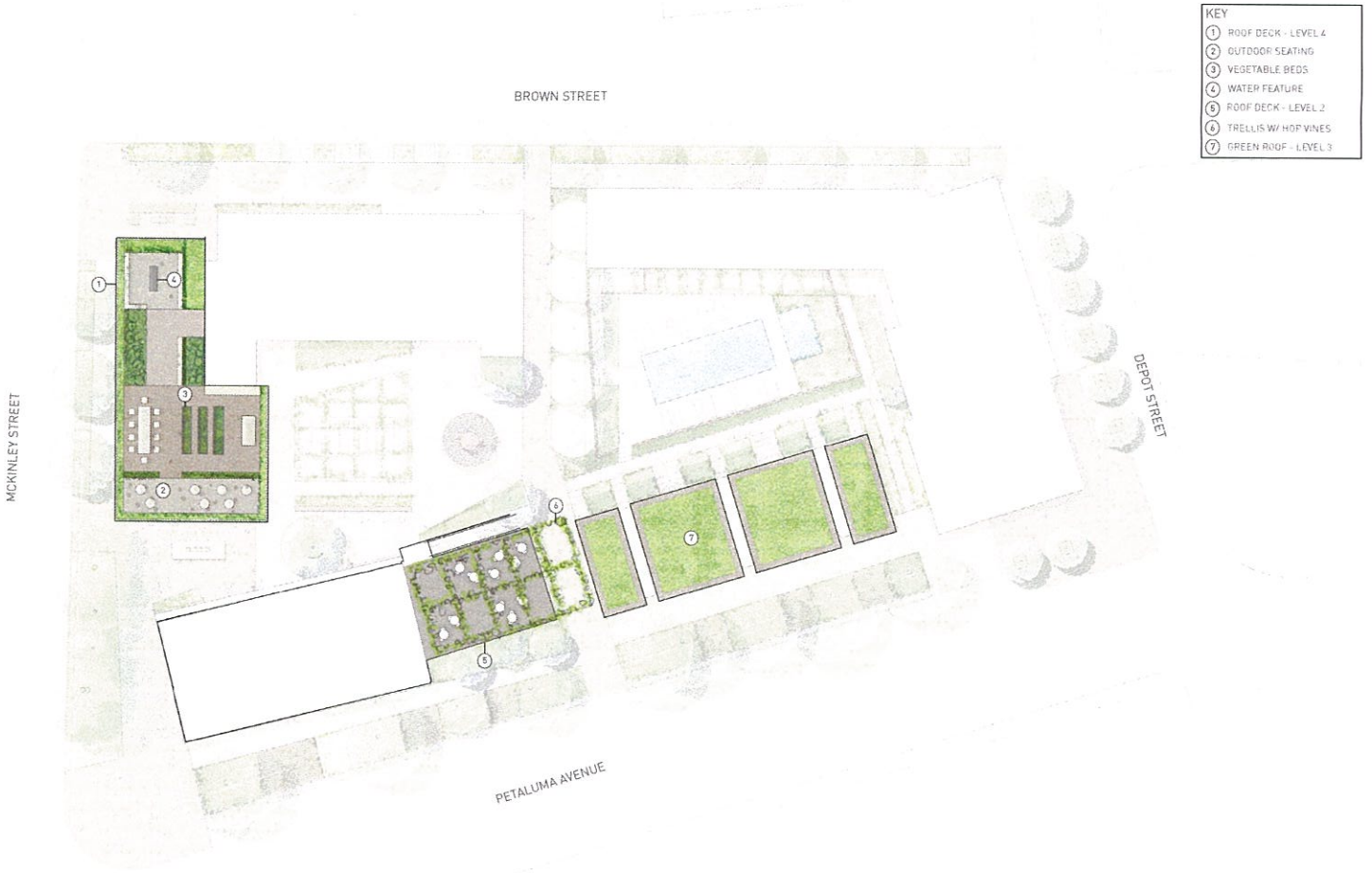
Vines:
Clematis armandii, Evergreen Clematis vine
Humulus lupus, Hops vine

AC LA

LANDSCAPE PLAN - L.00

N

PLANNING COMMISSION
JUNE 23, 2016
1"=16' @ 34X22" PLOT
0 8' 16 24



ROOF DECK PLAN - L.01

N

PLANNING COMMISSION
JUNE 23, 2016
1"=16' @ 34X22" PLOT
0 8' 16' 24'

SEBASTOPOL & SONOMA COUNTY CULTURAL INSPIRATION - APPLES & HOPS

GATHERING SPACES, REUSE OF INDUSTRIAL RELIC AS FIREPLACE, CATENARY LIGHTS

ACTIVATING THE SIDEWALK, FURNITURE ART

WESTERN REDBUD

DOGWOOD 'EDDIE S WHITE WONDER'

CREPE MYRTLE

TREES

APPLE

PLANE TREE

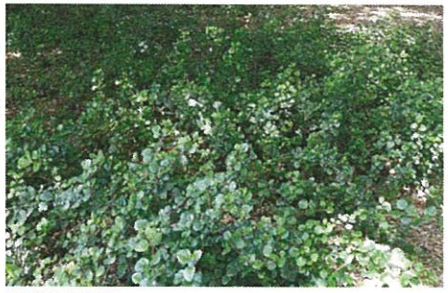
FLOWERING CHERRY

TREES

BAMBOO

FRUITING QUINCE

SWEET BAY



EVERGREEN CURRANT

SHRUBS

ALUMROOT

JAPANESE ANEMONE

SPURGE

HUMMINGBIRD SAGE

GIANT CHAIN FERN

STRAWBERRIES

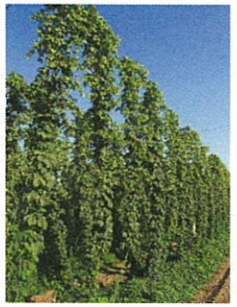
HELLEBORES

YARROW

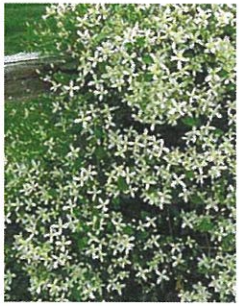
DWARF MAT RUSH

SLENDER VELDT GRASS

SMALL CAPE RUSH



HOPS VINE



EVERGREEN CLEMATIS VINE

GROUNDCOVERS, GRASSES, & VINES

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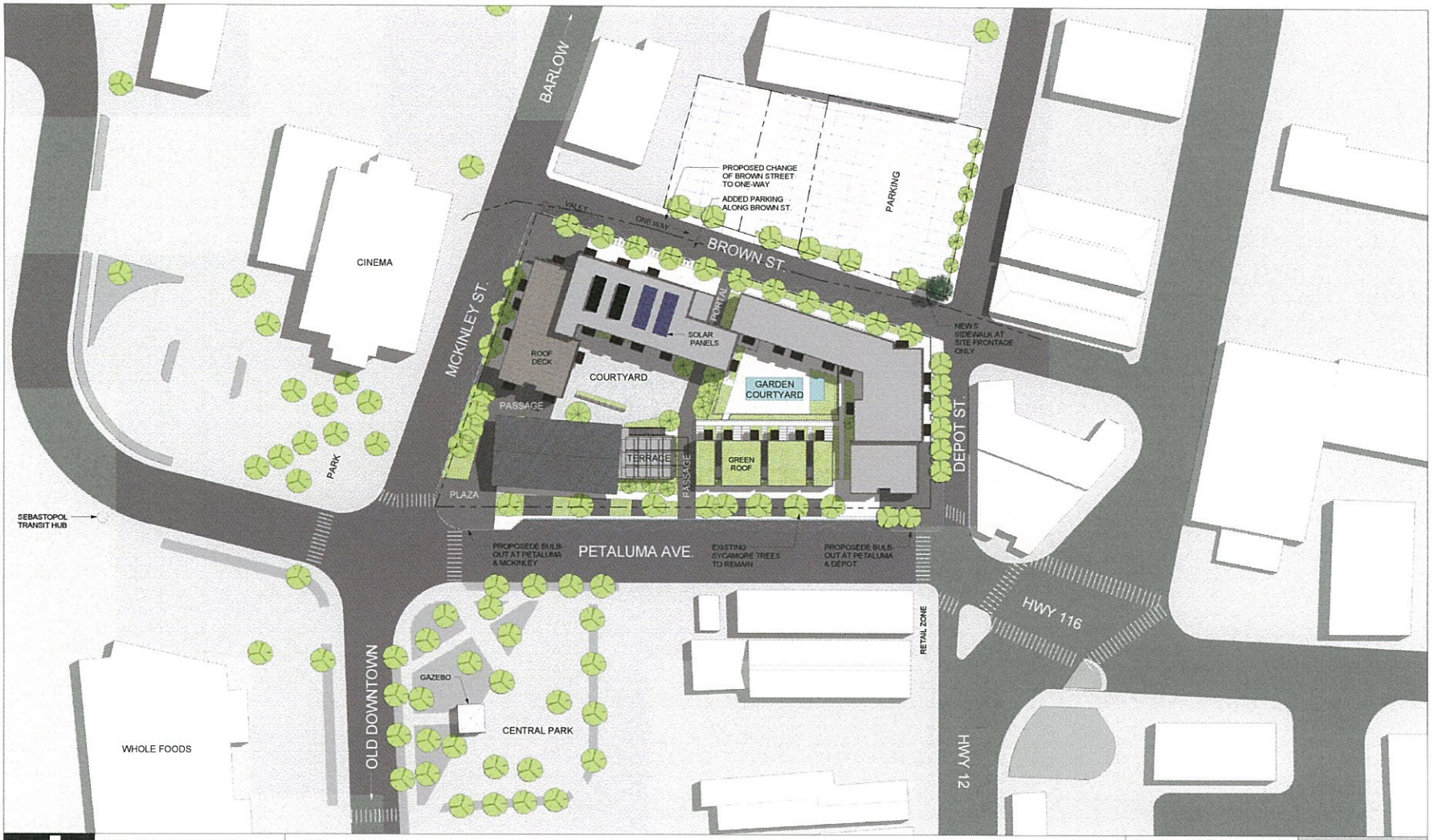
Site Analysis
Sebastopol Hotel

project number	21416
scale	
date	2016-08-08
drawn by	BRJ

A.00



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Site Plan
Sebastopol Hotel

project number	21416
scale	1":30'. (HALF-SIZED: 1":60')
date	2016-08-08
drawn by	BRJ

A.01

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Floor Plan - Level 1
Sebastopol Hotel

project number	21416
scale	1/16":1'-0". (HALF-SIZED: 1/32":1'-0")
date	2016-08-08
drawn by	BRJ

A.11

- Circulation
- Hotel Amenities
- Hotel Guest Room
- PDR/Retail (Commerical)
- Retail (Commercial)
- Restaurant (Commercial)
- Spa (Commercial)
- Service / Utility
- Open Space

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Floor Plan - Level 2
Sebastopol Hotel

project number	21416
scale	1/16":1'-0", (HALF-SIZED: 1/32":1'-0")
date	2016-07-15
drawn by	BRJ

A.12

- Circulation
- Hotel Amenities
- Hotel Guest Room
- PDR/Retail (Commerical)
- Retail (Commercial)
- Restaurant (Commercial)
- Spa (Commercial)
- Service / Utility
- Open Space

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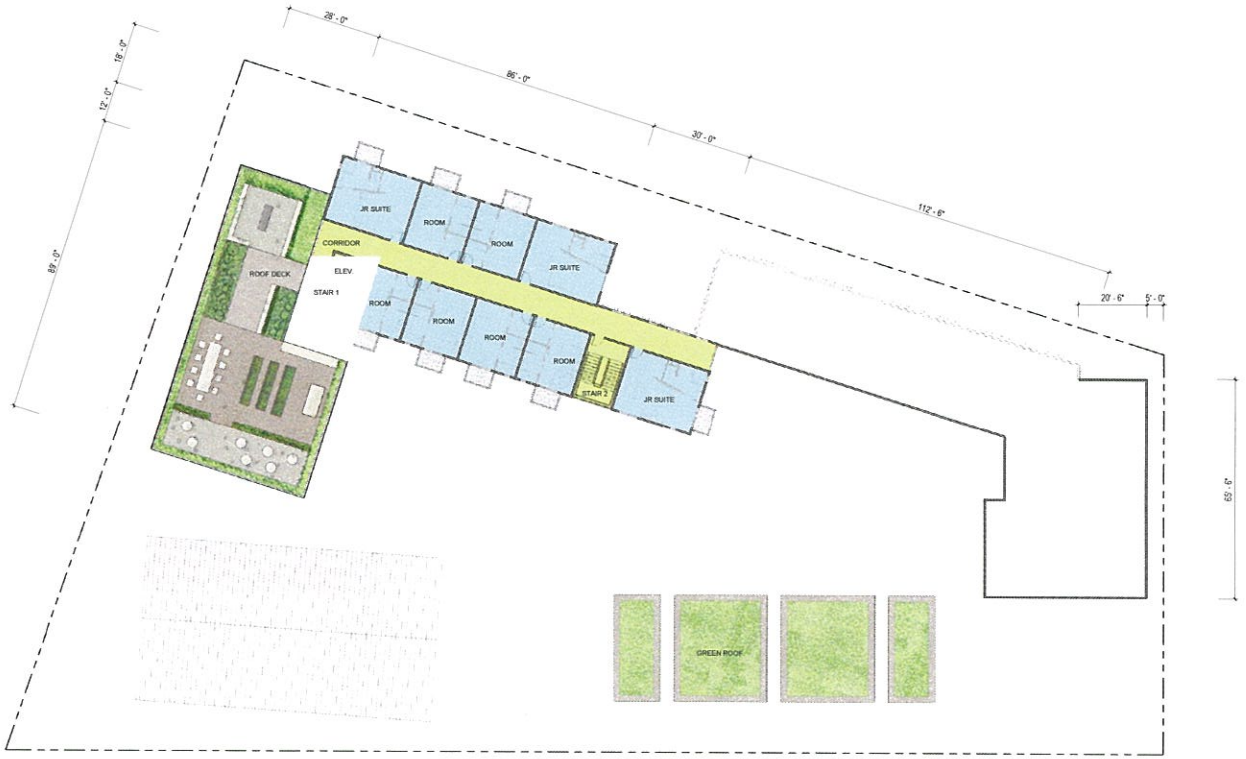
Floor Plan - Level 3
Sebastopol Hotel

project number	21416
scale	1/16":1'-0". (HALF-SIZED: 1/32":1'-0")
date	2016-07-15
drawn by	BRJ

A.13

- Circulation
- Hotel Amenities
- Hotel Guest Room
- PDR/Retail (Commerical)
- Retail (Commercial)
- Restaurant (Commercial)
- Spa (Commercial)
- Service / Utility
- Open Space



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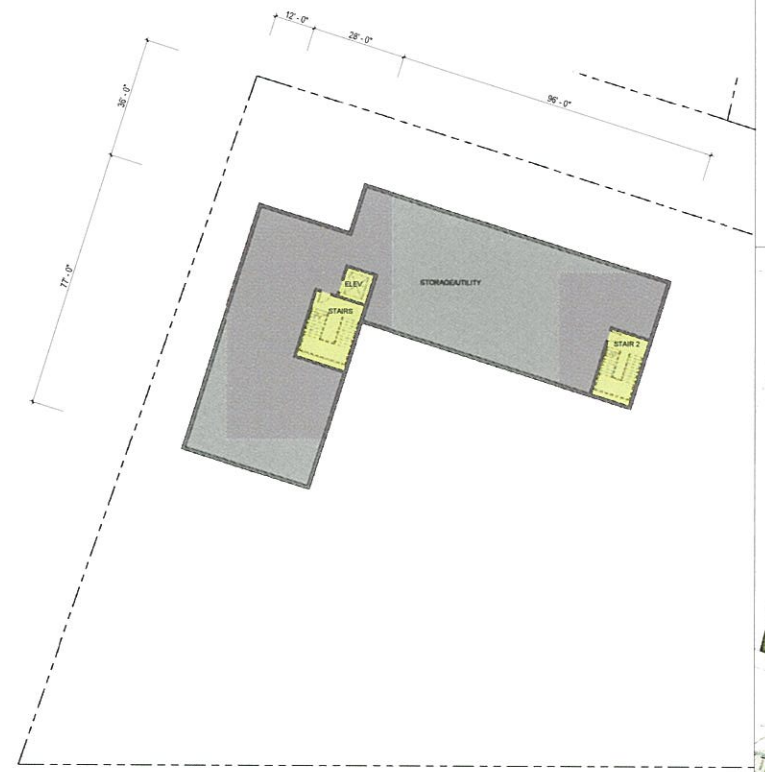
san francisco california 94107
v.415.896.6700 f.415.896.6103

Floor Plan - Level 4
Sebastopol Hotel

project number	21416
scale	1/16":1'-0". (HALF-SIZED: 1/32":1'-0")
date	2016-07-15
drawn by	BRJ

A.14

- Circulation
- Hotel Amenities
- Hotel Guest Room
- PDR/Retail (Commerical)
- Retail (Commercial)
- Restaurant (Commercial)
- Spa (Commercial)
- Service / Utility
- Open Space



1 Basement -
1/16" = 1'-0"

2 Level 1 - Parking
1/16" = 1'-0"

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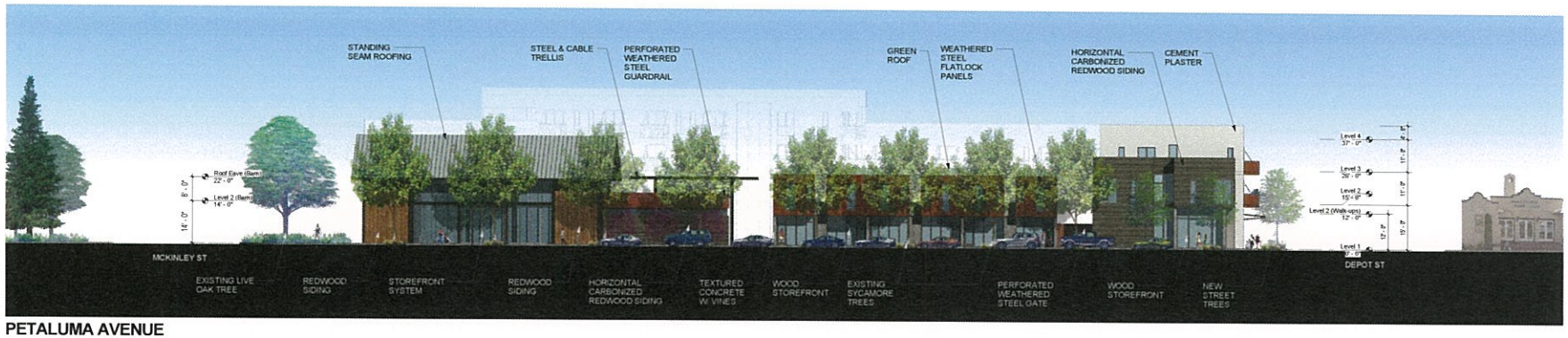
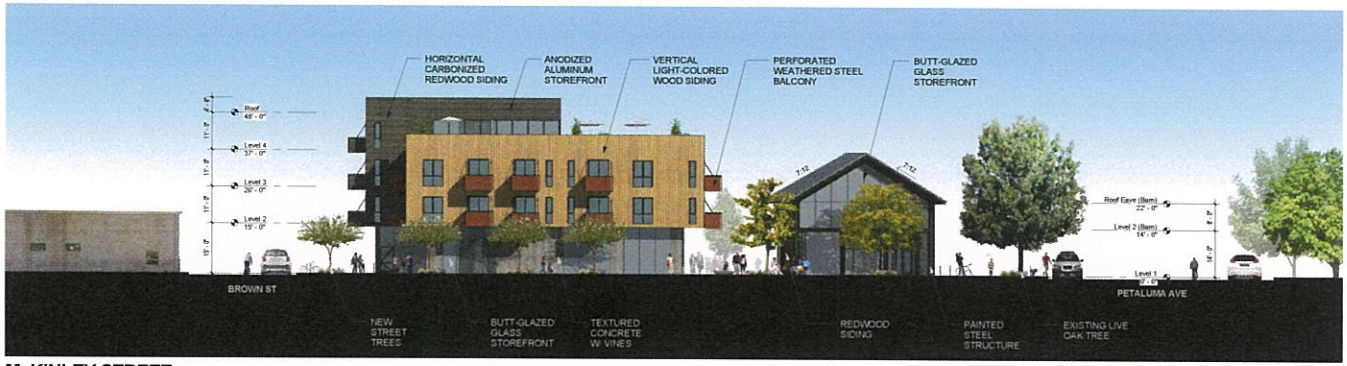
Floor Plans - Basement & Parking Lot
Sebastopol Hotel

project number	21416
scale	1/16" = 1'-0"
date	2016-08-08
drawn by	BRJ

A.15



PETALUMA AVENUE



McKINLEY STREET

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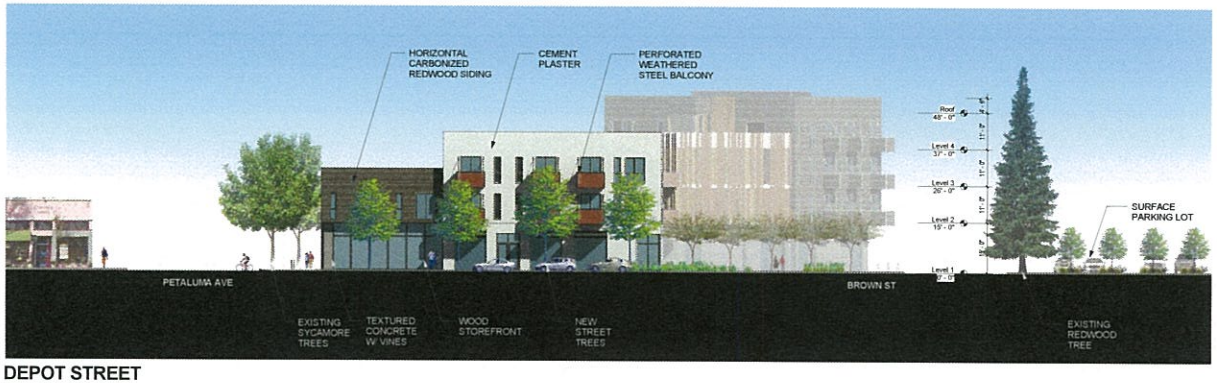
Street Elevations - Petaluma Avenue & McKinley Street
Sebastopol Hotel

project number	21416
scale	1/16":1'-0", (HALF-SIZED: 1/32":1'-0")
date	2016-07-15
drawn by	BRJ

A.20

BROWN STREET



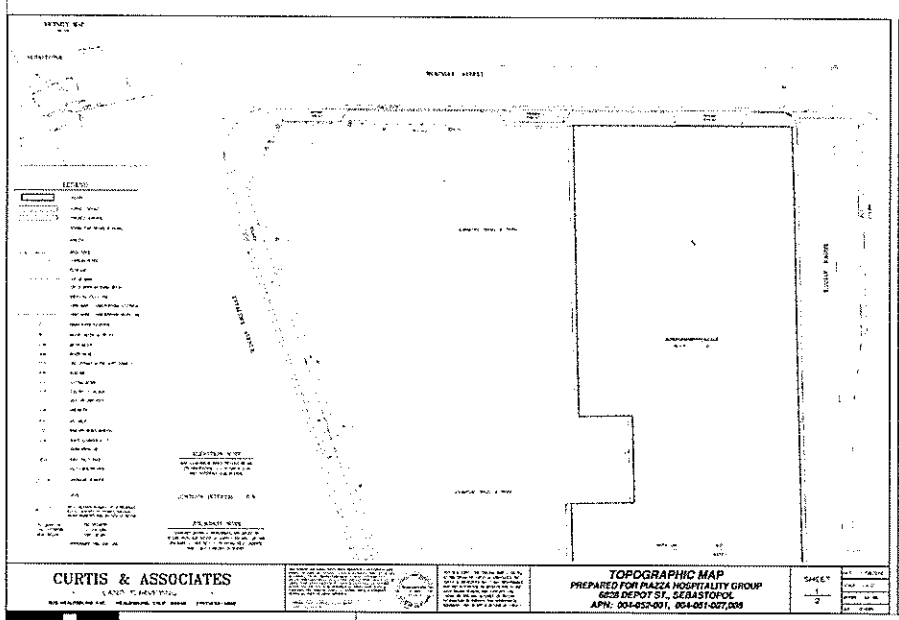
DEPOT STREET

david baker architects
dbarchitect.com
461 second street loft 127
san francisco california 94107
v.415.896.6700 f.415.896.6103

Street Elevations - Brown Street & Depot Street
Sebastopol Hotel

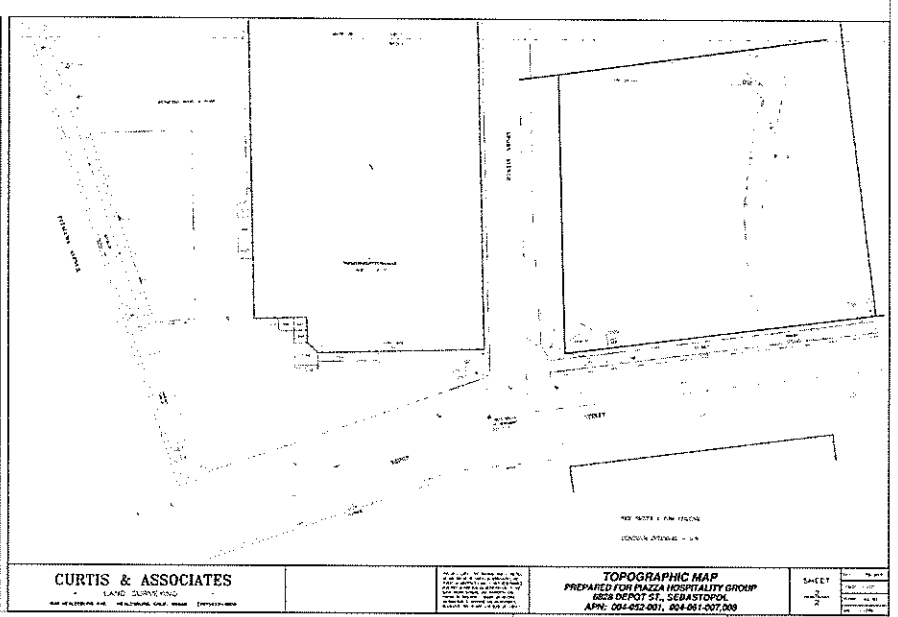
project number	21416
scale	1/16":1'-0", (HALF-SIZED: 1/32":1'-0")
date	2016-08-08
drawn by	BRJ

A.21



CURTIS & ASSOCIATES

TOPOGRAPHIC MAP
PREPARED FOR PIAZZA HOSPITALITY GROUP
6828 DEPOT ST., SEBASTOPOL
APN: 004-052-001, 004-061-027,035



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APN: 004-052-001, 004-061-027,035

david baker architects
dbarchitect.com
461 second street loft 127
san francisco california 94107
v.415.896.6700 f.415.896.6103

Site Survey
Sebastopol Hotel

project number	21416
scale	
date	2016-07-15
drawn by	C&A

S.00

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

HISTORIC RESOURCES INVENTORY

Ser. No. _____
HABS ____ HAER ____ NR 4 SHL ____ Loc ____
UTM: A 10/515980/4250520 B 10/515980/4250010
C 10/515310/4250010 D 10/515310/4250520

IDENTIFICATION

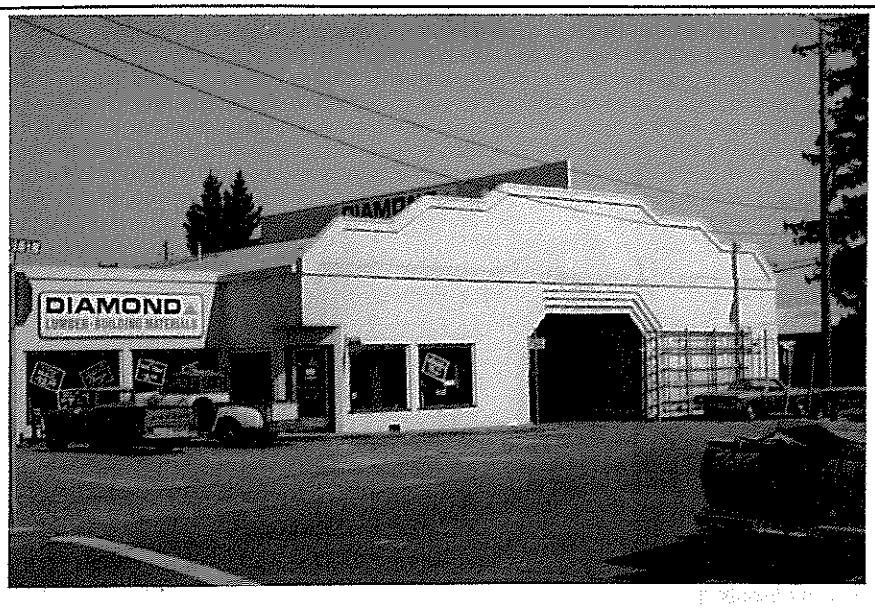
1. Common name: Diamond Lumber Co.
2. Historic name: Diamond Match Co.
3. Street or rural address: 6828 Depot Street
   City Sebastopol Zip 95472 County Sonoma
4. Parcel number: 04-052-01
5. Present Owner: Diamond National Corp. Address: PO Box 15377
   City Sacramento CA Zip 95813 Ownership is: Public _____ Private X
6. Present Use: Commercial, C-2 Original use: Commercial

DESCRIPTION

7a. Architectural style: Moderne

7b. Briefly describe the present *physical description* of the site or structure and describe any major alterations from its original condition:

A frame industrial warehouse building with stucco surface, gable roof and stepped falsefront displaying a central industrial archway giving access to the lumber storage. Incised lines framing the central arch and along the stepped cornice are the only decoration. Rectangular storefront windows form a horizontal band flanking the central opening.



8. Construction date:
   Estimated 1935 Factual _____
9. Architect _____
10. Builder _____
11. Approx. property size (in feet)
    Frontage 119 Depth 287
    or approx. acreage _____
12. Date(s) of enclosed photograph(s)
    24/00 / 1979-1980

13. Condition: Excellent ___ Good _X_ Fair ___ Deteriorated ___ No longer in existence ___

14. Alterations: _____

15. Surroundings: (Check more than one if necessary) Open land ___ Scattered buildings ___ Densely built-up ___
Residential ___ Industrial _X_ Commercial _X_ Other: _____

16. Threats to site: None known ___ Private development _X_ Zoning ___ Vandalism ___
Public Works project _X_ Other: _____

17. Is the structure: On its original site? ___ Moved? ___ Unknown? ___

18. Related features: _____

SIGNIFICANCE

19. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site.)

