KING CITY ROUNDABOUT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Prepared for:

CITY OF KING
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I. INTRODUCTION AND PURPOSE

This Initial Study/Mitigated Negative Declaration assesses the potential environmental impacts and identifies appropriate mitigation measures associated with the proposed King City Roundabout (to be referred to herein as the "proposed project", "proposed roundabout" or "proposed roundabout project"). The City of King (to also be referred to herein as "the City" or "King City") as Lead Agency for this environmental document, has the responsibility for determining whether or not to approve the proposed project.

As part of their decision-making process, the City is required to review and consider the potential environmental effects that could result from the proposed project. Together with the technical analyses applicable to this project and any other documents incorporated by reference, this analysis will serve as the initial environmental review for the proposed project. This review is required by the California Environmental Quality Act of 1970 (CEQA) as amended (Public Resources Code Section 21000 et. seq.) and the State CEQA Guidelines as well as Guidelines for the Implementation of CEQA adopted by the City.

Section 15070 of the State CEQA Guidelines states that "a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when the Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment." Section 15064 (a) (1) states "if there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a Draft EIR." The determination as to which document is appropriate in this situation will be based upon the information and analyses contained in this Initial Study in combination with any other documents incorporated by reference. The City is preparing this Initial Study to assist in their consideration as to whether to prepare a Negative Declaration, a Mitigated Negative Declaration or an Environmental Impact Report (EIR) for this proposed project.

This Initial Study/Mitigated Negative Declaration has been prepared in a manner which provides complete and adequate California Environmental Quality Act (CEQA) coverage for all actions and approvals associated with the proposed project as currently described herein (See Section III. Project Description).

This Initial Study/Mitigated Negative Declaration begins with Section I. Introduction and Purpose, which provides an introductory discussion of the purpose and scope of the document. Section II. Summary/Mitigation Monitoring Program summarizes the potential impacts and proposed mitigation measures. This section also contains the State-mandated Mitigation Monitoring Program (pursuant to AB 3180). Section III.

Project Description provides a detailed description of the proposed roundabout project.

Section IV. Environmental Evaluation contains the environmental checklist required by Section 15063(d)(3) of the State CEQA Guidelines. This checklist is intended to determine the nature and extent of various environmental effects of the proposed project followed by an explanation to justify the determination. The summary discussion following the checklist item provides the basis for this determination. Checklist items identified as "potentially significant and mitigated", "unknown potential significant" or "significant" are discussed within Section IV. Environmental Evaluation. Section V. provides the required Mandatory Findings of Significance pursuant to CEQA Section 15065. Section VI. Environmental Determination makes the final determination as to whether an EIR, Negative Declaration or Mitigated Negative Declaration is appropriate. Section VII. Certification provides the required Lead Agency Certification Statement.

Section 15150 of the State CEQA Guidelines permits an environmental document to incorporate by reference other documents that provide relevant data to the proposal currently being considered. The City General Plan, and Zoning Code as well as any other long-range planning documents prepared by the City including engineering and other technical studies as noted within this Initial Study are hereby incorporated by reference.

This Initial Study/Mitigated Negative Declaration provides a full and objective discussion of the potential environmental impacts of the proposed King City Roundabout. In preparing this document, the City decision-makers, staff and members of the public will be fully informed as to the potential impacts and required mitigation measures associated with the proposed project. In accordance with Section 15021 of the State CEQA Guidelines, this document is intended to enable the City, as Lead Agency, to fully evaluate these environmental impacts and mitigation measures in their consideration of the proposed project. The Lead Agency has an obligation to balance potential adverse effects of the project against a variety of public objectives, including economic, environmental and social factors, in determining whether the project is acceptable and approved for construction and operation.

Pursuant to California Public Resources Code 21082.1, the City has independently reviewed and analyzed the information contained in this Initial Study/Mitigated Negative Declaration prior to its consideration and certification. The conclusions and discussions contained herein reflect the independent judgment of the City of King relative to that information at the time of publication.

The proposed roundabout involves the redesign of an out-of-date traffic intersection located at Broadway Avenue and U.S. Highway 101. This intersection currently has five roadways intersecting at the same location, those roadways being Broadway Street, San Antonio Drive, San Lorenzo Park Road and the U.S. Highway 101

northbound on-and off-ramps. The proposed roundabout will replace the two existing stop signs and one traffic signal that currently control traffic circulation at this location.

The purpose of the roundabout project is to alleviate traffic congestion that is currently being experienced at this intersection. The traffic analysis prepared for this project indicates a significant reduction in the amount of vehicle delay with provision of the proposed roundabout. The level of air pollutants, noise and traffic/circulation levels of service associated with the provision of the proposed roundabout will be significantly improved.

The State CEQA Guidelines have recently been amended (per SB 743 effective July 1, 2020) to recommend use of vehicle miles traveled (VMT) rather than level of service (LOS) as a measure of traffic impacts. The proposed roundabout will not have a significant effect upon current VMT. However, according to the "Technical Advisory on Evaluating Transportation Impacts in CEQA" prepared by the Governor's Office of Planning and Research, dated April, 2018, installation of roundabouts or traffic circles would not lead to a substantial or measurable increase in vehicle miles traveled. As a result, the assessment of environmental impacts throughout this document are based upon reductions in automobile idling time, noise levels and levels of traffic service rather than VMT at this intersection. As noted in Section IV. Environmental Evaluation, the proposed roundabout will have beneficial air quality, noise and traffic/ circulation impacts on the environment. These reduced environmental impacts conform with the basic goals of CEQA.

II. SUMMARY/MITIGATION MONITORING PROGRAM

1. Aesthetics

Impacts: Given the nature of the proposed project facilities, those being the installation of a roundabout, crosswalks, medians sidewalks and other roadway improvements combined with the nature and extent of existing development surrounding the site, none of the proposed roundabout project facilities will have a substantial adverse effect upon any scenic vistas nor will they degrade any existing scenic resources or the visual character or quality of its surroundings. The proposed project will not create any new sources of substantial light or glare which would affect day or nighttime views in the area.

Mitigation Measures: Given the lack of potentially significant aesthetic impacts, no mitigation measures are required.

2. Agricultural Resources

Impacts: All of the proposed improvements associated with the roundabout project are located on approximately 4.3 acres that are approximately one mile south of existing farmland. As such, the roundabout project site is not expected to directly impact ongoing agricultural activities.

The proposed project will not directly impact any areas designated as prime farmland, unique farmland or farmland of statewide importance nor will they conflict with any areas zoned for agricultural use or covered by a Williamson Act contract. The proposed project will not result in any conversion of existing farmland to non-agricultural use.

Mitigation Measures: Given the lack of potentially significant impacts to agricultural resources, no mitigation measures are required.

3. Air Quality

Impacts: Air quality impacts of the proposed roundabout project were assessed in terms of both short-term construction impacts and long-term operational impacts.

Air quality compliance within the project area is managed by the Monterey Bay Unified Air Pollution Control District. District guidelines state that the anticipated level of ozone precursors (such as NOx) associated with project construction have already been included in their Air Basin Plan and therefore constitute a less than significant impact.

The District's guidelines have also quantified a significant threshold of 82 pounds per day for PM10. Estimated project construction emissions are estimated to be

8.39 pounds per day for both combustion and fugitive dust combined. However, this PM10 emissions rate for fugitive dust assumes the application of dust suppression watering as noted in the mitigation measure below. Application of this mitigation method, which is a standard construction industry practice, reduces fugitive dust emission rates by approximately 68%. Therefore, the estimated PM10 emissions, with application of regular site watering, are well below the District's threshold and constitute a less than significant impact.

The District also requires that short-term construction projects be evaluated for potential acute health risks from toxic air contaminant emissions (TAC). Small levels of TAC's such as diesel particulate matter during project construction could be produced by construction equipment. According to the Bay Area Air Quality Management District (BAAQMD), construction projects of approximately 3 acres in size should maintain a 55 meter setback from sensitive receptors in order to minimize short-term, acute health risks from TAC's. The nearest residential sensitive receptors in the vicinity of the proposed roundabout project are single-family homes on Bluff Avenue and apartments on San Antonio Drive which are located approximately 70 meters from the project construction zone. As such, impacts from short-term health risk pollutants are expected to be less than significant.

Long-term operational pollutant emissions associated with the proposed roundabout project were analyzed using the relative change from the baseline existing intersection condition to the fully developed roundabout project. The primary variable in this analysis was the change in delay hours at the intersection in terms of vehicle hours per year. The existing intersection experiences an annual total of 9,295 delay hours while automobiles are waiting to enter the intersection. The proposed roundabout design is estimated to result in a total of 3,932 delay hours, a net reduction of 5,363 delay hours. This net reduction in vehicle hour delays of approximately 5,363 hours per year results in a reduced volume of air pollutant emissions associated with the presence of idling or low-speed travel at this intersection. This represents a beneficial long-term air quality impact.

The proposed project will not conflict with or obstruct the implementation of any air quality plan, expose sensitive receptors to substantial pollution concentrations, violate any established air quality standards or result in a net increase of any criteria pollutant for which the region is in non-attainment. The proposed project will not create objectionable smoke, ash, dust or odors affecting existing residents or other persons in the immediate area. The proposed project will not generate significant greenhouse gas emissions or conflict with any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

Mitigation Measures:

AQ-1. Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the construction site. Increased watering frequency will be required whenever when wind speeds exceed 15 mph. Reclaimed water, if available, shall be used for dust control and other construction related purposes during project construction.

Implementation Responsibility: City of King

Monitoring Agency: City of King

Timing: During project grading or construction.

4. Biological Resources

Impacts: The proposed roundabout will occupy approximately 2.5 acres when all phases of the project are complete. The proposed project would affect only previously disturbed habitat including 0.1 acres of wild oats grassland, 0.2 acres of ornamental landscaping and 2.2 acres of developed areas. No impacts to native habitat would occur due to the proposed project.

Two special status plant species which were determined to have a low potential to occur within the project area include the Douglas spine flower and the Elegant wild buckwheat. Neither of these species were observed during on-site surveys. As such, the proposed project will not impact any special status plant species.

No sensitive wildlife species were observed during site surveys and have a low potential to occur within the project area. These species include Cooper's hawk, the Pallid bat and the Western bumble bee. There is a low potential for Cooper's hawk to occur within the study area as there is potentially suitable foraging habitat for this species but no suitable nesting habitat. A variety of other native birds protected under the Migratory Bird Treaty Act, may utilize habitat within the project area. As such, the mitigation measure provided below is intended to avoid impacts to nesting birds.

The Pallid bat was determined to have a low potential to occur within the project area utilizing drainage holes under the Highway 101 Road Bridge. However, due to the high level of noise and human disturbance, this area is not suitable for a maternal roost. There is a low potential for this area to be used as a night roost. If present, roosting Pallid Bats may be temporarily disturbed by construction noise, but no permanent impact to the species are anticipated.

The Western Bumblebee may utilize ornamental flowers as a suitable nectar source for this species. However, this species has a low potential to occur within the project area. While approximately 0.2 acres of potential foraging habitat for this species could be impacted by the proposed project, landscaping will be installed as part of

the project and there will be many other landscaped areas in the immediate vicinity to provide a food source for this species. However, impacts to the species, if present, are also anticipated to be negligible.

The proposed roundabout project is not anticipated to have a substantial adverse effect: on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or on federally protected wetlands as defined by Section 404 of the Clean Water Act. The proposed project will not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. The proposed project will not conflict with any local policies or ordinances protecting biological resources.

Mitigation Measures:

BR-1. If project construction is planned to occur between February 1st and August 31st and within one week of ground disturbance activities, a preconstruction nesting bird survey shall be conducted by a qualified biologist. If surveys do not locate nesting birds, construction activities may be conducted. If nesting birds are located, no construction activity shall occur within 100 feet of non-raptor bird nests and 500 feet of raptor nests until checks are fledged. The qualified biologist may increase or decrease the buffer on a case-by-case basis in consultation with the California Department of Fish and wildlife if the species, location, topography or work scope support this determination. A preconstruction nesting bird survey report detailing survey findings and recommendations for appropriate worker and project related avoidance shall also be provided to the City as Lead Agency.

Implementation Responsibility: City of King

Monitoring Agency: City of King

Timing: Prior to or during project grading or construction.

5. Cultural Resources

Impacts: The roundabout project site and surrounding areas are highly disturbed and developed and are not expected to contain any known archaeological, paleontological or historic resources. Walkover surveys of the project area did not observe or discover evidence of a sacred/religious site, evidence of Native American remains, evidence of anything of archaeological or paleontological significance or positive findings of historical significance.

However, in the event that significant archaeological or paleontological resources are discovered during project grading or construction, these resources will either be excavated or protected in a manner consistent with all applicable State and local

laws. If necessary, all construction work will be halted in order for these resources to be evaluated by a qualified professional

Mitigation Measures: The City, in 2019, adopted an updated and detailed list of mitigation measures related to cultural resources impacts that are applicable to all development applications. These measures are summarized below.

CR-1. Prior to excavation and construction on the project site, the prime construction contractor or any subcontractor(s) shall be cautioned on the legal and/or regulatory implications of knowingly destroying historic or prehistoric cultural resources or removing artifacts such as, but not limited to, prehistoric ground stone, projectile points, shell middens, or debitage, human remains, historic materials such as, but not limited to, bottles or cans and other cultural materials from the project site.

CR-2. Prior to any demolition, excavation, or construction, the Applicant shall identify a qualified archaeologist to be on call if any cultural resources are identified, or if required by the City, when project excavation of four feet or greater is needed. The City shall approve the selected archaeologist prior to issuance of any permit that includes soil disturbance. When excavation of greater than four feet is anticipated, a Tribal Monitor may be required.

CR-3. Prior to any soil disturbing activities to search for surface evidence of historical or prehistoric cultural resources and if a project survey has not been conducted as part of the project application process, the archaeologist shall conduct a pedestrian survey of the project site. The archaeologist shall be authorized to perform spot check monitoring of subsurface construction for potential cultural resources and analyze and evaluate those artifacts or resources that may be uncovered. The qualified archaeologist shall also have the authority to temporarily halt excavation and construction activities in the immediate vicinity (within a 50-meter radius or approximately 164 feet) of a find if significant or potentially significant cultural resources are exposed and/or adversely affected by construction operations.

CR-4. In the event of a find, reasonable time shall be allowed for the qualified archaeologist to conduct additional subsurface testing, analysis and reporting, if warranted. During this time, excavation and construction shall not be allowed in the immediate vicinity of the find (within a 50-meter radius or approximately 164 feet or within a larger area as determined by the qualified archaeologist). However, activities may continue in other areas of the project site, if so determined by the qualified archaeologist.

CR-5. All cultural materials recovered as part of the testing or monitoring program shall be subject to scientific analysis, professional museum curation and reporting prepared according to current professional standards.

CR-6. In accordance with State CEQA Guidelines, Section 15064.5 (e)(1)(A)(B), in the event of discovery or recognition of any human remains on the project site during development, the following steps should be taken. There shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner is contacted to determine that no investigation of the cause of death is required. Possible indications of burials could include a layer of shells placed over the burial. If the coroner determines the remains to be Native American, then the coroner shall contact the Native American Heritage Commission within 24 hours. The Commission shall identify the person or persons it believes to be the most likely descendent of the deceased Native American. The most likely descendent may then make recommendations to the landowner or person responsible for the excavation work, for the means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in the Public Resources Code.

CR-7. The applicant or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance.

Implementation Responsibility: City of King

Monitoring Agency: City of King

Timing: Prior to or during project grading or construction.

NOTE: Please see Attachment F, correspondence with Karen White, Xolon Salinan Tribe

6. Geology/Soils

Impacts: The proposed project is not expected to expose people or structures to geologic and soils hazards in areas containing the proposed project facilities. All proposed project facilities will be required to meet all applicable requirements contained in the City Building Code.

The proposed project is not expected to expose people or structures to substantial geologic risks due to the rupture of a known earthquake fault, strong seismic ground shaking or seismic related ground failure including liquefaction. Given the relatively flat topography of areas containing the proposed project facilities, little in the way of landslides, substantial erosion or exposure to unstable or expansive soils are expected to occur. The proposed project does not involve the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures: Given the lack of potentially significant impacts to geology and soils, no mitigation measures are required.

7. Hazards/Hazardous Materials

Impacts: The proposed roundabout project will not create a significant hazard to the public or the environment through the routine use and disposal of hazardous materials nor will it 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. The proposed project will not emit hazardous emissions or handle hazardous materials substances or waste within one quarter mile of an existing or proposed school. The proposed roundabout will not impair or interfere with implementation of an adopted emergency response plan or emergency evacuation plan and will not expose people or structures to significant risk of loss, injury or death involving wildfires. As noted above, roundabout project site is located within the vicinity of several known hazardous materials sites. For that reason, the mitigation measure provided below is intended to avoid impacts from these hazardous materials site.

The proposed roundabout project is intended to facilitate traffic flows and reduce wait times as compared to the existing intersection configuration. As such, the future use of this intersection will likely reduce the potential for accidents and/or spills of hazardous materials being transported to and from King City. The improved configuration of this intersection will also facilitate the ability for emergency vehicles trying to access locations within or outside of King City. This represents a beneficial hazards/hazardous materials impact.

Mitigation Measures:

HR-1 - In the event that subsurface contamination is discovered in the review or construction phase of a project, work shall cease and the contamination shall be remediated in a manner acceptable to California Environmental Protection Agency and the California State Water Resources Control Board. The Environstor Geotracker system can identify sites and determine what measures, if any, are required to mitigate subsurface contamination.

Implementation Responsibility: City of King

Monitoring Agency: City of King

Timing: Prior to or during project grading or construction.

8. Hydrology/Water Quality

Impacts: Stormwater runoff from project grading and construction may potentially impact surface stormwater quality. All design measures for stormwater pollution control shall comply with the requirements of the City Municipal Code Section 17.56.100 Stormwater Pollution Prevention. These standards protect against stormwater pollution during project grading and construction.
Given adherence to these requirements, project construction will not violate any water quality standards or waste discharge requirements, substantially deplete groundwater supplies or substantially alter existing drainage patterns or create or contribute runoff water which would exceed the capacity of existing or planned storm water discharge systems or otherwise degrade water quality. In addition, the proposed project will not place any structures within a 100-year floodplain hazard area or expose people or structures to significant loss, injury or death involving flooding. Project facilities will not be exposed to inundation due to a seiche, tsunami or mudflow.

Mitigation Measures: Given the lack of potentially significant impacts related to hydrology/water quality, no mitigation measures are required.

9. Land Use/Planning

Impacts: The proposed project will not physically divide an established community nor conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project area. The proposed project will also not conflict with any applicable habitat conservation plan or natural community conservation plan.

The proposed project may indirectly induce changes in land use as a result of improved traffic circulation within the northern portions of King City. The proposed project will not, however, directly cause a change in any existing or future City land use or zoning designations.

Mitigation Measures: Given the lack of potentially significant land use and planning impacts, no mitigation measures are required.

10. Noise

Impacts: Project grading and construction is expected to generate construction noise which represents a short-term impact on ambient noise levels. The primary source of construction noise is heavy equipment including, but not limited to, trenching equipment, trucks, concrete mixers and portable generators that can reach high levels. The peak noise level for most of the heavy equipment that will be used during project construction is 70 to 95 dBA at a distance of 50 feet. At 200 feet, the peak construction noise levels range from 58 to 83 dBA. At 400 feet, the peak noise levels range from 52 to 77 dBA. These noise levels are based upon worst-case conditions. Typically, construction-related noise levels near the construction site will be less. Construction-related noise impacts are considered to be short-term and temporary.

Long-term operations of the proposed roundabout project are not expected to increase ambient traffic noise levels beyond those currently impacting the existing land uses surrounding the project site. The reduction in the amount of stop and go traffic associated with the proposed roundabout is expected to reduce long-term noise levels in areas adjacent to the roundabout. This represents a beneficial noise impact.

Mitigation Measures: Given the lack of potentially significant noise impacts, no mitigation measures are required.

11. Population and Housing

Impacts: The proposed roundabout will generate employees during project construction. However, this generation of employees is considered to be a short-term, insignificant impact. Once project construction is completed, the proposed roundabout will not generate any additional long-term employees. As such, the lack of any long-term employee generation will negate the potential demand for additional housing.

Mitigation Measures: Given the lack of potentially significant impacts to population and housing, no mitigation measures are required.

12. Public Services

Impacts: The proposed project will not result in any additional long-term employees and, as such, will not generate any additional demand upon existing fire protection, police protection, schools, parks, other recreational facilities or other governmental services. It should be noted that the proposed roundabout will provide a safer traffic intersection which will likely benefit law enforcement, fire protection and emergency services. This represents a beneficial public services impact.

Mitigation Measures: Given the lack of potentially significant impacts to public services, no mitigation measures are required.

13. Recreation

Impacts: The proposed roundabout will generate employees during project construction. However, this generation of employees is considered to be a short-term, insignificant impact. Once project construction is completed, the proposed roundabout will not generate any additional long-term employees. As such, the lack of any long-term employee generation will negate the potential demand upon existing neighborhood and regional parks or other local recreational facilities. The proposed project will also not require the construction or expansion of recreational facilities.

Mitigation Measures: Given the lack of potentially significant impacts to recreation facilities, no mitigation measures are required.

14. Transportation/Circulation

Impacts: The proposed roundabout roadway involves the removal of existing traffic signals and roadway improvements including but not limited to resurfacing, restriping, installation of sidewalks and landscaping of medians to San Antonio Drive, San Lorenzo Park Road, Broadway Street and the U.S. Highway 101 northbound on- and off-ramps.

The proposed roundabout will generate employees and automobile trips during project construction. The proposed project is estimated to require the average of approximately ten employees at one time during project construction. Assuming a worst-case automobile trip generation factor of four vehicle trips per employee per day, a total of forty vehicle trips per day will be added onto local roadways by construction employees. This generation of traffic is considered to be a short-term, insignificant impact.

Once project construction is completed, the proposed roundabout will not generate any additional automobile trips. It is assumed that maintenance and oversight of the roundabout operations will occur without the substantial addition of cars or trucks onto local roadways.

The proposed project will not cause a substantial increase in traffic and will not exceed any level of service standards on any local roadways. The proposed project will not result in any changes in air traffic patterns or exposure to local roadway hazards. Given the lack of additional vehicle trips, the proposed project will not result in inadequate emergency access or parking capacity. However, the final design of the vegetation within the center of the roundabout could, if not properly designed, inhibit the driver's ability to see other cars either approaching or within the roundabout. For that reason, the mitigation measure provided below is intended to avoid impacts resulting from the blockage of views for drivers from various vantage points within the roundabout.

The Regional Roundabout Study identified and evaluated the existing and proposed intersection control options that were considered for the existing roundabout intersection. The five design options that were analyzed include: 1) the existing intersection with a signal control; 2) the existing intersection with a two-way stop control; 3) a modified intersection with signal control: 4) a single lane roundabout configuration and 5) a single lane roundabout configuration with the addition of a westbound Broadway Street right- turn lane that will be required between the years

2030 and 2040. The results of the analysis of these five intersection options are summarized below in terms of levels of service at the years 2015, 2030 and 2040.

By way of background, Levels of Service A through C are generally considered acceptable traffic levels when evaluating roadway and intersection capacity. Level of Service D is sometime considered acceptable when evaluating roadway and intersection capacity within highly urbanized areas. Otherwise, Levels of Service D and F are generally considered unacceptable.

1. The existing intersection with signal control option had Levels of Service B during both the A.M. and P.M. peak hour in the design year 2015, Levels of Service C during both the A.M. and P.M. peak hour in the year 2030 and Level of Service D during the A.M. peak hour and Level of Service C during the P.M. peak hour in the year 2040. With this option, northbound and westbound Broadway Street queues will exceed available automobile storage which would affect available storage on northbound U.S. Highway 101 ramps.

2. The existing intersection with a two-way stop control option had Levels of Service C during both the A.M. and P.M. peak hour in the design year 2015, Level of Service C during the A.M. peak hour and Level of Service D during the P.M. peak hour in the year 2030 and Levels of Service F during both the A.M. and P.M. peak hour in the year 2040. With this option, northbound and westbound Broadway Street queues will exceed available automobile storage which would affect available storage on northbound U.S. Highway 101 ramps.

3. The modified intersection with signal control option had Levels of Service C during both the A.M. and P.M. peak hour in the design year 2015, Levels of Service C during both the A.M. and P.M. peak hour in the year 2030 and Levels of Service D during both the A.M. and P.M. peak hour in the year 2040. With this option, westbound traffic on Broadway Street will exceed available storage Broadway Street during the P.M. peak hour in 2030.

4. The single lane roundabout control option had Levels of Service A during both the A.M. and P.M. peak hour in the design year 2015 and Level of Service A during the A.M. peak hour and Level of Service B during the P.M. peak hour in the year 2030. Significant queues are anticipated on westbound Broadway Street during the 2015 and 2030 A.M. and P.M. peak hours.

5. The single lane roundabout control with the addition of a westbound Broadway Street right turn lane option has Level of Service B during the A.M. peak hour and Level of Service C during the 2040 P.M. peak hour.

Based upon the above data, the study concluded "the roundabout (option) is expected to provide superior operations compared to the other existing conditions and proposed signal modification alternatives." Design options 4 and 5 were

ultimately selected by King City. Selection of these design options represents a beneficial transportation/circulation impact.

Mitigation Measures:

TC-1 Prior to project construction, a detailed landscape plan shall be prepared and approved by the City which identifies the plant material to be introduced in the center of the roundabout facility. This plan shall include the specific plant species as well as the location and ultimate height of these plants with the goal of insuring that lines of sight for drivers from any portions of the roundabout will not be blocked or inhibited in any way.

Implementation Responsibility: City of King

Monitoring Agency: City of King

Timing: Prior to or during project grading or construction.

15. Utility/Service Systems

Impacts: Construction and operation of the proposed roundabout project is not expected to generate the demand for wastewater treatment or new water sources. Project plans do include construction of new connection to or existing storm water drainage facilities in order to avoid any significant environmental effects. A minimal amount of water will be required during project construction as well as for irrigation of vegetation within the roundabout facility. Project construction will also generate a minimal amount of solid waste that will be transported to the nearest landfill.

The proposed roundabout will not require construction of new storm water drainage infrastructure facilities nor have the need for significant additional water supplies. It will be creating several BMP basins with new catch basins that connect to existing storm drain lines. Solid waste generated by the proposed roundabout will likely be transported to the Marina Landfill facility near Salinas in Monterey County. This landfill currently has sufficient capacity to accept the minimal amount of solid waste generated by the proposed roundabout in accordance with Federal, State and local regulations.

Mitigation Measures: Given the lack of potentially significant impacts associated with utilities and service systems, no mitigation measures are required.

III. PROJECT DESCRIPTION

A. PROJECT LOCATION

The proposed U.S. Highway 101/Broadway Street roundabout (also referred to herein as "the proposed roundabout" or "the proposed project") is located at the intersection of East San Antonio Drive, Broadway Street, San Lorenzo Park Road and the northbound U.S. Highway 101 on- and off-ramps, all of which are within the City of King. This intersection is immediately north of and adjacent to U.S. Highway 101 and is one of the two primary entry points to King City. U.S. Highway 101 provides direct access to Salinas and other destinations to the north as well as to Paso Robles and other destinations to the south. U.S. Highway 101 also connects to State Route 198 which provides access to the Central Valley (see Attachment A, Figures and Photographs of this document).

B. PROJECT SETTING

The proposed roundabout will be located approximately 100 feet north of the existing Broadway Street/San Antonio Drive/San Lorenzo Park Drive intersection and U.S. Highway 101 ramps, within the existing City and Caltrans rights-of-way. The existing Broadway Street/San Antonio Drive/San Lorenzo Park Drive intersection and the U.S. Highway 101 northbound on- and off-ramps are less than 100 feet apart, which the City considers to be too closely spaced. Two different types of traffic controls are currently used at this location. The Broadway Street/San Antonio Drive/San Lorenzo Park Road intersection is controlled by a traffic signal, while the Broadway Street/U.S. Highway 101 northbound ramp intersection is controlled by a two-way stop sign. Given the unique configuration of this intersection coupled with the proximity of the northbound freeway on- and off-ramps, vehicle turning movements are currently restricted during the peak traffic hours with traffic often backing up onto the northbound freeway off-ramp. Even though the existing signal control can handle AM and PM peak hour traffic levels, the current intersection is not considered to operate effectively despite these existing peak hour traffic levels.

The Transportation Agency for Monterey County has recommended that a roundabout be constructed at the Broadway Street/San Antonio Drive/Lorenzo Park Drive intersection. According to the Regional Roundabout Study, the existing intersection signal control and the existing stop control on the U.S. Highway 101 northbound off-ramp operates with an acceptable delay for the existing traffic, however southbound U.S. Highway 101 vehicles exiting onto Broadway Street frequently experience vehicle queuing which extends onto the off-ramp. It is difficult for northbound vehicles exiting U.S. Highway 101 to turn left onto Broadway Street because of the queuing caused by the signalized intersection and the short distance between the U.S. Highway 101 northbound off-ramp and the signal. The short distance between intersections also makes it difficult for left turning vehicles from

Broadway Street to enter the U.S. Highway 101 northbound on-ramp. Thus, the efficiency of the intersection is compromised for movements from U.S. Highway 101 onto Broadway Street. In addition, a roundabout intersection at this location will allow enough space to install upgraded access routes for pedestrians, as well as bicycles and other multimodal transportation which currently have no facilities.

Land uses surrounding the intersection include a gas station/convenience store and a Denny's restaurant between Broadway Street and the U.S. Highway 101 northbound off-ramp. North of Broadway Street and east of San Antonio Drive is a Days Inn hotel and the King City Cemetery. West of San Antonio Drive and north of San Lorenzo Park Road is a medium density residential development, a health care facility and a Quality Inn hotel. Immediately south of the Broadway Street/San Lorenzo Park Road/San Antonio Drive intersection is the northbound freeway on-ramp and U.S. Highway 101. This existing intersection provides access to points throughout the City. San Lorenzo Park Road parallels the Salinas River and terminates approximately one mile west of the existing intersection. San Antonio Drive extends north of the existing intersection, while Broadway Street extends both to the east, providing access to the downtown area, and to the south.

The existing intersection is located within the southern portion of the City, approximately 700 feet from the southwestern City boundary. Land use designations of the surrounding properties include (HSC) Highway Service Commercial, (OS) Open Space, (MHDR) Medium High Density Residential, and (LDR) Low Density Residential. The City's zoning classifications for the area surrounding the proposed project include (H-S) Highway Services District, (R-1) Single Family Residential District, and (R-3) Medium High Density Residential District.

C. PROJECT BACKGROUND

The Transportation Agency for Monterey County has recommended that a roundabout be constructed at the Broadway Street/San Antonio Drive/Lorenzo Park Drive intersection. According to the Regional Roundabout Study, the existing intersection signal control and the existing stop control on the U.S. Highway 101 northbound off-ramp operates with an acceptable delay for the existing traffic, however southbound U.S. Highway 101 vehicles exiting onto Broadway Street frequently experience vehicle queuing which extends onto the off-ramp. It is difficult for northbound vehicles exiting U.S. Highway 101 to turn left onto Broadway Street because of the queuing caused by the signalized intersection and the short distance between the U.S. Highway 101 northbound off-ramp and the signal. The short distance between intersections also makes it difficult for left turning vehicles from Broadway Street to enter the U.S. Highway 101 northbound on-ramp. Thus, the efficiency of the intersection is compromised for movements from U.S. Highway 101 onto Broadway Street. In addition, a roundabout intersection at this location will allow enough space to install upgraded access routes for pedestrians, as well as bicycles and other multimodal transportation which currently have no facilities.