The Diamond Match Co., now Diamond International Corporation, operated several lumberyards in California including those located in Sebastopol, Chico and Colusa. The industrial warehouse in Sebastopol constructed by the company ca. 1945-46 in the Moderne style is similar in many features and style to the company's warehouse in Colusa built during the same period. Diamond purchased the property for the building in 1945. Existing buildings were demolished and new buildings were erected. The lumberyard is part of an industrial district which also includes the Sebastopol Lumber Co. (6794 Depot Street). The Moderne influence of the 1930's and early 1940's is particularly evident in Sebastopol.

20. Main theme of the historic resource: (If more than one is checked, number in order of importance.)
Architecture _1_ Arts & Leisure ___
Economic/Industrial ___ Exploration/Settlement ___
Government ___ Military ___
Religion ___ Social/Education ___

21. Sources (List books, documents, surveys, personal interviews and their dates).

Diamond Internation Corp
Colusa Historic Resources Survey 1980

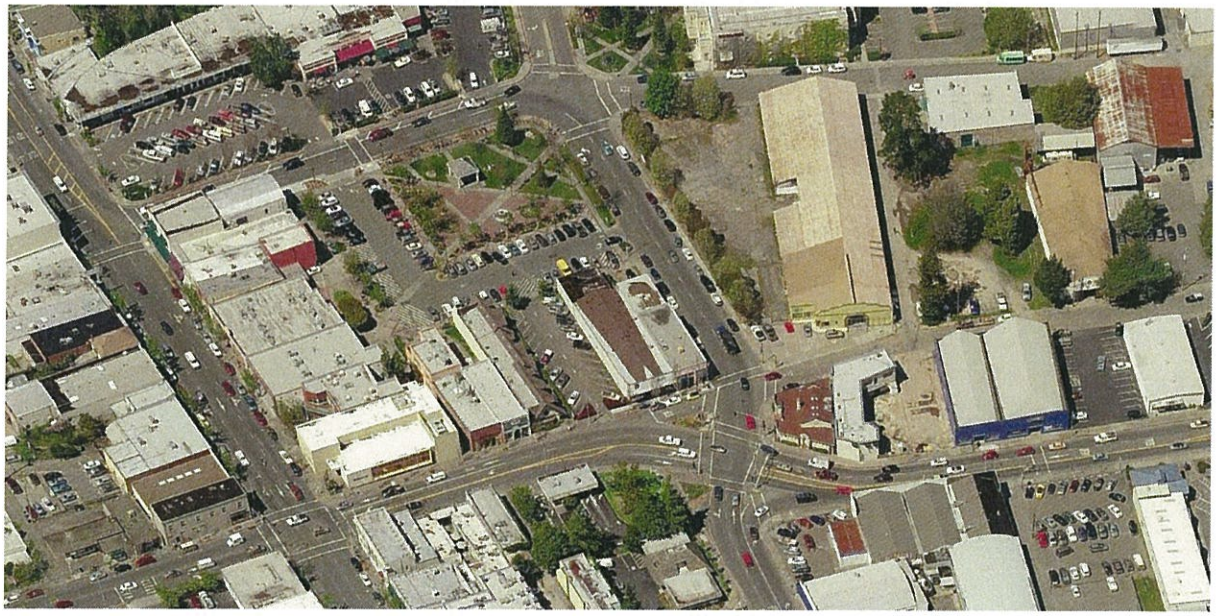
22. Date form prepared ~~MARCH 30, 1981~~
By (name) ~~Dan Peterson AIA & Associates~~
Organization ~~WEST. SO. CO. HIST. SOCIETY~~
Address: ~~P.O. BOX 816~~
City ~~SEBASTOPOL, CA.~~ Zip ~~95472~~
Phone: ~~NONE~~

Locational sketch map (draw and label site and surrounding streets, roads, and prominent landmarks):

NORTH

DISTRICT MAP # S-1

Traffic Impact Study for the Piazza Hotel



Prepared for the City of Sebastopol

Submitted by
W-Trans

August 9, 2016

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
Balancing Functionality and Livability since 1995
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Executive Summary

The proposed Piazza Hotel mixed use project would include a 66-room hotel with a 2,964 square foot restaurant and 4,240 square feet of commercial retail space. The project site is located at 6828 Depot Street and is currently occupied by Sebastopol Tractor, a tractor sales store, and would be demolished upon completion of the proposed project. As part of the project, Brown Street will be converted to one-way. The site will be served with a valet service and a total of 92 off-street tandem parking spaces in the hotel's parking lot on Brown Street and 30 on-street spaces around the perimeter of the project site. The 92 off-street spaces would only be accessible via the hotel's valet program.

The project's anticipated trip generation, with existing trips and an internal capture deductions applied, includes up to 709 net new daily trips, with 58 trips during the a.m. peak hour and 64 trips during the p.m. peak hour.

The study area includes the following nine intersections:

1. North Main Street (SR116)/McKinley Street
2. Petaluma Avenue (SR116)/McKinley Street/Laguna Park Way
3. Laguna Park Way/Johnson Street
4. Laguna Park Way/Morris Street
5. Bodega Avenue/Jewell Avenue
6. Sebastopol Avenue (SR 12)/North Main Street (SR116)
7. Sebastopol Avenue (SR 12)/Petaluma Avenue (SR116)
8. Sebastopol Avenue (SR 12)/Morris Street
9. Sebastopol Avenue (SR 12)/Llano Road

Analysis indicates that all study intersections, except Sebastopol Ave (SR 12)/Morris St, are expected to operate at acceptable levels of service upon the addition of project-generated traffic to both existing and cumulative volumes. Under Existing conditions, Sebastopol Avenue (SR 12)/Morris Street operates unacceptably at LOS F during the a.m. peak hour. Under Cumulative conditions, the intersection operates unacceptably at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. The increase in delay would be less than five seconds with the addition or project-generated trips, which would be a less-than-significant impact.

The proposed project is also expected to generate a significant volume of pedestrian traffic on McKinley Street-Laguna Park Way and on the surrounding downtown street network. Pedestrian facilities are generally adequate; however, there are gaps in the sidewalk on the south side of McKinley Street, east of Brown Street and on the east side of Brown Street. Existing and planned bike and transit facilities are adequate and the hotel plans to provide 19 bicycle parking spaces.

The proposed project plans to provide 122 parking spaces with 92 off-street and 30 on-street spaces. The project as proposed would experience a parking deficit of 16 spaces per the City of Sebastopol's Municipal Code. However, with shared parking principles applied, the project would experience a peak parking demand of 85 vehicles at 1:00 p.m. on weekdays. With plans to provide122 spaces, parking is expected to be adequate and a parking variance should be requested.

In order to improve pedestrian access, continues sidewalk should be provided along the perimeter of the project, on the east side of Brown Street between McKinley Street and Depot Street, and on the south side of McKinley Street, just east of Brown Street. Additionally, either a) High-Intensity Activated Crosswalk (HAWK) beacon should be installed at the south leg crossing, or b) the approach should be narrowed to one lane and some type of warning beacons should be installed. Any improvements should be at the discretion and approval of Caltrans.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with development of a proposed 66-room hotel to be located on the block bounded by Petaluma Avenue, McKinley Street, Brown Street and Depot Street in the City of Sebastopol. The traffic study was completed in accordance with the criteria established by the City, and is consistent with standard traffic engineering techniques.

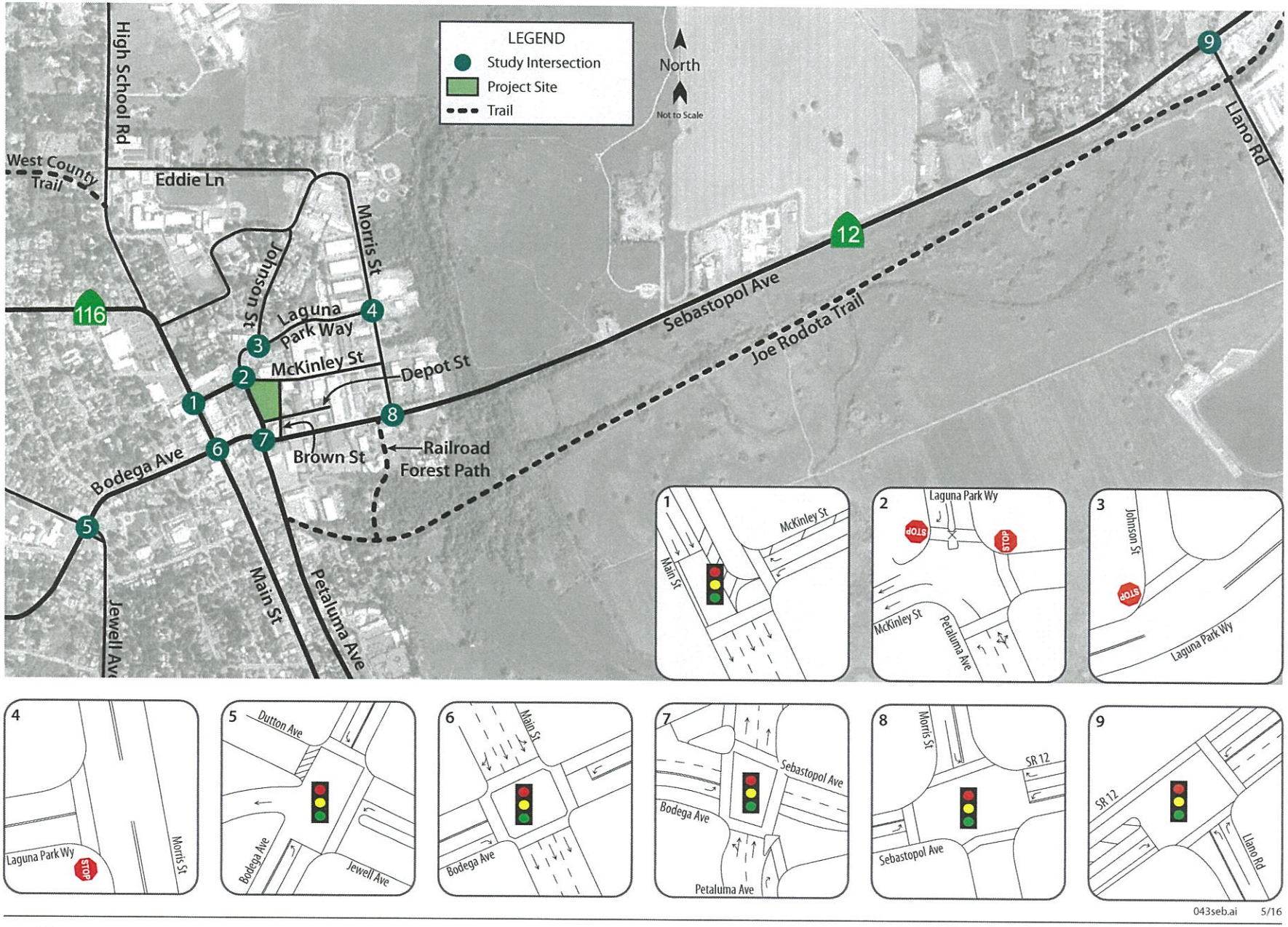
Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that 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 in order 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. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The proposed project consists of four buildings located at 6828 Depot Street in the City of Sebastopol on a lot currently occupied by Sebastopol Tractor which will cease operation upon construction of the propose project. The Sebastopol Hotel is anticipated to feature 66 hotel rooms, lobby, reception, café and bar areas, a restaurant, gardens, a wellness center, meeting/event rooms, an outdoor pool, and retail space. Access to the hotel would be provided by two primary pedestrian passages on Petaluma Avenue and Brown Street as well as at the lobby/reception area at the northeast corner of the project site. Brown Street would be converted to one-way vehicle travel as part of the project improvements. Parking would be provided by a total of 92 off-street tandem parking spaces in the hotel's parking lot on Brown Street and 30 on-street spaces around the perimeter of the project site. The 92 off-street spaces would only be accessible via the hotel's valet program.

The project site is shown in Figure 1.



043seb.ai 5/16

Traffic Impact Study for the Piazza Hotel

Figure 1 – Study Area and Lane Configurations

W-Trans

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the following intersections:

1. North Main Street (SR116)/McKinley Street
2. Petaluma Avenue (SR116)/McKinley Street/Laguna Park Way
3. Laguna Park Way/Johnson Street
4. Laguna Park Way/Morris Street
5. Bodega Avenue/Jewell Avenue
6. Sebastopol Avenue (SR 12)/North Main Street (SR116)
7. Sebastopol Avenue (SR 12)/Petaluma Avenue (SR116)
8. Sebastopol Avenue (SR 12)/Morris Street
9. Sebastopol Avenue (SR 12)/Llano Road

The study area consists of the following roadway segments:

1. Sebastopol Avenue (SR 12), east of Main Street to City limit
2. Bodega Avenue, between Main Street and Jewell Avenue
3. Main Street (SR 116), between Healdsburg Avenue and Calder Avenue
4. Petaluma Avenue (SR 116), between Fannen Avenue and McKinley Street
5. Morris Street, between Sebastopol Avenue and Laguna Park Way
6. Laguna Park Way, between Morris Street and McKinley Street
7. McKinley Street, between Morris Street and North Main Street

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

North Main Street (SR 116)/McKinley Street is a signalized tee-intersection with McKinley Street terminating. McKinley Street is a one-way westbound street and North Main Street becomes a one-way southbound street just south of the intersection. There are marked crosswalks on the south and east legs.

Petaluma Avenue (SR 116)/McKinley Street/Laguna Park Way is a four-legged intersection with stop sign controls on the southbound Laguna Park Way and westbound McKinley Street approaches. Petaluma Avenue is a one-way road that runs northbound and turns into one-way westbound McKinley Street. There are marked crosswalks on the north, east, and south legs.

Laguna Park Way/Johnson Street is an unsignalized intersection with a stop sign and marked crosswalk on the north Johnson Street leg.

Laguna Park Way/Morris Street is an unsignalized intersection with a stop sign and marked crosswalk on the west Laguna Park Way leg.

Bodega Avenue/Jewell Avenue is a signalized intersection with split phasing (exclusive green lights) on the northbound and southbound approaches and protected left-turns on the eastbound and westbound approaches. There is a striped yellow crosswalk on the north leg and yellow crosswalks on the south and east legs.

Sebastopol Avenue-Bodega Avenue (SR 12)/North Main Street (SR 116) is a signalized intersection with North Main Street being one-way southbound. The westbound Sebastopol Avenue approach has protected left-turn phasing. There are marked crosswalks on all four legs of the intersection.

Sebastopol Avenue (SR 12)/Petaluma Avenue (SR 116) is a signalized intersection with Petaluma Avenue being one-way northbound. Left-turns have protected phasing on the eastbound Sebastopol Avenue approach. There are marked crosswalks on all four legs of the intersection.

Sebastopol Avenue (SR 12)/Morris Street is a signalized intersection with protected left-turn phasing on the eastbound and westbound Sebastopol Avenue approaches and split phasing on the northbound and southbound Morris Street approaches. There are marked crosswalks on the north, south, and west legs.

Sebastopol Avenue (SR 12)/Llano Road is a signalized tee-intersection with protected left-turn phasing on the westbound Sebastopol Avenue approach and a right-turn overlap on the northbound Llano Road approach. There are marked crosswalks on the east and south legs.

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

Study Roadways

Sebastopol Avenue (SR 12) east of Main Street to the City limits runs east-west and has one travel lane in each direction. The travel lanes are generally 12 feet wide with a two-way left-turn lane (TWLTL) or left-turn pockets along the study segment. The posted speed limit is 25 miles per hour (mph) from Main Street, then transitions to 35 mph just west of Morris Street and is 45 mph from Morris Street to the City limits.

Bodega Avenue between Main Street and Jewell Avenue runs east-west and has one travel lane in each direction. The travel lanes are generally 20 feet wide with room for on-street parking and left-turn pockets along the study segment. The posted speed limit is 25 mph.

Main Street (SR 116) runs north-south and has two travel lanes in the southbound direction, one travel lane in the northbound direction, and a TWLTL from Healdsburg Avenue to McKinley Street. The segment turns into a one-way southbound street south of McKinley Street with three travel lanes and street parking through the downtown area and has two lanes with street parking south of downtown. The posted speed limit is 25 mph.

Petaluma Avenue (SR 116) south of McKinley Street is a one-way northbound street with two travel lanes and street parking. The posted speed limit is 25 mph.

Morris Street between Sebastopol Avenue and Laguna Park Way is a two-lane street that runs north-south and is 40 feet wide with room for on-street parking. The posted speed limit is 25 mph.

Laguna Park Way between Morris Street and McKinley Street generally runs east-west and is 35 to 40 feet wide with space for on-street parking. The posted speed limit is 25 mph.

McKinley Street between Morris Street and North Main Street runs east-west and is the main corridor running through the Barlow district, connecting the district to the downtown area. McKinley Street generally has sidewalks and room for on-street parking on both sides of the street. McKinley Street is one-way westbound to the west of Petaluma Avenue, and is a two-way street between Petaluma Avenue and Morris Street.

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 February 28, 2010 through March 1, 2015.

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 *2012 Collision Data on California State Highways*, California Department of Transportation. The resulting collision rates for the study intersections are below the statewide average collision rate for similar intersections for all of the study intersections except for Sebastopol Avenue/North Main Street and Sebastopol Avenue/Llano Road. Most of the collisions at Sebastopol Avenue/North Main Street were rear-end, sideswipe or broadside type collisions during the evening peak period, which is the time of day that the roadways carry the greatest amount of traffic. There were four vehicle-pedestrian collisions during the midday peak period. Nearly all of the collisions at Sebastopol Avenue/Llano Road were rear-end collisions and they also occurred mostly during the evening peak period. Traffic congestion is typically the primary contributing factor in locations with a pattern of rear-end collisions. The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2010-2015)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. North Main St (SR116)/McKinley St	5	0.16	0.21
2. Petaluma Ave (SR116)/McKinley St/Laguna Park Way	1	0.06	0.15
3. Laguna Park Way/Johnson St	0	0.0	0.18
4. Laguna Park Way/Morris St	0	0.0	0.18
5. Bodega Ave/Jewell Ave	5	0.21	0.27
6. Sebastopol Ave (SR 12)/North Main St (SR 116)	**19**	**0.45**	0.27
7. Sebastopol Ave (SR 12)/Petaluma Ave (SR 116)	9	0.19	0.27
8. Sebastopol Ave (SR 12)/Morris St	8	0.22	0.27
9. Sebastopol Ave (SR 12)/Llano Rd	**22**	**0.51**	0.21

Note: c/mve = collisions per million vehicles entering; **Bold** text represents collision rates higher than the statewide average

Alternative Modes

Pedestrian Facilities

Pedestrian facilities generally 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, traffic signals, and curb ramps provide access for pedestrians in the vicinity of the project site; however, sidewalk gaps, obstacles, and barriers can be found along some of the roadways connecting the project site to the

downtown and other destinations in the study area. Existing gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and may present safety concerns in those locations.

- **Petaluma Avenue** – Along the project frontage there is sidewalk coverage on both sides of Petaluma Avenue between McKinley Street and Depot Street.

- **McKinley Street** – McKinley Street is an important connector between the Barlow area and Sebastopol's plaza and downtown area. Complete sidewalk coverage is provided on the northern side of McKinley Street between Petaluma Avenue and Morris Street. Partial sidewalk coverage is provided on the southern side of McKinley Street, with sidewalk gaps between Petaluma Avenue and just east of Brown Street.

- **Depot Street** – There is sidewalk coverage on both sides of Depot Street bordering the project frontage. However, sidewalk gaps exist west of the project site toward The Barlow area.

- **Brown Street** – Brown Street borders the eastern edge of the project site and currently has no sidewalk coverage on either side of the street.

Bicycle Facilities

The *Highway Design Manual*, California Department of Transportation (Caltrans), 2012, classifies bikeways into three 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.

Guidance for Class IV Bikeways is provided in *Design Information Bulletin Number 89: Class IV Bikeway Guidance (Separated Bikeways/Cycle Tracks)*, Caltrans, 2015.

- **Class IV Separated Bikeway/Cycle Track** – a bikeway for the exclusive use of bicycles that requires physical separation such as grade differences, flexible posts, inflexible physical barriers, or on-street parking between the bikeway and through vehicular traffic.

In the project area, there are several Class I multi-use bike/pedestrian paths including the Joe Rodota Trail which connects Petaluma Avenue with Santa Rosa, the Railroad Forest Path which connects Sebastopol Avenue/Morris Street with the Joe Rodota Trail, and the West County Trail which runs between Eddie Lane and Occidental Road to the north. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Morris Street, Laguna Park Way, McKinley Street and Petaluma Avenue are all proposed to include Class II bike lanes in the future. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the City of Sebastopol *Bicycle and Pedestrian Master Plan*.

Table 2 – Bicycle Facility Summary				
Status Facility	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Railroad Forest Bike path	I	0.20	Sebastopol Ave	Joe Rodota Trail
West County Trail*	I	5.7	Eddie Ln	Forestville
Joe Rodota Trail*	I	6.3	Petaluma Ave	Santa Rosa Trail
Planned				
Morris St	II	0.43	Sebastopol Ave	Johnson St
Petaluma Ave	II	0.65	Gravenstein Hwy	McKinley St
Laguna Park Way	II	0.27	Petaluma Ave	Morris St
Sebastopol Ave	III	0.53	Morris St	Dutton Ave

Notes: * All or portions of these bikeways are located with adjacent jurisdictions
Source: *Bicycle and Pedestrian Master Plan*, City of Sebastopol, 2011

Transit Facilities

Sonoma County Transit (SCT) provides fixed route bus service in Sonoma County. Routes 20, 22, 24 and 26 provide regional service between the project site and surrounding communities. Each route stops on Laguna Park Way at the Sebastopol Transit Hub about one-quarter mile northwest of the project site.

Route 20 runs between the Russian River area and Santa Rosa and operates Monday through Friday, serving regional commuters to Santa Rosa with one-and-a-half to two-hour headways between 6:00 a.m. and 9:30 p.m. On the weekends, Route 20 runs from 8:00 a.m.to 8:15 p.m. with approximately three-hour headways.

Route 22 provides service between Sebastopol and Santa Rosa and operates Monday through Friday with two departures during the morning commute and two departures during the evening commute.

Route 24 provides service within Sebastopol, operating on weekdays with headways of about 45 minutes between 9:00 a.m. and 3:30 p.m., and on Saturdays with headways of about 45 minutes between 9:00 a.m. and 3:00 p.m.

Route 26 operates Monday through Friday between Sebastopol and Rohnert Park/Cotati. There is an approximate headway of an hour–and-a-half between buses, which run from 7:00 am to 6:00 p.m.

Two bicycles can be carried on most SCT buses. Bike rack space is on a first-come, first-served basis. Additional bicycles are allowed on SCT 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. Volunteer Wheels, the Americans with Disabilities Act (ADA) paratransit operator for Sonoma County Transit, is designed to serve the needs of individuals with disabilities within the incorporated areas of Sonoma County and between the County's nine incorporated cities.

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, 2000. 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 that are currently controlled by a traffic signal 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 or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing.

The ranges of delay associated with the various levels of service are indicated in Table 3.

Table 3 – Intersection Level of Service Criteria

LOS	Two-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. 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 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 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 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 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 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2000

Traffic Operation Standards

All study intersections, with the exception of Sebastopol Avenue (SR 12)/Llano Road, are located within the City of Sebastopol's city limits and are therefore are subject to the City's LOS standards. The *City of Sebastopol General Plan*, last updated in 1994 with revisions as recent as 2008, adopted Level of Service standards in Program 16.1 and as implemented by the City allow:

- **At unsignalized Intersections**: At unsignalized intersections, levels of service shall be determined for both controlled movements and for the overall intersection. Controlled movements operating below LOS D (LOS E or F) would be considered acceptable if 1) the intersection is projected to operate at LOS D or better overall, and 2) the projected traffic volume on the controlled movement is relatively low (30 vehicles or less per hour on approaches with single lanes, or on multi-lane approaches, 30 vehicles or less per hour on lanes serving left turns and through movements).

- **At signalized intersections**: At signalized intersections, levels of service shall be determined for the overall intersection.

- Intersection queuing shall be evaluated in tandem with LOS. Projected queues at signalized intersections shall not extend through upstream signalized intersections.

- In evaluating circulation improvement needs at downtown intersections, mitigations should be avoided which increase capacity by widening that causes impacts to right-of-way and/or historical structures.

- Allow a minimum operation of LOS D for signalized intersections within the Downtown; a LOS C for all signalized intersections outside of the Downtown; and LOS D for all side street movements at unsignalized intersections.

- **On Road Segments**: Allow a minimum LOS E for Highway 12 east of Main Street; LOS D for Highway 116 and Bodega Avenue; and LOS C for all other road segments.

- **On Local Residential Streets**: Allow a maximum of 1,500 to 2,000 vehicles per day on all existing residential streets and a maximum of 1,000 to 1,500 vehicles per day on all new residential streets.

The following significance criteria which the City has used in other traffic studies was also considered in this analysis:

> *A project would normally have a significant adverse impact on the environment if it would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., results in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads or delays at intersections), or change the condition of an existing street (i.e., street closures, changing direction of travel) in a manner that would substantially affect access or traffic load and capacity of the street system. The specific City of Sebastopol criteria utilized for this analysis are as follows:*
>
> *A project-related or cumulative traffic impact is considered to be significant if the proposed project would do any of the following:*
>
> - *Cause the existing baseline LOS to degrade to worse than LOS D at any signalized intersection within the Downtown; or,*
> - *Cause the existing baseline LOS to degrade to worse than LOS C at any signalized intersection outside of the Downtown.*
> - *Cause the existing baseline LOS to degrade to worse than LOS D at any side street approach at unsignalized intersections.*

The City of Sebastopol does not have an adopted threshold of significance for project related impacts at intersections that are already operating, or projected to operate, at unacceptable LOS under Existing or Cumulative Conditions without the addition of any project-related traffic.

Therefore, for the purpose of such studies to determine whether a project-related impact would be significant, the following criteria have been utilized in other studies in the City of Sebastopol. Similar criteria are utilized within other jurisdictions such as the City of Napa, City of Santa Rosa, City of San Francisco, and the City of Oakland:

- *A project impact is considered significant if the proposed project would cause the average control delay at any signalized intersections to increase by five (5.0) or more seconds for intersections already operating at unacceptable LOS E or LOS F under the no project conditions; or,*
- *A project impact is considered significant if the proposed project would cause the delay at any side street approach at a one- and two-way stop-controlled intersections to increase by five (5.0) or more seconds for intersections already operating at unacceptable LOS E or LOS F under the no project conditions*

Caltrans

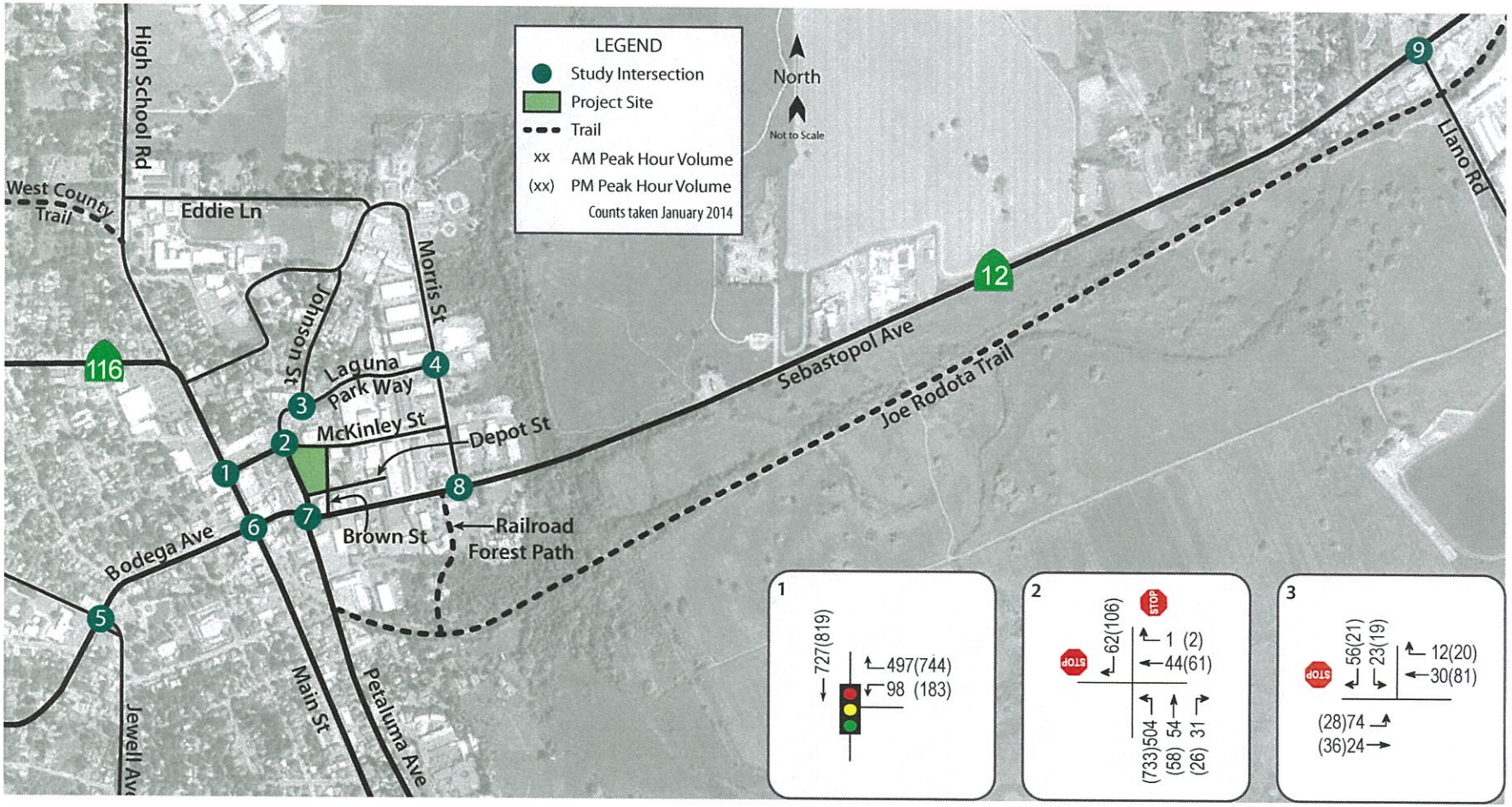
Since the Sebastopol Avenue/Llano Road study intersection is outside of the City of Sebastopol and is maintained by Caltrans, the Caltrans standard was used. In the *Guide for the Preparation of Traffic Impact Studies*, Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D; however, where operation is already below LOS C the existing measure of effectiveness should be maintained. For intersections, this means that the existing control delay should be maintained. Under this criterion, any increase in delay would therefore result in a significant impact. Since it is often not reasonable for a project to take on responsibility of constructing improvements that would mitigate the impacts and maintain or improve conditions, Caltrans accepts payment of traffic impact fees (provided the improvement needed is included in the impact fee program) or proportional share fees as mitigation.

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-generated traffic volumes. Volume data was collected in January 2014.

Intersection Levels of Service

Under existing conditions, all study intersections are operating at LOS D or better, except for Sebastopol Avenue/Morris Street, which is currently operating at LOS E during the a.m. peak hour. The existing traffic volumes are shown in Figure 2. A summary of the intersection level of service calculations is contained in Table 4, and copies are provided in Appendix B.



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Traffic Impact Study for the Piazza Hotel

Figure 2 – Existing Traffic Volumes

W-Trans

Table 4 – Existing Peak Hour Intersection Levels of Service				
Study Intersection *Approach*	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. North Main St (SR 112)/McKinley St	7.9	A	11.2	B
2. Petaluma Ave (SR 116)/McKinley St/Laguna Park Way	2.9	A	4.7	A
Southbound approach	*15.3*	*C*	*25.5*	*D*
Westbound approach	*15.8*	*C*	*23.4*	*C*
3. Laguna Park Way/Johnson St	6.0	A	2.8	A
Southbound approach	*9.6*	*A*	*9.3*	*A*
4. Laguna Park Way/Morris St	1.9	A	2.8	A
Eastbound approach	*11.6*	*B*	*11.6*	*B*
5. Bodega Ave/Jewell Ave	17.6	B	13.5	B
6. Bodega Ave-Sebastopol Ave/North Main St (SR 116)	29.7	C	24.9	C
7. Sebastopol Ave (SR 12)/Petaluma Ave (SR 116)	31.7	C	38.7	D
8. Sebastopol Ave (SR 12)/Morris St	**75.1**	**E**	37.9	D
9. Sebastopol Ave (SR 12)/Llano Rd	28.8	C	17.8	B

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*

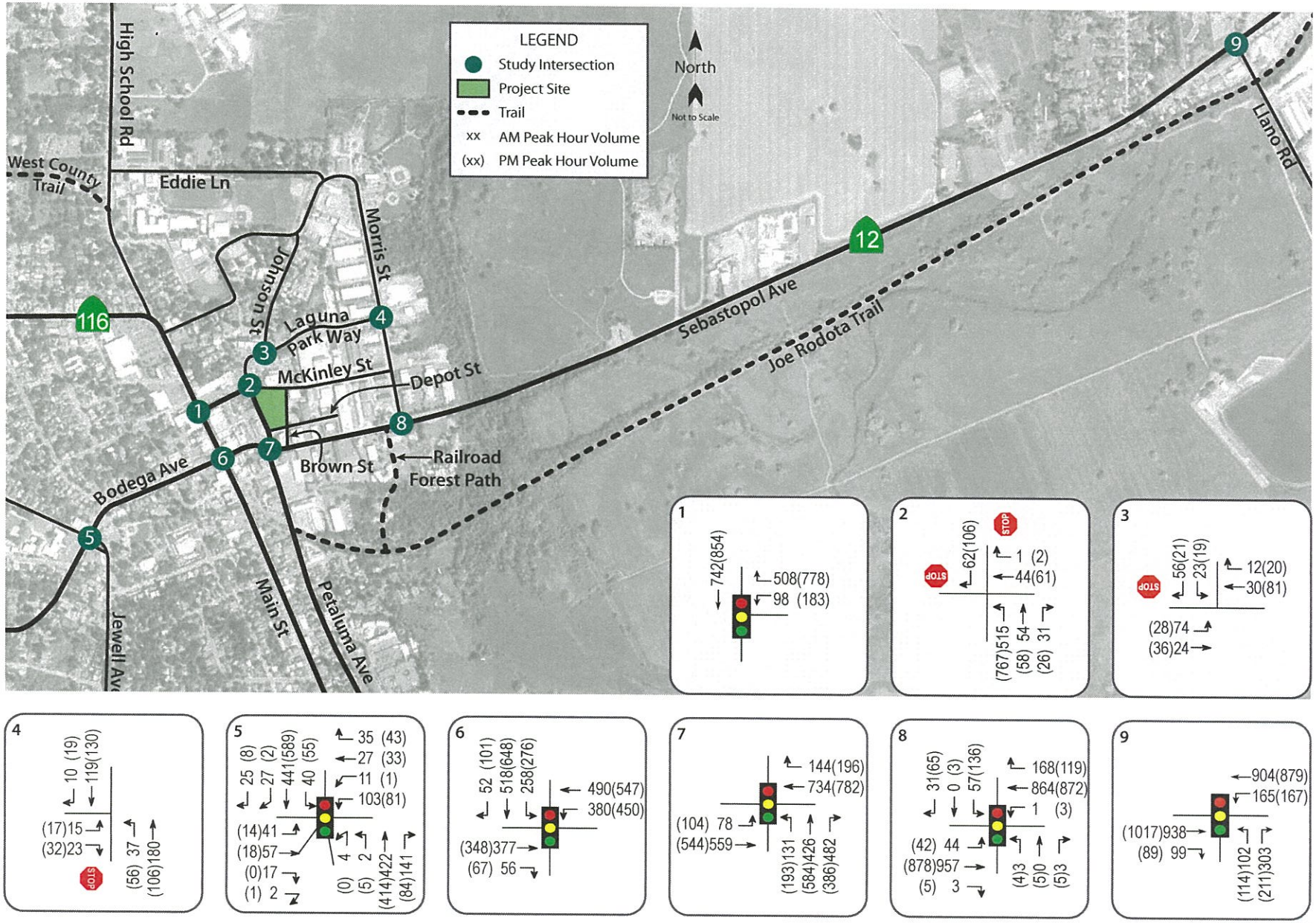
Cumulative Conditions

A future, "Cumulative Conditions" scenario was developed based on build-out of substantial pending and approved projects nearby in the City of Sebastopol. These projects include:

- CVS/Chase, *6877 Sebastopol Avenue* – 14,576 square foot CVS Pharmacy and 4,120 square foot bank
- French Garden Inn, *8060 Bodega Avenue* – 18-room inn
- Gravenstein Mixed-Use, *961 Gravenstein Highway South* – eight two-bedroom condominiums and 8,000 square feet of commercial retail
- Mixed use project, *845 Gravenstein Highway North* – 13 apartment units and 10,645 square feet of commercial space.

It should be noted that the traffic projections for the CVS/Chase project and Laguna Vista were obtained from the CEQA studies for those projects. The traffic estimates for the remaining projects were developed based on standard trip generation rates and expected trip distribution assumptions. The resulting traffic projections were compared with expected 10-year horizon growth projected by the SCTA Countywide Traffic Model and found to exceed those projections, so appear to be conservative.

Under the anticipated Cumulative volumes, all study intersections except for Sebastopol Avenue/Morris Street are expected to operate acceptably at LOS D or better. The intersection of Sebastopol Avenue/Morris Street is expected to operate at unacceptably LOS F during the a.m. peak hour and E during the p.m. peak hour. Cumulative volumes are shown in Figure 3, and Cumulative operating conditions are summarized in Table 5.



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Traffic Impact Study for the Piazza Hotel

Figure 3 – Cumulative Traffic Volumes

W-Trans

Table 5 – Cumulative Intersection Levels of Service					
Study Intersection *Approach*		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	North Main St (SR 112)/McKinley St	8.0	A	12.0	B
2.	Petaluma Ave (SR 116)/McKinley St/Laguna Park Way	3.0	A	4.8	A
	Southbound approach	*15.6*	*C*	*27.4*	*D*
	Westbound approach	*16.2*	*C*	*24.8*	*D*
3.	Laguna Park Way/Johnson St	6.0	A	3.0	A
	Southbound approach	*9.6*	*A*	*9.8*	*A*
4.	Laguna Park Way/Morris St	2.0	A	2.8	A
	Eastbound approach	*11.6*	*B*	*11.6*	*B*
5.	Bodega Ave/Jewell Ave	17.6	B	13.6	B
6.	Sebastopol Ave (SR 12)/North Main St (SR 116)	30.5	C	33.9	C
7.	Sebastopol Ave (SR 12)/Petaluma Ave (SR 116)	32.7	C	36.1	D
8.	Sebastopol Ave (SR 12)/Morris St	**83.9**	**F**	**72.6**	**E**
9.	Sebastopol Ave (SR 12)/Llano Rd	29.7	C	21.5	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 project consists of the development of the Piazza Hotel on the block bounded by Petaluma Avenue, McKinley Street, Brown Street and Depot Street, just west of "The Barlow" district. The site currently hosts Sebastopol Tractor, a tractor sales store that would cease operations upon construction of the proposed project. At its greatest anticipated capacity, 66 guest rooms would be served by this hotel site. The hotel would include a lobby, reception, retail, restaurant and bar areas, wellness center, public courtyard, rooftop decks, meeting rooms, and other hotel amenities. The proposed project would occupy the parcels located at 6824, 6826, and 6828 Depot Street. The project site plan is shown in Figure 4.

Access

Access to the hotel site would be provided by two primary pedestrian passages on Petaluma Avenue and Brown Street as well as at the lobby/reception area at the northeast corner of the project site. Vehicles would access the hotel at the front entrance of the lobby via a valet service or use an off-site parking. Brown Street would be converted to one-way vehicle travel as part of the project improvements.

Parking

The proposed Piazza Hotel plans to provide 122 parking spaces, including a total of 92 off-street tandem parking spaces in the hotel's parking lot on Brown Street and 30 on-street spaces around the perimeter of the project site. The 92 off-street spaces would only be accessible via the hotel's valet program. The adjacent property, which is currently vacant and being used for parking, will be the primary parking facility that will serve the project site. This location will only be accessed via Brown Street and the hotel will provide valet services at the northeast corner of the project site on Brown Street.

Source: David Baker Architects 2/16

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Traffic Impact Study for the Piazza Hotel

Figure 4 – Site Plan

W-Trans

Pedestrian

The project as proposed would provide continuous sidewalk bordering the entirety of the project site. This includes sidewalk on McKinley Street and Brown Street, both of which currently lack sidewalks. Entrances into the site will be for pedestrians only, as vehicles will be parked on an adjacent lot.

Bicycle

The proposed project site plan includes 19 bicycle parking spaces.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012,for a Hotel (Land Use #310) and a High-Turnover (Sit-Down) Restaurant (Land Use #932), as these descriptions most closely match the proposed project. Rates from the High-Turnover Restaurant were used for the proposed bar/café because it will be open not only hotel guests, but also to the general public. Because the site is currently occupied by a tractor sales store, the trip generation of the existing store was considered.

Internal Capture Trips

Traffic associated with a mixed-use development, such as the proposed project, has several different trip components. Some trips are made without leaving the site as employees or customers of one establishment patronize other uses on the site, for instance hotel guests having a meal in the morning at the café or a drink later in the day at the bar. These trips are called "internal capture" trips. It was assumed that 25 percent of the trips generated by the café/bar and retail would be considered "internal capture." The 25 percent internal capture is based on a review of estimates from the *Trip Generation Manual*.

Total Project Trip Generation

The expected trip generation potential for the proposed project is indicated in Table 6, with deductions taken for trips made to and from the existing Sebastopol Tractor at the site, which will cease with the construction of the project, as well as for internal capture. The proposed project is expected to generate an average of 1,101 trips per day, including 71 trips during the a.m. peak hour and 92 during the p.m. peak hour. After deductions are taken into account, the project would be expected to generate 709 new trips on a daily basis, including 58 during the morning peak hour and 64 during the evening peak hour; these new trips represent the increase in traffic associated with the project compared to existing volumes and are the volumes used for the analysis.

Table 6 – Trip Generation Summary											
Land Use	**Units**	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
		Rate	**Trips**	**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
Existing											
Sebastopol Tractor	5.954 ksf	44.32	264	0.96	6	4	2	2.71	16	7	9
Proposed											
Hotel	65 occ rm	8.92	589	0.67	44	26	18	0.70	46	23	23
Restaurant	4.240 ksf	89.95	381	5.57	24	20	4	9.02	38	26	12
Internal Capture		*-25%*	*-95*	*-25%*	*-6*	*-5*	*-1*	*-25%*	*-10*	*-7*	*-3*
Retail	2.964 ksf	44.32	131	0.96	3	2	1	2.71	8	4	4
Internal Capture		*-25%*	*-33*	*-25%*	*-1*	*-1*	*0*	*-25%*	*-2*	*-1*	*-1*
Total Project Trips			1,101		71	48	23		92	53	39
Net New Trips			**709**		**58**	**38**	**20**		**64**	**38**	**26**

Note: ksf = 1,000 square feet; occ rm = occupied room

Pedestrian Trip Generation

Due to the pedestrian-oriented design of the area, the potential pedestrian trips generated by the project were considered. It was assumed using engineering judgement that 25 percent of vehicle trips would be equivalent to the number of pedestrian trips generated by the project. This equates to 177 daily pedestrian trips including 15 during the a.m. peak hour and 16 during the p.m. peak hour.

Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing existing turning movements at the study intersections as well as employment patterns for residents of the City of Sebastopol as indicated by the 2010 Census. Since traffic conditions are generally most critical during the weekday p.m. peak hour, these distribution assumptions are primarily based on the expected trip routes during that time. The applied distribution assumptions and resulting trips are shown in Table 7.

Table 7 – Trip Distribution Assumptions				
Route	**Percent**	**Daily Trips**	**AM Trips**	**PM Trips**
US 101 (to/from the east)	35%	245	20	22
SR 116 (to/from the north)	15%	105	9	10
SR 116 (to/from the south)	35%	245	20	22
Sonoma Coast (to/from the west)	15%	105	9	10
TOTAL	**100%**	**700**	**58**	**64**

Trip distribution for pedestrian trips was assumed to be 50 percent to/from the west on McKinley Street and 50 percent to/from the east. This would result in a distribution of 87 pedestrian trips to/from the west on McKinley and 88 to/from the east.

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, all study intersections will continue operating at the same levels of service as without the added trips.[1]

It should be noted that with the addition of project-related traffic volumes average delay at the intersections of Sebastopol Avenue/North Main Street and Sebastopol Avenue (SR 12)/Llano Road decreases during the a.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underused or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The project adds traffic predominantly to the right-turn or through movements, which typically have an average delay that is lower than the average for the intersection as a whole, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project actually improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers would experience little, if any, change in conditions as a result of the project.

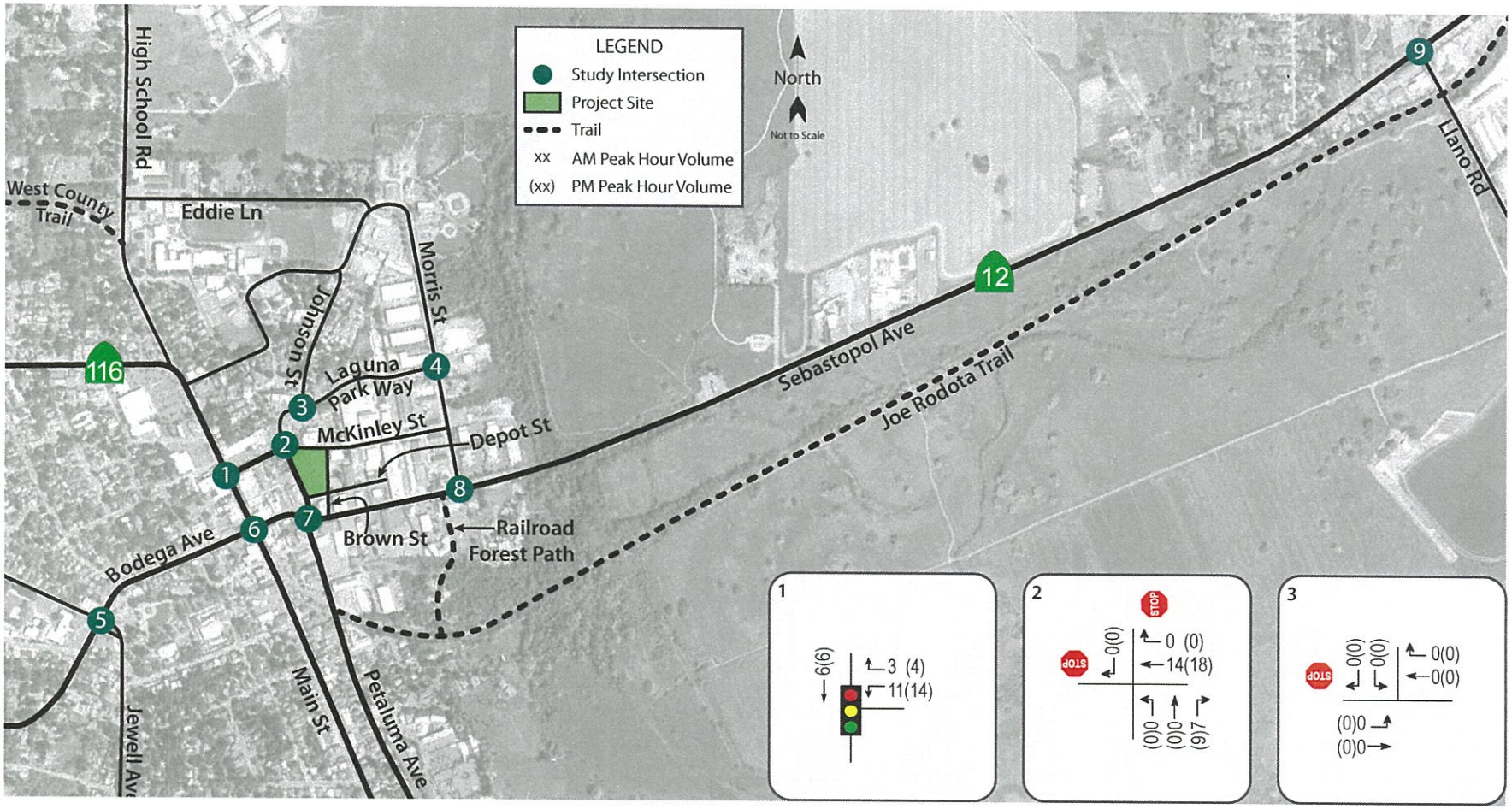
A summary of the Existing plus Project level of service results is contained in Table 8. Project traffic volumes are shown in Figure 5.

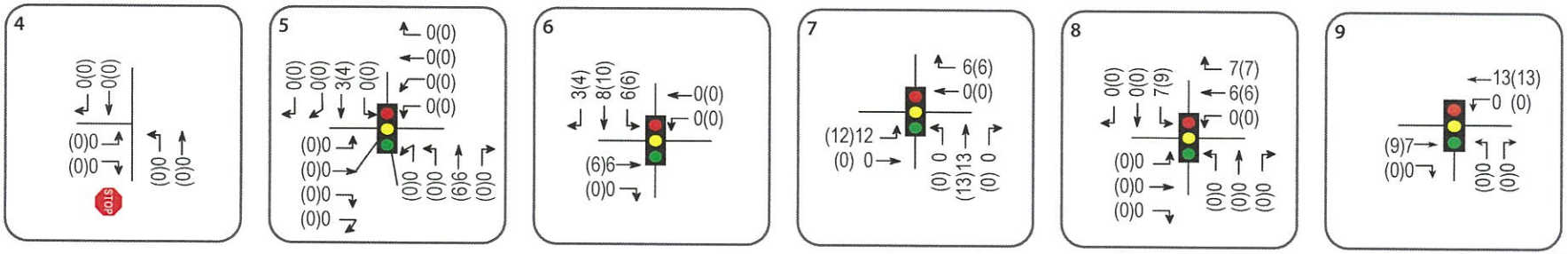
Table 8 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

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. North Main St (SR 112)/McKinley St	7.9	A	11.2	B	8.0	A	11.3	B
2. Petaluma Ave (SR 116)/McKinley St/Laguna Park Way	2.9	A	4.7	A	3.3	A	5.1	A
Southbound approach	*15.3*	*C*	*25.5*	*D*	*15.4*	*C*	*25.7*	*D*
Westbound approach	*15.8*	*C*	*23.4*	*C*	*16.6*	*C*	*25.8*	*D*
3. Laguna Park Way/Johnson St	6.0	A	2.8	A	6.0	A	3.0	A
Southbound approach	*9.6*	*A*	*9.3*	*A*	*9.6*	*A*	*9.8*	*A*
4. Laguna Park Way/Morris St	1.9	A	2.8	A	1.9	A	2.8	A
Eastbound approach	*11.6*	*B*	*11.6*	*B*	*11.6*	*B*	*11.6*	*B*
5. Bodega Ave/Jewell Ave	17.6	B	13.5	B	17.6	B	13.5	B
6. Sebastopol Ave (SR 12)/North Main St (SR 116)	29.7	C	24.9	C	29.9	C	24.6	C
7. Sebastopol Ave (SR 12)/Petaluma Ave (SR 116)	31.7	C	38.7	D	32.5	C	44.8	D
8. Sebastopol Ave (SR 12)/Morris St	**75.1**	**E**	37.9	D	**75.8**	**E**	38.4	D
9. Sebastopol Ave (SR 12)/Llano Rd	28.8	C	17.8	B	27.8	C	18.1	B

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

[1] The original project plans included 65 rooms, which was used for the intersection operation analysis. The latest projection description based on 66 rooms would produce a nominal number of new trips when compared to 65 rooms, so the original analysis was not updated to include the additional room.





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Traffic Impact Study for the Piazza Hotel

Figure 5 – Project Traffic Volumes

W-Trans

Finding – The project is expected to have a less-than-significant impact as all intersections currently operating acceptably are expected to continue operating acceptably. The project would only increase delay by 0.7 seconds at the Sebastopol Avenue (SR 12)/Morris Street intersection, which is currently operating at an unacceptable level of service during the morning peak hour.

Cumulative plus Project Conditions

Upon the addition of project-related traffic to Cumulative volumes, all study intersections forecasted to operate acceptably under Cumulative conditions would be expected to continue operating acceptably at LOS D or better, except Sebastopol Avenue (SR 12)/Morris Street. Sebastopol Avenue (SR 12)/Morris Street is expected to continue to operate at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. These results are summarized in Table 9.

Table 9 – Cumulative and Cumulative plus Project Peak Hour Intersection Levels of Service

	Study Intersection *Approach*	**Cumulative Conditions**				**Cumulative plus Project**			
		AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1.	North Main St (SR 112)/McKinley St	8.0	A	12.0	B	8.1	A	12.0	B
2.	Petaluma Ave (SR 116)/McKinley St/Laguna Park Way	3.0	A	4.8	A	3.3	A	5.4	A
	Southbound approach	*15.6*	*C*	*27.4*	*D*	*15.6*	*C*	*27.6*	*D*
	Westbound approach	*16.2*	*C*	*24.8*	*D*	*16.9*	*C*	*27.5*	*D*
3.	Laguna Park Way/Johnson St	6.0	A	3.0	A	6.0	A	3.0	A
	Southbound approach	*9.6*	*A*	*9.8*	*A*	*9.6*	*A*	*9.8*	A
4.	Laguna Park Way/Morris St	2.0	A	2.8	A	2.0	A	2.8	A
	Eastbound approach	*11.6*	*B*	*11.6*	*B*	*11.6*	*B*	*11.6*	*B*
5.	Bodega Ave/Jewell Ave	17.6	C	13.6	B	17.6	C	13.6	B
6.	Sebastopol Ave (SR 12)/North Main St	30.5	C	33.9	C	30.8	C	34.1	C
7.	Sebastopol Ave (SR 12)/Petaluma Ave (SR 116)	32.7	C	36.1	D	33.5	C	41.6	D
8.	Sebastopol Ave (SR 12)/Morris St	**83.9**	**F**	**72.6**	**E**	**84.7**	**F**	**73.7**	**E**
9.	Sebastopol Ave (SR 12)/Llano Rd	29.7	C	21.5	C	30.7	D	22.3	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 are expected to continue operating at the same levels of service with the addition of project generated trips as without. The project is expected to increase delay at Sebastopol Avenue (SR 12)/Morris Street by 0.8 seconds during the a.m. peak hour and 1.1 seconds during the p.m. peak hour; this is less than the 5-second increment allowed under the standards applied, so would be considered a less-than-significant impact.

Alternative Modes

Given the proximity to Sebastopol's downtown, the Barlow district, the Laguna open space, and transit stops surrounding the site, it is reasonable to assume that some guests and employees would want to walk, bicycle, and/or use transit to travel to and from the project site.

Pedestrian Facilities

McKinley Street serves as the main corridor in the Barlow District and helps connect that area to Sebastopol's downtown area, making it a primary path of travel for hotel-related pedestrians. Sidewalk connectivity between the project site and destinations surrounding project site is generally adequate, however, there is a gap in the sidewalk on south side of McKinley Street along the project frontage. The proposed project includes plans to provide sidewalk coverage on the project frontage of McKinley Street.

There is also a 60-foot gap east of the project site on the south side of McKinley Street, approximately 110 feet east of Brown Street. Consideration should be given to closing this gap on McKinley Street to provide continuous sidewalks for the entirety of McKinley and improve access for pedestrians.

There are no sidewalks on the west side of Brown Street along the project frontage and a large section without sidewalks on the east side of Brown Street. The proposed project will install sidewalks on the project's frontage on the east side of Brown Street and along the east side of the street where the parking lot would be provided, but there would still be a gap on the west side of Brown Street, adjacent to the proposed parking lot. In order to serve pedestrian travel along Brown Street, sidewalk should be constructed to close this gap.

Finding – With the addition of proposed improvements, pedestrian facilities accessing the project site are expected to be adequate except for two locations. There would be two gaps in sidewalk facilities including one on the east side of Brown Street between the existing sidewalk and the proposed parking lot and another on the south side of McKinley Street, east of Brown Street.

Recommendation – Continuous sidewalks should be provided 1) along the perimeter of the project, 2) on the east side of Brown Street between McKinley Street and Depot Street and 3) on the south side of McKinley Street, just east of Brown Street. The project should install these sidewalk segments with consideration for reimbursement for the non-project frontage sections should these non-project vacant parcels develop in the future.

McKinley Street/Laguna Parkway/Petaluma Avenue

The intersection of McKinley Street/Laguna Park Way/Petaluma Avenue would operate at LOS D on the Laguna Park Way and McKinley Street stop-controlled approaches. Delays are expected to continue to increase as Sebastopol continues to develop. However, existing volumes do not meet peak hour traffic signal warrants. Of primary concern is the volume of pedestrian crossings on the south leg of the intersection and the potential increase to these crossings with continued development to the east in the Barlow area. With the anticipated increase of pedestrian trips generated by the proposed hotel that will travel to/from this intersection, pedestrian improvements to this intersection were considered.

Crossing improvement warrants were explored at this location using a methodology from *Improving Pedestrian Safety at Unsignalized Crossings*, prepared by the National Cooperative Highway Research Program (NCHRP Report 562), 2006, and published by The Transportation Research Board. The study recommends select engineering treatments to improve safety for pedestrians crossing high-volume, high-speed roadways at unsignalized intersections. Quantitative procedures in the guidelines use key input variables (such as pedestrian volume, vehicle speeds, street crossing width, and traffic volume) to recommend possible crossing treatments. The results of the warrants which are included in Appendix C, are summarized as follows:

- The crosswalk on the south leg of Petaluma Boulevard at McKinley street warrants the installation of a High-Intensity Activated Crosswalk (HAWK) beacon be installed given the current crossing width of the street.

- The HAWK will allow for protected pedestrian crossings, stopping traffic only as needed. When activated, the break in traffic will provide gaps for traffic on the southbound approach of Laguna Park Way and the westbound approach of McKinley Street to proceed from the stop-controlled approach.

- If the approach were narrowed to one lane, an "Active or Enhanced/High Visibility" treatment would be warranted.

- The inside lane is generally only used by traffic as a passing lane since the majority of this traffic is destined to turn right onto North Main Street which provides the opportunity for narrowing.

- "Active or Enhanced/High Visibility" treatments can consist of some combination of the following elements:
  - **Active when Present** – in-roadway warning lights, passive/pushbutton/beacon, pedestrian crossing flags, rapid rectangular flashing beacons.
  - **Enhanced/High Visibility** – in-street crossing signs, high visibility signs/markings, pedestrian refuge islands, raised crosswalks, curb extensions, advanced signage, advance stop/yield lines, constant flashing yellow beacons.

Ultimately, the decision to install enhancements at this location would be at the discretion of Caltrans who maintains SR 116.

Finding – The project is expected to generate a significant volume of pedestrians crossing Petaluma Avenue at its intersection with McKinley Street-Laguna Park Way. Existing traffic volumes do not meet peak hour traffic signal warrants, but the volume of pedestrian activity anticipated upon completion of the project triggers the need for a crossing enhancements.

Recommendation – Either a) "HAWK" (High-Intensity Activated Crosswalk) beacon should be installed at the south leg crossing, or b) the approach should be narrowed to one lane and some type of warning beacons should be installed. Any improvements should be at the discretion and approval of Caltrans.

Bicycle Facilities

Existing and planned bicycle facilities, per the City's *Bicycle and Pedestrian Master Plan*, will provide access for bicyclists. The City of Sebastopol ordinance 17.220.050 requires non-residential uses to provide bicycle parking spaces equal to a minimum of 15 percent of the required vehicle spaces, distributed to serve customers and employees of the project. Proper bicycle parking facilities are also required; each bicycle parking space shall include a stationary parking device to adequately secure bicycles.

Based on the 126 vehicle parking spaces required, the project is required to provide a minimum of 19 bicycle parking spaces. The proposed project plans to include at least 19 bicycle parking spaces.

Finding – Bicycle facilities serving the project site are adequate.

Transit

Existing transit routes are adequate to accommodate project-generated transit trips. Existing stops are within acceptable walking distance of the site.

Finding – Transit facilities serving the project site are expected to be adequate.

Access and Circulation

Site Access

The proposed project will be accessed by a valet parking area at the northeast corner of the project site on the west side of Brown Street as well as a parking structure across the street that will also be accessed via Brown Street.

Brown Street Access

Brown Street is currently 24 to 25 feet wide with parking only on the west side. Given the narrow width of the street, options for parking and circulation are limited, but include the following:

- If parking were provided only on the west side of Brown Street (including an area designated for valet service only), the overall street width would allow for approximately 18 feet of clearance for two-way traffic and emergency services.

- If parking were to be provided on both sides of Brown Street and two-way traffic were allowed, the street would need to be widened to 32 feet in order to provide the 18 feet of clearance for two-way traffic.

- If parking were to be provided on both sides of Brown Street without widening the street, traffic flow would need to be converted to one-way. The remaining width for through traffic would be approximately 11 feet, which is minimally sufficient for normal vehicle access, however, the width would not be sufficient for emergency access.

- If the street were converted to one-way flow, traffic should be oriented in the southbound direction only, which would be more conducive to the valet service on the project frontage on the west side of the street. Also, Brown Street would be more accessible from McKinley Street than from Depot Street. Valet return of vehicles would either need to travel in a clockwise fashion via Petaluma Boulevard or counter-clockwise via Depot Street and through the Barlow parking lot. The clockwise option would be less desirable due to the need to minimize traffic impacts to Petaluma Boulevard. The counter-clockwise option is preferable from a traffic impact standpoint, but would need to be done in cooperation with Barlow management.