D. PROJECT OBJECTIVES

The basic purpose of the proposed roundabout intersection is to alleviate traffic congestion on Broadway Street, San Antonio Drive and San Lorenzo Park Road while also improving access to and from U.S. Highway 101 via the northbound on- and off-ramps. The proposed project is also intended to improve traffic circulation at the intersection thereby reducing vehicle delay during high traffic periods. Based on the City's evaluation of various interchange designs, a roundabout design was identified as the most cost-effective means of traffic control at the project location. As such, the proposed roundabout configuration will reduce traffic congestion, reduce traffic back-ups onto the U.S. Highway 101 northbound off-ramp and most importantly improve safety at this location. The proposed project will also accommodate multi-modal transportation and non-motorized vehicle access to crosswalks and sidewalks, thus improving safety for all users.

The proposed roundabout intersection will be designed to accomplish the following objectives:

- Reduce congestion at the project intersection and queuing onto the freeway,
- Improve safety by simplifying vehicle movements, particularly for northbound off-ramp vehicles exiting from U.S. Highway 101 and northbound vehicles on Broadway Street turning left onto the freeway,
- Improve safety for pedestrian, bicycle, and other multimodal transportation users by installing crosswalks and sidewalks,
- Provide an efficient and safe intersection for agriculture trucks, especially when loaded,
- Optimize the roundabout size and location to balance right of way constraints with solid roundabout design principles and
- Establish a gateway to Broadway Street and the historic downtown King City.

E. PROJECT CHARACTERISTICS

The proposed roundabout intersection will be approximately 130 feet in diameter and will be designed to maximize sight lines, provide proper approach angles, and regulate entry speeds to ensure safe and efficient traffic circulation.

Construction of the proposed project will commence with the removal of the existing traffic signals and stop sign which currently regulate vehicle traffic at the existing Broadway Street/ San Antonio Drive/San Lorenzo Park Road intersection and U.S. Highway 101 on- and off-ramps. The proposed project will replace the existing traffic controls and will involve a variety of specific roadway improvements as listed below.

Broadway Street – Improvements to Broadway Street include the installation of a raised entry/exit median and crosswalk to connect proposed sidewalks and reduce the roadway width for traffic calming. The street will have a full section replacement

for approximately 125 feet, grind and overlay for approximately 100 feet and full restriping. Landscaping will also be installed to the north of the roadway connection and adjacent to the existing gas station.

U.S. Highway 101 Northbound Off-Ramp – The U.S. Highway 101 northbound off-ramp will have full roadway section replacement for a distance of approximately 30 feet east of the proposed roundabout intersection, and grind and overlay for approximately 60 feet and be restriped for the full length. The existing medians will be landscaped and a crosswalk will be installed to connect to the proposed sidewalk which will surround the roundabout improvements.

U.S. Highway 101 Northbound On-Ramp – The U.S. Highway 101 northbound on-ramp have full roadway section replacement for a distance of approximately 75 feet, grind and overlay for approximately 25 feet and be restriped for the full length. A crosswalk will also be provided to connect the sidewalks circling the intersection.

San Antonio Drive – Improvements to San Antonio Drive north of the proposed roundabout intersection include installing a sidewalk, crosswalk, and a raised entry/exit median with landscaping. The design will adjust lane widths to moderate traffic speed. San Antonio Drive north of the proposed roundabout will also have full roadway section replacement for a distance of approximately 175 feet, grind and overlay for approximately 200 feet and be restriped for the full length.

San Lorenzo Park Road – Improvements to San Lorenzo Park Road will include a raised center median, crosswalk and sidewalks. Landscaping will be installed between San Lorenzo Park Road and U.S. Highway 101. San Lorenzo Park Road will have full roadway section replacement for a distance of approximately 150 feet, grind and overlay for approximately 50 feet and be restriped for the full length.

Right of Way – The proposed roundabout intersection improvements will encroach into approximately 90 feet of Caltrans Right of Way at the median between the U.S. Highway 101 northbound on-ramp and San Lorenzo Park Road.

F. PROJECT APPROVALS

The proposed roundabout intersection will require site plan review and approval by the City of King. It is also anticipated that an encroachment permit from the California Department of Transportation (Caltrans) for the portion of the project facilities that extend into the U.S. Highway 101 right-of-way will be required.

G. PROJECT TIMING

The preliminary project design is anticipated to be completed by April 1, 2020. At that point, detailed project plans will be proposed. It is expected that these detailed plans will be completed in approximately one month at which point an application for Highway Safety Improvement Plan funding and a construction bid will be

prepared. It is estimated that construction of the proposed roundabout intersection will require twelve to eighteen months to complete.

H. PROJECT ALTERNATIVES

The Regional Roundabout Study prepared by the Transportation Agency for Monterey County evaluated several design alternatives for the proposed roundabout intersection. These design alternatives include making signal modifications at the existing intersection as well as alternative roundabout designs. The Study also evaluated the existing intersection configuration to provide a basis for comparison of these project alternatives. The estimated operation of each of these designs were evaluated in terms of existing and future levels of intersection traffic delay. Based on this analysis, the currently proposed roundabout intersection configuration was selected.

IV. ENVIRONMENTAL EVALUATION

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is either a "Significant", "Unknown Potentially Significant" or "Potentially Significant and Mitigable" impact. "Not Significant" impacts are also noted in the following checklist. Impacts that are considered beneficial, while not included in the as a checklist option, are also discussed in this section.

	1. Aesthetics			9. Land Use/Planning
	2. Agricultural Resources			10. Noise
X	3. Air Quality/Greenhouse Gas Emissions			11. Population/Housing
X	4. Biological Resources			12. Public Services
X	5. Cultural Resources			13. Recreation
	6. Geology/Soils		X	14. Transportation/Circulation
X	7. Hazards/Hazardous Materials			15. Utility/Service Systems
	8. Hydrology/Water Quality			

The following checklist indicates the potential level of impact and based upon the following categories:

Significant:	Known significant environmental impacts.
Unknown, Potentially Significant:	Unknown potentially significant impacts, which require further review to determine significance level.
Potentially Significant and Mitigable:	Potentially significant impacts which can be mitigated to less than significant levels.
Not Significant:	Impacts which are not considered significant.
Beneficial:	Impacts which are considered to be beneficial which include the following topic areas: air quality, hazards/hazardous materials, noise, public services and transportation/circulation.

1.	AESTHETICS: Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Have a substantial adverse effect on a scenic vista?				X
b.	Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within view of a state scenic highway?				X
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d.	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X

Existing Conditions: The City of King General Plan indicates that the visual and scenic resources within southern Monterey County could be considered "scenic" due to its rural character and agricultural setting. The Salinas River is located approximately 700 feet west of the project site while the San Lorenzo Creek is located approximately one mile to the east. U.S. Highway 101, which is located immediately to the west of the roundabout project site, is not designated as a State Scenic Highway and is not eligible for listing. The closest eligible State Scenic Highway is State Route 198, located approximately 9 miles southeast of the project site.

The proposed roundabout site is surrounded by developed land uses at and around the intersection of East San Antonio Drive, Broadway Street, and San Lorenzo Park Road within King City. Land uses surrounding this intersection are typical urbanized uses including a gas station, a convenience store and a Denny's restaurant between Broadway Street and the U.S. Highway 101 northbound off ramp. To the north of Broadway Street and East of San Antonio Drive is a Days Inn Hotel and the King City Cemetery. West of San Antonio Drive and north of San Lorenzo Park Road is a medium density residential development, a healthcare facility and a Quality Inn Hotel. Immediately south of the Broadway Street/San Antonio Drive/Lorenzo Park Road intersection is northbound U.S. Highway 101 and its northbound on- and off-ramps. The Salinas riverbed, which is located west of the roundabout site, contains many large trees and thick ground vegetation.

Impacts: Given the nature of the proposed project facilities, those being the installation of a roundabout, crosswalks, medians sidewalks and other roadway improvements combined with the nature and extent of existing development surrounding the site, none of the proposed roundabout project facilities will have a substantial adverse effect upon any scenic vistas nor will they degrade any existing scenic resources or the visual character or quality of its surroundings. The proposed project will not create any new sources of substantial light or glare which would affect day or nighttime views in the area.

Mitigation Measures: Given the lack of potentially significant impacts to aesthetics, no additional mitigation measures are recommended.

2.	AGRICULTURAL 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c.	Involve other changes in the existing environment, which, due to their location or nature could result in conversion of farmland, to non-agricultural use?				X

Existing Conditions: The roundabout project site is located in a valley bound by the Gabilan Range to the east and the Santa Lucia Range to the west. The Salinas River, located west of the project site, flows in a north and northwest direction. San Lorenzo Creek, located approximately one mile east of the project site, flows west until it drains into the Salinas River. This valley contains rich soils formed by sediments that were carried out of the adjacent mountain ranges. The Valley is composed almost entirely of prime agricultural land and is extensively farmed.

There is no existing farmland within or adjacent to the project site. The California Department of Conservation maps indicate that the project site and immediate surrounding areas are designated as Urban and Built Up land. The closest prime farmland is located approximately one mile to the northeast of the project site along San Antonio Drive. Active agriculture operations are ongoing in areas north and northeast of the roundabout project site.

Impacts: All of the proposed improvements associated with the roundabout project are located on approximately 4.3 acres that are approximately one mile south of

existing farmland. As such, the roundabout project site is not expected to directly impact ongoing agricultural activities.

The proposed project will not directly impact any areas designated as prime farmland, unique farmland or farmland of statewide importance nor will they conflict with any areas zoned for agricultural use or covered by a Williamson Act contract. The proposed project will not result in any conversion of existing farmland to non-agricultural use.

Mitigation Measures: Given the lack of potentially significant impacts to agricultural resources, no additional mitigation measures are recommended.

3.	AIR QUALITY/GREENHOUSE GAS EMISSIONS Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Conflict with or obstruct implementation of the applicable air quality plan?				X
b.	Expose of sensitive receptors to substantial pollution concentrations (emissions from direct, indirect, mobile and stationary sources)?				X
c.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
d.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				X
e.	Create objectionable smoke, ash, dust or odors affecting a substantial number of people?				X
f.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				X
g.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

The following discussion of air quality conditions and project impacts is based upon information contained within the "King City Roundabout – Air Quality Emissions Summary" prepared by SCS Engineers dated July 30, 2020. This analysis is included in its entirety in Attachment B of this document.

Existing Conditions: The project site is located within the Monterey Bay Unified Air Pollution Control District boundaries which is located within the North Central

Coast Air Basin. The District is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education and public information activities related to air pollution. The District is also responsible for the implementation and enforcement of attainment of acceptable pollutant levels and maintenance of Federal and State ambient air standards.

Impacts: Air quality impacts of the proposed roundabout project are assessed in terms of both short-term construction impacts and long-term operational impacts.

Estimated short-term construction pollutant emissions associated with the proposed roundabout project were quantified based upon standard construction emission rates derived from the California Emissions Estimator Model (CalEEMOD) the combination of total days and hours of construction work, the fleet mix and equipment emission rates were utilized to quantify estimated emissions of common criteria pollutants and greenhouse gases. Particulate matter (PM) emissions related to fuel combustion, construction equipment and vehicles has also been estimated. Grading activities associated with the proposed roundabout project also have been quantified using emission factors recommended by the EPA. Air quality compliance within the project area is managed by the Monterey Bay Unified Air Pollution Control District. District guidelines state that the anticipated level of ozone precursors (such as NOx) associated with project construction have already been included in their Air Basin Plan and therefore constitute a less than significant impact.

The District's guidelines have also quantified a significant threshold of 82 pounds per day for PM10. Project construction emissions are estimated to be 8.39 pounds per day for both combustion and fugitive dust combined. However, this PM10 emissions rate for fugitive dust assumes the application of dust suppression watering as noted in the mitigation measure below. Application of this mitigation method, which is a standard construction industry practice, reduces fugitive dust emission rates by approximately 68%. Therefore, the estimated PM10 emissions, with application of regular site watering, are well below the Districts threshold and constitute a less than significant impact.

The District also requires that short-term construction projects be evaluated for potential acute health risks from toxic air contaminant emissions (TAC). Small levels of TAC's such as diesel particulate matter during project construction could be produced by construction equipment. According to the Bay Area Air Quality Management District (BAAQMD), construction projects of approximately 3 acres in size should maintain a 55 meter setback from sensitive receptors in order to minimize short-term, acute health risks from TAC's. The nearest residential sensitive receptors in the vicinity of the proposed roundabout project are single-family homes on Bluff Avenue and apartments on San Antonio Drive which are located approximately 70 meters from the project construction zone. As such, impacts from short-term health risk pollutants are expected to be less than significant.

Long-term operational pollutant emissions associated with the proposed roundabout project were analyzed using the relative change from the baseline existing intersection condition to the fully developed roundabout project. The primary variable in this analysis was the change in delay hours at the intersection in terms of vehicle hours per year. The existing intersection experiences an annual total of 9,295 delay hours while automobiles are waiting to enter the intersection. The proposed roundabout design is estimated to result in a total of 3,932 delay hours, a net reduction of 5,363 delay hours. This net reduction in vehicle hour delays of approximately 5,363 hours per year results in a reduced volume of air pollutant emissions associated with the presence of idling or low-speed travel at this intersection. This represents a beneficial long-term air quality impact.

The proposed project will not conflict with or obstruct the implementation of any air quality plan, expose sensitive receptors to substantial pollution concentrations, violate any established air quality standards or result in a net increase of any criteria pollutant for which the region is in non-attainment. The proposed project will not create objectionable smoke, ash, dust or odors affecting existing residents or other persons in the immediate area. The proposed project will not generate significant greenhouse gas emissions or conflict with any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

Mitigation Measures:

AQ-1. Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the construction site. Increased watering frequency will be required whenever when wind speeds exceed 15 mph. Reclaimed water, if available, shall be used for dust control and other construction related purposes during project construction.

4.	BIOLOGICAL RESOURCES Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
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?		X		
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife service?				X
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?				X

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?				X
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

The following discussion of biological resources conditions and project impacts is based upon information contained within the "Biological Resources Letter Report for the King City Roundabout, King City, California" prepared by Althouse and Meade dated July 24, 2020. This analysis is included in its entirety in Attachment C of this document.

Existing Conditions: A majority of the project area is currently developed. There is, however, a small area of ornamental/ landscaped vegetation and non-native wild oats grassland species. These three habitats are described below.

The southern extent of the project area is dominated by a by a small area (0.3 acres or approximately 7% of the site) which contains a mixture of non-native annual grasses including wild oats, wild mustard, yellow star thistle, Russian thistle, rat tail six weeks grass and other non-native annual species. Individual oak trees and a small population of coyote brush and holly-leaf red berry lie directly outside this project area adjacent to this habitat type. This habitat is typically found on disturbed north facing slopes on the northern side of the on and off ramps of Highway 101. No special status species were observed within this habitat.

Ornamental/landscaped vegetation includes ornamental plantings found in a small area (0.8 acres or approximately 19% of the site). Ornamental/landscaped species within this area include lantana, crêpe myrtle, hot-lips sage and ornamental gaura as well as several ornamental hedges including red claws and privet.

Developed areas comprise the majority of the project area (3.2 acres or approximately 75% of the site) and include portions of existing roadways, parking lots and sidewalks.

On-site botanical surveys identified 55 plant species comprised of 11 native and 44 non-native and ornamental species within the project area. A total of 18 wildlife species were observed within the project area including those adapted to urban land uses. These species include the Northern Mockingbird, European starling and house sparrow. Suitable nesting habitat is present within the project area within native shrubs and ornamental landscaping within developed features including the Highway 101 overpass bridge. Existing land uses preclude the potential presence of most sensitive species within the project area. Two special status plant species and three special status wildlife species have a low potential to occur within the project

area. Based upon an analysis of known ecological requirements, consultation of known records and the habitat conditions within the project area, the remaining special status plants and special status animal species were determined to have no potential to occur due to absence of suitable habitat, soils or other ecological conditions.

Impacts: The proposed roundabout will occupy approximately 2.5 acres when all phases of the project are complete. The proposed project would affect only previously disturbed habitat including 0.1 acres of wild oats grassland, 0.2 acres of ornamental landscaping and 2.2 acres of developed areas. No impacts to native habitat would occur due to the proposed project
Two special status plant species which were determined to have a low potential to occur within the project area include the Douglas spine flower and the Elegant wild buckwheat. Neither of these species were observed during on-site surveys. As such, the proposed project will not impact any special status plant species.

No sensitive wildlife species were observed during site surveys and have a low potential to occur within the project area. These species include Cooper's hawk, the Pallid bat and the Western bumble bee. There is a low potential for Cooper's hawk to occur within the study area as there is potentially suitable foraging habitat for this species but no suitable nesting habitat. A variety of other native birds protected under the Migratory Bird Treaty Act, may utilize habitat within the project area. As such, the mitigation measure provided below is intended to avoid impacts to nesting birds.

The Pallid bat was determined to have a low potential to occur within the project area utilizing drainage holes under the Highway 101 Road Bridge. However, due to the high level of noise and human disturbance, this area is not suitable for a maternal roost. There is a low potential for this area to be used as a night roost. If present, roosting Pallid Bats may be temporarily disturbed by construction noise, but no permanent impact to the species are anticipated.

The Western Bumblebee may utilize ornamental flowers as a suitable nectar source for this species. However, this species has a low potential to occur within the project area. While approximately 0.2 acres of potential foraging habitat for this species could be impacted by the proposed project, landscaping will be installed as part of the project and there will be many other landscaped areas in the immediate vicinity to provide a food source for this species. However, impacts to the species, if present, are also anticipated to be negligible.

The proposed roundabout project is not anticipated to have a substantial adverse effect: on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or on federally protected wetlands as defined by Section 404 of the Clean Water Act. The proposed project will not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors.

The proposed project will not conflict with any local policies or ordinances protecting biological resources.

Mitigation Measures:

BR-1. If project construction is planned to occur between February 1st and August 31st and within one week of ground disturbance activities, a preconstruction nesting bird survey shall be conducted by a qualified biologist. If surveys do not locate nesting birds, construction activities may be conducted. If nesting birds are located, no construction activity shall occur within 100 feet of non-raptor bird nests and 500 feet of raptor nests until checks are fledged. The qualified biologist may increase or decrease the buffer on a case-by-case basis in consultation with the California Department of Fish and wildlife if the species, location, topography or work scope support this determination. A preconstruction nesting bird survey report detailing survey findings and recommendations for appropriate worker and project related avoidance shall also be provided to the City as Lead Agency.

5. CULTURAL RESOURCES Would the project:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.				X
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?			X	
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d.	Disturb any human remains, including those interred outside of formal cemeteries?			X	

The following discussion of cultural resources conditions and project impacts is based upon information contained within the "Cultural Resource Inventory Survey of an Intersection With San Antonio Road, Broadway Street and San Lorenzo Park Drive, King City, Monterey County, California" prepared by Cultural Resource Management Services dated September, 2020. This analysis is included in its entirety in Attachment D of this document.

Existing Conditions: Archaeological evidence indicates that the Interior Coast Ranges have a long history of occupation by Native American groups, perhaps extending back 10,000 years or more.

The earliest evidence of Native American occupation is from the Early Holocene/Millingstone period (9000 Before Present or BP to 5500 BP). Artifacts found in the San Luis reservoir area include millingstones, handstones, small shaped mortars and pestles, simple flaked stone tools, perforated stone pendants and beads made from shells.

The Early Period (5500 BP to 2500 BP) was marked by the appearance of mortars and pestles, projectiles and other artifacts including large beads, side-notched projectile points, milling slabs and handstones. Early Period artifacts have been found along the ridge tops between Pacheco Pass and Priest Valley as well as at several sites within Camp Roberts.

The Middle Period (2500 BP to 1000 BP) is well represented at sites along the central coast and increasingly in interior regions as well. The types of artifacts found during this period are similar to those from the Early Period, however, the nature and extent of these artifacts produced evidence that intensive occupation of the upland valleys and drainages occurred throughout most of this period.

The Middle Late and Late /Historic Periods (700 BP to Historic Contact) was marked by disruption in settlement patterns and subsistence activities and periods of severe and prolonged drought. Artifacts are characterized by bowl mortars, shaped pestles, and tapered stemmed projectile points. Artifacts from this period include new shell and bead types, side notched triangular arrow points and many artifacts found in earlier periods. The extent of human occupation of this area is well-documented at Camp Roberts, Fort Hunter Liggett and Santa Isabel Ranch near Paso Robles.

At the time of European contact, the surrounding region was occupied by Salinan people. Salinan territory extended along the coast and inland to the crest of the Coast Range. To the northwest and northeast were the Esselen and the Ohlone, to the south were the Chumash and to the east lived the Tachi and the Tulamni bands of the Southern Valley Yokuts. Nearly all of Central California's original inhabitants practiced a semi-sedentary hunting and gathering economy.

No prehistoric archaeological sites have been recorded within the areas surrounding the roundabout project site. However, one piece of debitage, stone flakes that are the result of stone tool manufacture or maintenance, was found in 2018 north of the study area. The lack of archaeological sites in the immediate vicinity of King City is consistent with the ethnographic literature that places villages at the edge of the Salinas Valley with a lack of settlements on the valley floor. However, more temporary occupations along the Salinas River and San Lorenzo Creek may have been part of the settlement system, now obscured or eroded by the meandering river or creek channels.

Impacts: The roundabout project site and surrounding areas are highly disturbed and developed and are not expected to contain any known archaeological, paleontological or historic resources. Walkover surveys of the project area did not observe or discover evidence of a sacred/religious site, evidence of Native American remains, evidence of anything of archaeological or paleontological significance or positive findings of historical significance.

However, in the event that significant archaeological or paleontological resources are discovered during project grading or construction, these resources will either be excavated or protected in a manner consistent with all applicable State and local laws. If necessary, all construction work will be halted in order for these resources to be evaluated by a qualified professional.

Mitigation Measures: The City, in 2019, adopted an updated and detailed list of mitigation measures related to cultural resources impacts that are applicable to all development applications. These measures are summarized below.

CR-1. Prior to excavation and construction on the project site, the prime construction contractor or any subcontractor(s) shall be cautioned on the legal and/or regulatory implications of knowingly destroying historic or prehistoric cultural resources or removing artifacts such as, but not limited to, prehistoric groundstone, projectile points, shell middens, or debitage, human remains, historic materials such as, but not limited to, bottles or cans and other cultural materials from the project site.

CR-2. Prior to any demolition, excavation, or construction, the Applicant shall identify a qualified archaeologist to be on call if any cultural resources are identified, or if required by the City, when project excavation of four feet or greater is needed. The City shall approve the selected archaeologist prior to issuance of any permit that includes soil disturbance. When excavation of greater than four feet is anticipated, a Tribal Monitor may be required.

CR-3. Prior to any soil disturbing activities to search for surface evidence of historical or prehistoric cultural resources and if a project survey has not been conducted as part of the project application process, the archaeologist shall conduct a pedestrian survey of the project site. The archaeologist shall be authorized to perform spot check monitoring of subsurface construction for potential cultural resources and analyze and evaluate those artifacts or resources that may be uncovered. The qualified archaeologist shall also have the authority to temporarily halt excavation and construction activities in the immediate vicinity (within a 50-meter radius or approximately 164 feet) of a find if significant or potentially significant cultural resources are exposed and/or adversely affected by construction operations.

CR-4. In the event of a find, reasonable time shall be allowed for the qualified archaeologist to conduct additional subsurface testing, analysis and reporting, if warranted. During this time, excavation and construction shall not be allowed in the immediate vicinity of the find (within a 50-meter radius or approximately 164 feet or within a larger area as determined by the qualified archaeologist). However, activities may continue in other areas of the project site, if so determined by the qualified archaeologist.

CR-5. All cultural materials recovered as part of the testing or monitoring program shall be subject to scientific analysis, professional museum curation and reporting prepared according to current professional standards.

CR-6. In accordance with State CEQA Guidelines, Section 15064.5 (e)(1)(A)(B), in the event of discovery or recognition of any human remains on the project site during development, the following steps should be taken. There shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner is contacted to determine that no investigation of the cause of death is required. Possible indications of burials could include a layer of shells placed over the burial. If the coroner determines the remains to be Native American, then the coroner shall contact the Native American Heritage Commission within 24 hours. The Commission shall identify the person or persons it believes to be the most likely descendent of the deceased Native American. The most likely descendent may then make recommendations to the landowner or person responsible for the excavation work, for the means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in the Public Resources Code.

CR-7. The applicant or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance.

6.	GEOLOGY /SOILS Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
i)	Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist or based on other substantial evidence of a known fault?				X
ii)	Strong seismic ground shaking?				X
iii)	Seismic-related ground failure, including liquefaction?				X
iv)	Landslides?				X
b.	Result in substantial erosion or the loss of topsoil?				X
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?				X
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?				X
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

Existing Conditions: The roundabout project site is located in the Salinas Valley between the Santa Lucia Range to the west and the Gabilan Range to the east. Runoff from these mountain ranges forms the Salinas River which flows through the valley in a south to north direction within or adjacent to King City.

The project area contains three soil types. The Pico Fine Sandy Loam comprises a large majority (93%) of the project site and is very deep and well-drained. This soil type is typically found on mild-to-moderate slopes formed from alluvium derived from sedimentary rocks. The permeability of this soil type is rapid and its water retention capacity is moderate to high. The Mocho Silty Clay Loam is found in the eastern portion of the project area (6%). This soil type is very deep, well drained and a nearly level soil typical of alluvial fans and planes. It is formed in alluvium weathered from sedimentary rocks. The permeability of this soil type is moderately slow and its water retention capacity is moderate. The Xerorthents soil type is found in a small area in the western portion of the study area (1%). This soil type is very deep and well-drained and is found at the foot of moderate and steep slopes and its water retention capacity is very high. Nearly all of the soils within King city are categorized as Class I or Class II soils within the Soil Conservation Service Land Capability Rating. These soil types do not present any significant limitations for construction.

According to the King City Housing Element, no known seismic faults are located within the City. None of the soil types within the City are known to be subject to liquefaction, except for soils immediately adjacent to the Salinas River and San Lorenzo Creek. The nearest fault to the roundabout project site is the Espinoza Fault which is within the Rinconada fault zone located approximately 5 miles west of the roundabout project site. The San Andreas Fault is located approximately 14 miles to the east of the City.

The roundabout site is relatively flat and is located within existing roadway sidewalks landscaped areas and medians project construction would involve the removal of existing hard scape and minor grading as preparation for construction of the proposed project

Impacts: The proposed project is not expected to expose people or structures to geologic and soils hazards in areas containing the proposed project facilities. All proposed project facilities will be required to meet all applicable requirements contained in the City Building Code.

The proposed project is not expected to expose people or structures to substantial geologic risks due to the rupture of a known earthquake fault, strong seismic ground shaking or seismic related ground failure including liquefaction. Given the relatively flat topography of areas containing the proposed project facilities, little in the way of landslides, substantial erosion or exposure to unstable or expansive soils are expected to occur. The proposed project does not involve the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures: Given the lack of potentially significant impacts due to geology and soils, no mitigation measures are recommended.

7. HAZARDS/HAZARDOUS MATERIALS Would the project:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
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?				X
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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 create a significant hazard to the public or the environment?			X	
e.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
f.	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?				X

Existing Conditions: According to the State Water Resources Control Board GeoTracker database, there are eight known hazardous materials sites within one quarter-mile of the roundabout project site. Two of the sites, located at 1140 Broadway St. and 1137 Broadway St., are adjacent to the proposed project boundaries. Of the two, only the site at 1140 Broadway St. is an open case; the remaining sites do not have any open cases or violations listed.

The site at 1137 Broadway St. has two listings. One is for a leak at the former Chevron gas station which was closed in August, 2000. No subsequent violations have occurred at this location. The other listing was an underground storage tank which is located under the current Valero gas station but no violations are listed.

The site at 1140 Broadway St. is listed as a leaking underground storage tank cleanup site. This site is listed due to the potential contaminant of concern being gasoline. The site is classified with an Open Site Assessment which is defined as a "Site characterization, investigation, risk evaluation and/or site conceptual model development is occurring at the site. Examples of such site assessment activities include, but are not limited to, identification of the contaminants in the investigation of their potential impacts, determination of the threats/impacts to water quality, evaluation of the risk to humans and ecology, delineation of the nature and extent of contamination, delineation of the contaminant plumes and development of the Site

Conceptual Model." This site was the subject of two Open Site Assessments performed in 1993 and again in 2015. The site has not been closed.

Impacts: The proposed roundabout project will not create a significant hazard to the public or the environment through the routine use and disposal of hazardous materials nor will it 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. The proposed project will not emit hazardous emissions or handle hazardous materials substances or waste within one quarter mile of an existing or proposed school. The proposed roundabout will not impair or interfere with implementation of an adopted emergency response plan or emergency evacuation plan and will not expose people or structures to significant risk of loss, injury or death involving wildfires. As noted above, roundabout project site is located within the vicinity of several known hazardous materials sites. For that reason, the mitigation measure provided below is intended to avoid impacts from these hazardous materials site.

The proposed roundabout project is intended to facilitate traffic flows and reduce wait times as compared to the existing intersection configuration. As such, the future use of this intersection will likely reduce the potential for accidents and/or spills of hazardous materials being transported to and from King City. The improved configuration of this intersection will also facilitate the ability for emergency vehicles trying to access locations within or outside of King City. This represents a beneficial hazards/hazardous materials impact.

Mitigation Measures:

HM-1 -Prior to any grading or construction on the roundabout project site, a Hazardous Materials Technical Memorandum shall be prepared for review and approval by the City of King. This Technical Memorandum will identify any potential hazardous materials sites that could impact the construction or future utilization of the proposed roundabout project as well as any possible mitigations to reduce any potentially significant impacts to a level of insignificance.

8.	HYDROLOGY/WATER QUALITY	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Violate any water quality standards or waste discharge requirements?				X
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 pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X

c.	Substantially alter the existing drainage pattern on 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?				X
d.	Substantially alter the existing drainage pattern on the site or area, including through the alteration of the course of a stream or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?				X
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 or fail to meet the new CCRWQCB standards for stormwater control?				X
f.	Otherwise substantially degrade water quality?				X
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?				X
h.	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?				X
i.	Expose people or structure to Inundation by seiche, tsunami, or mudflow?				X

Existing Conditions: The nearest river to the roundabout project site is the Salinas River which is approximately 700 feet to the south and west of the existing intersection and approximately 550 feet from the southernmost roadway improvements on Broadway Street under US Highway 101. There are no waters including rivers, streams, lakes, wetlands or sloughs within or adjacent to the project site. The Federal Emergency Management Agency (FEMA) Insurance Rate Map indicates that the project site is not at risk from a 100-year flood event. This Map also indicates that the project site is located in a Zone X flood hazard area that is defined as an area of Minimal Flood Hazard. The roundabout project site is not located in proximity to a sole-source aquifer, the nearest of which is located approximately 62 miles to the east underlying the Central Valley within Fresno County and the Sierra Nevada Mountains.