Any of these options would be acceptable from a circulation standpoint pending approval by City emergency services. As discussed in the parking section, the option with parking on both sides of Brown Street would contribute more parking towards the project.

Air Quality

The *Air Quality and Greenhouse Gas Emissions Assessment*, Illingworth & Rodkin, June 2, 2016, is included in Appendix D.

Parking

The project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. The project site as proposed would provide a total of 92 off-street tandem parking spaces in the hotel's parking lot on Brown Street and 30 on-street spaces around the perimeter of the project site for a total of 122 spaces. The 92 off-street spaces would only be accessible via the hotel's valet program.

City Parking Supply Requirements

The City of Sebastopol's Municipal Code stipulates the parking requirements for new developments. For all commercial developments within the Downtown Core District and Northeast Specific Plan area, which includes the proposed project site, the City requires one parking space per 400 square feet of net floor area. Net floor area is defined in the City's Municipal Code as 85 percent of gross square footage. The gross floor area of the planned project is 59,090 square feet which equates to 50,227 square feet of net floor area. Based on the City's parking requirement, the project as proposed would be required to provide 126 parking spaces.

With the City parking standards applied to the proposed 122-space supply, there would be a parking deficit of four parking spaces. The proposed Piazza hotel is located within the larger downtown and Barlow area which includes multiple shared parking lots and public on-street parking, some of which would be available as overflow parking if the parking demand for the hotel exceeded their supply. The proposed hotel also plans to only provide access to the Brown Street parking lot via their valet service, which will help manage peak parking demands.

Finding – The proposed project would experience a parking deficit of 4 parking spaces based on City standards. However, there is potential to increase on-street parking on Brown Street by converting the street to one-way southbound. Also, with its proximity to the larger Barlow area and access to multiple public parking lots, on-street spaces, and planned valet service, parking is anticipated to be adequate despite being less than the supply required under the Municipal Code.

Recommendation – Converting Brown Street to one-way in the southbound direction may allow for 7 to 14 additional parking spaces should the City deem the deficit unacceptable and vehicle clearance be acceptable to City emergency services.

Shared Parking

In addition to the 'code' analysis, a shared-use analysis was performed. In order to determine the potential parking demand of a fully-occupied Piazza Hotel development, parking rates from ITE's *Parking Generation Manual*, 4th Edition, were applied within a Shared Parking model developed by the Urban Land Institute. The Shared Parking model estimates the parking activity by land use by time of day and day of the week, then determines the peak parking demand based on the mix of land uses.

A parking demand methodology that considers "shared parking" principles can significantly improve the accuracy of determining actual parking demand. The ULI publication *Shared Parking*, 2nd Edition, 2006, includes state-of-the-practice methodologies for determining parking demand based on the various components of a specific project. The ULI shared parking methodology focuses on temporal data, determining when the overall peak demand for various land uses occurs, including what time of day, whether it is a weekday or weekend, and what month of the year. The recommended parking supply is then tied to that maximum demand period. The ULI model considers the proposed mix of land uses, including quantities of each type of use.

The ULI shared parking model separately considers the hourly parking demand created by hotel guests, employees, restaurants/lounges, and meeting rooms. The proposed resort hotel includes 66 hotel units, 2,560

square feet of meeting space, a 4,240 square foot restaurant, and 2,964 square feet of retail space. The methodology takes into consideration the interactions among distinct hotel uses, such as hotel guests also being restaurant/lounge patrons and users of the hotel meeting space or shopping at the retail stores. Hotel guest parking demand is highest during early mornings and late nights, while other hotel uses have a higher parking demand during the daytime. Additionally, reductions were applied to the hotel uses based on rates published by ULI. These reductions include a mode adjustment, i.e. the percent of hotel guests accessing the site by non-auto modes and an internal capture percentage which is the percent of guests who access the restaurant and convention space and are also staying at the hotel. For example, based on ULI rates, 30 percent of hotel restaurant patrons will arrive by non-auto modes and 70 percent of patrons will also be guests staying at the hotel. Table 10 summarizes the mode adjustment and internal capture assumptions.

Table 10 – Mode Adjustment and Internal Capture Assumptions

Land Use	Weekday		Weekend	
	Mode Adjustment	Internal Capture	Mode Adjustment	Internal Capture
Hotel				
Guest	34%	-	23%	-
Restaurant	30%	10%	40%	70%
Convention Space	25%	75%	25%	75%

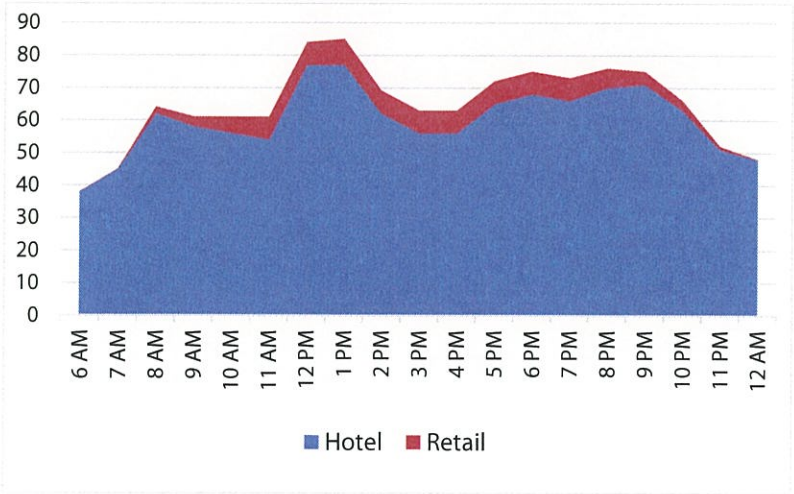
Source: *Shared Parking*, 2nd Edition, Urban Land Institute, 2006

In addition to mode adjustment and internal capture rates, the shared parking model applies hourly and peak month factors to determine the time-of-day demand. The peak month for the proposed hotel with the expansion, based on the Shared Parking Model's calculations, is anticipated to be July. With the mode adjustment, internal capture, time-of-day, and peak month factors applied, the hourly parking demands generated by each component of the hotel and weekdays and weekends were derived. With deductions applied, the hourly parking demands generated by each of the resort's components on weekdays and weekends are shown in Graph 1 and Graph 2 respectively.

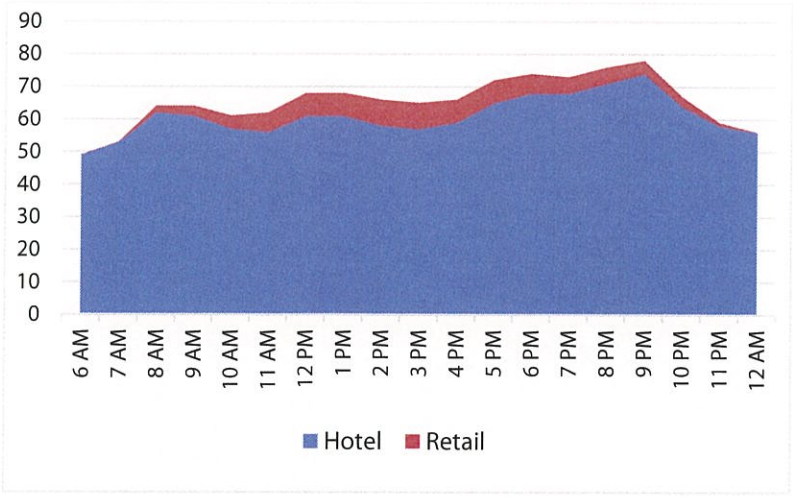
Graph 1: Weekday Parking Demand by Use

Graph 2: Weekend Parking Demand by Use

The parking demand profile for the entire mixed-use project was assessed by summing the hourly demands of the individual uses. From this cumulative parking demand profile it is possible to determine the hour or hours of the day when the site as a whole would experience its peak parking demand. The site-wide peak parking demand would occur on weekdays at 1:00 p.m. with a total parking usage of 85 spaces shared between the various hotel uses and retail. On weekends, the cumulative parking demand peaks at 9:00 p.m. with a demand of 78 spaces. The cumulative weekday parking demand is shown in Graph 3, and cumulative weekday demand in Graph 4.



Graph 3: Weekday Cumulative Parking Demand



Graph 4: Weekend Cumulative Parking Demand

Finding – The proposed project would experience a parking deficit of four parking spaces based on City standards. However, with its proximity to the larger Barlow area and access to multiple public parking lots, on-street spaces, and planned valet service, parking is anticipated to be adequate despite being less than the supply required under the Municipal Code. Additionally, with shared parking principles applied, the proposed project would experience a peak demand of 85 occupied parking spaces on weekdays at 1:00 p.m. With plans to provide a supply of 122 spaces, parking would be adequate to meet the projected demand.

Recommendation – Given the finding that the parking demand is likely to be substantially less than the supply as proposed, it is recommended that a parking variance be requested. This would result in the need for no changes to be made to Brown Street to accommodate additional parking.

Conclusions and Recommendations

Conclusions

- The proposed project would be expected to generate 709 net new vehicle trips per day including 58 in the a.m. peak hour and 64 trips during the p.m. peak hour. Additionally, the proposed project would be expected to generate an estimated 177 daily pedestrian trips including 15 during the a.m. peak hour and 16 during the p.m. peak hour.

- Under Existing conditions, all study intersections operate acceptably except for Sebastopol Avenue (SR 12)/Morris Street which operates at LOS F during the a.m. peak hour; it would be expected to continue doing so upon the addition of project-generated traffic. The increase in delay as a result of project generated trips would be less than five seconds, which would be a less-than-significant impact.

- Under Cumulative conditions, all study intersections are expected to operate acceptably except for Sebastopol Avenue (SR 12)/Morris Street which is expected to operate at LOS F during the a.m. peak hour and E during the p.m. peak hour. All study intersections are expected to operate at the same levels of service with the addition of project added trips. The increase in delay would be less than five seconds with the addition of project-generated trips, which would be a less-than-significant impact.

- The site will be accessed via the valet service and parking structure located on Brown Street. The narrow section on Brown Street would provide limited options for circulation and parking.

- Sidewalk connectivity between the project site and destinations surrounding the project site is generally adequate, however, there are gaps in the sidewalk on the south side of McKinley Street, east of Brown Street and east side of Brown Street.

- The project is expected to generate a significant volume of pedestrians crossing Petaluma Avenue at its intersection with McKinley Street-Laguna Park Way.

- Existing and planned bicycle facilities provide adequate bicycle access. The proposed hotel plans to provide at least 19 bicycle parking spaces, which meets the City's requirements.

- Existing transit routes are adequate to accommodate project-generated transit trips. Existing stops are within acceptable walking distance of the site.

- The project as proposed would experience a parking deficit of 4 vehicles per the City of Sebastopol's Municipal Code.

- With shared parking principles applied, the proposed project would experience a peak parking demand of 85 vehicles at 1:00 p.m. on weekdays. With plans to provide 122 spaces, parking is expected to be adequate.

Recommendations

- Continuous sidewalks should be provided 1) along the perimeter of the project, 2) on the east side of Brown Street between McKinley Street and Depot Street and 3) on the south side of McKinley Street, just east of Brown Street. The project should install these sidewalk segments with consideration for reimbursement for the non-project frontage sections should these non-project vacant parcels develop in the future.

- Either a) "HAWK" (High-Intensity Activated Crosswalk) beacon should be installed at the south leg of Petaluma Avenue at McKinley Street, or b) the approach should be narrowed to one lane and some type of warning beacons should be installed. Any improvements should be at the discretion and approval of Caltrans.

- It is recommended that the City consider a parking variance to accept the parking supply as proposed given the results of the shared parking analysis.

- If Brown Street were converted to one-way flow, it is recommended that traffic be oriented in the southbound direction only, which would be more conducive to the valet service on the project frontage on the west side of the street. Valet return of vehicles should be in a counter-clockwise vehicle return via Depot Street and through the Barlow parking lot in order to minimize impacts to Petaluma Avenue. This option would need to be done in cooperation with Barlow management.

Study Participants and References

Study Participants

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Assistant Planner	Shannon Baker
Editing/Formatting/Graphics	Angela McCoy
Report Review	Dalene J. Whitlock, PE, PTOE

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SEB043

Appendix A

Collision Rate Calculations

Intersection Collision Rate Calculations

Proposed Piazza Hotel

Intersection # 1: North Main Street (SR116) & McKinley Street
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 5
Number of Injuries: 3
Number of Fatalities: 0
ADT: 17500
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

Intersection Type: Tee
Control Type: Signals
Area: Urban

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

$$\text{collision rate} = \frac{5 \times 1{,}000{,}000}{17{,}500 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.16 c/mve	0.0%	60.0%
Statewide Average*	0.21 c/mve	0.3%	42.4%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection # 2: Petaluma Avenue (SR116) & McKinley Street/Laguna Park Way
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
ADT: 9900
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{1 \times 1{,}000{,}000}{9{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.06 c/mve	0.0%	100.0%
Statewide Average*	0.15 c/mve	1.0%	41.9%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Proposed Piazza Hotel

Intersection # 3: Laguna Park Way & Johnson Street
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 0
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

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

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.00 c/mve	0.0%	0.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection # 4: Laguna Park Way & Morris Street
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
ADT: 3600
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{0 \times 1{,}000{,}000}{3{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.00 c/mve	0.0%	0.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Proposed Piazza Hotel

Intersection # 5: Bodega Avenue & Jewell Avenue
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 5
Number of Injuries: 1
Number of Fatalities: 0
ADT: 13000
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{5 \times 1{,}000{,}000}{13{,}000 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.21 c/mve	0.0%	20.0%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection # 6: Sebastopol Avenue (SR 12) & North Main Street (SR116)
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 19
Number of Injuries: 8
Number of Fatalities: 0
ADT: 22900
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{19 \times 1{,}000{,}000}{22{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.45 c/mve	0.0%	42.1%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Proposed Piazza Hotel

Intersection # 7: Sebastopol Avenue (SR 12) & Petaluma Avenue (SR116)
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 9
Number of Injuries: 4
Number of Fatalities: 0
ADT: 26100
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{9 \times 1{,}000{,}000}{26{,}100 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.19 c/mve	0.0%	44.4%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection # 8: Sebastopol Avenue (SR 12) & Morris Street
Date of Count: Tuesday, April 12, 2016

Number of Collisions: 8
Number of Injuries: 5
Number of Fatalities: 0
ADT: 20200
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

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

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

$$\text{collision rate} = \frac{8 \times 1{,}000{,}000}{20{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.22 c/mve	0.0%	62.5%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Proposed Piazza Hotel

Intersection # 9: Sebastopol Avenue (SR 12) & Llano Road

Date of Count: Tuesday, April 12, 2016

Number of Collisions: 22
Number of Injuries: 14
Number of Fatalities: 0
ADT: 23600
Start Date: March 1, 2010
End Date: February 28, 2015
Number of Years: 5

Intersection Type: Tee
Control Type: Signals
Area: Urban

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

$$\text{collision rate} = \frac{22 \times 1{,}000{,}000}{23{,}600 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.51 c/mve	0.0%	63.6%
Statewide Average*	0.21 c/mve	0.3%	42.4%

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2012 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

5/16/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	98	497	0	0	0	727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1805	1615				3610
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1805	1615				3610
Peak-hour factor, PHF	0.93	0.93	0.90	0.90	0.90	0.93
Adj. Flow (vph)	105	534	0	0	0	782
RTOR Reduction (vph)	69	0	0	0	0	0
Lane Group Flow (vph)	36	534	0	0	0	782
Heavy Vehicles (%)	0%	0%	2%	2%	2%	0%
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	18.1	32.6				27.2
Effective Green, g (s)	18.1	32.6				27.2
Actuated g/C Ratio	0.34	0.61				0.51
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	612	987				1842
v/s Ratio Prot	0.02	c0.33				c0.22
v/s Ratio Perm						
v/c Ratio	0.06	0.54				0.42
Uniform Delay, d1	11.9	6.0				8.2
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.6				0.2
Delay (s)	11.9	6.6				8.3
Level of Service	B	A				A
Approach Delay (s)	7.5		0.0			8.3
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Generated with PTV VISTRO
Version 4.00-02

6/1/2016

Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR116)/Mckinley Street/Laguna Park Way

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):	0.134

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	504	54	31	0	0	62	0	0	0	0	44	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	504	54	31	0	0	62	0	0	0	0	44	1
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	145	16	9	0	0	18	0	0	0	0	13	0
Total Analysis Volume [veh/h]	579	62	36	0	0	71	0	0	0	0	51	1
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.04	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.13	0.00
d_M, Delay for Movement [s/veh]	0.00	7.09	0.00	0.00	0.00	15.34	0.00	0.00	0.00	0.00	15.98	15.50
Movement LOS	A	A	A			C					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.47	0.47
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	15.10	0.00	0.00	0.00	0.00	11.76	11.76
d_A, Approach Delay [s/veh]	0.70		15.34		0.00		15.97					
Approach LOS	A		C		A		C					
d_I, Intersection Delay [s/veh]	2.99											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

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):	0.061

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	23	56	74	24	30	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	56	74	24	30	12
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	22	29	10	12	5
Total Analysis Volume [veh/h]	37	89	118	38	48	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.09	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.27	8.91	7.54	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.29	0.34	0.34	0.00	0.00
95th-Percentile Queue Length [ft]	4.82	7.24	8.47	8.47	0.00	0.00
d_A, Approach Delay [s/veh]	9.61		5.70		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.02					
Intersection LOS	B					

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Version 4.00-02 6/1/2016

Intersection Level Of Service Report
Intersection 4: Laguna Park Way/Morris Street

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):	0.059

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	37	180	119	10	15	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	180	119	10	15	23
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	74	49	4	6	9
Total Analysis Volume [veh/h]	61	296	196	16	25	38
Pedestrian Volume [ped/h]	0		0		0	

Proposed Piazza Hotel W-Trans
Scenario 1: 1: Existing AM Peak Hour

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	0.04	0.00	0.00	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	14.14	9.99
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	1.06	1.06	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	26.51	26.51	0.00	0.00	8.67	8.67
d_A, Approach Delay [s/veh]	1.33		0.00		11.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.500

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	6	410	141	40	432	52	41	57	19	114	27	35
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	6	410	141	40	432	52	41	57	19	114	27	35
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	111	38	11	117	14	11	15	5	31	7	9
Total Analysis Volume [veh/h]	6	444	153	43	468	56	44	62	21	123	29	38
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	100	100	0	100	100	0	0	100	0	0	100	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	74	0	9	74	0	0	19	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	1	0	0	1	0	0	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	16	2	18	4	3	3
g / C, Green / Cycle	0.01	0.40	0.05	0.43	0.10	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.33	0.02	0.29	0.07	0.07	0.04
s, saturation flow rate [veh/h]	1774	1782	1774	1828	1780	1774	1693
c, Capacity [veh/h]	15	706	85	796	173	124	119
d1, Uniform Delay [s]	20.30	11.28	19.11	9.19	18.05	19.11	18.51
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]	17.68	2.91	4.63	0.93	5.92	34.92	4.16
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	0.41	0.85	0.51	0.66	0.73	0.99	0.56
d, Delay for Lane Group [s/veh]	37.98	14.19	23.74	10.12	23.97	54.02	22.67
Lane Group LOS	D	B	C	B	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.12	4.16	0.46	2.81	1.30	2.22	0.67
50th-Percentile Queue Length [ft]	3.05	103.98	11.49	70.33	32.40	55.62	16.87
95th-Percentile Queue Length [veh]	0.22	7.49	0.83	5.06	2.33	4.00	1.21
95th-Percentile Queue Length [ft]	5.49	187.16	20.68	126.59	58.33	100.11	30.36

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.98	14.19	14.19	23.74	10.12	10.12	23.97	23.97	23.97	54.02	22.67	22.67
Movement LOS	D	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	14.43			11.15			23.97			42.97		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	17.64											
Intersection LOS	B											
Intersection V/C	0.500											

Sequence

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

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

5/16/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	367	54	361	481	0	0	0	0	246	515	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3520	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3520	
Peak-hour factor, PHF	0.90	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	403	59	397	529	0	0	0	0	270	566	57
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	403	56	397	529	0	0	0	0	270	615	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		31.5	31.5	24.4	59.9					22.1	22.1	
Effective Green, g (s)		31.5	31.5	24.4	59.9					22.1	22.1	
Actuated g/C Ratio		0.35	0.35	0.27	0.67					0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		665	565	489	1264					395	864	
v/s Ratio Prot		c0.21		c0.22	0.28						c0.17	
v/s Ratio Perm			0.03							0.17		
v/c Ratio		0.61	0.10	0.81	0.42					0.68	0.71	
Uniform Delay, d1		24.1	19.7	30.7	7.0					30.8	31.0	
Progression Factor		1.00	1.00	1.44	1.15					1.00	1.00	
Incremental Delay, d2		4.1	0.3	6.1	0.6					4.8	2.8	
Delay (s)		28.2	20.0	50.4	8.6					35.6	33.8	
Level of Service		C	C	D	A					D	C	
Approach Delay (s)		27.2			26.5			0.0			34.4	
Approach LOS		C			C			A			C	

Intersection Summary				
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
7: Petaluma Ave & Sebastopol Ave

5/16/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	537	0	0	714	144	121	417	481	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2223			3570	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2223			3570	1615			
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	81	571	0	0	760	153	129	444	512	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	81	571	0	0	902	0	0	573	485	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	7.8	52.8			41.0			29.2	29.2			
Effective Green, g (s)	7.8	52.8			41.0			29.2	29.2			
Actuated g/C Ratio	0.09	0.59			0.46			0.32	0.32			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	156	1114			1012			1158	523			
v/s Ratio Prot	0.04	c0.30			c0.41							
v/s Ratio Perm								0.16	c0.30			
v/c Ratio	0.52	0.51			0.89			0.49	0.93			
Uniform Delay, d1	39.3	11.0			22.5			24.5	29.4			
Progression Factor	0.99	1.27			1.00			1.00	1.00			
Incremental Delay, d2	2.3	1.3			11.8			0.3	22.6			
Delay (s)	41.1	15.2			34.2			24.8	52.0			
Level of Service	D	B			C			C	D			
Approach Delay (s)		18.5			34.2			37.6			0.0	
Approach LOS		B			C			D			A	

Intersection Summary				
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave/Sebastopol Rd & Morris St

5/16/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	936	3	1	841	168	3	0	3	57	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1805	1899		1805	1900	1615		1729		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1805	1899		1805	1900	1615		1729		1805	1615	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	46	975	3	1	876	175	3	0	3	59	0	32
RTOR Reduction (vph)	0	0	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	46	978	0	1	876	152	0	0	0	59	32	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.43	0.43		0.07		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	87	881		17	808	687		114		480	429	
v/s Ratio Prot	c0.03	c0.51		0.00	0.46			c0.00		c0.03	0.02	
v/s Ratio Perm						0.09						
v/c Ratio	0.53	1.11		0.06	1.08	0.22		0.00		0.12	0.07	
Uniform Delay, d1	38.4	22.2		40.6	23.8	15.1		36.0		23.0	22.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.7	65.2		1.5	57.0	0.2		0.0		0.1	0.1	
Delay (s)	44.1	87.3		42.0	80.7	15.2		36.1		23.1	22.8	
Level of Service	D	F		D	F	B		D		C	C	
Approach Delay (s)		85.4			69.8			36.1			23.0	
Approach LOS		F			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	75.1	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	61.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

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6/1/2016

Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	917	99	165	881	102	303
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	917	99	165	881	102	303
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	243	26	44	234	27	80
Total Analysis Volume [veh/h]	972	105	175	934	108	321
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	3	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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

Proposed Piazza Hotel W-Trans
Scenario 1: 1: Existing AM Peak Hour

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	68	68	23	95	23	49
g / C, Green / Cycle	0.54	0.54	0.18	0.76	0.18	0.39
(v / s)_i Volume / Saturation Flow Rate	0.52	0.07	0.10	0.50	0.06	0.20
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1012	860	322	1409	319	622
d1, Uniform Delay [s]	27.41	14.04	46.72	7.48	44.98	29.02
k, delay calibration	0.22	0.11	0.11	0.20	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.55	0.06	1.43	1.00	0.62	0.66
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.12	0.54	0.66	0.34	0.52
d, Delay for Lane Group [s/veh]	38.96	14.10	48.15	8.48	45.60	29.69
Lane Group LOS	D	B	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	29.76	1.48	5.11	10.91	3.01	7.47
50th-Percentile Queue Length [ft]	744.09	37.05	127.77	272.66	75.30	186.85
95th-Percentile Queue Length [veh]	38.71	2.67	8.82	16.32	5.42	11.96
95th-Percentile Queue Length [ft]	967.77	66.69	220.46	408.06	135.54	298.94

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.96	14.10	48.15	8.48	45.60	29.69
Movement LOS	D	B	D	A	D	C
d_A, Approach Delay [s/veh]	36.54		14.74		33.69	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	26.83					
Intersection LOS	C					
Intersection V/C	0.783					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Proposed Piazza Hotel W-Trans
Scenario 1: 1: Existing AM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/21/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	183	744	0	0	0	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1770	1583				3539
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1770	1583				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	195	791	0	0	0	871
RTOR Reduction (vph)	71	0	0	0	0	0
Lane Group Flow (vph)	124	791	0	0	0	871
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	18.8	33.5				27.6
Effective Green, g (s)	18.8	33.5				27.6
Actuated g/C Ratio	0.35	0.62				0.51
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	611	974				1795
v/s Ratio Prot	0.07	c0.50				c0.25
v/s Ratio Perm						
v/c Ratio	0.20	0.81				0.49
Uniform Delay, d1	12.5	8.0				8.8
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.2	5.2				0.2
Delay (s)	12.7	13.3				9.0
Level of Service	B	B				A
Approach Delay (s)	13.2		0.0			9.0
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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6/1/2016

Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR 116)/McKinley St/Laguna Pwy

Control Type:	Two-way stop	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	733	58	26	0	0	106	0	0	0	0	61	2
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	733	58	26	0	0	106	0	0	0	0	61	2
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	211	17	7	0	0	30	0	0	0	0	18	1
Total Analysis Volume [veh/h]	843	67	30	0	0	122	0	0	0	0	70	2
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.05	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.26	0.01
d_M, Delay for Movement [s/veh]	0.00	7.60	0.00	0.00	0.00	25.50	0.00	0.00	0.00	0.00	23.42	22.68
Movement LOS	A	A	A			D					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	1.06	1.06
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	48.43	0.00	0.00	0.00	0.00	26.55	26.55
d_A, Approach Delay [s/veh]	0.54		25.50		0.00		23.40					
Approach LOS	A		D		A		C					
d_I, Intersection Delay [s/veh]	4.68											
Intersection LOS	D											

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Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	19	21	28	36	81	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	19	21	28	36	81	20
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	8	11	14	32	8
Total Analysis Volume [veh/h]	30	33	45	57	129	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.04	0.04	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.57	9.14	7.62	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.11	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft]	3.48	2.84	5.80	5.80	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		3.36		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.95					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: Laguna Pwy/Morris St

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):	0.064

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	56	106	130	19	17	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	56	106	130	19	17	32
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	44	53	8	7	13
Total Analysis Volume [veh/h]	92	174	214	31	28	53
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	0.07	0.00	0.00	0.00	0.06	0.07
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	14.13	10.30
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.75	0.75	0.00	0.00	0.44	0.44
95th-Percentile Queue Length [ft]	18.80	18.80	0.00	0.00	11.11	11.11
d_A, Approach Delay [s/veh]	2.74		0.00		11.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	5	389	84	55	563	10	14	18	1	82	33	43
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	5	389	84	55	563	10	14	18	1	82	33	43
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	105	23	15	152	3	4	5	0	22	9	12
Total Analysis Volume [veh/h]	5	421	91	60	609	11	15	19	1	89	36	47
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2		1	6			8			4	
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5		5	5			5			5	
Maximum Green [s]	100	100		100	100			100			100	
Amber [s]	3.0	3.0		3.0	3.0			3.0			3.0	
All red [s]	1.0	1.0		1.0	1.0			1.0			1.0	
Split [s]	9	74		9	74			19			18	
Vehicle Extension [s]	3.0	3.0		3.0	3.0			3.0			3.0	
Walk [s]					1			1			1	
Pedestrian Clearance [s]					0			0			0	
I1, Start-Up Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
I2, Clearance Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]												
Detector Length [ft]												
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

Proposed Piazza Hotel W-Trans
Scenario 1: 1: 1: Existing PM Peak Hour

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	12	2	14	1	3	3
g / C, Green / Cycle	0.01	0.35	0.06	0.41	0.04	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.00	0.28	0.03	0.33	0.02	0.05	0.05
s, saturation flow rate [veh/h]	1774	1806	1774	1857	1815	1774	1694
c, Capacity [veh/h]	12	637	114	762	76	143	136
d1, Uniform Delay [s]	17.19	10.16	15.75	9.08	16.27	15.47	15.45
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]	19.86	2.42	3.72	2.17	4.24	4.39	4.34
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	0.40	0.80	0.53	0.81	0.46	0.62	0.61
d, Delay for Lane Group [s/veh]	37.05	12.58	19.47	11.25	20.51	19.87	19.79
Lane Group LOS	D	B	B	B	C	B	B
Critical Lane Group	Yes	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.10	2.82	0.50	3.07	0.32	0.73	0.68
50th-Percentile Queue Length [ft]	2.54	70.57	12.45	76.67	7.90	18.33	17.12
95th-Percentile Queue Length [veh]	0.18	5.08	0.90	5.52	0.57	1.32	1.23
95th-Percentile Queue Length [ft]	4.58	127.03	22.41	138.00	14.22	33.00	30.82

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.05	12.58	12.58	19.47	11.25	11.25	20.51	20.51	20.51	19.87	19.79	19.79
Movement LOS	D	B	B	B	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	12.82			11.98			20.51			19.83		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	13.46											
Intersection LOS	B											
Intersection V/C	0.406											