Impacts: Stormwater runoff from project grading and construction may potentially impact surface stormwater quality. All design measures for stormwater pollution control shall comply with the requirements of the City Municipal Code Section 17.56.100 Stormwater Pollution Prevention. These standards protect against stormwater pollution during project grading and construction.

Given adherence to these requirements, project construction will not violate any water quality standards or waste discharge requirements, substantially deplete groundwater supplies or substantially alter existing drainage patterns or create or contribute runoff water which would exceed the capacity of existing or planned storm water discharge systems or otherwise degrade water quality. In addition, the proposed project will not place any structures within a 100-year floodplain hazard area or expose people or structures to significant loss, injury or death involving

flooding. Project facilities will not be exposed to inundation due to a seiche, tsunami or mudflow.

Mitigation Measures: Given the lack of potentially significant impacts related to hydrology/water quality, no mitigation measures are recommended.

9.	LAND USE AND PLANNING Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Physically divide an established community?				X
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?				X
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

Existing Conditions: The proposed roundabout site is located at the intersection of East San Antonio Drive, Broadway Street, and San Lorenzo Park Road within King City. Land uses surrounding this intersection include a gas station and convenience store, and Denny's restaurant between Broadway Street and the U.S. Highway 101 northbound off ramp. To the north of Broadway Street and East of San Antonio Drive is a Days Inn Hotel and the King City Cemetery. West of San Antonio Drive and north of San Lorenzo Park Road is a medium density residential development, a healthcare facility and a Quality Inn Hotel. Immediately south of the Broadway Street/San Antonio Drive/Lorenzo Park Road intersection is northbound U.S. Highway 101 and its northbound on- and off-ramps.

Surrounding the proposed roundabout site is a variety of City land-use designations including (HSC) Highway Service Commercial, (OS) Open Space, (MHDR) Medium High Density Residential and (LDR) Low Density Residential. The City's zoning classifications for the areas surrounding the proposed project include (H-S) Highway Services, (R-1) Single Family Residential and (R-3) Medium High Density Residential.

Impacts: The proposed project will not physically divide an established community nor conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project area. The proposed project will also not conflict with any applicable habitat conservation plan or natural community conservation plan.

The proposed project may indirectly induce changes in land use as a result of improved traffic circulation within the northern portions of King City. The proposed project will not, however, directly cause a change in any existing or future City land use or zoning designations.

Mitigation Measures: Given the lack of potentially significant land use and planning impacts, no mitigation measures are recommended.

10.	NOISE Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Expose people to, or generate, noise levels exceeding established standards in the local general plan, coastal plan, noise ordinance or other applicable standards of other agencies?				X
b.	Expose persons to or generate excessive ground borne vibration or ground borne noise levels?				X
c.	Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d.	Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X

Existing Conditions: The primary source of noise at the existing intersection is automobile traffic that is controlled by traffic signals and stop signs. Ambient noise levels are currently well within acceptable levels. On-site noise measurements indicate an average ambient noise level of approximately 57 dBA.

Impacts: Project grading and construction is expected to generate construction noise which represents a short-term impact on ambient noise levels. The primary source of construction noise is heavy equipment including, but not limited to, trenching equipment, trucks, concrete mixers and portable generators that can reach high levels. The peak noise level for most of the heavy equipment that will be used during project construction is 70 to 95 dBA at a distance of 50 feet. At 200 feet, the peak construction noise levels range from 58 to 83 dBA. At 400 feet, the peak noise levels range from 52 to 77 dBA. These noise levels are based upon worst-case conditions. Typically, construction-related noise levels near the construction site will be less. Construction-related noise impacts are considered to be short-term and temporary.

Long-term operations of the proposed roundabout project are not expected to increase ambient traffic noise levels beyond those currently impacting the existing land uses surrounding the project site. The reduction in the amount of stop and go traffic associated with the proposed roundabout is expected to reduce long-term noise levels in areas adjacent to the roundabout. This represents a beneficial noise impact.

Mitigation Measures: Given the lack of potentially significant noise impacts to adjacent areas, no mitigation measures are recommended.

11. POPULATION AND HOUSING Would the project:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c.	Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?				X

Existing Conditions: The City of King currently has a total population of 14,274 and a housing total of 3,382.

Impacts: The proposed roundabout will generate employees during project construction. However, this generation of employees is considered to be a short-term, insignificant impact. Once project construction is completed, the proposed roundabout will not generate any additional long-term employees. As such, the lack of any long-term employee generation will negate the potential demand for additional housing.

Mitigation Measures: Given the lack of potentially significant impacts to population and housing, no mitigation measures are recommended.

12. PUBLIC SERVICES 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 following public services:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Fire protection?				X
b.	Police protection?				X
c.	Schools?				X
d.	Parks or other recreational facilities?				X
e.	Other governmental services?				X

Existing Conditions: The City of King Fire Department currently provides fire protection and emergency rescue services to the city. Their headquarters are located at 422 Bassett Street. Law enforcement services are currently provided by the City Police Department. Their headquarters are located at 415 Bassett Street. School services are provided by the King City Union School District (pre-K through 8th grade); their administrative offices are located at 104 South Vanderhurst Street.

The South Monterey County Joint Union High School District (grades 9 through 12) has administrative offices located at 800 Broadway Street. The City also provides a variety of recreational services as noted in Section 13, Recreation.

Impacts: As noted above, the proposed project will not result in any additional long-term employees and, as such, will not generate any additional demand upon existing fire protection, police protection, schools, parks, other recreational facilities or other governmental services. It should be noted that the proposed roundabout will provide a safer traffic intersection which will likely benefit law enforcement, fire protection and emergency services. This represents a beneficial public services impact.

Mitigation Measures: Given the lack of potentially significant impacts to public services, no mitigation measures are recommended.

13. RECREATION Would the project:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b.	Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X

Existing Conditions: Existing recreation facilities within King City include a city park located at Division and South Vanderhurst Street, Forden Park located at Rio Vista and Forden Drive, San Antonio Park located at San Antonio and Bedford Drive, Creekbridge Baseball/Softball Park located at San Antonio Drive and Mildred Street, Cambridge Soccer Park located at Meyer Street and San Antonio Drive and a pocket park located at King and Beech Streets. In addition, the City has an aquatics facility located at 401 Division Street.

Impacts: The proposed roundabout will generate employees during project construction. However, this generation of employees is considered to be a short-term, insignificant impact. Once project construction is completed, the proposed roundabout will not generate any additional long-term employees. As such, the lack of any long-term employee generation will negate the potential demand upon existing neighborhood and regional parks or other local recreational facilities. The proposed project will also not require the construction or expansion of recreational facilities.

Mitigation Measures: Given the lack of potentially significant impacts to recreation facilities, no mitigation measures are required.

14. TRANSPORTATION/CIRCULATION Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant

a.	Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e. result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				X
b.	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
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?				X
d.	Substantially increase hazards due to a design feature (e.g. limited sight visibility, sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			X	
e.	Result in inadequate emergency access?				X
f.	Result in inadequate parking capacity?				X
g.	Conflict with adopted policies supporting alternative transportation (e.g. bus turnouts, bicycle racks)?				X

The following discussion of transportation/circulation conditions and project impacts is based upon information contained within the "Regional Roundabout Study Utilizing Caltrans' Intersection Control Evaluation" prepared by the firm of Kittelson & Associates, Inc. on behalf of the Transportation Agency for Monterey County dated July 30, 2020. This analysis is included in its entirety in Attachment e of this document.

Existing Conditions: The Broadway Street at San Antonio Dr./US Highway 101 northbound ramp intersection is located at the confluence of Broadway Street, East San Antonio Drive, San Lorenzo Drive and the northbound on and off ramps of US Highway 101. The Broadway Street at San Antonio Dr./US Highway 101 northbound ramp intersection is actually two closely spaced intersections with two types of traffic control. The Broadway Street at San Antonio Dr. intersection is controlled by a traffic signal. The Broadway Street at the US Highway 101 northbound ramp is controlled by a two-way stop. This existing intersection configuration provides the basis for comparison of project impacts involving the proposed roundabout project as discussed below.

Impacts: The proposed roundabout roadway involves the removal of existing traffic signals and roadway improvements including but not limited to resurfacing, restriping, installation of sidewalks and landscaping of medians to San Antonio Drive, San Lorenzo Park Road, Broadway Street and the US Highway 101 northbound on- and off-ramps.

The proposed roundabout will generate employees and automobile trips during project construction. The proposed project is estimated to require the average of approximately ten employees at one time during project construction. Assuming a worst-case automobile trip generation factor of four vehicle trips per employee per day, a total of forty vehicle trips per day will be added onto local roadways by construction employees. This generation of traffic is considered to be a short-term, insignificant impact.

Once project construction is completed, the proposed roundabout will not generate any additional automobile trips. It is assumed that maintenance and oversight of the roundabout operations will occur without the substantial addition of cars or trucks onto local roadways.

The proposed project will not cause a substantial increase in traffic and will not exceed any level of service standards on any local roadways. The proposed project will not result in any changes in air traffic patterns or exposure to local roadway hazards. Given the lack of additional vehicle trips, the proposed project will not result in inadequate emergency access or parking capacity. However, the final design of the vegetation within the center of the roundabout could, if not properly designed, inhibit the driver's ability to see other cars either approaching or within the roundabout. For that reason, the mitigation measure provided below is intended to avoid impacts resulting from the blockage of views for drivers from various vantage points within the roundabout.

The Regional Roundabout Study identified and evaluated the existing and proposed intersection control options that were considered for the existing roundabout intersection. The five options that were analyzed include: 1) the existing intersection with a signal control; 2) the existing intersection with a two-way stop control; 3) a modified intersection with signal control: 4) a single lane roundabout configuration and 5) a single lane roundabout configuration with the addition of a westbound Broadway Street right- turn lane that will be required between the years 2030 and 2040. The results of the analysis of these five intersection options are summarized below in terms of levels of service at the years 2015, 2030 and 2040.

By way of background, Levels of Service A through C are generally considered acceptable traffic levels when evaluating roadway and intersection capacity. Level of Service D is sometime considered acceptable when evaluating roadway and intersection capacity within highly urbanized areas. Otherwise, Levels of Service D and F are generally considered unacceptable.

1. The existing intersection with signal control option had Levels of Service B during both the A.M. and P.M. peak hour in the design year 2015, Levels of Service C during both the A.M. and P.M. peak hour in the year 2030 and Level of Service D during the A.M. peak hour and Level of Service C during the P.M. peak hour in the year 2040. With this option, northbound and westbound Broadway Street queues will exceed available automobile storage which would affect available storage on northbound U.S. Highway 101 ramps.

2. The existing intersection with a two-way stop control option had Levels of Service C during both the A.M. and P.M. peak hour in the design year 2015, Level of Service C during the A.M. peak hour and Level of Service D during the P.M. peak hour in the year 2030 and Levels of Service F during both the A.M. and P.M. peak hour in the year 2040. With this option, northbound and westbound Broadway Street queues

will exceed available automobile storage which would affect available storage on northbound U.S. Highway 101 ramps.

3. The modified intersection with signal control option had Levels of Service C during both the A.M. and P.M. peak hour in the design year 2015, Levels of Service C during both the A.M. and P.M. peak hour in the year 2030 and Levels of Service D during both the A.M. and P.M. peak hour in the year 2040. With this option, westbound traffic on Broadway Street will exceed available storage Broadway Street during the P.M. peak hour in 2030.
4. The single lane roundabout control option had Levels of Service A during both the A.M. and P.M. peak hour in the design year 2015 and Level of Service A during the A.M. peak hour and Level of Service B during the P.M. peak hour in the year 2030. Significant queues are anticipated on westbound Broadway Street during the 2015 and 2030 A.M. and P.M. peak hours.

5. The single lane roundabout control with the addition of a westbound Broadway Street right turn lane option has Level of Service B during the A.M. peak hour and Level of Service C during the 2040 P.M. peak hour.

Based upon the above data the study concluded "the roundabout (option) is expected to provide superior operations compared to the other existing conditions and proposed signal modification alternatives." Design options 4 and 5 were ultimately selected by King City. Selection of these design options represents a beneficial transportation/circulation impact.

Mitigation Measures:

TC-1 Prior to project construction, a detailed landscape plan shall be prepared and approved by the City which identifies the plant material to be introduced in the center of the roundabout facility. This plan shall include the specific plant species as well as the location and ultimate height of these plants with the goal of insuring that lines of sight for drivers from any portions of the roundabout will not be blocked or inhibited in any way.

15. UTILITIES & SERVICE SYSTEMS Would the project:		Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X
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?				X

d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
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?				X
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g.	Comply with federal, state, and local statutes and regulations related to solid waste?				X

Existing Conditions: The King City Public Works Department and the Regional Water Quality Control Board oversee adherence to wastewater treatment requirements for any major construction project. The City also evaluates whether sufficient water supplies and solid waste disposal facilities are available for proposed projects.

Impacts: Construction and operation of the proposed roundabout project is not expected to generate the demand for wastewater treatment or new water sources. Project plans do include construction of new connection to or existing storm water drainage facilities in order to avoid any significant environmental effects. A minimal amount of water will be required during project construction as well as for irrigation of vegetation within the roundabout facility. Project construction will also generate a minimal amount of solid waste that will be transported to the nearest landfill.

The proposed roundabout will not require construction of new storm water drainage facilities nor have the need for significant additional water supplies. The project will be creating several BMP basins with new catch basins that connect to existing storm drain lines. Existing manhole and drainage inlets will be adjusted. Solid waste generation from the proposed project will likely be transported to the Marina Landfill facility near Salinas in Monterey County. This landfill currently has sufficient capacity to accept the minimal amount of solid waste generated by the proposed roundabout facility in compliance with Federal, State and local regulations.

Mitigation Measures: Given the lack of potentially significant impacts associated with utilities and service systems, no additional mitigation measures are recommended.

V. MANDATORY FINDINGS OF SIGNIFICANCE

A project may have a significant effect on the environment and thereby require a focused or full environmental impact report to be prepared for the project where any of the following conditions occur (CEQA §15065):

	Significant	Unknown Potential Significant	Potential Significant And Mitigated	Not Significant	Impact Reviewed in Previous Document
Potential to degrade: 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?				X	
Cumulative: Does the project have impacts that are individually limited but cumulatively considerable? (Cumulatively considerable means that 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)?				X	
Substantial adverse: Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				X	

a. The proposed King City Roundabout does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species. It is possible during grading and construction activities that unknown cultural resources may be unearthed, which may result in a potentially significant impact. Implementation of the mitigation measures for Cultural Resources would ensure the proposed project would not eliminate important examples of the major periods of California history or prehistory.

b. Construction-related activities related to the proposed King City Roundabout have the potential to generate storm-related runoff pollutants. This project will be required to prepare a plan that addresses all potential pollutants, including but not limited to soil erosion and sediment which shall be followed during grading and construction as well as maintained for the entire term of their use. Other measures to address the protection against all subsurface and surface pollution shall also be implemented during construction and for the full duration of the use of the properties.

c. The proposed King City Roundabout could potentially result in the generation of construction dust and equipment exhaust emissions and noise will be required to reduce air quality and noise impacts to less than significant levels.