Sequence

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

Proposed Piazza Hotel W-Trans
Scenario 1: 1: 1: Existing PM Peak Hour

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/21/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	327	63	393	521	0	0	0	0	249	640	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1863	1583	1770	1863					1580	3407	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1863	1583	1770	1863					1580	3407	
Peak-hour factor, PHF	0.90	0.93	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	0	352	68	423	560	0	0	0	0	268	688	109
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	352	68	423	560	0	0	0	0	268	797	0
Confl. Peds. (#/hr)										50		50
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		27.4	27.4	25.1	56.5					25.5	25.5	
Effective Green, g (s)		27.4	27.4	25.1	56.5					25.5	25.5	
Actuated g/C Ratio		0.30	0.30	0.28	0.63					0.28	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		567	481	493	1169					447	965	
v/s Ratio Prot		c0.19		c0.24	0.30						c0.23	
v/s Ratio Perm			0.04							0.17		
v/c Ratio		0.62	0.14	0.86	0.48					0.60	0.83	
Uniform Delay, d1		26.8	22.8	30.8	8.9					27.8	30.2	
Progression Factor		1.00	1.00	0.57	0.37					1.00	1.00	
Incremental Delay, d2		5.0	0.6	5.5	0.5					2.2	5.9	
Delay (s)		31.9	23.4	23.1	3.8					30.0	36.0	
Level of Service		C	C	C	A					C	D	
Approach Delay (s)		30.5			12.1			0.0			34.5	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/21/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	496	0	0	723	196	163	556	380	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.95			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1770	1863			2164			3487	1510			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1770	1863			2164			3487	1510			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	108	545	0	0	795	215	179	611	418	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	33	0	0	0
Lane Group Flow (vph)	108	545	0	0	999	0	0	790	385	0	0	0
Confl. Peds. (#/hr)							15		15			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	7.8	52.0			40.2			30.0	30.0			
Effective Green, g (s)	7.8	52.0			40.2			30.0	30.0			
Actuated g/C Ratio	0.09	0.58			0.45			0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	153	1076			966			1162	503			
v/s Ratio Prot	c0.06	0.29			c0.46							
v/s Ratio Perm								0.23	c0.25			
v/c Ratio	0.71	0.51			1.03			0.68	0.76			
Uniform Delay, d1	40.0	11.3			24.9			25.9	26.8			
Progression Factor	0.97	0.87			1.00			1.00	1.00			
Incremental Delay, d2	11.6	1.4			38.1			1.6	6.8			
Delay (s)	50.4	11.3			63.0			27.5	33.7			
Level of Service	D	B			E			C	C			
Approach Delay (s)		17.8			63.0			29.6			0.0	
Approach LOS		B			E			C			A	

Intersection Summary				
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave/Sebastopol Rd & Morris St

6/21/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	818	5	3	813	119	4	5	5	136	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1863	1583		1748		1770	1595	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	1861		1770	1863	1583		1748		1770	1595	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	861	5	3	856	125	4	5	5	143	3	68
RTOR Reduction (vph)	0	0	0	0	0	11	0	5	0	0	0	0
Lane Group Flow (vph)	44	866	0	3	856	114	0	9	0	143	71	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	46.4		0.8	43.2	43.2		6.1		22.0	22.0	
Effective Green, g (s)	4.0	46.4		0.8	43.2	43.2		6.1		22.0	22.0	
Actuated g/C Ratio	0.04	0.51		0.01	0.47	0.47		0.07		0.24	0.24	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	77	945		15	881	749		116		426	384	
v/s Ratio Prot	c0.02	c0.47		0.00	c0.46			c0.01		c0.08	0.04	
v/s Ratio Perm						0.07						
v/c Ratio	0.57	0.92		0.20	0.97	0.15		0.08		0.34	0.18	
Uniform Delay, d1	42.8	20.7		44.9	23.5	13.7		40.0		28.6	27.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	9.8	13.2		6.5	23.5	0.1		0.3		0.5	0.2	
Delay (s)	52.7	33.9		51.4	46.9	13.8		40.3		29.1	27.8	
Level of Service	D	C		D	D	B		D		C	C	
Approach Delay (s)		34.8			42.7			40.3			28.6	
Approach LOS		C			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	64.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

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Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

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):	0.762

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	957	89	167	820	114	211
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	957	89	167	820	114	211
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	254	24	44	217	30	56
Total Analysis Volume [veh/h]	1015	94	177	870	121	224
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	3	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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

Proposed Piazza Hotel
Scenario 1: 1: 1: Existing PM Peak Hour
W-Trans

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	50	50	13	67	12	29
g / C, Green / Cycle	0.58	0.58	0.14	0.77	0.14	0.33
(v / s)_i Volume / Saturation Flow Rate	0.54	0.06	0.10	0.47	0.07	0.14
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1072	911	256	1426	253	527
d1, Uniform Delay [s]	17.32	8.38	35.57	4.51	34.49	22.67
k, delay calibration	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
d2, Incremental Delay [s]	5.29	0.05	3.31	0.43	1.39	0.54
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.10	0.69	0.61	0.48	0.42
d, Delay for Lane Group [s/veh]	22.61	8.43	38.88	4.93	35.89	23.21
Lane Group LOS	C	A	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	18.13	0.75	3.75	4.75	2.43	3.55
50th-Percentile Queue Length [ft]	453.27	18.86	93.81	118.73	60.64	88.79
95th-Percentile Queue Length [veh]	25.11	1.36	6.75	8.32	4.37	6.39
95th-Percentile Queue Length [ft]	627.84	33.94	168.86	208.08	109.16	159.82

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.61	8.43	38.88	4.93	35.89	23.21
Movement LOS	C	A	D	A	D	C
d_A, Approach Delay [s/veh]	21.41		10.67		27.66	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	17.78					
Intersection LOS	B					
Intersection V/C	0.762					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Proposed Piazza Hotel W-Trans
Scenario 1: 1: 1: Existing PM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/13/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	98	508	0	0	0	742
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1805	1615				3610
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1805	1615				3610
Peak-hour factor, PHF	0.93	0.93	0.90	0.90	0.90	0.93
Adj. Flow (vph)	105	546	0	0	0	798
RTOR Reduction (vph)	69	0	0	0	0	0
Lane Group Flow (vph)	36	546	0	0	0	798
Heavy Vehicles (%)	0%	0%	2%	2%	2%	0%
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	18.1	32.6				27.2
Effective Green, g (s)	18.1	32.6				27.2
Actuated g/C Ratio	0.34	0.61				0.51
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	612	987				1842
v/s Ratio Prot	0.02	c0.34				c0.22
v/s Ratio Perm						
v/c Ratio	0.06	0.55				0.43
Uniform Delay, d1	11.9	6.1				8.2
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.7				0.2
Delay (s)	11.9	6.8				8.4
Level of Service	B	A				A
Approach Delay (s)	7.6		0.0			8.4
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR116)/Mckinley Street/Laguna Park Way

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	504	54	31	0	0	62	0	0	0	0	44	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	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]	515	54	31	0	0	62	0	0	0	0	44	1
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	148	16	9	0	0	18	0	0	0	0	13	0
Total Analysis Volume [veh/h]	592	62	36	0	0	71	0	0	0	0	51	1
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.04	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.14	0.00
d_M, Delay for Movement [s/veh]	0.00	7.58	0.00	0.00	0.00	15.56	0.00	0.00	0.00	0.00	16.20	15.72
Movement LOS	A	A	A			C					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.48	0.48
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	11.99	11.99
d_A, Approach Delay [s/veh]	0.68			15.56			0.00				16.19	
Approach LOS	A			C			A				C	
d_I, Intersection Delay [s/veh]	2.97											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

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):	0.061

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	23	56	74	24	30	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	56	74	24	30	12
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	22	29	10	12	5
Total Analysis Volume [veh/h]	37	89	118	38	48	19
Pedestrian Volume [ped/h]	0		0		0	

Proposed Piazza Hotel W-Trans
Scenario 3: 3: Cumulative AM Peak Hour

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.09	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.27	8.91	7.54	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.29	0.34	0.34	0.00	0.00
95th-Percentile Queue Length [ft]	4.82	7.24	8.47	8.47	0.00	0.00
d_A, Approach Delay [s/veh]	9.61		5.70		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.02					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: Laguna Park Way/Morris Street

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):	0.059

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	37	180	119	10	15	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	180	119	10	15	23
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	74	49	4	6	9
Total Analysis Volume [veh/h]	61	296	196	16	25	38
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	0.04	0.00	0.00	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	14.14	9.99
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	1.06	1.06	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	26.51	26.51	0.00	0.00	8.67	8.67
d_A, Approach Delay [s/veh]	1.33		0.00		11.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	6	410	141	40	432	52	41	57	19	114	27	35
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	9	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]	6	422	141	40	441	52	41	57	19	114	27	35
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	114	38	11	119	14	11	15	5	31	7	9
Total Analysis Volume [veh/h]	6	457	153	43	477	56	44	62	21	123	29	38
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2		1	6			8			4	
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5		5	5			5			5	
Maximum Green [s]	100	100		100	100			100			100	
Amber [s]	3.0	3.0		3.0	3.0			3.0			3.0	
All red [s]	1.0	1.0		1.0	1.0			1.0			1.0	
Split [s]	9	74		9	74			19			18	
Vehicle Extension [s]	3.0	3.0		3.0	3.0			3.0			3.0	
Walk [s]					1			1			1	
Pedestrian Clearance [s]					0			0			0	
I1, Start-Up Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
I2, Clearance Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]												
Detector Length [ft]												
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

Proposed Piazza Hotel W-Trans
Scenario 3: 3: Cumulative AM Peak Hour

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	17	2	18	4	3	3
g / C, Green / Cycle	0.01	0.40	0.05	0.44	0.10	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.34	0.02	0.29	0.07	0.07	0.04
s, saturation flow rate [veh/h]	1774	1784	1774	1829	1780	1774	1693
c, Capacity [veh/h]	15	717	84	808	173	125	119
d1, Uniform Delay [s]	20.63	11.35	19.43	9.20	18.35	19.41	18.81
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]	17.70	2.95	4.68	0.93	5.92	34.05	4.11
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	0.41	0.85	0.51	0.66	0.73	0.99	0.56
d, Delay for Lane Group [s/veh]	38.33	14.30	24.11	10.13	24.26	53.47	22.92
Lane Group LOS	D	B	C	B	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.12	4.33	0.47	2.90	1.32	2.22	0.69
50th-Percentile Queue Length [ft]	3.08	108.31	11.71	72.61	32.98	55.54	17.14
95th-Percentile Queue Length [veh]	0.22	7.75	0.84	5.23	2.37	4.00	1.23
95th-Percentile Queue Length [ft]	5.54	193.65	21.08	130.71	59.36	99.98	30.85

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.33	14.30	14.30	24.11	10.13	10.13	24.26	24.26	24.26	53.47	22.92	22.92
Movement LOS	D	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	14.54			11.17			24.26			42.70		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	17.62											
Intersection LOS	B											
Intersection V/C	0.507											

Sequence

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

Proposed Piazza Hotel W-Trans
Scenario 3: 3: Cumulative AM Peak Hour

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	377	56	380	490	0	0	0	0	258	518	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3520	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3520	
Peak-hour factor, PHF	0.90	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	414	62	418	538	0	0	0	0	284	569	57
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	414	59	418	538	0	0	0	0	284	618	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.9	30.9	25.1	60.0					22.0	22.0	
Effective Green, g (s)		30.9	30.9	25.1	60.0					22.0	22.0	
Actuated g/C Ratio		0.34	0.34	0.28	0.67					0.24	0.24	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		652	554	503	1266					394	860	
v/s Ratio Prot		c0.22		c0.23	0.28						0.18	
v/s Ratio Perm			0.04							c0.18		
v/c Ratio		0.63	0.11	0.83	0.42					0.72	0.72	
Uniform Delay, d1		24.8	20.1	30.5	7.0					31.2	31.2	
Progression Factor		1.00	1.00	1.45	1.15					1.00	1.00	
Incremental Delay, d2		4.7	0.4	6.6	0.6					6.4	2.9	
Delay (s)		29.5	20.5	50.9	8.6					37.6	34.1	
Level of Service		C	C	D	A					D	C	
Approach Delay (s)		28.3			27.1			0.0			35.2	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.6%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	559	0	0	734	144	131	426	482	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2224			3568	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2224			3568	1615			
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	83	595	0	0	781	153	139	453	513	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	83	595	0	0	923	0	0	592	486	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	7.9	52.6			40.7			29.4	29.4			
Effective Green, g (s)	7.9	52.6			40.7			29.4	29.4			
Actuated g/C Ratio	0.09	0.58			0.45			0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	158	1110			1005			1165	527			
v/s Ratio Prot	0.05	c0.31			c0.42							
v/s Ratio Perm								0.17	c0.30			
v/c Ratio	0.53	0.54			0.92			0.51	0.92			
Uniform Delay, d1	39.3	11.3			23.1			24.5	29.2			
Progression Factor	0.97	1.31			1.00			1.00	1.00			
Incremental Delay, d2	2.3	1.4			14.5			0.4	21.8			
Delay (s)	40.5	16.1			37.6			24.8	51.0			
Level of Service	D	B			D			C	D			
Approach Delay (s)		19.1			37.6			37.0			0.0	
Approach LOS		B			D			D			A	

Intersection Summary				
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.6%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave/Sebastopol Rd & Morris St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	957	3	1	864	168	3	0	3	57	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1805	1899		1805	1900	1615		1729		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1805	1899		1805	1900	1615		1729		1805	1615	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	46	997	3	1	900	175	3	0	3	59	0	32
RTOR Reduction (vph)	0	0	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	46	1000	0	1	900	152	0	0	0	59	32	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.43	0.43		0.07		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	87	881		17	808	687		114		480	429	
v/s Ratio Prot	c0.03	c0.53		0.00	0.47			c0.00		c0.03	0.02	
v/s Ratio Perm						0.09						
v/c Ratio	0.53	1.14		0.06	1.11	0.22		0.00		0.12	0.07	
Uniform Delay, d1	38.4	22.2		40.6	23.8	15.1		36.0		23.0	22.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.7	74.7		1.5	67.7	0.2		0.0		0.1	0.1	
Delay (s)	44.1	96.9		42.0	91.5	15.2		36.1		23.1	22.8	
Level of Service	D	F		D	F	B		D		C	C	
Approach Delay (s)		94.6			79.0			36.1			23.0	
Approach LOS		F			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	83.9	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

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6/10/2016

Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	917	99	165	881	102	303
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	0	0	23	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	938	99	165	904	102	303
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	249	26	44	240	27	80
Total Analysis Volume [veh/h]	995	105	175	959	108	321
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2		1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5		5	5	5	5
Maximum Green [s]	100		100	100	100	100
Amber [s]	3.0		3.0	3.0	3.0	3.0
All red [s]	1.0		1.0	1.0	1.0	1.0
Split [s]	77		20	97	23	20
Vehicle Extension [s]	3.0		3.0	3.0	3.0	3.0
Walk [s]	1			1		
Pedestrian Clearance [s]	0			0		
I1, Start-Up Lost Time [s]	2.0		2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0		2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]						
Detector Length [ft]						
I, Upstream Filtering Factor	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

Proposed Piazza Hotel W-Trans
Scenario 3: 3: Cumulative AM Peak Hour

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	76	76	25	105	25	53
g / C, Green / Cycle	0.55	0.55	0.18	0.76	0.18	0.39
(v / s)_i Volume / Saturation Flow Rate	0.53	0.07	0.10	0.51	0.06	0.20
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1031	876	320	1421	318	615
d1, Uniform Delay [s]	29.43	14.69	51.29	7.97	49.37	32.29
k, delay calibration	0.28	0.11	0.11	0.26	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.21	0.06	1.46	1.36	0.63	0.69
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.12	0.55	0.67	0.34	0.52
d, Delay for Lane Group [s/veh]	43.64	14.75	52.75	9.33	50.00	32.98
Lane Group LOS	D	B	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	34.32	1.61	5.65	12.74	3.33	8.36
50th-Percentile Queue Length [ft]	858.08	40.19	141.18	318.42	83.23	209.02
95th-Percentile Queue Length [veh]	43.93	2.89	9.54	18.59	5.99	13.10
95th-Percentile Queue Length [ft]	1098.28	72.34	238.62	464.74	149.81	327.57

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.64	14.75	52.75	9.33	50.00	32.98
Movement LOS	D	B	D	A	D	C
d_A, Approach Delay [s/veh]	40.88		16.03		37.26	
Approach LOS	D		B		D	
d_I, Intersection Delay [s/veh]	29.72					
Intersection LOS	C					
Intersection V/C	0.796					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Proposed Piazza Hotel W-Trans
Scenario 3: 3: Cumulative AM Peak Hour

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/14/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	183	778	0	0	0	854
Future Volume (vph)	183	778	0	0	0	854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1805	1615				3610
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1805	1615				3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	197	837	0	0	0	918
RTOR Reduction (vph)	62	0	0	0	0	0
Lane Group Flow (vph)	135	837	0	0	0	918
Heavy Vehicles (%)	0%	0%	2%	2%	2%	0%
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	19.1	33.7				27.6
Effective Green, g (s)	19.1	33.7				27.6
Actuated g/C Ratio	0.35	0.62				0.50
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	630	994				1821
v/s Ratio Prot	0.07	c0.52				c0.25
v/s Ratio Perm						
v/c Ratio	0.21	0.84				0.50
Uniform Delay, d1	12.5	8.4				9.0
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.2	6.6				0.2
Delay (s)	12.7	15.0				9.2
Level of Service	B	B				A
Approach Delay (s)	14.5		0.0			9.2
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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Version 4.00-02

6/13/2016

Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR 116)/McKinley St/Laguna Pwy

Control Type:	Two-way stop	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	733	58	26	0	0	106	0	0	0	0	61	2
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	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]	767	58	26	0	0	106	0	0	0	0	61	2
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	220	17	7	0	0	30	0	0	0	0	18	1
Total Analysis Volume [veh/h]	882	67	30	0	0	122	0	0	0	0	70	2
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.05	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.28	0.01
d_M, Delay for Movement [s/veh]	0.00	7.60	0.00	0.00	0.00	27.36	0.00	0.00	0.00	0.00	24.80	24.01
Movement LOS	A	A	A			D					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	2.09	0.00	0.00	0.00	0.00	1.14	1.14
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	52.24	0.00	0.00	0.00	0.00	28.39	28.39
d_A, Approach Delay [s/veh]	0.52			27.36			0.00			24.78		
Approach LOS	A			D			A			C		
d_I, Intersection Delay [s/veh]	4.80											
Intersection LOS	D											

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Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	19	21	28	36	81	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	19	21	28	36	81	20
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	8	11	14	32	8
Total Analysis Volume [veh/h]	30	33	45	57	129	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.04	0.04	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.57	9.14	7.62	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.11	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft]	3.48	2.84	5.80	5.80	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		3.36		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.95					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: Laguna Pwy/Morris St

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):	0.064

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	56	106	130	19	17	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	56	106	130	19	17	32
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	44	53	8	7	13
Total Analysis Volume [veh/h]	92	174	214	31	28	53
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	0.07	0.00	0.00	0.00	0.06	0.07
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	14.13	10.30
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.75	0.75	0.00	0.00	0.44	0.44
95th-Percentile Queue Length [ft]	18.80	18.80	0.00	0.00	11.11	11.11
d_A, Approach Delay [s/veh]	2.74		0.00		11.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.421

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	5	389	84	55	563	10	14	18	1	82	33	43
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	26	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]	5	414	84	55	589	10	14	18	1	82	33	43
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	112	23	15	159	3	4	5	0	22	9	12
Total Analysis Volume [veh/h]	5	448	91	60	637	11	15	19	1	89	36	47
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2		1	6			8			4	
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5		5	5			5			5	
Maximum Green [s]	100	100		100	100			100			100	
Amber [s]	3.0	3.0		3.0	3.0			3.0			3.0	
All red [s]	1.0	1.0		1.0	1.0			1.0			1.0	
Split [s]	9	74		9	74			19			18	
Vehicle Extension [s]	3.0	3.0		3.0	3.0			3.0			3.0	
Walk [s]					1			1			1	
Pedestrian Clearance [s]					0			0			0	
I1, Start-Up Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
I2, Clearance Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]												
Detector Length [ft]												
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

Proposed Piazza Hotel W-Trans
Scenario 3: 3: 3: Cumulative PM Peak Hour

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	13	2	15	1	3	3
g / C, Green / Cycle	0.01	0.37	0.06	0.42	0.04	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.00	0.30	0.03	0.35	0.02	0.05	0.05
s, saturation flow rate [veh/h]	1774	1809	1774	1857	1815	1774	1694
c, Capacity [veh/h]	12	663	113	786	76	141	135
d1, Uniform Delay [s]	17.66	10.21	16.20	9.12	16.72	15.92	15.90
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]	19.87	2.48	3.80	2.25	4.29	4.54	4.48
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	0.40	0.81	0.53	0.82	0.46	0.63	0.61
d, Delay for Lane Group [s/veh]	37.53	12.68	20.00	11.37	21.01	20.47	20.38
Lane Group LOS	D	B	B	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.10	3.05	0.52	3.30	0.33	0.76	0.71
50th-Percentile Queue Length [ft]	2.58	76.37	12.88	82.58	8.14	19.02	17.76
95th-Percentile Queue Length [veh]	0.19	5.50	0.93	5.95	0.59	1.37	1.28
95th-Percentile Queue Length [ft]	4.64	137.47	23.19	148.65	14.66	34.24	31.97

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.53	12.68	12.68	20.00	11.37	11.37	21.01	21.01	21.01	20.47	20.38	20.38
Movement LOS	D	B	B	B	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	12.91			12.10			21.01			20.43		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	13.60											
Intersection LOS	B											
Intersection V/C	0.421											

Sequence

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

Proposed Piazza Hotel W-Trans
Scenario 3: 3: 3: Cumulative PM Peak Hour

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Rd & Main St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	348	67	450	547	0	0	0	0	276	648	101
Future Volume (vph)	0	348	67	450	547	0	0	0	0	276	648	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3477	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3477	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	382	74	495	601	0	0	0	0	303	712	111
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	382	70	495	601	0	0	0	0	303	816	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		25.8	25.8	27.8	57.6					24.4	24.4	
Effective Green, g (s)		25.8	25.8	27.8	57.6					24.4	24.4	
Actuated g/C Ratio		0.29	0.29	0.31	0.64					0.27	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		544	462	557	1216					437	942	
v/s Ratio Prot		c0.20		c0.27	0.32						c0.23	
v/s Ratio Perm			0.04							0.19		
v/c Ratio		0.70	0.15	0.89	0.49					0.69	0.87	
Uniform Delay, d1		28.7	23.9	29.6	8.5					29.4	31.2	
Progression Factor		1.00	1.00	1.50	1.11					1.00	1.00	
Incremental Delay, d2		7.4	0.7	8.4	0.7					4.7	8.4	
Delay (s)		36.1	24.6	52.9	10.1					34.2	39.6	
Level of Service		D	C	D	B					C	D	
Approach Delay (s)		34.2			29.4			0.0			38.2	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.3%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Rd/Sebastopol Ave & Petaluma Ave

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	544	0	0	782	196	193	584	386	0	0	0
Future Volume (vph)	104	544	0	0	782	196	193	584	386	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2212			3566	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2212			3566	1615			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	109	573	0	0	823	206	203	615	406	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	109	573	0	0	1018	0	0	818	379	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	8.3	53.7			41.4			28.3	28.3			
Effective Green, g (s)	8.3	53.7			41.4			28.3	28.3			
Actuated g/C Ratio	0.09	0.60			0.46			0.31	0.31			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	166	1133			1017			1121	507			
v/s Ratio Prot	c0.06	0.30			c0.46							
v/s Ratio Perm								0.23	c0.23			
v/c Ratio	0.66	0.51			1.00			0.73	0.75			
Uniform Delay, d1	39.5	10.5			24.3			27.4	27.6			
Progression Factor	0.92	1.38			1.00			1.00	1.00			
Incremental Delay, d2	6.6	1.2			28.5			2.4	5.9			
Delay (s)	42.8	15.7			52.8			29.9	33.6			
Level of Service	D	B			D			C	C			
Approach Delay (s)		20.0			52.8			31.1			0.0	
Approach LOS		B			D			C			A	

Intersection Summary				
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.3%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave & Morris St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	878	5	3	872	119	4	5	5	136	3	65
Future Volume (vph)	42	878	5	3	872	119	4	5	5	136	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1805	1898		1805	1900	1615		1783		1805	1627	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1805	1898		1805	1900	1615		1783		1805	1627	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	915	5	3	908	124	4	5	5	142	3	68
RTOR Reduction (vph)	0	0	0	0	0	23	0	5	0	0	0	0
Lane Group Flow (vph)	44	920	0	3	908	101	0	9	0	142	71	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		6.1		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		6.1		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.42	0.42		0.07		0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	86	874		17	802	682		130		476	429	
v/s Ratio Prot	c0.02	c0.48		0.00	c0.48			c0.01		c0.08	0.04	
v/s Ratio Perm						0.06						
v/c Ratio	0.51	1.05		0.18	1.13	0.15		0.07		0.30	0.17	
Uniform Delay, d1	38.7	22.4		40.9	24.0	14.8		36.0		24.5	23.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.1	45.2		4.9	74.8	0.1		0.2		0.4	0.2	
Delay (s)	43.8	67.7		45.8	98.8	14.9		36.2		24.8	23.8	
Level of Service	D	E		D	F	B		D		C	C	
Approach Delay (s)		66.6			88.6			36.2			24.5	
Approach LOS		E			F			D			C	

Intersection Summary				
HCM 2000 Control Delay	72.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	67.4%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

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6/13/2016

Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

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):	0.797

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	957	89	167	820	114	211
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	60	0	0	59	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1017	89	167	879	114	211
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	270	24	44	233	30	56
Total Analysis Volume [veh/h]	1078	94	177	932	121	224
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	3	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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

Proposed Piazza Hotel
Scenario 3: 3: 3: Cumulative PM Peak Hour
W-Trans

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	63	63	15	82	15	33
g / C, Green / Cycle	0.60	0.60	0.14	0.78	0.14	0.32
(v / s)_i Volume / Saturation Flow Rate	0.58	0.06	0.10	0.50	0.07	0.14
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1125	957	251	1460	248	506
d1, Uniform Delay [s]	19.49	8.73	42.92	4.91	41.59	28.26
k, delay calibration	0.18	0.11	0.11	0.12	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.99	0.04	3.63	0.52	1.48	0.61
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.10	0.71	0.64	0.49	0.44
d, Delay for Lane Group [s/veh]	28.48	8.77	46.54	5.43	43.07	28.87
Lane Group LOS	C	A	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	24.89	0.87	4.60	6.57	2.97	4.50
50th-Percentile Queue Length [ft]	622.22	21.85	114.88	164.19	74.37	112.41
95th-Percentile Queue Length [veh]	33.07	1.57	8.11	10.77	5.35	7.97
95th-Percentile Queue Length [ft]	826.76	39.33	202.76	269.26	133.87	199.35

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.48	8.77	46.54	5.43	43.07	28.87
Movement LOS	C	A	D	A	D	C
d_A, Approach Delay [s/veh]	26.90		11.99		33.85	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	21.51					
Intersection LOS	C					
Intersection V/C	0.797					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/14/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	109	500	0	0	0	733
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1805	1615				3610
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1805	1615				3610
Peak-hour factor, PHF	0.93	0.93	0.90	0.90	0.90	0.93
Adj. Flow (vph)	117	538	0	0	0	788
RTOR Reduction (vph)	77	0	0	0	0	0
Lane Group Flow (vph)	40	538	0	0	0	788
Heavy Vehicles (%)	0%	0%	2%	2%	2%	0%
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	18.1	32.6				27.2
Effective Green, g (s)	18.1	32.6				27.2
Actuated g/C Ratio	0.34	0.61				0.51
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	612	987				1842
v/s Ratio Prot	0.02	c0.33				c0.22
v/s Ratio Perm						
v/c Ratio	0.06	0.55				0.43
Uniform Delay, d1	11.9	6.0				8.2
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.6				0.2
Delay (s)	11.9	6.6				8.3
Level of Service	B	A				A
Approach Delay (s)	7.6		0.0			8.3
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR116)/Mckinley Street/Laguna Park Way

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.177

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	504	54	31	0	0	62	0	0	0	0	44	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	0	0	0	0	0	0	0	14	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]	504	54	38	0	0	62	0	0	0	0	58	1
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	145	16	11	0	0	18	0	0	0	0	17	0
Total Analysis Volume [veh/h]	579	62	44	0	0	71	0	0	0	0	67	1
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.04	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.18	0.00
d_M, Delay for Movement [s/veh]	0.00	7.59	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	16.61	16.13
Movement LOS	A	A	A			C					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.65	0.65
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	15.19	0.00	0.00	0.00	0.00	16.19	16.19
d_A, Approach Delay [s/veh]	0.69		15.41		0.00		16.60					
Approach LOS	A		C		A		C					
d_I, Intersection Delay [s/veh]	3.27											
Intersection LOS	C											

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Version 4.00-02 6/14/2016

Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

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):	0.061

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	23	56	74	24	30	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	56	74	24	30	12
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	22	29	10	12	5
Total Analysis Volume [veh/h]	37	89	118	38	48	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.09	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.27	8.91	7.54	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.29	0.34	0.34	0.00	0.00
95th-Percentile Queue Length [ft]	4.82	7.24	8.47	8.47	0.00	0.00
d_A, Approach Delay [s/veh]	9.61		5.70		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.02					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: Laguna Park Way/Morris Street

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):	0.059

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	37	180	119	10	15	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	180	119	10	15	23
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	74	49	4	6	9
Total Analysis Volume [veh/h]	61	296	196	16	25	38
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	0.04	0.00	0.00	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	14.14	9.99
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	1.06	1.06	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	26.51	26.51	0.00	0.00	8.67	8.67
d_A, Approach Delay [s/veh]	1.33		0.00		11.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.503

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	6	410	141	40	432	52	41	57	19	114	27	35
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	3	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]	6	416	141	40	435	52	41	57	19	114	27	35
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	113	38	11	118	14	11	15	5	31	7	9
Total Analysis Volume [veh/h]	6	450	153	43	471	56	44	62	21	123	29	38
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2		1	6			8			4	
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5		5	5			5			5	
Maximum Green [s]	100	100		100	100			100			100	
Amber [s]	3.0	3.0		3.0	3.0			3.0			3.0	
All red [s]	1.0	1.0		1.0	1.0			1.0			1.0	
Split [s]	9	74		9	74			19			18	
Vehicle Extension [s]	3.0	3.0		3.0	3.0			3.0			3.0	
Walk [s]					1			1			1	
Pedestrian Clearance [s]					0			0			0	
I1, Start-Up Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
I2, Clearance Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]												
Detector Length [ft]												
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

Proposed Piazza Hotel
Scenario 2: 2: Existing AM Peak Hour + Project
W-Trans

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	16	2	18	4	3	3
g / C, Green / Cycle	0.01	0.40	0.05	0.44	0.10	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.34	0.02	0.29	0.07	0.07	0.04
s, saturation flow rate [veh/h]	1774	1783	1774	1828	1780	1774	1693
c, Capacity [veh/h]	15	711	85	801	173	125	119
d1, Uniform Delay [s]	20.45	11.32	19.26	9.18	18.19	19.25	18.65
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]	17.69	2.93	4.65	0.93	5.92	34.52	4.14
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	0.41	0.85	0.51	0.66	0.73	0.99	0.56
d, Delay for Lane Group [s/veh]	38.14	14.24	23.91	10.11	24.10	53.76	22.79
Lane Group LOS	D	B	C	B	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.12	4.24	0.46	2.85	1.31	2.22	0.68
50th-Percentile Queue Length [ft]	3.06	105.96	11.59	71.14	32.67	55.58	16.99
95th-Percentile Queue Length [veh]	0.22	7.61	0.83	5.12	2.35	4.00	1.22
95th-Percentile Queue Length [ft]	5.51	190.37	20.86	128.05	58.80	100.04	30.58

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.14	14.24	14.24	23.91	10.11	10.11	24.10	24.10	24.10	53.76	22.79	22.79
Movement LOS	D	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	14.48			11.15			24.10			42.84		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	17.63											
Intersection LOS	B											
Intersection V/C	0.503											

Sequence

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

Proposed Piazza Hotel W-Trans
Scenario 2: 2: Existing AM Peak Hour + Project

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	373	54	361	481	0	0	0	0	252	523	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3517	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3517	
Peak-hour factor, PHF	0.90	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	410	59	397	529	0	0	0	0	277	575	60
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	410	56	397	529	0	0	0	0	277	627	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		31.4	31.4	24.4	59.8					22.2	22.2	
Effective Green, g (s)		31.4	31.4	24.4	59.8					22.2	22.2	
Actuated g/C Ratio		0.35	0.35	0.27	0.66					0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		662	563	489	1262					397	867	
v/s Ratio Prot		c0.22		c0.22	0.28						c0.18	
v/s Ratio Perm			0.03							0.17		
v/c Ratio		0.62	0.10	0.81	0.42					0.70	0.72	
Uniform Delay, d1		24.3	19.8	30.7	7.0					30.8	31.1	
Progression Factor		1.00	1.00	1.44	1.17					1.00	1.00	
Incremental Delay, d2		4.3	0.4	5.9	0.6					5.3	3.0	
Delay (s)		28.7	20.1	49.9	8.8					36.1	34.1	
Level of Service		C	C	D	A					D	C	
Approach Delay (s)		27.6			26.4			0.0			34.7	
Approach LOS		C			C			A			C	

Intersection Summary				
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	87.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	537	0	0	714	150	121	430	481	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2221			3571	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2221			3571	1615			
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	94	571	0	0	760	160	129	457	512	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	94	571	0	0	909	0	0	586	485	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	8.1	52.6			40.5			29.4	29.4			
Effective Green, g (s)	8.1	52.6			40.5			29.4	29.4			
Actuated g/C Ratio	0.09	0.58			0.45			0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	162	1110			999			1166	527			
v/s Ratio Prot	0.05	c0.30			c0.41							
v/s Ratio Perm								0.16	c0.30			
v/c Ratio	0.58	0.51			0.91			0.50	0.92			
Uniform Delay, d1	39.3	11.1			23.1			24.4	29.2			
Progression Factor	1.00	1.28			1.00			1.00	1.00			
Incremental Delay, d2	4.0	1.3			13.6			0.3	21.5			
Delay (s)	43.2	15.5			36.7			24.8	50.7			
Level of Service	D	B			D			C	D			
Approach Delay (s)		19.4			36.7			36.8			0.0	
Approach LOS		B			D			D			A	

Intersection Summary				
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	87.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave/Sebastopol Rd & Morris St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	936	3	1	847	175	3	0	3	64	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1805	1899		1805	1900	1615		1729		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1805	1899		1805	1900	1615		1729		1805	1615	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	46	975	3	1	882	182	3	0	3	67	0	32
RTOR Reduction (vph)	0	0	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	46	978	0	1	882	159	0	0	0	67	32	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.43	0.43		0.07		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	87	881		17	808	687		114		480	429	
v/s Ratio Prot	c0.03	c0.51		0.00	0.46			c0.00		c0.04	0.02	
v/s Ratio Perm						0.10						
v/c Ratio	0.53	1.11		0.06	1.09	0.23		0.00		0.14	0.07	
Uniform Delay, d1	38.4	22.2		40.6	23.8	15.1		36.0		23.1	22.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.7	65.2		1.5	59.6	0.2		0.0		0.1	0.1	
Delay (s)	44.1	87.3		42.0	83.3	15.3		36.1		23.3	22.8	
Level of Service	D	F		D	F	B		D		C	C	
Approach Delay (s)		85.4			71.7			36.1			23.1	
Approach LOS		F			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	75.8	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	62.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

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Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	917	99	165	881	102	303
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	13	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	924	99	165	894	102	303
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	245	26	44	237	27	80
Total Analysis Volume [veh/h]	980	105	175	948	108	321
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	0	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	0	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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

Proposed Piazza Hotel
Scenario 2: 2: Existing AM Peak Hour + Project
W-Trans

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	71	71	23	98	23	51
g / C, Green / Cycle	0.55	0.55	0.18	0.76	0.18	0.39
(v / s)_i Volume / Saturation Flow Rate	0.53	0.07	0.10	0.51	0.06	0.20
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1019	866	321	1413	319	620
d1, Uniform Delay [s]	28.09	14.26	48.25	7.69	46.45	30.11
k, delay calibration	0.24	0.11	0.11	0.22	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.45	0.06	1.44	1.15	0.62	0.67
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.12	0.55	0.67	0.34	0.52
d, Delay for Lane Group [s/veh]	40.54	14.32	49.69	8.84	47.08	30.78
Lane Group LOS	D	B	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	31.28	1.52	5.29	11.65	3.12	7.77
50th-Percentile Queue Length [ft]	781.89	38.10	132.25	291.23	77.95	194.25
95th-Percentile Queue Length [veh]	40.45	2.74	9.06	17.25	5.61	12.34
95th-Percentile Queue Length [ft]	1011.18	68.59	226.55	431.17	140.30	308.54

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.54	14.32	49.69	8.84	47.08	30.78
Movement LOS	D	B	D	A	D	C
d_A, Approach Delay [s/veh]	38.00		15.20		34.88	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	27.79					
Intersection LOS	C					
Intersection V/C	0.788					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Proposed Piazza Hotel
Scenario 2: 2: Existing AM Peak Hour + Project
W-Trans

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/14/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	197	748	0	0	0	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1770	1583				3539
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1770	1583				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	210	796	0	0	0	878
RTOR Reduction (vph)	70	0	0	0	0	0
Lane Group Flow (vph)	140	796	0	0	0	878
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	18.8	33.5				27.6
Effective Green, g (s)	18.8	33.5				27.6
Actuated g/C Ratio	0.35	0.62				0.51
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	611	974				1795
v/s Ratio Prot	0.08	c0.50				c0.25
v/s Ratio Perm						
v/c Ratio	0.23	0.82				0.49
Uniform Delay, d1	12.7	8.1				8.8
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.2	5.4				0.2
Delay (s)	12.8	13.5				9.0
Level of Service	B	B				A
Approach Delay (s)	13.3		0.0			9.0
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR 116)/McKinley St/Laguna Pwy

Control Type:	Two-way stop	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.344

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	733	58	26	0	0	106	0	0	0	0	61	2
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	0	0	0	0	0	0	0	18	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]	733	58	35	0	0	106	0	0	0	0	79	2
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	211	17	10	0	0	30	0	0	0	0	23	1
Total Analysis Volume [veh/h]	843	67	40	0	0	122	0	0	0	0	91	2
Pedestrian Volume [ped/h]	26			62			0			20		

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.01	0.05	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.34	0.01
d_M, Delay for Movement [s/veh]	0.00	7.60	0.00	0.00	0.00	25.72	0.00	0.00	0.00	0.00	25.77	25.03
Movement LOS	A	A	A			D					D	D
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	1.52	1.52
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	48.90	0.00	0.00	0.00	0.00	37.88	37.88
d_A, Approach Delay [s/veh]	0.54		25.72		0.00		25.75					
Approach LOS	A		D		A		D					
d_I, Intersection Delay [s/veh]	5.19											
Intersection LOS	D											

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Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	19	21	28	36	81	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	19	21	28	36	81	20
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	8	11	14	32	8
Total Analysis Volume [veh/h]	30	33	45	57	129	32
Pedestrian Volume [ped/h]	0		0		0	

Proposed Piazza Hotel W-Trans
Scenario 2: 2: 2: Existing PM Peak Hour + Project

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.04	0.04	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.57	9.14	7.62	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.11	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft]	3.48	2.84	5.80	5.80	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		3.36		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.95					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: Laguna Pwy/Morris St

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):	0.064

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	56	106	130	19	17	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	56	106	130	19	17	32
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	44	53	8	7	13
Total Analysis Volume [veh/h]	92	174	214	31	28	53
Pedestrian Volume [ped/h]	0		0		0	

Proposed Piazza Hotel W-Trans
Scenario 2: 2: 2: Existing PM Peak Hour + Project

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	0.00	0.00	0.00	0.06	0.07
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	14.13	10.30
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.75	0.75	0.00	0.00	0.44	0.44
95th-Percentile Queue Length [ft]	18.80	18.80	0.00	0.00	11.11	11.11
d_A, Approach Delay [s/veh]	2.74		0.00		11.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.409

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	5	389	84	55	563	10	14	18	1	82	33	43
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	4	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]	5	395	84	55	567	10	14	18	1	82	33	43
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	107	23	15	153	3	4	5	0	22	9	12
Total Analysis Volume [veh/h]	5	427	91	60	614	11	15	19	1	89	36	47
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

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Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-		-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	100	100	0	100	100	0	0	100	0	0	100	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	74	0	9	74	0	0	19	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	1	0	0	1	0	0	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	12	2	14	1	3	3
g / C, Green / Cycle	0.01	0.36	0.06	0.41	0.04	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.00	0.29	0.03	0.34	0.02	0.05	0.05
s, saturation flow rate [veh/h]	1774	1807	1774	1857	1815	1774	1694
c, Capacity [veh/h]	12	643	114	767	76	142	136
d1, Uniform Delay [s]	17.29	10.17	15.85	9.08	16.36	15.57	15.55
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]	19.86	2.43	3.74	2.17	4.25	4.43	4.37
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	0.40	0.81	0.53	0.81	0.46	0.62	0.61
d, Delay for Lane Group [s/veh]	37.15	12.60	19.58	11.24	20.62	20.00	19.92
Lane Group LOS	D	B	B	B	C	B	B
Critical Lane Group	Yes	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.10	2.87	0.50	3.11	0.32	0.74	0.69
50th-Percentile Queue Length [ft]	2.55	71.83	12.54	77.64	7.96	18.48	17.26
95th-Percentile Queue Length [veh]	0.18	5.17	0.90	5.59	0.57	1.33	1.24
95th-Percentile Queue Length [ft]	4.59	129.30	22.58	139.75	14.32	33.27	31.07

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.15	12.60	12.60	19.58	11.24	11.24	20.62	20.62	20.62	20.00	19.92	19.92
Movement LOS	D	B	B	B	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	12.84			11.98			20.62			19.96		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	13.48											
Intersection LOS	B											
Intersection V/C	0.409											

Sequence

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

Proposed Piazza Hotel W-Trans
Scenario 2: 2: 2: Existing PM Peak Hour + Project

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	333	63	393	521	0	0	0	0	255	650	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1863	1583	1770	1863					1580	3405	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1863	1583	1770	1863					1580	3405	
Peak-hour factor, PHF	0.90	0.93	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	0	358	68	423	560	0	0	0	0	274	699	113
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	358	68	423	560	0	0	0	0	274	812	0
Confl. Peds. (#/hr)										50		50
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		27.0	27.0	25.1	56.1					25.9	25.9	
Effective Green, g (s)		27.0	27.0	25.1	56.1					25.9	25.9	
Actuated g/C Ratio		0.30	0.30	0.28	0.62					0.29	0.29	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		558	474	493	1161					454	979	
v/s Ratio Prot		c0.19		c0.24	0.30						c0.24	
v/s Ratio Perm			0.04							0.17		
v/c Ratio		0.64	0.14	0.86	0.48					0.60	0.83	
Uniform Delay, d1		27.3	23.0	30.8	9.1					27.6	30.0	
Progression Factor		1.00	1.00	0.55	0.31					1.00	1.00	
Incremental Delay, d2		5.6	0.6	3.8	0.3					2.3	5.9	
Delay (s)		32.9	23.7	20.7	3.2					29.9	35.9	
Level of Service		C	C	C	A					C	D	
Approach Delay (s)		31.4			10.7			0.0			34.4	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	86.7%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	496	0	0	723	202	163	569	380	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.95			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1770	1863			2162			3488	1510			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1770	1863			2162			3488	1510			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	121	545	0	0	795	222	179	625	418	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	33	0	0	0
Lane Group Flow (vph)	121	545	0	0	1006	0	0	804	385	0	0	0
Confl. Peds. (#/hr)							15		15			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	9.4	52.0			38.6			30.0	30.0			
Effective Green, g (s)	9.4	52.0			38.6			30.0	30.0			
Actuated g/C Ratio	0.10	0.58			0.43			0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	184	1076			927			1162	503			
v/s Ratio Prot	c0.07	0.29			c0.47							
v/s Ratio Perm								0.23	c0.25			
v/c Ratio	0.66	0.51			1.08			0.69	0.76			
Uniform Delay, d1	38.8	11.3			25.7			26.0	26.8			
Progression Factor	0.97	0.85			1.00			1.00	1.00			
Incremental Delay, d2	6.8	1.4			55.3			1.8	6.8			
Delay (s)	44.5	11.1			81.0			27.8	33.7			
Level of Service	D	B			F			C	C			
Approach Delay (s)		17.1			81.0			29.8			0.0	
Approach LOS		B			F			C			A	

Intersection Summary				
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	86.7%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave/Sebastopol Rd & Morris St

6/14/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	818	5	3	819	126	4	5	5	145	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1863	1583		1748		1770	1595	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	1861		1770	1863	1583		1748		1770	1595	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	861	5	3	862	133	4	5	5	153	3	68
RTOR Reduction (vph)	0	0	0	0	0	11	0	5	0	0	0	0
Lane Group Flow (vph)	44	866	0	3	862	122	0	9	0	153	71	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	46.4		0.8	43.2	43.2		6.1		22.0	22.0	
Effective Green, g (s)	4.0	46.4		0.8	43.2	43.2		6.1		22.0	22.0	
Actuated g/C Ratio	0.04	0.51		0.01	0.47	0.47		0.07		0.24	0.24	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	77	945		15	881	749		116		426	384	
v/s Ratio Prot	c0.02	c0.47		0.00	c0.46			c0.01		c0.09	0.04	
v/s Ratio Perm						0.08						
v/c Ratio	0.57	0.92		0.20	0.98	0.16		0.08		0.36	0.18	
Uniform Delay, d1	42.8	20.7		44.9	23.6	13.7		40.0		28.8	27.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	9.8	13.2		6.5	24.8	0.1		0.3		0.5	0.2	
Delay (s)	52.7	33.9		51.4	48.4	13.8		40.3		29.3	27.8	
Level of Service	D	C		D	D	B		D		C	C	
Approach Delay (s)		34.8			43.8			40.3			28.8	
Approach LOS		C			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	64.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

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Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	957	89	167	820	114	211
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	13	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	966	89	167	833	114	211
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	256	24	44	221	30	56
Total Analysis Volume [veh/h]	1024	94	177	883	121	224
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Bicycle Volume [bicycles/h]	0	0	0

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Version 4.00-02 6/14/2016

Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	3	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	100	5	100	100	100	100
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	77	5	20	97	23	20
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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

Proposed Piazza Hotel W-Trans
Scenario 2: 2: 2: Existing PM Peak Hour + Project

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	52	52	13	69	13	30
g / C, Green / Cycle	0.58	0.58	0.14	0.77	0.14	0.33
(v / s)_i Volume / Saturation Flow Rate	0.55	0.06	0.10	0.47	0.07	0.14
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1080	918	256	1431	253	524
d1, Uniform Delay [s]	17.59	8.42	36.48	4.58	35.37	23.36
k, delay calibration	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
d2, Incremental Delay [s]	5.38	0.05	3.35	0.44	1.40	0.55
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.10	0.69	0.62	0.48	0.43
d, Delay for Lane Group [s/veh]	22.97	8.47	39.83	5.01	36.78	23.91
Lane Group LOS	C	A	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	18.84	0.77	3.86	5.01	2.49	3.67
50th-Percentile Queue Length [ft]	470.94	19.23	96.42	125.28	62.35	91.72
95th-Percentile Queue Length [veh]	25.96	1.38	6.94	8.68	4.49	6.60
95th-Percentile Queue Length [ft]	648.88	34.62	173.56	217.06	112.22	165.09

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Version 4.00-02 6/14/2016

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.97	8.47	39.83	5.01	36.78	23.91
Movement LOS	C	A	D	A	D	C
d_A, Approach Delay [s/veh]	21.75		10.83		28.42	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	18.07					
Intersection LOS	B					
Intersection V/C	0.767					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Proposed Piazza Hotel W-Trans
Scenario 2: 2: 2: Existing PM Peak Hour + Project

Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR116)/Mckinley Street/Laguna Park Way

Control Type:	Two-way stop	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	504	54	31	0	0	62	0	0	0	0	44	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	7	0	0	0	0	0	0	0	14	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]	515	54	38	0	0	62	0	0	0	0	58	1
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	148	16	11	0	0	18	0	0	0	0	17	0
Total Analysis Volume [veh/h]	592	62	44	0	0	71	0	0	0	0	67	1
Pedestrian Volume [ped/h]	26			62			0			20		

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Version 4.00-02 6/13/2016

Intersection Settings

Priority Scheme	Free	Stop	Free	Stop
Flared Lane				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	0.04	0.05	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.18	0.00
d_M, Delay for Movement [s/veh]	0.00	7.59	0.00	0.00	0.00	15.62	0.00	0.00	0.00	0.00	16.86	16.37
Movement LOS	A	A	A			C					C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.66	0.66
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	15.50	0.00	0.00	0.00	0.00	16.52	16.52
d_A, Approach Delay [s/veh]	0.67			15.62			0.00			16.85		
Approach LOS	A			C			A			C		
d_I, Intersection Delay [s/veh]	3.26											
Intersection LOS	C											

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

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):	0.061

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	23	56	74	24	30	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	56	74	24	30	12
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	22	29	10	12	5
Total Analysis Volume [veh/h]	37	89	118	38	48	19
Pedestrian Volume [ped/h]	0		0		0	

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Version 4.00-02 6/13/2016

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.09	0.08	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.27	8.91	7.54	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.29	0.34	0.34	0.00	0.00
95th-Percentile Queue Length [ft]	4.82	7.24	8.47	8.47	0.00	0.00
d_A, Approach Delay [s/veh]	9.61		5.70		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.02					
Intersection LOS	B					

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Intersection Level Of Service Report
Intersection 4: Laguna Park Way/Morris Street

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):	0.059

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	37	180	119	10	15	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	180	119	10	15	23
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	74	49	4	6	9
Total Analysis Volume [veh/h]	61	296	196	16	25	38
Pedestrian Volume [ped/h]	0		0		0	

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Version 4.00-02 6/13/2016

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	0.04	0.00	0.00	0.00	0.06	0.05
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	14.14	9.99
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	1.06	1.06	0.00	0.00	0.35	0.35
95th-Percentile Queue Length [ft]	26.51	26.51	0.00	0.00	8.67	8.67
d_A, Approach Delay [s/veh]	1.33		0.00		11.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	1		0	0		0	1		0
Pocket Length [ft]	70.00			100.0						100.0		
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	6	410	141	40	432	52	41	57	19	114	27	35
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	12	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
Total Hourly Volume [veh/h]	6	428	141	40	444	52	41	57	19	114	27	35
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	116	38	11	120	14	11	15	5	31	7	9
Total Analysis Volume [veh/h]	6	463	153	43	481	56	44	62	21	123	29	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]												
Local Bus Stopping Rate [/h]			0			0			0			0
Pedestrian Volume [ped/h]				0			0			0		

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Bicycle Volume [bicycles/h]	0	0	0	0

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	100	100	0	100	100	0	0	100	0	0	100	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	74	0	9	74	0	0	19	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	1	0	0	1	0	0	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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

Generated with PTV VISTRO
Version 4.00-02 6/13/2016

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C
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	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
g_i, Effective Green Time [s]	0	17	2	19	4	3	3
g / C, Green / Cycle	0.01	0.40	0.05	0.44	0.10	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.35	0.02	0.29	0.07	0.07	0.04
s, saturation flow rate [veh/h]	1774	1785	1774	1829	1780	1774	1693
c, Capacity [veh/h]	15	723	84	813	173	125	119
d1, Uniform Delay [s]	20.79	11.39	19.59	9.21	18.49	19.56	18.95
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]	17.70	2.97	4.70	0.93	5.91	33.66	4.09
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	0.41	0.85	0.51	0.66	0.73	0.98	0.56
d, Delay for Lane Group [s/veh]	38.49	14.36	24.29	10.13	24.40	53.22	23.04
Lane Group LOS	D	B	C	B	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.12	4.41	0.47	2.95	1.33	2.22	0.69
50th-Percentile Queue Length [ft]	3.09	110.37	11.81	73.66	33.25	55.52	17.27
95th-Percentile Queue Length [veh]	0.22	7.86	0.85	5.30	2.39	4.00	1.24
95th-Percentile Queue Length [ft]	5.56	196.51	21.26	132.59	59.85	99.93	31.08

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

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Version 4.00-02

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.49	14.36	14.36	24.29	10.13	10.13	24.40	24.40	24.40	53.22	23.04	23.04
Movement LOS	D	B	B	C	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	14.59			11.18			24.40			42.58		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	17.61											
Intersection LOS	B											
Intersection V/C	0.510											

Sequence

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

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	383	56	380	490	0	0	0	0	264	526	55
Future Volume (vph)	0	383	56	380	490	0	0	0	0	264	526	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3517	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3517	
Peak-hour factor, PHF	0.90	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	421	62	418	538	0	0	0	0	290	578	60
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	421	59	418	538	0	0	0	0	290	630	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.9	30.9	25.1	60.0					22.0	22.0	
Effective Green, g (s)		30.9	30.9	25.1	60.0					22.0	22.0	
Actuated g/C Ratio		0.34	0.34	0.28	0.67					0.24	0.24	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		652	554	503	1266					394	859	
v/s Ratio Prot		c0.22		c0.23	0.28						0.18	
v/s Ratio Perm			0.04							c0.18		
v/c Ratio		0.65	0.11	0.83	0.42					0.74	0.73	
Uniform Delay, d1		24.9	20.1	30.5	7.0					31.3	31.3	
Progression Factor		1.00	1.00	1.45	1.17					1.00	1.00	
Incremental Delay, d2		4.9	0.4	6.4	0.6					7.0	3.3	
Delay (s)		29.8	20.5	50.7	8.7					38.3	34.6	
Level of Service		C	C	D	A					D	C	
Approach Delay (s)		28.6			27.0			0.0			35.8	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	89.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	559	0	0	734	150	131	439	482	0	0	0
Future Volume (vph)	90	559	0	0	734	150	131	439	482	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2222			3569	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2222			3569	1615			
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	96	595	0	0	781	160	139	467	513	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	96	595	0	0	930	0	0	606	486	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	8.1	52.6			40.5			29.4	29.4			
Effective Green, g (s)	8.1	52.6			40.5			29.4	29.4			
Actuated g/C Ratio	0.09	0.58			0.45			0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	162	1110			999			1165	527			
v/s Ratio Prot	0.05	c0.31			c0.42							
v/s Ratio Perm								0.17	c0.30			
v/c Ratio	0.59	0.54			0.93			0.52	0.92			
Uniform Delay, d1	39.4	11.3			23.4			24.6	29.2			
Progression Factor	0.98	1.31			1.00			1.00	1.00			
Incremental Delay, d2	4.2	1.3			16.0			0.4	21.8			
Delay (s)	42.7	16.1			39.5			25.0	51.0			
Level of Service	D	B			D			C	D			
Approach Delay (s)		19.8			39.5			36.9			0.0	
Approach LOS		B			D			D			A	

Intersection Summary				
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	89.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave & Morris St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	957	3	1	870	175	3	0	3	64	0	31
Future Volume (vph)	44	957	3	1	870	175	3	0	3	64	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1805	1899		1805	1900	1615		1729		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1805	1899		1805	1900	1615		1729		1805	1615	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	46	997	3	1	906	182	3	0	3	67	0	32
RTOR Reduction (vph)	0	0	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	46	1000	0	1	906	159	0	0	0	67	32	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		5.5		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.43	0.43		0.07		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	87	881		17	808	687		114		480	429	
v/s Ratio Prot	c0.03	c0.53		0.00	0.48			c0.00		c0.04	0.02	
v/s Ratio Perm						0.10						
v/c Ratio	0.53	1.14		0.06	1.12	0.23		0.00		0.14	0.07	
Uniform Delay, d1	38.4	22.2		40.6	23.8	15.1		36.0		23.1	22.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.7	74.7		1.5	70.5	0.2		0.0		0.1	0.1	
Delay (s)	44.1	96.9		42.0	94.3	15.3		36.1		23.3	22.8	
Level of Service	D	F		D	F	B		D		C	C	
Approach Delay (s)		94.6			81.0			36.1			23.1	
Approach LOS		F			F			D			C	

Intersection Summary				
HCM 2000 Control Delay	84.7	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	63.5%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	917	99	165	881	102	303
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	0	36	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	945	99	165	917	102	303
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	251	26	44	243	27	80
Total Analysis Volume [veh/h]	1002	105	175	972	108	321
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

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Bicycle Volume [bicycles/h]	0	0	0

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	0	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	Lead	-	Lead	
Minimum Green [s]	5	0	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	1	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	79	79	25	108	25	55
g / C, Green / Cycle	0.56	0.56	0.18	0.76	0.18	0.39
(v / s)_i Volume / Saturation Flow Rate	0.54	0.07	0.10	0.52	0.06	0.20
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1037	881	319	1425	317	613
d1, Uniform Delay [s]	30.10	14.89	52.78	8.19	50.81	33.36
k, delay calibration	0.30	0.11	0.11	0.28	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.06	0.06	1.47	1.52	0.63	0.70
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.12	0.55	0.68	0.34	0.52
d, Delay for Lane Group [s/veh]	45.16	14.95	54.25	9.71	51.44	34.05
Lane Group LOS	D	B	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	35.84	1.65	5.82	13.52	3.43	8.65
50th-Percentile Queue Length [ft]	896.01	41.21	145.57	337.96	85.82	216.28
95th-Percentile Queue Length [veh]	45.66	2.97	9.78	19.55	6.18	13.47
95th-Percentile Queue Length [ft]	1141.47	74.18	244.50	488.71	154.48	336.87

Proposed Piazza Hotel W-Trans
Scenario 4: 4: Cumulative AM Peak Hour + Project

Generated with PTV VISTRO
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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.16	14.95	54.25	9.71	51.44	34.05
Movement LOS	D	B	D	A	D	C
d_A, Approach Delay [s/veh]	42.29		16.51		38.43	
Approach LOS	D		B		D	
d_I, Intersection Delay [s/veh]	30.65					
Intersection LOS	C					
Intersection V/C	0.800					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

HCM Signalized Intersection Capacity Analysis
1: Main St & McKinley St

6/13/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	197	782	0	0	0	860
Future Volume (vph)	197	782	0	0	0	860
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0				4.0
Lane Util. Factor	1.00	1.00				0.95
Frt	1.00	0.85				1.00
Flt Protected	0.95	1.00				1.00
Satd. Flow (prot)	1805	1615				3610
Flt Permitted	0.95	1.00				1.00
Satd. Flow (perm)	1805	1615				3610
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	212	841	0	0	0	925
RTOR Reduction (vph)	61	0	0	0	0	0
Lane Group Flow (vph)	151	841	0	0	0	925
Heavy Vehicles (%)	0%	0%	2%	2%	2%	0%
Turn Type	Prot	custom				NA
Protected Phases	8	2 8				6
Permitted Phases		8				
Actuated Green, G (s)	19.2	33.8				27.6
Effective Green, g (s)	19.2	33.8				27.6
Actuated g/C Ratio	0.35	0.62				0.50
Clearance Time (s)	4.0					4.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	632	996				1818
v/s Ratio Prot	0.08	c0.52				c0.26
v/s Ratio Perm						
v/c Ratio	0.24	0.84				0.51
Uniform Delay, d1	12.6	8.4				9.1
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.2	6.7				0.2
Delay (s)	12.8	15.1				9.3
Level of Service	B	B				A
Approach Delay (s)	14.6		0.0			9.3
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection Level Of Service Report
Intersection 2: Petaluma Ave (SR 116)/McKinley St/Laguna Pwy

Control Type:	Two-way stop	Delay (sec / veh):	27.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

Intersection Setup

Name				Laguna Park Wy			McKinley St					
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]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

volumes

Name				Laguna Park Wy			McKinley St					
Base Volume Input [veh/h]	733	58	26	0	0	106	0	0	0	0	61	2
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	0	9	0	0	0	0	0	0	0	18	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]	767	58	35	0	0	106	0	0	0	0	79	2
Peak Hour Factor	0.870	0.870	0.870	1.000	1.000	0.870	1.000	1.000	1.000	1.000	0.870	0.870
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	220	17	10	0	0	30	0	0	0	0	23	1
Total Analysis Volume [veh/h]	882	67	40	0	0	122	0	0	0	0	91	2
Pedestrian Volume [ped/h]	26			62			0			20		

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Intersection Settings

Priority Scheme	Free		Stop		Free		Stop	
Flared Lane							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	0.01	0.05	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.36	0.01
d_M, Delay for Movement [s/veh]	0.00	7.60	0.00	0.00	0.00	27.62	0.00	0.00	0.00	0.00	27.52	26.72
Movement LOS	A	A	A			D					D	D
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	2.11	0.00	0.00	0.00	0.00	1.63	1.63
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	52.75	0.00	0.00	0.00	0.00	40.70	40.70
d_A, Approach Delay [s/veh]	0.52			27.62			0.00			27.50		
Approach LOS	A			D			A			D		
d_I, Intersection Delay [s/veh]	5.35											
Intersection LOS	D											

Proposed Piazza Hotel W-Trans
Scenario 4: 4: 4: Cumulative PM Peak Hour + Project

Intersection Level Of Service Report
Intersection 3: Laguna Park Way/Johnson St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Johnson St		Laguna Park Wy			
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		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

volumes

Name	Johnson St		Laguna Park Wy			
Base Volume Input [veh/h]	19	21	28	36	81	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	19	21	28	36	81	20
Peak Hour Factor	0.6290	0.6290	0.6290	0.6290	0.6290	0.6290
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	8	11	14	32	8
Total Analysis Volume [veh/h]	30	33	45	57	129	32
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.04	0.04	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.57	9.14	7.62	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.11	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft]	3.48	2.84	5.80	5.80	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		3.36		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.95					
Intersection LOS	B					

Proposed Piazza Hotel W-Trans
Scenario 4: 4: 4: Cumulative PM Peak Hour + Project

Intersection Level Of Service Report
Intersection 4: Laguna Pwy/Morris St

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):	0.064

Intersection Setup

Name			Morris St			
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	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

volumes

Name			Morris St			
Base Volume Input [veh/h]	56	106	130	19	17	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	56	106	130	19	17	32
Peak Hour Factor	0.6080	0.6080	0.6080	0.6080	0.6080	0.6080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	44	53	8	7	13
Total Analysis Volume [veh/h]	92	174	214	31	28	53
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	0.07	0.00	0.00	0.00	0.06	0.07
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	14.13	10.30
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.75	0.75	0.00	0.00	0.44	0.44
95th-Percentile Queue Length [ft]	18.80	18.80	0.00	0.00	11.11	11.11
d_A, Approach Delay [s/veh]	2.74		0.00		11.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Bodega Ave/Jewell Ave