VI. ENVIRONMENTAL DETERMINATION

On the basis of the facts contained within this Initial Study:

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 project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in this document have been added to the project. A NEGATIVE DECLARATION will be prepared.	☒
I find that the project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the project MAY have a significant effect(s) on the applicable legal standards and has been addressed by mitigation measures based on an earlier analysis. If at least one effect has been adequately analyzed in an earlier document pursuant to potentially significant impact or potentially significant unless mitigated, an ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that need to be addressed.	☐
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 all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including project revisions or mitigation measures that are imposed upon the proposed project.	☐

1/21/21

Steven Adams
City Manager
City of King

Date

VII. CERTIFICATION

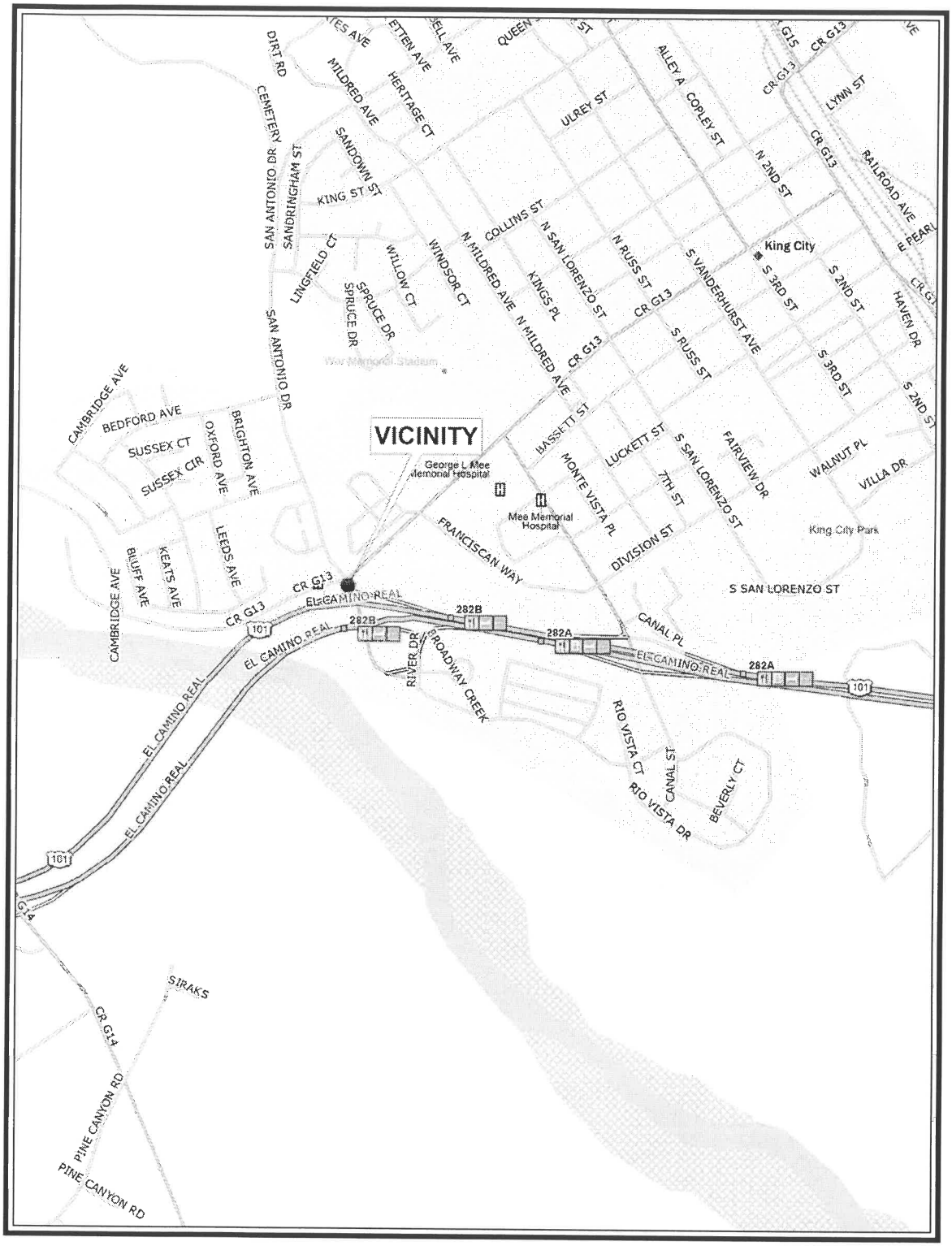
I hereby affirm to the best of my knowledge, based on available information provided to me through specialist's technical reports, public documents and original research, analysis and assessments, the statements and information contained within this environmental document are true and correct to the degree of accuracy necessary for public disclosure purposes in accordance with Public Resources Code Section 21003, 21061 and 21100.

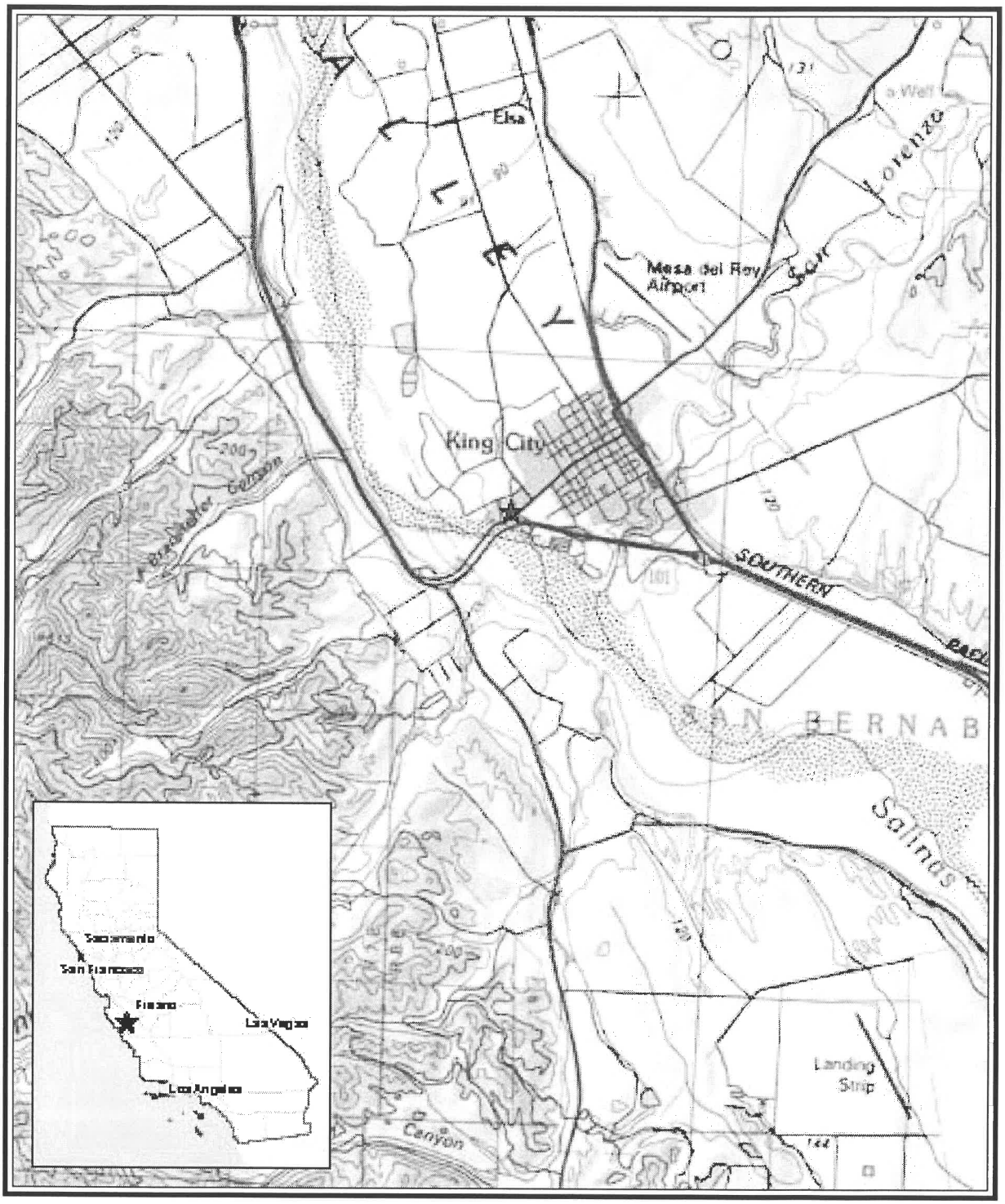
Steven Adams
City Manager
City of King

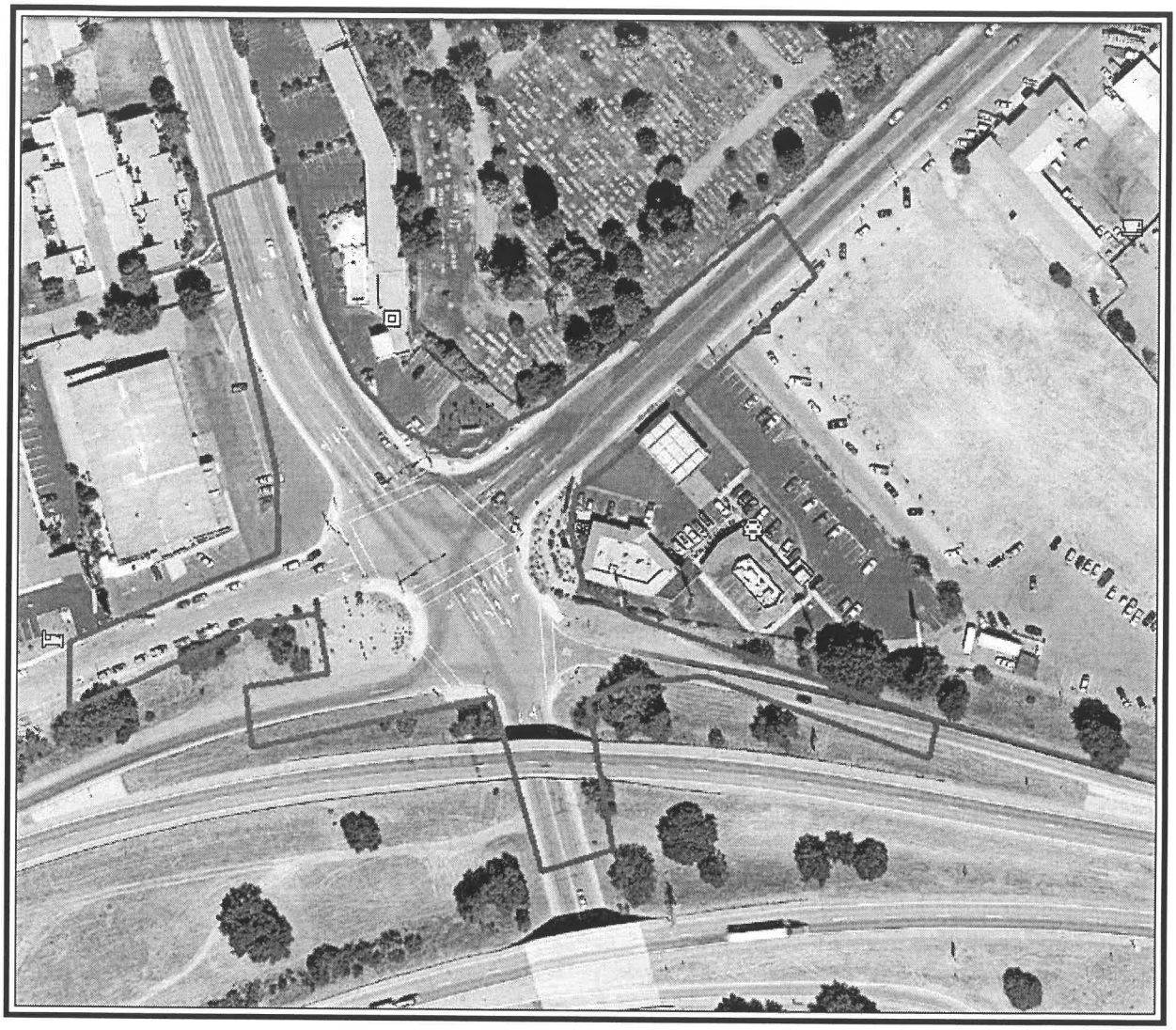
1/21/21
Date

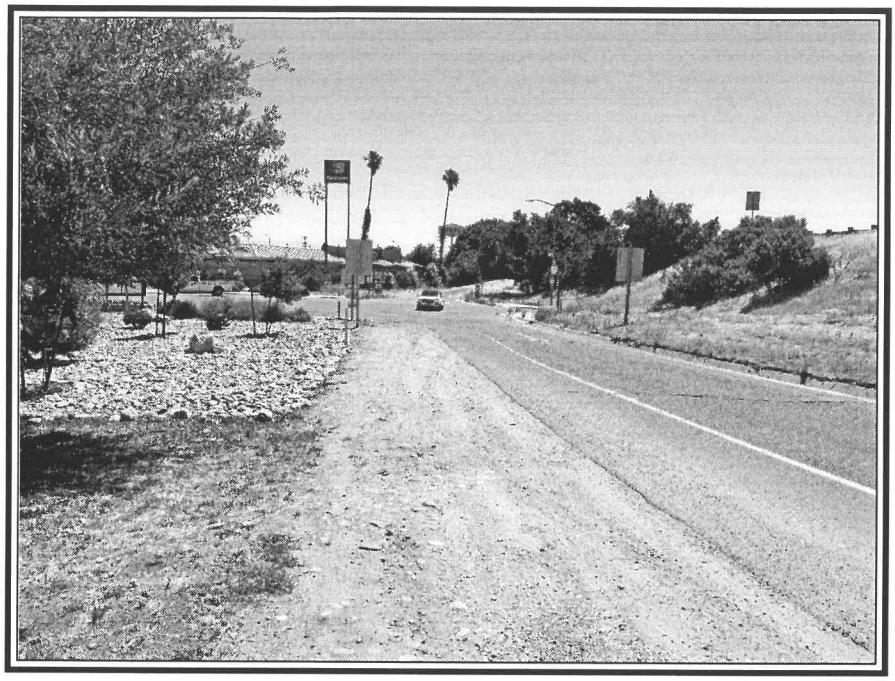
ATTACHMENT A

FIGURES AND PHOTOGRAPHS

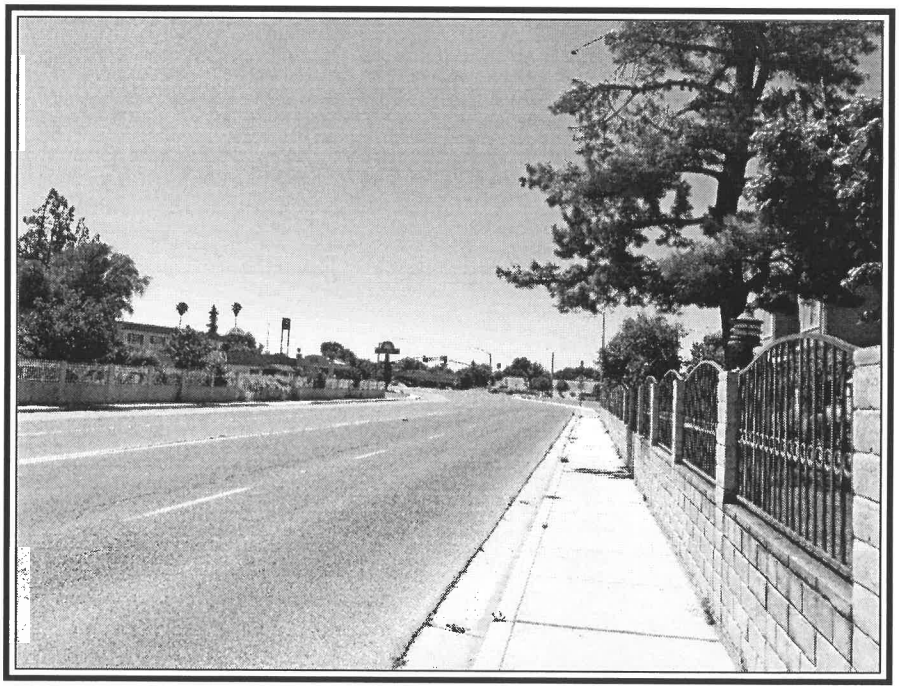

VICINITY
DIRT RD
CEMETERY
MILDRED AVE
HERITAGE CT
ETTEN AVE
QUEEN
ULREY ST
ALLEY A
COPLEY ST
LYNN ST
CR G13
CR G15
RAILROAD AVE
N 2ND ST
SANDOWN ST
KING ST
SAN ANTONIO DR
SANDRINGHAM ST
COLLINS ST
N SAN LORENZO ST
N RUSS ST
King City
S 3RD ST
S 2ND ST
HAVEN DR
LINGFIELD CT
WILLOW CT
WINDSOR CT
N MILDRED AVE
KINGS PL
SPRUCE DR
S VANDERHURST AVE
S RUSS ST
CAMBRIDGE AVE
BEDFORD AVE
SUSSEX CT
SUSSEX CIR
OXFORD AVE
BRIGHTON AVE
BASSETT ST
LUCKETT ST
MONTE VISTA PL
7TH ST
S SAN LORENZO ST
FAIRVIEW DR
WALNUT PL
VILLA DR
George L Mee Memorial Hospital
Mee Memorial Hospital
King City Park
FRANCISCAN WAY
DIVISION ST
KEATS AVE
BLUFF AVE
LEEDS AVE
EL CAMINO REAL
282B
282A
CANAL PL
RIVER DR
ROADWAY CREEK
RIO VISTA CT
RIO VISTA DR
CANAL ST
BEVERLY CT
101
SIRAKS
PINE CANYON RD