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.424

Intersection Setup

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell 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	0	0	0	1	0	0
Pocket Length [ft]	70.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

volumes

Name	Bodega Ave			Bodega Ave			Dutton Ave			Jewell Ave		
Base Volume Input [veh/h]	5	389	84	55	563	10	14	18	1	82	33	43
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	0	0	30	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]	5	420	84	55	593	10	14	18	1	82	33	43
Peak Hour Factor	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	114	23	15	160	3	4	5	0	22	9	12
Total Analysis Volume [veh/h]	5	455	91	60	642	11	15	19	1	89	36	47
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		

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Bicycle Volume [bicycles/h]	0	0	0	0

Proposed Piazza Hotel W-Trans
Scenario 4: 4: 4: Cumulative PM Peak Hour + Project

Intersection Settings

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

Phasing & Timing

Control Type	Protec	Permi	Permi	Protec	Permi	Permi	Split	Split	Split	Split	Split	Split
Signal group	5	2		1	6			8			4	
Auxiliary Signal Groups												
Lead / Lag	Lead			Lead								
Minimum Green [s]	5	5		5	5			5			5	
Maximum Green [s]	100	100		100	100			100			100	
Amber [s]	3.0	3.0		3.0	3.0			3.0			3.0	
All red [s]	1.0	1.0		1.0	1.0			1.0			1.0	
Split [s]	9	74		9	74			19			18	
Vehicle Extension [s]	3.0	3.0		3.0	3.0			3.0			3.0	
Walk [s]					1			1			1	
Pedestrian Clearance [s]					0			0			0	
I1, Start-Up Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
I2, Clearance Lost Time [s]	2.0	2.0		2.0	2.0			2.0			2.0	
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]												
Detector Length [ft]												
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	L	C	C	L	C
t_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]							
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]	0	13	2	15	1	3	3
g / C, Green / Cycle	0.01	0.37	0.06	0.43	0.04	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.00	0.30	0.03	0.35	0.02	0.05	0.05
s, saturation flow rate [veh/h]	1774	1810	1774	1857	1815	1774	1694
c, Capacity [veh/h]	12	670	113	793	76	141	135
d1, Uniform Delay [s]	17.78	10.22	16.32	9.11	16.84	16.04	16.02
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]	19.88	2.49	3.82	2.23	4.31	4.58	4.52
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	0.40	0.82	0.53	0.82	0.46	0.63	0.62
d, Delay for Lane Group [s/veh]	37.67	12.71	20.14	11.34	21.14	20.63	20.54
Lane Group LOS	D	B	C	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.10	3.12	0.52	3.34	0.33	0.77	0.72
50th-Percentile Queue Length [ft]	2.58	77.93	13.00	83.57	8.21	19.20	17.93
95th-Percentile Queue Length [veh]	0.19	5.61	0.94	6.02	0.59	1.38	1.29
95th-Percentile Queue Length [ft]	4.65	140.28	23.39	150.42	14.78	34.57	32.28

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.67	12.71	12.71	20.14	11.34	11.34	21.14	21.14	21.14	20.63	20.54	20.54
Movement LOS	D	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	12.94			12.08			21.14			20.59		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	13.61											
Intersection LOS	B											
Intersection V/C	0.424											

Sequence

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

HCM Signalized Intersection Capacity Analysis
6: Bodega Ave/Sebastopol Ave & Main St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	354	67	450	547	0	0	0	0	282	658	105
Future Volume (vph)	0	354	67	450	547	0	0	0	0	282	658	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.89	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1900	1615	1805	1900					1612	3475	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		1900	1615	1805	1900					1612	3475	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	0	389	74	495	601	0	0	0	0	310	723	115
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	389	70	495	601	0	0	0	0	310	831	0
Confl. Peds. (#/hr)										50		50
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2							4		
Actuated Green, G (s)		25.6	25.6	27.8	57.4					24.6	24.6	
Effective Green, g (s)		25.6	25.6	27.8	57.4					24.6	24.6	
Actuated g/C Ratio		0.28	0.28	0.31	0.64					0.27	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		540	459	557	1211					440	949	
v/s Ratio Prot		c0.20		c0.27	0.32						c0.24	
v/s Ratio Perm			0.04							0.19		
v/c Ratio		0.72	0.15	0.89	0.50					0.70	0.88	
Uniform Delay, d1		29.0	24.1	29.6	8.6					29.4	31.2	
Progression Factor		1.00	1.00	1.49	1.12					1.00	1.00	
Incremental Delay, d2		8.1	0.7	7.0	0.6					5.1	9.1	
Delay (s)		37.0	24.8	51.1	10.2					34.5	40.3	
Level of Service		D	C	D	B					C	D	
Approach Delay (s)		35.1			28.7			0.0			38.7	
Approach LOS		D			C			A			D	

Intersection Summary				
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	89.2%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Sebastopol Ave & Petaluma Ave

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	544	0	0	782	202	193	597	386	0	0	0
Future Volume (vph)	116	544	0	0	782	202	193	597	386	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			*0.60			0.95	1.00			
Frt	1.00	1.00			0.97			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1805	1900			2210			3566	1615			
Flt Permitted	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	1805	1900			2210			3566	1615			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	122	573	0	0	823	213	203	628	406	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	27	0	0	0
Lane Group Flow (vph)	122	573	0	0	1025	0	0	831	379	0	0	0
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	9.9	53.6			39.7			28.4	28.4			
Effective Green, g (s)	9.9	53.6			39.7			28.4	28.4			
Actuated g/C Ratio	0.11	0.60			0.44			0.32	0.32			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	198	1131			974			1125	509			
v/s Ratio Prot	c0.07	0.30			c0.46							
v/s Ratio Perm								0.23	c0.23			
v/c Ratio	0.62	0.51			1.05			0.74	0.74			
Uniform Delay, d1	38.2	10.5			25.1			27.5	27.5			
Progression Factor	0.92	1.39			1.00			1.00	1.00			
Incremental Delay, d2	4.0	1.1			43.6			2.6	5.8			
Delay (s)	39.0	15.8			68.7			30.1	33.4			
Level of Service	D	B			E			C	C			
Approach Delay (s)		19.9			68.7			31.1			0.0	
Approach LOS		B			E			C			A	

Intersection Summary				
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	89.2%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Sebastopol Ave & Morris St

6/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	878	5	3	878	126	4	5	5	145	3	65
Future Volume (vph)	42	878	5	3	878	126	4	5	5	145	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1805	1898		1805	1900	1615		1783		1805	1627	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1805	1898		1805	1900	1615		1783		1805	1627	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	915	5	3	915	131	4	5	5	151	3	68
RTOR Reduction (vph)	0	0	0	0	0	23	0	5	0	0	0	0
Lane Group Flow (vph)	44	920	0	3	915	108	0	9	0	151	71	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	4.0	38.4		0.8	35.2	35.2		6.1		22.0	22.0	
Effective Green, g (s)	4.0	38.4		0.8	35.2	35.2		6.1		22.0	22.0	
Actuated g/C Ratio	0.05	0.46		0.01	0.42	0.42		0.07		0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	86	874		17	802	682		130		476	429	
v/s Ratio Prot	c0.02	c0.48		0.00	c0.48			c0.01		c0.08	0.04	
v/s Ratio Perm						0.07						
v/c Ratio	0.51	1.05		0.18	1.14	0.16		0.07		0.32	0.17	
Uniform Delay, d1	38.7	22.4		40.9	24.0	14.9		36.0		24.6	23.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.1	45.2		4.9	78.1	0.1		0.2		0.4	0.2	
Delay (s)	43.8	67.7		45.8	102.2	15.0		36.2		25.0	23.8	
Level of Service	D	E		D	F	B		D		C	C	
Approach Delay (s)		66.6			91.1			36.2			24.6	
Approach LOS		E			F			D			C	

Intersection Summary				
HCM 2000 Control Delay	73.7	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	67.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Intersection Level Of Service Report
Intersection 9: Sebastopol Ave (SR 12)/Llano Rd

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.803

Intersection Setup

Name	Sebastopol Ave		SR 12		Llano Rd	
Approach	Northeastbound		Southwestbound		Northwestbound	
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	1	1	0	1	0
Pocket Length [ft]	100.00	320.00	140.00	100.00	210.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		No	

volumes

Name	Sebastopol Ave		SR 12		Llano Rd	
Base Volume Input [veh/h]	957	89	167	820	114	211
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	69	0	0	72	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1026	89	167	892	114	211
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	272	24	44	236	30	56
Total Analysis Volume [veh/h]	1088	94	177	946	121	224
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

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Version 4.00-02 6/13/2016

Bicycle Volume [bicycles/h]	0	0	0

Proposed Piazza Hotel W-Trans
Scenario 4: 4: 4: Cumulative PM Peak Hour + Project

Intersection Settings

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

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Overlap
Signal group	2	0	1	6	4	1
Auxiliary Signal Groups						1,4
Lead / Lag			Lead		Lead	
Minimum Green [s]	5	0	5	5	5	5
Maximum Green [s]	100	0	100	100	100	100
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0
Split [s]	77	0	20	97	23	20
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	1	0	0	1	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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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Version 4.00-02 6/13/2016

Lane Group Calculations

Lane Group	C	R	L	C	L	R
L, Total Lost Time per Cycle [s]	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
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	66	66	15	85	15	34
g / C, Green / Cycle	0.61	0.61	0.14	0.79	0.14	0.32
(v / s)_i Volume / Saturation Flow Rate	0.58	0.06	0.10	0.51	0.07	0.14
s, saturation flow rate [veh/h]	1863	1583	1774	1863	1774	1583
c, Capacity [veh/h]	1134	964	250	1465	248	502
d1, Uniform Delay [s]	19.91	8.80	44.35	5.01	42.97	29.36
k, delay calibration	0.20	0.11	0.11	0.14	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.85	0.04	3.68	0.62	1.49	0.62
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.10	0.71	0.65	0.49	0.45
d, Delay for Lane Group [s/veh]	29.76	8.85	48.03	5.63	44.46	29.98
Lane Group LOS	C	A	D	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	26.28	0.90	4.76	7.03	3.08	4.68
50th-Percentile Queue Length [ft]	657.09	22.43	118.96	175.67	77.04	117.00
95th-Percentile Queue Length [veh]	34.69	1.62	8.34	11.37	5.55	8.23
95th-Percentile Queue Length [ft]	867.29	40.38	208.40	284.36	138.68	205.70

Proposed Piazza Hotel W-Trans
Scenario 4: 4: 4: Cumulative PM Peak Hour + Project

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.76	8.85	48.03	5.63	44.46	29.98
Movement LOS	C	A	D	A	D	C
d_A, Approach Delay [s/veh]	28.10		12.31		35.06	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	22.31					
Intersection LOS	C					
Intersection V/C	0.803					

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix C

Pedestrian Crossing Warrants

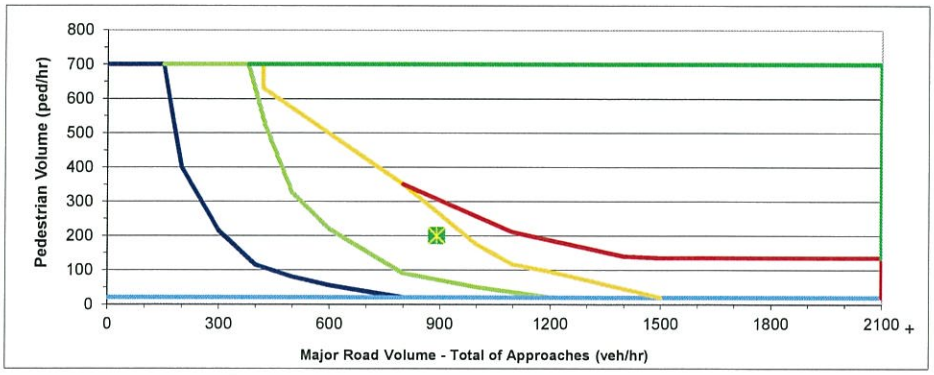
TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information			
Analyst:	Steve Weinberger	Major Street:	SR116
Analysis Date:	5/17/2016	Minor Street or Location:	McKinley Street
Data Collection Date:	4/1/2014	Peak Hour:	4:30

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):		
a) Worksheet 1 - 35 mph or less		
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), vp	2a	200
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
0		
Major road volume, total of both approaches during peak hour (veh/h), V maj-s	3a	892
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 OR [(0.00021 3a² - 0.74072 3a + 734.125)/0.75]	3b	320.6562667
If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	320.6562667
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	358
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	42
Pedestrian walking speed (ft.s), Sp	4b	3.5
Pedestrian start-up time and end clearance time (s), ts	4c	4
Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	4d	16
Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	4e	892
Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	4f	0.247777778
Average pedestrian delay (s/person), dp = $(e^{v\,tc}$ - v tc - 1) / v OR [$(e^{4f \times 4d}$-4f x 4d - 1) / 4f]	4g	192.6183392
Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600] (this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	10.70101884
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	LOW

Total Pedestrian Delay, Dp (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	DO NOT USE CROSSWALK

Roadway Configuration: 56' Wide, <35 mph, Vped = 3.5 ft/s



Legend:
Study Intersection
Striped Crosswalk
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Signal
No Treatment

Description of Treatment Types:		
Red:	Enhanced-High Visibility/Active when Present	
Midblock Signal	*Active When Present*	*Enhanced/High Visibility*
	In Roadway Warning Lights	In-Street Crossing Signs
Half Signal	Passive/Pushbutton Flashing Beacons	High Visibility Signs/Markings
		Pedestrian Refuge Islands
HAWK	Pedestrian Crossing Flags	Raised Crosswalks
		Curb Extensions
	Rapid Rectangular Flashing Beacons	Advanced Signage
		Advanced Stop/Yield Lines
		Constant Flashing Yellow Beacons

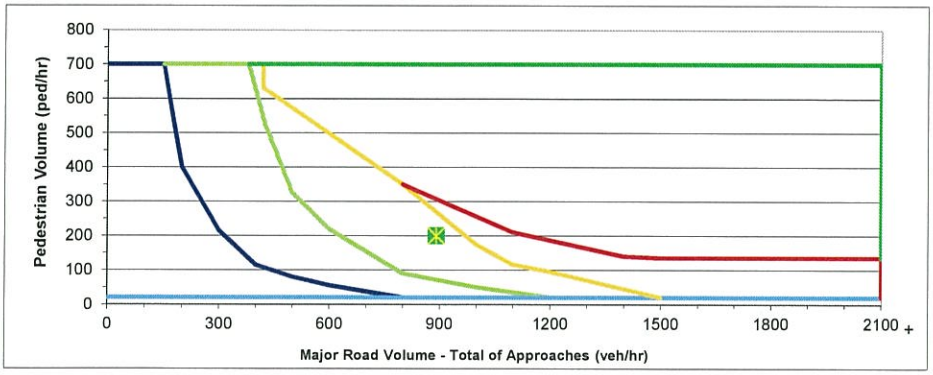
TCRP Report 112 - NCHRP Report 562 - Pedestrian Crossing Treatment Worksheet
Worksheet 1: Peak-Hour, 35 MPH or Less

Analyst and Site Information			
Analyst:	Steve Weinberger	Major Street:	SR116
Analysis Date:	5/17/2016	Minor Street or Location:	McKinley Street
Data Collection Date:	4/1/2014	Peak Hour:	4:30

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):		
a) Worksheet 1 - 35 mph or less		
b) Worksheet 2- exceeds 35 mph, communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), vp	2a	200
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
0		
Major road volume, total of both approaches during peak hour (veh/h), V maj-s	3a	892
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = 0.00021 Vmaj-s² - 0.74072 Vmaj-s + 734.125)/0.75 OR [(0.00021 3a² - 0.74072 3a + 734.125)/0.75]	3b	320.6562667
If 3b< 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	320.6562667
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	358
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	21
Pedestrian walking speed (ft.s), Sp	4b	3.5
Pedestrian start-up time and end clearance time (s), ts	4c	4
Critical gap required for crossing pedestrian (s), tc= (L/Sp) + ts OR [(4a/4b) + 4c)]	4d	10
Major road volume, total of both approaches or approach being crossed if median refuge island is present during peak hour (veh.h), Vmaj-d	4e	892
Major road flow rate (veh/s), v = Vmaj-d/3600 OR [4e/3600]	4f	0.247777778
Average pedestrian delay (s/person), dp = $(e^{v*tc}$ - v tc - 1) / v OR [$(e^{4f \times 4d}$-4f x 4d - 1) / 4f]	4g	34.05059177
Total pedestrian delay (h), Dp=(dp x Vp) / 3600 OR [(4g x 2a) / 3600] (this is estimated delayfor all pedestrians crossing the major roadway without a crossing treatment - assumes 05 compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	1.891699543
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	LOW

Total Pedestrian Delay, Dp (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
Dp ≥21.3h (Comp = high or low) OR 5.3h≤Dp<21.3 h and Comp = low	DO NOT USE RED
1.3h ≤ Dp < 21.3h and Comp = high or low) OR 5.3 ≤ Dp < 21.3 h and Comp = high	USE ACTIVE OR ENHANCED
Dp < 1.3 h (Comp = high or low)	DO NOT USE CROSSWALK

Roadway Configuration: 56' Wide, <35 mph, Vped = 3.5 ft/s



Legend:
Study Intersection
Striped Crosswalk
Enhanced-High Visibility/Active when Present
Red
Enhanced-High Visibility/Active when Present (if high compliance expected) OR Red (if low compliance expected)
Signal
No Treatment

Description of Treatment Types:		
Red:	Enhanced-High Visibility/Active when Present	
Midblock Signal	*Active When Present*	*Enhanced/High Visibility*
	In Roadway Warning Lights	In-Street Crossing Signs
Half Signal		High Visibility Signs/Markings
	Passive/Pushbutton	Pedestrian Refuge Islands
HAWK	Flashing Beacons	Raised Crosswalks
	Pedestrian Crossing Flags	Curb Extensions
		Advanced Signage
	Rapid Rectangular Flashing Beacons	Advanced Stop/Yield Lines
		Constant Flashing Yellow Beacons

Appendix D

Air Quality and Greenhouse Gas Emissions Assessment
Illingworth & Rodkin, June 2, 2016

HOTEL SEBASTOPOL PROJECT DRAFT AIR QUALITY AND GREENHOUSE GAS EMISSIONS ASSESSMENT

Sebastopol, California

June 2, 2016

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Project: 16-087

Introduction

This report addresses air quality and greenhouse gas (GHG) impacts from implementation of the proposed project. We understand that the project would develop a new hotel just west of "The Barlow District" in the City of Sebastopol. Hotel Sebastopol proposes 65 hotel rooms, lobby and reception, restaurant and bar areas, a wellness center, meeting rooms, rooftop decks, other hotel amenities and retail space, and parking. This project would also involve the demolition of an existing building located at 6828 Depot Street. The project site is flat and would not require substantial grading. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD)[1].

Setting

The project is located in the southern portion of Sonoma County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

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[1] BAAQMD 2011. BAAQMD CEQA Air Quality Guidelines. May.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[3]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. There are residences near the site, with the closest being to the north. In addition, the Sebastopol Charter School is located to the southwest.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These Thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

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[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: June 9, 2015.
[3] Bay Area Air Quality Management District, 2011. *BAAQMD CEQA Air Quality Guidelines.* May.

The BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. Accordingly, the case is currently pending back in the Court of Appeal. Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project.

Table 1. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	>10 per one million		
Chronic or Acute Hazard Index	>1.0		
Incremental annual average $PM_{2.5}$	>0.3 $\mu g/m^3$		
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	>100 per one million		
Chronic Hazard Index	>10.0		
Annual Average $PM_{2.5}$	>0.8 $\mu g/m^3$		
Greenhouse Gas Emissions			
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan? ***Less than significant***

The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* that was adopted by BAAQMD in September 2010. The proposed project would not conflict with the latest Clean Air planning efforts since the project would have emissions well below the BAAQMD thresholds (see Impact 2), and development would be near existing transit with regional connections. The project, at 65 rooms, is too small to exceed any of the significance thresholds and, thus, it is not required to incorporate project-specific transportation control measures listed in the latest Clean Air Plan.

Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less than significant with construction period mitigation***

The Bay Area 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 and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2013.2.2 was used to predict emissions from construction of the site assuming full build out of the project. The project land use types and size, and default construction schedule were input to CalEEMod.

Construction period emissions

CalEEMod provided annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario, including equipment list and schedule, was developed based on the CalEEMod defaults for a project of this type and size. The proposed project land uses were input into CalEEMod, which included: 65 rooms entered as "Hotel," 88 parking spaces entered as "Parking Lot," 4,240 square feet (sf) entered as "High Turnover (Sit Down Restaurant)," and 2,964 sf entered as "Strip Mall" on 1.48 acres.The demolition volume was estimated using Google Earth and inputting the area to CalEEMod. The building demolition area is estimated to be 24,700 sf.

The CalEEMod default construction schedule assumes that the project would be built out over a period of approximately 12 months beginning in January 2017, or an estimated 246 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, construction criteria pollutant emissions would not exceed the BAAQMD significance thresholds. *Attachment 2* includes the CalEEMod input and output values for construction emissions.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices.*

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions	1.09 tons	2.51 tons	0.15 tons	0.14 tons
Average daily emissions (pounds)[1]	8.9 lbs.	20.4 lbs.	1.2 lbs.	1.1 lbs.
BAAQMD Thresholds (pounds per day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 246 workdays.				

Operational Period Emissions

Due to the project size, operational-period emissions would be less than significant. In the 2011 update to the CEQA Air Quality Guidelines, BAAQMD identifies screening criteria for the sizes of land use projects that could result in significant air pollutant emissions. For operational impacts, the screening project size is identified at 489 rooms. Hotel projects of smaller size would be expected to have less-than-significant impacts with respect to operational-period emissions. Since the project proposes to develop 65 rooms, it is concluded that emissions would be below the BAAQMD significance thresholds for the operational period. Stationary sources of air pollution (e.g., back-up generators) have not been identified with this project.

Mitigation Measure AQ-1: Include basic measures to control dust and exhaust during construction.

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-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 is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. 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.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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.

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less than significant***

As discussed under Impact 2, the project would have emissions less than the BAAQMD screening size for evaluating impacts related to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[4]

Impact 4: Expose sensitive receptors to substantial pollutant concentrations? ***Less than significant with construction period mitigation***

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust poses both potential health and nuisance impacts to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects to sensitive receptors at nearby residences and the Sebastopol Charter School from construction emissions of DPM and $PM_{2.5}$.[5] A dispersion model was used to predict the off-site DPM concentrations resulting from project construction so that lifetime cancer risks could be predicted. Figure 1 shows the project site and sensitive receptor locations used in the air quality dispersion modeling analysis where potential community risk impacts were evaluated. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

[4] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

[5] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

On-Site Construction TAC Emissions

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The CalEEMod model provided total annual $PM_{2.5}$ exhaust emissions (assumed to be DPM) for the off-road construction equipment used for construction of the project and for the exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles) of 0.1409 tons (282 pounds) over the construction period. A trip length of one-half mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. Fugitive dust $PM_{2.5}$ emissions were also computed and included in this analysis. The model predicted emissions of 0.0105 tons (21 pounds) of fugitive $PM_{2.5}$ over the construction period. Construction emissions and modeling results are included in *Attachment 2*.

Dispersion Modeling

The U.S. EPA ISCST3 dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at existing sensitive receptors (residences and Sebastopol Charter School) in the vicinity of the project construction area. The ISCST3 dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[6] The dispersion modeling utilized two area sources to represent the on-site construction emissions, one for DPM exhaust emissions and the other for fugitive $PM_{2.5}$ dust emissions. For the exhaust emissions from construction equipment, an emission release height of six meters (19.7 feet) was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of two meters (6.6 feet) was used for the area sources. Construction emissions were modeled as occurring daily between 7 a.m. and 4 p.m.

The modeling used a five-year data set (2001 - 2005) of hourly meteorological data from the Santa Rosa Airport prepared by the BAAQMD for use with the ISCST3 model. Annual DPM and $PM_{2.5}$ concentrations from construction activities in 2017 were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby residential and school locations at a receptor height of 1.5 meters (4.9 feet) to represent the first floor building level. The maximum-modeled $PM_{2.5}$ and DPM concentration occurred directly north of the project construction site a single-family residence located on Johnson Street, as shown in Figure 1.

Results of this assessment indicate that the maximum increased residential cancer risks would be 13.9 in one million for an infant exposure and 0.3 in one million for an adult exposure. The maximum residential excess cancer risk would be greater than the BAAQMD significance threshold of 10 in one million and would be considered significant. Implementation of Mitigation Measure AQ-1 and AQ-2 would reduce this impact to a level of less than significant.

[6] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

At the Sebastopol Charter School, the maximum increased cancer risk would be 0.2 in one million for a child exposure.

Predicted Annual $PM_{2.5}$ Concentration

The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.1 $\mu g/m^3$, occurring at the residential MEI. At the Charter School, the maximum annual PM2.5 concentration would be 0.0 $\mu g/m^3$. Therefore, the maximum annual $PM_{2.5}$ concentration at the MEI residential receptor and school locations would not exceed the BAAQMD significance threshold of a $PM_{2.5}$ concentration greater than 0.3 $\mu g/m^3$.

Non-Cancer Hazards

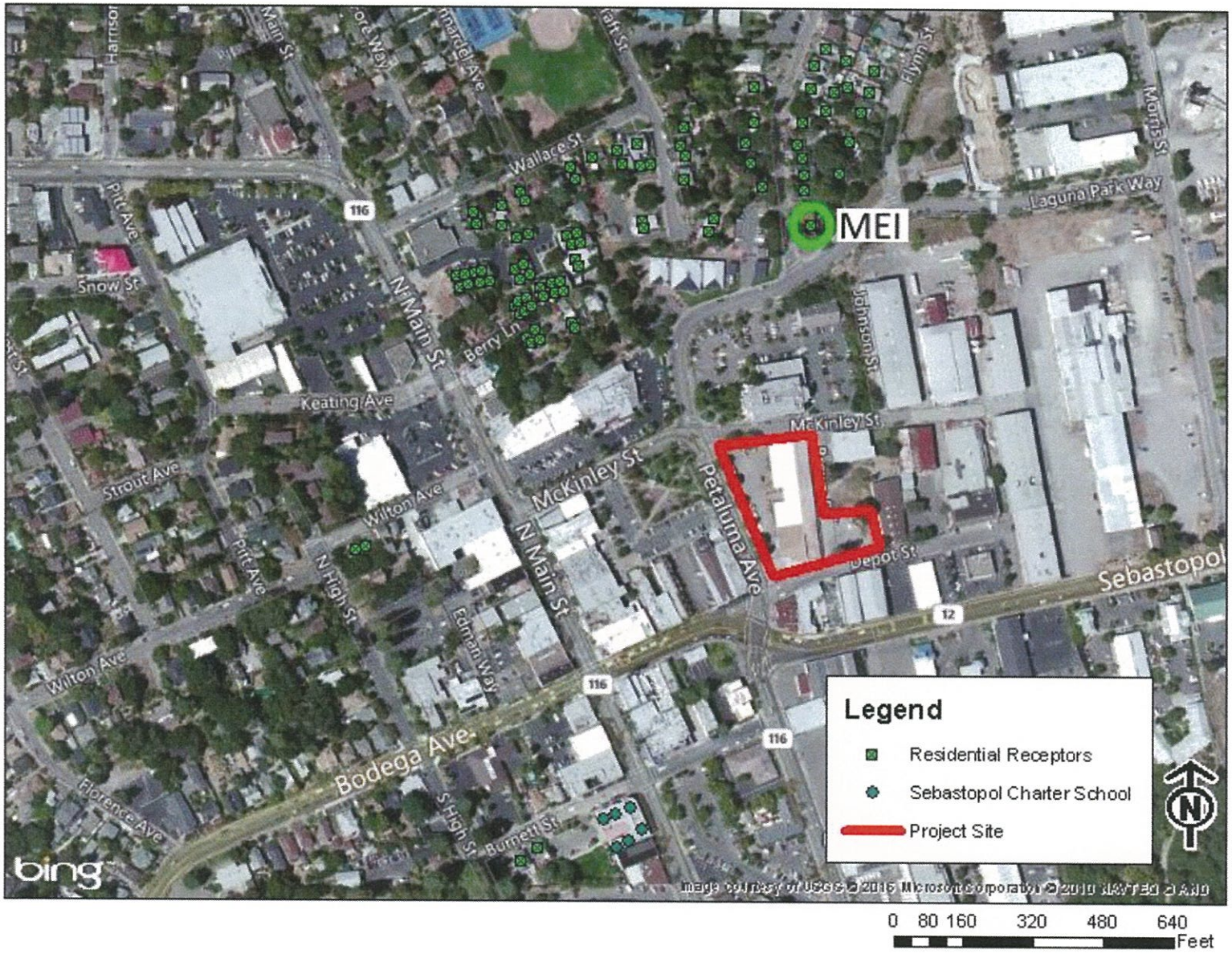
The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.093 $\mu g/m^3$. The maximum computed HI based on this DPM concentration is 0.02, which is much lower than the BAAQMD significance criterion of a HI greater than 1.0. The maximum computed HI at the Charter School is less than 0.01.

Mitigation Measure AQ-2: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.

1. All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

Effectiveness of Mitigation: Implementation of recommended best management practices (i.e., *Mitigation Measure AQ-1*) is considered to reduce exhaust emissions by 5 percent and fugitive dust emissions by over 50 percent. Implementation of *Mitigation Measure AQ-2* would further reduce on-site diesel exhaust emissions. With this mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant/child exposure, would be 9.1 in one million. This cancer risk would be below the BAAQMD threshold of greater than 10.0 per one million for cancer risk. *After implementation of these recommended measures, the project would have a less-than-significant impact with respect to community risk caused by construction activities.*

Figure 1. Project Construction Site, Locations of Sensitive Receptors, and Maximum Cancer Risk



Impact 5: Create objectionable odors affecting a substantial number of people? ***Less than significant***

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by nearby receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses. This would be a *less-than-significant* impact

Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less than significant***

The project is located in the southern portion of Sonoma County, where air quality is regulated at the local level by the Bay Area Air Quality Management District. The BAAQMD CEQA Air Quality Guidelines contain methodology and thresholds of significance for evaluating greenhouse gas (GHG) emissions from land use type projects. The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of Assembly Bill 32 (AB 32) scoping plan measures that would reduce regional emissions. BAAQMD intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. The BAAQMD suggested applying GHG efficiency thresholds to projects with emissions of 1,100 metric tons (MT) of CO_2e (carbon dioxide equivalency) or greater[7]. Projects that have emissions below 1,100 MT of CO_2e per year are considered to have less than significant GHG emissions.

Methodology

GHG emissions for the construction period and the full build out scenario of the proposed project were computed using CalEEMod.. Construction emissions were based on the size and type of the project and model defaults, including those for phasing, duration and equipment usage. The model predicts emissions of GHG in the form of equivalent carbon dioxide emissions or CO_2e. CalEEMod also predicts emissions from traffic generated by the project as well as emissions associated with energy usage, water usage and solid waste generation. CalEEMod is the model recommended by BAAQMD for predicting emissions from land use development projects, such as this one. In addition, an existing run was conducted to determine net project emissions.

Land Use Types

The following land use types were input to the model.

Proposed Use

- Hotel = 65 rooms
- High Turnover (Sit Down Restaurant) = 4, 240 square feet
- Strip Mall= 2, 964 square feet
- Parking Lot = 88 spaces

[7] BAAQMD. 2009. California Environmental Quality Act Guidelines Update Proposed Thresholds of Significance. December.

Existing Use

- Hardwar e/ Paint Store= 5, 954 square feet

Construction Emissions

The CalEEMod model was used to predict construction GHG emissions. The model default 12--month construction schedule was used in the modeling. Construction phases included demolition, site preparation, site grading, paving, building construction and application of architectural coatings. CO_2e emissions associated with construction were assumed to occurin 2017. Under this scenario, construction of the project would emit 287 MT of CO_2e. Neither the City nor BAAQMD have quantified thresholds for construction activities. However, the annual emissions would be below the lowest project emission threshold considered by BAAQMD. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include, but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model along with the project vehicle trip generation rates and estimates were used to predict operational period GHG emissions associated with operation of a fully developed site under the proposed project. The model uses mobile emission factors from the California Air Resources Board's EMFAC2011 model and adjusts these based on the effect of new regulations to reduce GHG emissions. These regulations include the Pavley Rule that increases fleet efficiency (reducing fuel consumption) and the low carbon fuel standard. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. Adjustments to the modeling are described below.

Year of Analysis

Emissions associated with vehicle travel depend on the year of analysis. The earlier the year, the higher the emission rates as CalEEMod uses the California Air Resources Board's EMFAC2011 motor vehicle emissions model. This model assumes reduced emission rates as newer vehicles with lower emission rates replace older, more polluting vehicles through attrition of the overall vehicle fleet. The earliest full year the project could be possibly constructed and operational would be 2018.

CalEEMod Traffic Inputs

Traffic trip generation rates provided by the project traffic consultant (W-Trans) were used and input to CalEEMod. Trip rates for the restaurant and retail uses were reduced by 25 percent to account for internal capture, as reported in the project traffic report. The types of trips and trip lengths were based on CalEEMod defaults.

Energy Consumption

CalEEMod has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The PG&E rate was updated to be the most recent rate reported in the California Climate Registry that was for 2013, which is 429.6 pounds of CO_2 per megawatt of electricity produced.[8]

The 2013 Title 24 Building Standards became effective July 1, 2014 and are predicted to use 30 percent less energy for lighting, heating, cooling, ventilation, and water heating for non-residential uses than the 2008 standards that CalEEMod incorporates.[9] Therefore, the CalEEMod project run was adjusted to account for the greater energy efficiency.

Solid Waste Generation

Emissions from solid waste generation are based on CalEEMod model defaults that are based on the project type and size. These are emissions associated with transporting and landfilling of solid waste generated by the project.

Water Usage

Emissions from water usage are based on CalEEMod model defaults that are based on the project type and size. These are emissions associated with electricity usage associated with conveyance and treatment of water and wastewater associated with the project.

Occupancy

GHG emissions are based on annual operations. The hotel is anticipated to have an occupancy rate of 80 percent. Therefore, CalEEMod modeled emissions were reduced by 20 percent to account for occupancy.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project. In 2018, as shown in Table 3, annual net emissions resulting from operation of the proposed project are predicted to be 543 MT of CO_2e, which would be less than the BAAQMD significance threshold of 1,100 MT of CO_2e/ year.

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[8] See Climate Registry most current version of default emissions factors: http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol. Accessed: May 17, 2016.

[9] California Energy Commission, 2014. *New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions*. July. Available online: http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html

Table 3. Annual GHG emissions of CO_2e (MT/year)

Source Category	Existing Land Uses	2018 Proposed Project [1]
Area	<1	<1
Energy Consumption	21	196
Mobile	234	596
Waste	30	32
Water Usage	2	6
Total	287	830
Net Project Total		543 MT of CO_2e/year
BAAQMD Threshold		**1, 100 MT of CO_2e/year**

Note: [1] Assumes 80 percent average occupancy

Impact 7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***No Impact.***

AB 32, the Global Warming Solutions Act of 2006, codifies the State of California's GHG emissions target by directing CARB to reduce the state's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, CARB, CEC, the California Public Utilities Commission (CPUC), and the Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State of California's main strategies to reduce GHGs from BAU emissions projected in 2020 back down to 1990 levels. BAU is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It required CARB and other state agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 MMT of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. The project would comply with requirements of the Green Building Code. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[10] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[11] This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. While the OEHHA guidelines use substantially more conservative assumptions than the current Bay Area Air Quality Management District (BAAQMD) guidelines, BAAQMD has not formally adopted recommended procedures for applying the newest OEHHA guidelines. BAAQMD is in the process of developing new guidance and has developed proposed HRA Guidelines as part of the proposed amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[12] Exposure parameters from the OEHHA guidelines and newly proposed BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

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[10] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment. February.

[11] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics.* July 23.

[12] BAAQMD, 2016. *Workshop Report. Proposed Amendments to Air District Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. Appendix C. Proposed Air District HRA Guidelines.* January 2016.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. BAAQMD recommends using these FAH factors for residential exposures.

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	572	261
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14
Exposure Frequency (days/year)		350	350	350	350
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home		0.85 - 1.0	0.72 – 1.0	0.72 – 1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Input and Output Worksheets and Risk Calculations

Sebastopol Hotel, AQ/GHG, Sebastopol

Sonoma-North Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	88.00	Space	0.00	35,200.00	0
High Turnover (Sit Down Restaurant)	4.24	1000sqft	0.00	4,240.00	0
Hotel	65.00	Room	1.48	51,886.00	0
Strip Mall	2.96	1000sqft	0.00	2,964.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 emission intensity

Land Use - Land Use infromation from project description and site plan

Demolition - 24,700sf

Vehicle Trips - Project trip generation rates

Energy Use - 30% reduction in title 24 values

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblEnergyUse	LightingElect	5.80	4.06
tblEnergyUse	LightingElect	2.72	2.04
tblEnergyUse	LightingElect	0.88	0.62
tblEnergyUse	LightingElect	5.64	3.95
tblEnergyUse	T24E	6.19	4.33
tblEnergyUse	T24E	2.50	1.75
tblEnergyUse	T24E	3.37	2.36
tblEnergyUse	T24NG	63.57	44.50
tblEnergyUse	T24NG	41.63	29.14

tblEnergyUse	T24NG	2.49	1.74
tblLandUse	LandUseSquareFeet	94,380.00	51,886.00
tblLandUse	LandUseSquareFeet	2,960.00	2,964.00
tblLandUse	LotAcreage	0.79	0.00
tblLandUse	LotAcreage	0.10	0.00
tblLandUse	LotAcreage	2.17	1.48
tblLandUse	LotAcreage	0.07	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	158.37	83.50
tblVehicleTrips	ST_TR	8.19	8.94
tblVehicleTrips	ST_TR	42.04	31.53
tblVehicleTrips	SU_TR	131.84	69.95
tblVehicleTrips	SU_TR	5.95	6.50
tblVehicleTrips	SU_TR	20.43	15.32
tblVehicleTrips	WD_TR	127.15	67.46
tblVehicleTrips	WD_TR	8.17	8.92
tblVehicleTrips	WD_TR	44.32	33.24

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.0877	2.5138	2.3979	3.4100e-003	0.0708	0.1496	0.2204	0.0215	0.1434	0.1649	0.0000	285.9150	285.9150	0.0505	0.0000	286.9757
Total	**1.0877**	**2.5138**	**2.3979**	**3.4100e-003**	**0.0708**	**0.1496**	**0.2204**	**0.0215**	**0.1434**	**0.1649**	**0.0000**	**285.9150**	**285.9150**	**0.0505**	**0.0000**	**286.9757**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4381	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.8600e-003	2.8600e-003	1.0000e-005	0.0000	3.0300e-003
Energy	0.0139	0.1264	0.1061	7.6000e-004		9.6000e-003	9.6000e-003		9.6000e-003	9.6000e-003	0.0000	243.2243	243.2243	9.7700e-003	4.0000e-003	244.6687
Mobile	0.9409	1.6702	8.2354	9.8900e-003	0.5697	0.0190	0.5887	0.1528	0.0175	0.1703	0.0000	744.4032	744.4032	0.0460	0.0000	745.3686
Waste						0.0000	0.0000		0.0000	0.0000	18.0987	0.0000	18.0987	1.0696	0.0000	40.5603
Water						0.0000	0.0000		0.0000	0.0000	1.0010	3.5994	4.6003	0.1031	2.4800e-003	7.5325
Total	**1.3929**	**1.7966**	**8.3430**	**0.0107**	**0.5697**	**0.0286**	**0.5983**	**0.1528**	**0.0271**	**0.1799**	**19.0996**	**991.2297**	**1,010.3294**	**1.2284**	**6.4800e-003**	**1,038.1331**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	2/6/2017	5	4	
4	Building Construction	Building Construction	2/7/2017	11/13/2017	5	200	
5	Paving	Paving	11/14/2017	11/27/2017	5	10	
6	Architectural Coating	Architectural Coating	11/28/2017	12/11/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 90,219; Non-Residential Outdoor: 30,073 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	112.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	39.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.8400e-003	0.0000	1.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**0.0122**	**0.0161**	**0.0282**	**1.8400e-003**	**0.0150**	**0.0169**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5900e-003	0.0154	0.0209	4.0000e-005	9.3000e-004	2.1000e-004	1.1500e-003	2.6000e-004	2.0000e-004	4.5000e-004	0.0000	3.6829	3.6829	3.0000e-005	0.0000	3.6834

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	1.1500e-003	0.0105	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	1.0252	1.0252	8.0000e-005	0.0000	1.0269
Total	**2.4200e-003**	**0.0165**	**0.0314**	**5.0000e-005**	**1.9500e-003**	**2.2000e-004**	**2.1800e-003**	**5.3000e-004**	**2.1000e-004**	**7.3000e-004**	**0.0000**	**4.7081**	**4.7081**	**1.1000e-004**	**0.0000**	**4.7103**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0631	0.0631	0.0000	0.0000	0.0632
Total	**5.0000e-005**	**7.0000e-005**	**6.5000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0631**	**0.0631**	**0.0000**	**0.0000**	**0.0632**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0396	0.0264	3.0000e-005		2.1300e-003	2.1300e-003		1.9600e-003	1.9600e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280
Total	**3.7700e-003**	**0.0396**	**0.0264**	**3.0000e-005**	**9.8300e-003**	**2.1300e-003**	**0.0120**	**5.0500e-003**	**1.9600e-003**	**7.0100e-003**	**0.0000**	**2.6112**	**2.6112**	**8.0000e-004**	**0.0000**	**2.6280**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	1.4000e-004	1.2900e-003	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1262	0.1262	1.0000e-005	0.0000	0.1264
Total	**1.0000e-004**	**1.4000e-004**	**1.2900e-003**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1262**	**0.1262**	**1.0000e-005**	**0.0000**	**0.1264**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5473	184.5473	0.0387	0.0000	185.3605
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5473**	**184.5473**	**0.0387**	**0.0000**	**185.3605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0264	0.1496	0.3051	3.5000e-004	9.4500e-003	2.3500e-003	0.0118	2.7000e-003	2.1500e-003	4.8500e-003	0.0000	31.0013	31.0013	2.6000e-004	0.0000	31.0067
Worker	0.0248	0.0346	0.3145	4.2000e-004	0.0306	4.0000e-004	0.0310	8.1500e-003	3.7000e-004	8.5200e-003	0.0000	30.7569	30.7569	2.4200e-003	0.0000	30.8078
Total	**0.0512**	**0.1842**	**0.6195**	**7.7000e-004**	**0.0401**	**2.7500e-003**	**0.0428**	**0.0109**	**2.5200e-003**	**0.0134**	**0.0000**	**61.7582**	**61.7582**	**2.6800e-003**	**0.0000**	**61.8146**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	5.8000e-004	5.2400e-003	1.0000e-005	5.1000e-004	1.0000e-005	5.2000e-004	1.4000e-004	1.0000e-005	1.4000e-004	0.0000	0.5126	0.5126	4.0000e-005	0.0000	0.5135
Total	**4.1000e-004**	**5.8000e-004**	**5.2400e-003**	**1.0000e-005**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.5126**	**0.5126**	**4.0000e-005**	**0.0000**	**0.5135**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6969					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795

Total	0.6986	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.5000e-004	3.2300e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3155	0.3155	2.0000e-005	0.0000	0.3160
Total	2.5000e-004	3.5000e-004	3.2300e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3155	0.3155	2.0000e-005	0.0000	0.3160

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.9409	1.6702	8.2354	9.8900e-003	0.5697	0.0190	0.5887	0.1528	0.0175	0.1703	0.0000	744.4032	744.4032	0.0460	0.0000	745.3686

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	286.03	354.04	296.59	344,894	344,894
Hotel	579.80	581.10	422.50	1,059,239	1,059,239
Parking Lot	0.00	0.00	0.00		
Strip Mall	98.39	93.33	45.35	138,741	138,741
Total	964.22	1,028.47	764.44	1,542,873	1,542,873

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.412177	0.112523	0.159237	0.157853	0.077974	0.009612	0.025172	0.031274	0.001137	0.000213	0.008341	0.000681	0.003807

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	105.6776	105.6776	7.1300e-003	1.4800e-003	106.2850
NaturalGas Unmitigated	0.0139	0.1264	0.1061	7.6000e-004		9.6000e-003	9.6000e-003		9.6000e-003	9.6000e-003	0.0000	137.5466	137.5466	2.6400e-003	2.5200e-003	138.3837

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	5157.36	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2752	0.2752	1.0000e-005	1.0000e-005	0.2769
High Turnover (Sit Down Restaurant)	813953	4.3900e-003	0.0399	0.0335	2.4000e-004		3.0300e-003	3.0300e-003		3.0300e-003	3.0300e-003	0.0000	43.4356	43.4356	8.3000e-004	8.0000e-004	43.7000
Hotel	1.75842e+006	9.4800e-003	0.0862	0.0724	5.2000e-004		6.5500e-003	6.5500e-003		6.5500e-003	6.5500e-003	0.0000	93.8358	93.8358	1.8000e-003	1.7200e-003	94.4069
Total		**0.0139**	**0.1264**	**0.1061**	**7.6000e-004**		**9.6000e-003**	**9.6000e-003**		**9.6000e-003**	**9.6000e-003**	**0.0000**	**137.5466**	**137.5466**	**2.6400e-003**	**2.5300e-003**	**138.3837**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	130126	25.3567	1.7100e-003	3.5000e-004	25.5024
Hotel	363721	70.8758	4.7800e-003	9.9000e-004	71.2832
Parking Lot	21824	4.2527	2.9000e-004	6.0000e-005	4.2771
Strip Mall	26646.4	5.1924	3.5000e-004	7.0000e-005	5.2222

Total		105.6776	7.1300e-003	1.4700e-003	106.2850

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.4381	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.8600e-003	2.8600e-003	1.0000e-005	0.0000	3.0300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0697					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3683					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.8600e-003	2.8600e-003	1.0000e-005	0.0000	3.0300e-003
Total	**0.4381**	**1.0000e-005**	**1.4900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.8600e-003**	**2.8600e-003**	**1.0000e-005**	**0.0000**	**3.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	4.6003	0.1031	2.4800e-003	7.5325

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	1.28698 / 0.0821479	1.8213	0.0420	1.0100e-003	3.0171
Hotel	1.64884 / 0.183204	2.3866	0.0539	1.2900e-003	3.9189
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.219255 / 0.134382	0.3924	7.1700e-003	1.7000e-004	0.5966
Total		**4.6003**	**0.1031**	**2.4700e-003**	**7.5325**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	18.0987	1.0696	0.0000	40.5603

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	50.46	10.2429	0.6053	0.0000	22.9551
Hotel	35.59	7.2245	0.4270	0.0000	16.1905
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.11	0.6313	0.0373	0.0000	1.4148
Total		**18.0987**	**1.0696**	**0.0000**	**40.5603**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

6826 Depot street, Sebastopol - Existing

Sonoma-North Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hardware/Paint Store	5.95	1000sqft	1.47	5,954.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Existing Land Use

Vehicle Trips - Trip generation rates from Traffic Report

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	5,950.00	5,954.00
tblLandUse	LotAcreage	0.14	1.47
tblVehicleTrips	ST_TR	82.52	71.31
tblVehicleTrips	SU_TR	68.65	59.32
tblVehicleTrips	WD_TR	51.29	44.32

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0302	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.1000e-004
Energy	8.0000e-005	7.3000e-004	6.1000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	21.0392	21.0392	9.3000e-004	2.0000e-004	21.1220
Mobile	0.4148	0.6792	3.5430	2.8000e-003	0.1606	9.5500e-003	0.1702	0.0431	8.7500e-003	0.0518	0.0000	233.6344	233.6344	0.0193	0.0000	234.0391
Waste						0.0000	0.0000		0.0000	0.0000	13.3933	0.0000	13.3933	0.7915	0.0000	30.0154
Water						0.0000	0.0000		0.0000	0.0000	0.1398	0.9688	1.1086	0.0144	3.5000e-004	1.5191
Total	**0.4451**	**0.6800**	**3.5437**	**2.8000e-003**	**0.1606**	**9.6100e-003**	**0.1702**	**0.0431**	**8.8100e-003**	**0.0519**	**13.5332**	**255.6425**	**269.1757**	**0.8261**	**5.5000e-004**	**286.6956**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.4148	0.6792	3.5430	2.8000e-003	0.1606	9.5500e-003	0.1702	0.0431	8.7500e-003	0.0518	0.0000	233.6344	233.6344	0.0193	0.0000	234.0391

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	263.70	424.29	352.95	435,547	435,547
Total	263.70	424.29	352.95	435,547	435,547

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	9.50	7.30	7.30	13.60	67.40	19.00	45	29	26

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.415516	0.112691	0.159584	0.160528	0.079081	0.009906	0.021112	0.027603	0.001099	0.000220	0.008187	0.000684	0.003788

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.2481	20.2481	9.2000e-004	1.9000e-004	20.3260
NaturalGas Unmitigated	8.0000e-005	7.3000e-004	6.1000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.7911	0.7911	2.0000e-005	1.0000e-005	0.7960

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	14825.5	8.0000e-005	7.3000e-004	6.1000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.7911	0.7911	2.0000e-005	1.0000e-005	0.7960
Total		**8.0000e-005**	**7.3000e-004**	**6.1000e-004**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.7911**	**0.7911**	**2.0000e-005**	**1.0000e-005**	**0.7960**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	69602.3	20.2481	9.2000e-004	1.9000e-004	20.3260
Total		**20.2481**	**9.2000e-004**	**1.9000e-004**	**20.3260**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.0302	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.1000e-004
Total	**0.0302**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	1.1086	0.0144	3.5000e-004	1.5191

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	0.440732 / 0.270126	1.1086	0.0144	3.5000e-004	1.5191
Total		**1.1086**	**0.0144**	**3.5000e-004**	**1.5191**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	13.3933	0.7915	0.0000	30.0154

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	65.98	13.3933	0.7915	0.0000	30.0154
Total		**13.3933**	**0.7915**	**0.0000**	**30.0154**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Sebastopol Hotel, Construction TAC, Sebastpol

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	88.00	Space	0.00	35,200.00	0
High Turnover (Sit Down Restaurant)	4.24	1000sqft	0.00	4,240.00	0
Hotel	65.00	Room	1.48	51,886.00	0
Strip Mall	2.96	1000sqft	0.00	2,964.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Project description and site plans

Trips and VMT - for risk assessment. 0.5 mile trip lengths

Demolition - Demolition volume obtained from Google earth

Construction Off-road Equipment Mitigation - Tier 2 and Best Management Practices

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblLandUse	LandUseSquareFeet	94,380.00	51,886.00
tblLandUse	LandUseSquareFeet	2,960.00	2,964.00
tblLandUse	LotAcreage	0.79	0.00
tblLandUse	LotAcreage	0.10	0.00
tblLandUse	LotAcreage	2.17	1.48
tblLandUse	LotAcreage	0.07	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50

tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.6737	2.3520	1.9774	2.6500e-003	0.0301	0.1469	0.1769	0.0105	0.1409	0.1514	0.0000	225.0355	225.0355	0.0479	0.0000	226.0416
Total	**0.6737**	**2.3520**	**1.9774**	**2.6500e-003**	**0.0301**	**0.1469**	**0.1769**	**0.0105**	**0.1409**	**0.1514**	**0.0000**	**225.0355**	**225.0355**	**0.0479**	**0.0000**	**226.0416**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5544	2.1024	1.9510	2.6500e-003	0.0148	0.0922	0.1069	2.8400e-003	0.0921	0.0950	0.0000	225.0352	225.0352	0.0479	0.0000	226.0413
Total	**0.5544**	**2.1024**	**1.9510**	**2.6500e-003**	**0.0148**	**0.0922**	**0.1069**	**2.8400e-003**	**0.0921**	**0.0950**	**0.0000**	**225.0352**	**225.0352**	**0.0479**	**0.0000**	**226.0413**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**17.71**	**10.61**	**1.33**	**0.00**	**50.85**	**37.25**	**39.56**	**72.87**	**34.61**	**37.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	1/31/2017	5	2	
3	Grading	Grading	2/1/2017	2/6/2017	5	4	
4	Building Construction	Building Construction	2/7/2017	11/13/2017	5	200	
5	Paving	Paving	11/14/2017	11/27/2017	5	10	
6	Architectural Coating	Architectural Coating	11/28/2017	12/11/2017	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 90,219; Non-Residential Outdoor: 30,073 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	112.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	7	39.00	15.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

Paving	5	13.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.8400e-003	0.0000	1.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**0.0122**	**0.0161**	**0.0282**	**1.8400e-003**	**0.0150**	**0.0169**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	1.4700e-003	0.0108	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0661	0.0661	1.0000e-005	0.0000	0.0662
Total	**9.2000e-004**	**1.5600e-003**	**0.0121**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.2435**	**0.2435**	**1.0000e-005**	**0.0000**	**0.2437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4700e-003	0.0000	5.4700e-003	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9300e-003	0.2144	0.1556	2.4000e-004		7.2300e-003	7.2300e-003		7.2300e-003	7.2300e-003	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**8.9300e-003**	**0.2144**	**0.1556**	**2.4000e-004**	**5.4700e-003**	**7.2300e-003**	**0.0127**	**4.1000e-004**	**7.2300e-003**	**7.6400e-003**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	1.4700e-003	0.0108	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0661	0.0661	1.0000e-005	0.0000	0.0662
Total	**9.2000e-004**	**1.5600e-003**	**0.0121**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.2435**	**0.2435**	**1.0000e-005**	**0.0000**	**0.2437**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0700e-003	4.0700e-003	0.0000	0.0000	4.0800e-003
Total	**2.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.0700e-003**	**4.0700e-003**	**0.0000**	**0.0000**	**4.0800e-003**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					2.6100e-003	0.0000	2.6100e-003	6.6000e-004	0.0000	6.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7000e-004	0.0148	0.0111	2.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**5.7000e-004**	**0.0148**	**0.0111**	**2.0000e-005**	**2.6100e-003**	**4.2000e-004**	**3.0300e-003**	**6.6000e-004**	**4.2000e-004**	**1.0800e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0700e-003	4.0700e-003	0.0000	0.0000	4.0800e-003
Total	**2.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.0700e-003**	**4.0700e-003**	**0.0000**	**0.0000**	**4.0800e-003**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0396	0.0264	3.0000e-005		2.1300e-003	2.1300e-003		1.9600e-003	1.9600e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280

Total	3.7700e-003	0.0396	0.0264	3.0000e-005	9.8300e-003	2.1300e-003	0.0120	5.0500e-003	1.9600e-003	7.0100e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	1.0000e-005	1.6000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	8.1400e-003	8.1400e-003	0.0000	0.0000	8.1500e-003
Total	4.0000e-005	1.0000e-005	1.6000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	8.1400e-003	8.1400e-003	0.0000	0.0000	8.1500e-003

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4200e-003	0.0000	4.4200e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	0.0243	0.0181	3.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280
Total	9.4000e-004	0.0243	0.0181	3.0000e-005	4.4200e-003	6.9000e-004	5.1100e-003	1.1400e-003	6.9000e-004	1.8300e-003	0.0000	2.6112	2.6112	8.0000e-004	0.0000	2.6280

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	1.0000e-005	1.6000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	8.1400e-003	8.1400e-003	0.0000	0.0000	8.1500e-003
Total	**4.0000e-005**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.1400e-003**	**8.1400e-003**	**0.0000**	**0.0000**	**8.1500e-003**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2955	1.9109	1.4311	2.2000e-003		0.1226	0.1226		0.1182	0.1182	0.0000	184.5473	184.5473	0.0387	0.0000	185.3605
Total	**0.2955**	**1.9109**	**1.4311**	**2.2000e-003**		**0.1226**	**0.1226**		**0.1182**	**0.1182**	**0.0000**	**184.5473**	**184.5473**	**0.0387**	**0.0000**	**185.3605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0122	0.0356	0.1889	5.0000e-005	6.9000e-004	2.2000e-004	9.1000e-004	2.0000e-004	2.0000e-004	4.0000e-004	0.0000	4.3118	4.3118	6.0000e-005	0.0000	4.3131
Worker	0.0102	2.7800e-003	0.0385	3.0000e-005	1.4500e-003	5.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.9832	1.9832	1.9000e-004	0.0000	1.9873
Total	**0.0225**	**0.0384**	**0.2274**	**8.0000e-005**	**2.1400e-003**	**2.7000e-004**	**2.4100e-003**	**5.9000e-004**	**2.4000e-004**	**8.3000e-004**	**0.0000**	**6.2950**	**6.2950**	**2.5000e-004**	**0.0000**	**6.3004**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2022	1.7401	1.4676	2.2000e-003		0.0807	0.0807		0.0807	0.0807	0.0000	184.5471	184.5471	0.0387	0.0000	185.3603
Total	**0.2022**	**1.7401**	**1.4676**	**2.2000e-003**		**0.0807**	**0.0807**		**0.0807**	**0.0807**	**0.0000**	**184.5471**	**184.5471**	**0.0387**	**0.0000**	**185.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0122	0.0356	0.1889	5.0000e-005	6.9000e-004	2.2000e-004	9.1000e-004	2.0000e-004	2.0000e-004	4.0000e-004	0.0000	4.3118	4.3118	6.0000e-005	0.0000	4.3131
Worker	0.0102	2.7800e-003	0.0385	3.0000e-005	1.4500e-003	5.0000e-005	1.5000e-003	3.9000e-004	4.0000e-005	4.3000e-004	0.0000	1.9832	1.9832	1.9000e-004	0.0000	1.9873
Total	**0.0225**	**0.0384**	**0.2274**	**8.0000e-005**	**2.1400e-003**	**2.7000e-004**	**2.4100e-003**	**5.9000e-004**	**2.4000e-004**	**8.3000e-004**	**0.0000**	**6.2950**	**6.2950**	**2.5000e-004**	**0.0000**	**6.3004**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9300e-003	0.0605	0.0452	7.0000e-005		3.6700e-003	3.6700e-003		3.3800e-003	3.3800e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.0605**	**0.0452**	**7.0000e-005**		**3.6700e-003**	**3.6700e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	5.0000e-005	6.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**1.7000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0331**	**0.0331**	**0.0000**	**0.0000**	**0.0331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7100e-003	0.0579	0.0485	7.0000e-005		2.0300e-003	2.0300e-003		2.0300e-003	2.0300e-003	0.0000	6.1129	6.1129	1.8400e-003	0.0000	6.1515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7100e-003**	**0.0579**	**0.0485**	**7.0000e-005**		**2.0300e-003**	**2.0300e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**6.1129**	**6.1129**	**1.8400e-003**	**0.0000**	**6.1515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	5.0000e-005	6.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**1.7000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0331**	**0.0331**	**0.0000**	**0.0000**	**0.0331**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3153**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	3.0000e-005	3.9000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0203	0.0203	0.0000	0.0000	0.0204
Total	**1.1000e-004**	**3.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**0.0000**	**0.0204**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	**0.3153**	**0.0109**	**9.3400e-003**	**1.0000e-005**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.3000e-004**	**0.0000**	**1.2795**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	3.0000e-005	3.9000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0203	0.0203	0.0000	0.0000	0.0204
Total	**1.1000e-004**	**3.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**0.0000**	**0.0204**

Hotel Sebastopol, Sebastopol, CA

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2017	Construction	0.1409	1_DPM	281.8	0.08578	1.08E-02	5,975	1.81E-06
Total		*0.1409*		*282*	*0.0858*	*0.0108*		

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 365
hours/year = 3285

Hotel Sebastopol, Sebastopol, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2017	Construction	1_FUG	0.0105	21.0	0.00639	8.05E-04	5,975	1.35E-07
Total			*0.0105*	*21.0*	*0.0064*	*0.0008*		

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 365
hours/year = 3285

Hotel Sebastopol, Sebastopol, CA - Project Construction Health Impact Summar

Maximum Impacts at Off-Site Residences

Construction Year	Unmitigated					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2017	0.0934	0.0072	13.90	0.27	0.019	0.101
Total	-	-	**13.9**	**0.3**	-	-
Maximum Annual	0.0934	0.0072	-	-	**0.019**	**0.101**

Hotel Sebastopol, Sebastopol, CA - Construction Impacts - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					
							Modeled					
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2017	0.0000	10	0.00	2017	0.0000	-	-	-	-
1	1	0 - 1	2017	0.0846	10	13.90	2017	0.0934	1	0.27	0.0072	0.101
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00	0.0000	0.000
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00	0.0000	0.000
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**13.9**				**0.27**		

* Third trimester of pregnancy

Hotel Sebastopol, Sebastopol, CA - Project Construction Health Impact Summar

Maximum Impacts at Sebastopol Charter School

Construction Year	Unmitigated					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2017	0.0078	0.0006	0.20	0.02	0.002	0.008
Total	-	-	**0.2**	**0.0**	-	-
Maximum Annual	0.0078	0.0006	-	-	**0.002**	**0.008**

Hotel Sebastopol, Sebastopol, CA - Construction Impacts - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Sebastopol Charter School - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information Modeled DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*		0.0000	10	0.00		0.0000	-	-	-	-
1	1	0 - 1		0.0000	10	0.00		0.0000	1	0.00	0.0000	0.000
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00	0.0000	0.000
3	1	2 - 3	2017	0.0078	3	0.20	2017	0.0078	1	0.02	0.0006	0.008
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						0.2				0.02		

* Third trimester of pregnancy