Elsa
Mesa del Rey Airport
King City
SOUTHERN
Salinas
Landing Strip
Canyon
Sacramento
San Francisco
Fresno
Las Vegas
Los Angeles

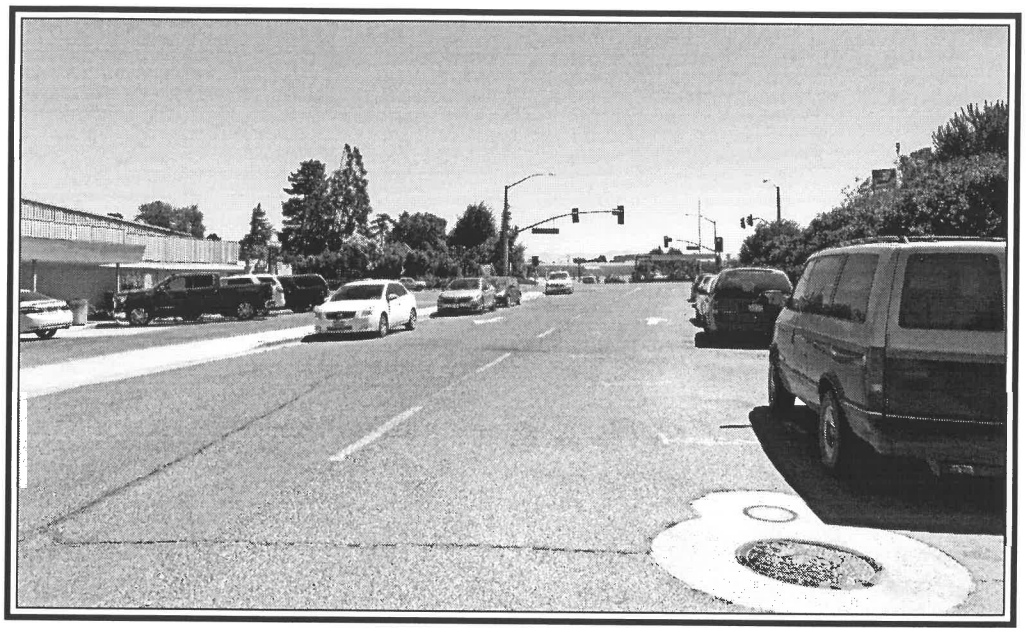




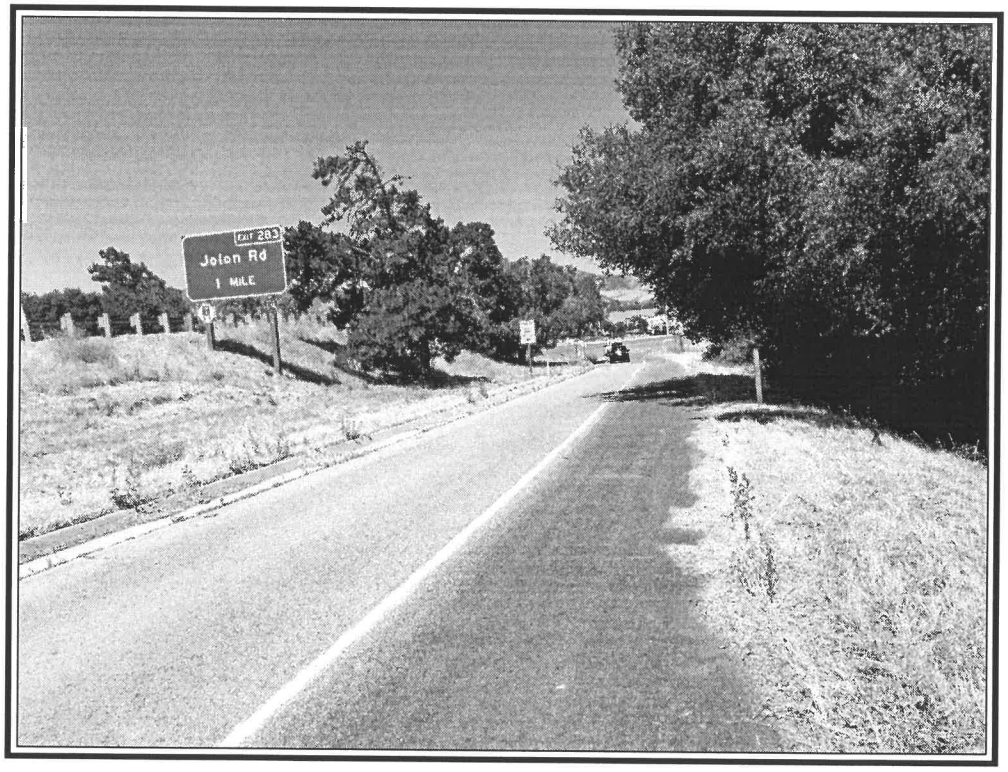
US 101 North On-Ramp-View To East



Broadway-View To West



San Antonio Drive-View South



US 101 North Offramp-View To West

ATTACHMENT B

AIR QUALITY ASSESSMENT

Tracer Environmental
Services

2370 Skyway Drive
Suite 101
Santa Maria, CA 93455

805 346-6591
FAX 805 346-6127
www.scsengineers.com

SCS ENGINEERS

July 30, 2020

Mr. Douglas Wood
Douglas Wood & Associates, Inc.
1461 Higuera Street, Suite A
San Luis Obispo, CA 93401

Subject: King City Roundabout- Air Quality Emissions Summary

To Mr. Wood:

Pursuant to your team's request, SCS Engineers hereby provides the information requested regarding the potential air quality impacts related to the proposed King City Roundabout Improvement Project (Project).

PROJECT LOCATION & VICINITY:

The Project Site is located within the incorporated limits of the City of King, in Monterey County approximately forty-five (45) miles south of Salinas. Specifically the Project includes the redevelopment of a vehicular intersection at the confluence of East San Antonio Drive, Broadway Street, San Lorenzo Park Drive, the northbound off-ramp of Highway 101, and the northbound on-ramp of Highway 101. Refer to Appendix A for a Project Vicinity Map.

PROJECT DESCRIPTION:

The proposed Project includes the potential redevelopment of the existing intersection to resolve traffic delays, congestion, and/or hazards related to the unconventional confluence of more than four (4) vehicular paths of travel at a single intersection point. Based upon a previous conceptual traffic analysis completed by Kittelson & Associates, Inc. (Kittelson), a roundabout has been selected as the superior method resolving the aforementioned traffic issues. A conceptual layout of the new roundabout configuration has been attached as Appendix B.

Based upon the limited information available, the Project would require the construction disturbance of approximately 2.15 acres of land. This would include the systematic demolition of existing asphalt roadbed, concrete sidewalks and gutters, landscaping, and various ancillary improvements (street lights, minor utilities, etc.). The new roundabout would then be developed in a similar fashion to the current conceptual design including safe path of vehicular travel from six (6) different entry/exit points.

Pertinent to long-term operational function and related air quality emissions resulting from the new proposed roundabout, the Kittelson analysis estimates that the "Delay to Persons in Vehicles Hours" per year would be 3,932 hours for the proposed roundabout Project versus a baseline condition of 9,295 hours for baseline operational condition of the existing intersection (4-way traffic signal plus a proximal 2-way stop sign).

LONG-TERM OPERATIONAL AIR QUALITY ANALYSIS

Given the lack of conventional land use driven vehicle miles travelled (VMT) data associated with typical land development projects, the air quality impacts of the proposed Project were analyzed by the relative change from the baseline existing intersection condition and the proposed roundabout Project. As such, the primary variable in the analysis was the change in "Delay to Persons in Vehicles Hours" predicted in the Kittelson Report. A reduction in vehicle hour delays of approximately 5,363 hours per year, results in a reduced volume of air pollutant emissions associated with the presence of idling or low-speed travel at the intersection.

Table 1- Vehicle Delay Hours Comparison

Project Scenario	Annual Hours of Vehicle Delay
Proposed Roundabout Operation	3,932
Baseline/Existing Lighted-signal + Stop Sign	9,295
Net Reduction in Delay Hours	**-5,363**

This relative comparison in delay hours was used to quantify estimated emissions from the current baseline/existing intersection operations versus the proposed Roundabout Project. These air quality emissions estimates are derived from the use of Emission Rates provided by EMFAC2017 (v1.0.2) for Monterey County, operational calendar year 2021, Annual season, with all vehicle and fuel types assumed to travel at ten (10) miles per hour. The EMFAC emission rate was then converted from grams per mile to grams per hour and multiplied by the estimated number of delay hours per intersection scenario (proposed versus baseline). The results of the emissions calculations for various pollutant types are summarized in Table 2 below. As expected a net reduction in vehicle waiting hours results in a commensurate reduction in air pollutant emissions of all types. **Therefore the Project is expected to have beneficial air quality impacts on the environment (Class 4 pursuant to CEQA).**

Table 2- Long-term/Operational Air Quality Emissions Summary

		Pounds Per Year							
Intersection Type	Delay Hours	NO_x	ROG	CO	SO_x	$PM_{2.5}$	PM_{10}	CO_2	CO_2e
Roundabout	3,932	108.29	21.94	205.80	0.79	1.79	1.89	81,717	83,467
Light Signal + Stop Sign	9,295	255.98	51.86	486.49	1.86	4.23	4.47	193,176	197,312
Annual Reduction	-5,363	-147.70	-29.92	-280.69	-1.08	-2.44	-2.58	-111,458	-113,845
		NO_x	ROG	CO	SO_x	$PM_{2.5}$	PM_{10}	CO_2	CO_2e*
Tons Per Year		-0.07	-0.01	-0.14	0.00	0.00	0.00	-55.73	-51.64
Pounds Per Day		-0.40	-0.08	-0.77	0.00	-0.01	-0.01	-305.36	-311.90

*CO_2e is reflected in metric tonnes.

SHORT-TERM CONSTRUCTION AIR QUALITY ANALYSIS

Estimated short-term construction pollutant emissions related to the proposed Project were quantified based upon standard construction emission rates derived from CalEEMOD, Appendix D, October 2017. Construction scenario assumptions included approximately 281 days of total work encompassing three (3) acres or less of work area.[1]

Table 3- Construction Phasing & Estimated Schedule

Construction Phase	Estimated Days of Construction
Demolition	20
Rough Grading	8
Site Preparation	5
Building/Construction	230
Paving	18
Total	**281**

Each phase of construction has a unique quantity and type of equipment as detailed in Table 4. The quantity, types, and emissions rates of construction equipment for each phase have been derived from CalEEMod, Appendix D, October 2017, Tables 3.2, 3.3, and 3.4. This fleet mix is based upon a three (3) acre or smaller construction footprint.

Table 4- Typical Construction Fleet Mix

Phase	Equipment	Quantity
Demolition	Rubber Tired Dozers	1
	Concrete/Industrial Saws	1
	Tractors/Loaders/Backhoes	3
Grading	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
	Graders	1
Site Preparation	Graders	1
	Tractors/Loaders/Backhoes	1
	Scrapers	1
Building/Construction	Cranes	1
	Forklifts	2
	Tractors/Loaders/Backhoes	1
	Welders	3
	Generator Sets	1
Paving	Pavers	1
	Cement and Mortar Mixers	1
	Rollers	1
	Tractors/Loaders/Backhoes	1
	Paving Equipment	1

[1] SCS estimated the total Project footprint to be approximately 2.15 acres based upon the conceptual Project design. Total length of construction is defined by CalEEmod, Appendix D, October 2017, Table 3.1.

The combination of total days and hours of construction work, the fleet mix, and equipment emission rates were utilized to quantify estimated emissions of common criteria pollutants and greenhouse gases as summarized in Table 5.

Table 5- Short-term/Construction Air Quality Emissions Summary (Combustion)

	NO_x	ROG	CO	SO_x	$PM_{2.5}$	PM_{10}	CO_2	CO_2e*
Average Pounds Per Day	19.31	1.77	10.21	0.02	0.82	0.89	1,998	2,190
Total Pounds For Entire Project	5,425	498	2868	5.92	229.88	249.87	561,562	615,615
Total Tons for Entire Project	2.71	0.25	1.43	0.00	0.82	0.89	280.78	279.24

***CO_2e is reflected in metric tonnes.**

Particulate matter (PM) emissions related to fuel combustion in equipment and vehicles has been accounted for in Table 5 above. The grading activities associated with the Project also have the potential to emit PM emissions from fugitive dust. Those emissions have been quantified separately using emission factors derived from the EPA's AP-42, Table 2, Code 18 and Appendix D (Methodology to Calculate Particulate Matter 2.5).

Table 6- Short-term/Construction Air Quality Emissions: PM from Fugitive Dust

	$PM_{2.5}$	PM_{10}
Average Pounds Per Day	1.56	7.50
Total Pounds For Entire Project	51.50	247.62
Total Tons for Entire Project	0.12	0.03

SUMMARY OF FINDINGS & RECOMMENDED MITIGATION MEASURES:

A described in further detail above, the proposed Project would result in a net reduction of long-term/operational air pollutant emissions due to the Project's intent of reducing vehicular wait time at the target intersection by 5,363 hours per year. Therefore, long-term/operational air quality impacts would benefit the environment (Class 4 pursuant to CEQA). The City of King does not have its own adopted Thresholds of Significance or jurisdiction specific CEQA Guidelines. Therefore, analysis of construction related air impacts will differ to the *CEQA Air Quality Guidelines* published by the Monterey Bay Unified Air Pollution Control District (District) in 2008. The proposed Project Site is located within the North Central Coast Air Basin, within which air quality compliance is managed by the District. District's guidelines cite that the anticipated level of ozone precursors (such a NOx) associated with construction have already been included in the air basin plan and therefore constitute a less than significant impact (Class 3 pursuant to CEQA). The District's guidelines have quantified a significance threshold of 82 pounds per day for PM_{10}. As estimated in the Project's emissions calculations, daily PM_{10} emissions would likely result in 8.39 pounds per day in PM_{10} emissions (combustion and fugitive dust combined). However, this PM_{10} emissions rate from fugitive dust is assumed to be

"controlled" through the application of dust suppression watering. Application of this mitigation method, which is a standard construction industry practice, reduces fugitive dust emission rates by approximately 68%. Therefore, the estimated PM_{10} emissions, with the application of regular site watering, are well below the District's threshold and constitute a less than significant impact to the environment (Class 2 pursuant to CEQA). Lastly, the District requires that short-term construction projects be evaluated when appropriate for potential acute health risks from toxic air contaminate (TAC) emissions. Small levels of TACs (such as diesel particulate matter) from the Project could be entrained exhaust emissions from construction equipment. According to Construction Health Risk Screening Tables produced by the Bay Area Air Quality Management District (BAAQMD) construction projects of approximately three (3) acres in size recommend a fifty-five (55) meter setback to sensitive receptors in order to minimize short-term, acute health risks. The nearest residential sensitive receptors are located approximately seventy (70) meters from the core construction zone. As a result, impacts from short-term health risk are expected to be less than significant (Class 3 pursuant to CEQA).

Thank you for the opportunity to support this valuable project. If you if have any further questions or concerns, do not hesitate to contact us at (805) 346-6591.

Sincerely,

Nathan Eady

Nathan Eady, AICP
Project Director/Land Use Planner
SCS Engineers

Appendices

Appendix A- Vicinity Map
Appendix B- Conceptual Roundabout Design
Appendix C- Kittelson Report Excerpt
Appendix D- Detailed Emission Calculation Tables

Length of Construction Phasing

Acres	Demolition	Grading
3	20	8

Equipment Used (Assumes 3 acre footprint)

Phase	Equipment	Quantity
Demolition	Rubber Tired Dozers	1
	Concrete/Industrial Saws	1
	Tractors/Loaders/Backhoes	3
Site Prepartion	Graders	1
	Tractors/Loaders/Backhoes	1
	Scrapers	1
Grading	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
	Graders	1
Building/Construction	Cranes	1
	Forklifts	2
	Tractors/Loaders/Backhoes	1
	Welders	3
	Generator Sets	1
Paving	Pavers	1
	Cement and Mortar Mixers	1
	Rollers	1
	Tractors/Loaders/Backhoes	1
	Paving Equipment	1

Fugitive Dust Emission Calculations

Acres	Max Hours Per Day	Acres Per Hour Disturbed
2.15	8	0.26875

PM10 EF Lbs/Acre/Hr	PM2.5 EF Lbs/Acre/Hr
3.49	0.72592

Sources:

1.) PM10 Controlled Emission Factor- SBCo Form 24/AP-42, Table 2, Code 18 - https://w
2.) PM2.5 calculated using Construction ratio of PM2.5 from PM10 from Appendix D of Met

	PM10 Pounds	PM2.5 Pounds
Whole Project	247.62	51.50
Daily	7.50	1.56

Source: CalEEMod, Appendix D, October 2017, Table 3.1

Building/Construction Days	Site Preparation Days	Paving Days	Total Days
230	5	18	**284**

Source: CalEEMod, Appendix D, October 2017, Table 3.2, Table 3.3, Table 3.4

Hours/Day	Days/Project	Total Hours	Horsepower
8	20	160	247
8	20	160	81
8	20	480	97
8	8	64	187
7	8	56	97
8	8	64	367
8	230	1840	247
7	230	3220	97
8	230	1840	187
8	5	40	231
7	5	70	89
6	5	30	97
8	5	120	46
8	5	40	84
8	18	144	130
8	18	144	9
8	18	144	80
8	18	144	97
8	18	144	132

PM10 Pounds Per Hour	PM2.5 Pounds Per Hour	Total Hours of Site Disturbance
0.9379375	0.195091	264

ww.ourair.org/wp-content/uploads/apcd-24.pdf
ıodology to Calculate Particulate Matter (PM) 2.5

	Emission Factors (grams per BHP/Hr)						
Load Factor	**TOG**	**ROG**	**CO**	**Nox**	**SO2**	**PM10**	**PM2.5**
0.4	0.714624	0.6	2.31719	6.29617	0.005	0.306	0.281
0.73	3.721	0.369	3.523	2.913	0.006	0.166	0.166
0.37	0.35209	0.296	3.57072	2.995	0.005	0.177	0.162
0.41	0.398657	0.335	1.30687	4.38134	0.005	0.139	0.128
0.37	0.35209	0.296	3.57072	2.995	0.005	0.177	0.162
0.48	0.356021	0.299	2.25454	3.44481	0.005	0.134	0.123
0.4	0.714624	0.6	2.31719	6.29617	0.005	0.306	0.281
0.37	0.35209	0.296	3.57072	2.995	0.005	0.177	0.162
0.41	0.398657	0.335	1.30687	4.38134	0.005	0.139	0.128
0.29	0.415905	0.349	1.67824	4.10439	0.005	0.167	0.153
0.2	0.490261	0.412	3.72	3.75592	0.005	0.267	0.245
0.37	0.35209	0.296	3.57072	2.995	0.005	0.177	0.162
0.45	8.704	0.829	4.708	4.133	0.007	0.203	0.203
0.74	6.62	0.326	3.361	2.888	0.006	0.153	0.153
0.42	0.324615	0.273	3.0097	2.91833	0.005	0.142	0.131
0.56	1.075	0.661	3.469	4.142	0.008	0.161	0.161
0.38	0.42061	0.353	3.50719	3.5889	0.005	0.219	0.202
0.37	0.35209	0.296	3.57072	2.995	0.005	0.177	0.162
0.36	0.272687	0.229	3.03229	2.31505	0.005	0.114	0.105

CO2	CH4	TOG	ROG	CO	Nox	SO2
		Total Emissions by Equipment for Entire Project (Grams)				
474.7984	0.154	11296.7762	9484.8	36630.1395	99529.8554	79.04
568.299	0.033	35203.6368	3491.0352	33330.3984	27559.3104	56.7648
475.3621	0.154	6065.52485	5099.2512	61513.5076	51595.464	86.136
474.5386	0.153	1956.16206	1643.8048	6412.65427	21498.7096	24.5344
475.3621	0.154	707.644566	594.91264	7176.57588	6019.4708	10.0492
472.4636	0.153	4013.8662	3370.99776	25418.225	38837.6147	56.3712
474.7984	0.154	129912.926	109075.2	421246.604	1144593.34	908.96
475.3621	0.154	40689.5625	34207.4768	412653.113	346119.571	577.829
474.5386	0.153	56239.6592	47259.388	184363.81	618087.902	705.364
472.9057	0.153	1114.45904	935.1804	4497.0119	10998.1234	13.398
471.5285	0.153	610.865206	513.352	4635.12	4679.87632	6.23
475.3621	0.154	379.095303	318.7032	3844.59422	3224.7165	5.3835
568.299	0.074	21620.736	2059.236	11694.672	10266.372	17.388
568.299	0.029	16459.968	810.5664	8356.7904	7180.7232	14.9184
472.7746	0.153	2552.25298	2146.4352	23663.4653	22945.0778	39.312
568.299	0.059	780.192	479.72736	2517.66144	3006.09792	5.80608
473.9012	0.153	1841.26234	1545.2928	15353.0749	15710.7686	21.888
475.3621	0.154	1819.65745	1529.77536	18454.0523	15478.6392	25.8408
470.6495	0.152	1865.96442	1567.01952	20749.5966	15841.6093	34.2144
		335130.211	**226132.155**	**1302511.07**	**2463173.24**	**2689.42778**
		738.17	**498.09**	**2,868.97**	**5,425.49**	**5.92**
		0.37	**0.25**	**1.43**	**2.71**	**0.00**
		2.60	**1.75**	**10.10**	**19.10**	**0.02**

Source/Comments:
N2O calculated using N2O/CH4 ratio from https://www.epa.gov/sit
CH4 and N2O emissions are converted to CO2 equivalents by multip

PM10	PM2.5	CO2	CH4	N2O	CO2e	
4837.248	4442.048	7505613.107	2434.432	2291.23	8249260.482	
1570.4928	1570.4928	5376563.179	312.2064	293.8413	5471933.052	
3049.2144	2790.8064	8189157.969	2652.9888	2496.931	8999568.018	
682.05632	628.08064	2328503.966	750.75264	706.5907	2557836.816	
355.74168	325.59408	955401.7631	309.51536	291.3086	1049949.602	
1510.7482	1386.7315	5326668.018	1724.9587	1623.491	5853592.173	
55628.352	51083.552	86314550.73	27995.968	26349.15	94866495.55	
20455.147	18721.66	54935601.38	17797.133	16750.24	60372102.12	
19609.119	18057.318	66944489.01	21584.138	20314.48	73537808.46	
447.4932	409.9788	1267198.114	409.9788	385.8624	1392434.579	
332.682	305.27	587524.511	190.638	179.424	645758.813	
190.5759	174.4254	511822.3731	165.8118	156.0582	562473.0012	
504.252	504.252	1411654.716	183.816	173.0033	1467805.098	
380.4192	380.4192	1413018.634	72.1056	67.86409	1435044.774	
1116.4608	1029.9744	3717143.015	1202.9472	1132.186	4084608.004	
116.84736	116.84736	412448.6822	42.81984	40.30103	425528.884	
958.6944	884.2752	2074549.893	669.7728	630.3744	2279145.784	
914.76432	837.24192	2456747.391	795.89664	749.0792	2699870.406	
780.08832	718.5024	3220598.051	1040.1178	978.9344	3538323.435	
113440.4	**104367.47**	**254949254.5**	**80335.998**	**75610.35**	**279489539.1**	**Total Grams for Entire**
249.87	**229.88**	**561,562.23**	**176.95**	**166.54**	**615,615.72**	**Total Pounds for Entir**
0.12	**0.11**	**280.78**	**0.09**	**0.08**	**307.81**	**Total Standard Tons fc**
					279.24	**Total Metric Tonnes fc**
0.88	**0.81**	**1,977.33**	**0.62**	**0.59**	**2,167.66**	**Average Pounds Per D**

es/production/files/2016-03/documents/mobileemissions_3_2016.pdf
lying their emissions by their global warming potential (25 for CH4, 298 for N2O)

Project

e Project
or Entire Project

or Entire Project

ay

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: MONTEREY
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	VMT	NOx_RUNE	PM2.5_RU
MONTEREY	2021	All Other B	Aggregatec	10	DSL	850.0864	7.79252	0.167571
MONTEREY	2021	LDA	Aggregatec	10	GAS	74183.57	0.094326	0.006338
MONTEREY	2021	LDA	Aggregatec	10	DSL	785.2515	0.209879	0.040026
MONTEREY	2021	LDT1	Aggregatec	10	GAS	6973.742	0.208142	0.008357
MONTEREY	2021	LDT1	Aggregatec	10	DSL	2.724437	1.032188	0.606143
MONTEREY	2021	LDT2	Aggregatec	10	GAS	27125.85	0.275913	0.007052
MONTEREY	2021	LDT2	Aggregatec	10	DSL	174.5822	0.14467	0.017514
MONTEREY	2021	LHD1	Aggregatec	10	GAS	13441.49	0.429408	0.004943
MONTEREY	2021	LHD1	Aggregatec	10	DSL	10132.73	2.507935	0.063911
MONTEREY	2021	LHD2	Aggregatec	10	GAS	1911.401	0.447326	0.004723
MONTEREY	2021	LHD2	Aggregatec	10	DSL	3660.417	2.023552	0.054338
MONTEREY	2021	MCY	Aggregatec	10	GAS	1114.671	1.437674	0.006505
MONTEREY	2021	MDV	Aggregatec	10	GAS	22362.07	0.254494	0.00645
MONTEREY	2021	MDV	Aggregatec	10	DSL	572.3342	0.139462	0.014086
MONTEREY	2021	MH	Aggregatec	10	GAS	316.8584	0.886354	0.006654
MONTEREY	2021	MH	Aggregatec	10	DSL	116.3706	12.2293	0.248721
MONTEREY	2021	Motor Coa	Aggregatec	10	DSL	203.4559	11.72152	0.170891
MONTEREY	2021	OBUS	Aggregatec	10	GAS	475.4793	2.347305	0.005355
MONTEREY	2021	SBUS	Aggregatec	10	GAS	106.4169	0.592986	0.005033
MONTEREY	2021	SBUS	Aggregatec	10	DSL	502.5814	17.98322	0.157915
MONTEREY	2021	T6 Ag	Aggregatec	10	DSL	18.32385	14.61888	0.894385
MONTEREY	2021	T6 CAIRP h	Aggregatec	10	DSL	100.9245	5.007571	0.026027
MONTEREY	2021	T6 CAIRP sı	Aggregatec	10	DSL	13.56998	5.445783	0.047733
MONTEREY	2021	T6 instate (	Aggregatec	10	DSL	241.3086	9.057073	0.184079
MONTEREY	2021	T6 instate (	Aggregatec	10	DSL	1073.696	7.770698	0.16076
MONTEREY	2021	T6 instate l	Aggregatec	10	DSL	2493.003	9.290171	0.150684
MONTEREY	2021	T6 instate s	Aggregatec	10	DSL	2991.991	7.975422	0.163108
MONTEREY	2021	T6 OOS hea	Aggregatec	10	DSL	59.04669	4.823701	0.01425
MONTEREY	2021	T6 OOS sm	Aggregatec	10	DSL	7.45053	5.582632	0.052984
MONTEREY	2021	T6 Public	Aggregatec	10	DSL	185.8012	14.93396	0.107938
MONTEREY	2021	T6 utility	Aggregatec	10	DSL	60.47925	3.273308	0.002207
MONTEREY	2021	T6TS	Aggregatec	10	GAS	1276.546	1.365092	0.005378
MONTEREY	2021	T7 Ag	Aggregatec	10	DSL	3.695676	28.08576	1.711166
MONTEREY	2021	T7 CAIRP	Aggregatec	10	DSL	1157.884	11.3781	0.03721
MONTEREY	2021	T7 CAIRP c	Aggregatec	10	DSL	164.3424	11.14995	0.034979
MONTEREY	2021	T7 NNOOS	Aggregatec	10	DSL	1411.763	9.881677	0.024415
MONTEREY	2021	T7 NOOS	Aggregatec	10	DSL	454.8386	11.17068	0.021489
MONTEREY	2021	T7 POAK	Aggregatec	10	DSL	339.356	13.09975	0.044369

MONTEREY	2021	T7 Public	Aggregatec	10	DSL	222.5043	24.25456	0.153305
MONTEREY	2021	T7 Single	Aggregatec	10	DSL	786.1178	17.52995	0.204033
MONTEREY	2021	T7 single cc	Aggregatec	10	DSL	407.7032	12.67447	0.171981
MONTEREY	2021	T7 SWCV	Aggregatec	10	DSL	363.4884	10.32044	0.015552
MONTEREY	2021	T7 SWCV	Aggregatec	10	NG	144.3632	1.112907	0.004194
MONTEREY	2021	T7 tractor	Aggregatec	10	DSL	387.9304	13.70476	0.120937
MONTEREY	2021	T7 tractor (	Aggregatec	10	DSL	336.3192	13.64139	0.140612
MONTEREY	2021	T7 utility	Aggregatec	10	DSL	18.00927	5.347222	0.003905
MONTEREY	2021	T7IS	Aggregatec	10	GAS	2.002547	4.980432	0.006739
MONTEREY	2021	UBUS	Aggregatec	10	GAS	302.3047	0.248214	0.002828
MONTEREY	2021	UBUS	Aggregatec	10	DSL	611.9127	3.121803	0.007283
MONTEREY	2021	UBUS	Aggregatec	10	NG	447.1472	0.598924	0.004824
						181095.9		

PM10_RUI	CO2_RUNE	CH4_RUNE	N2O_RUNI	ROG_RUNI	TOG_RUNI	CO_RUNEX	SOx_RUNEX
0.175147	2121.418	0.045083	0.333457	0.970633	1.104992	1.797188	0.020042
0.006893	527.4573	0.015069	0.009182	0.062426	0.091036	1.402089	0.00522
0.041836	456.817	0.008297	0.071805	0.178639	0.203369	2.687242	0.004319
0.009088	616.2399	0.026797	0.0152	0.118465	0.17278	2.410354	0.006098
0.63355	872.7149	0.034439	0.137179	0.741443	0.844083	3.108116	0.00825
0.007669	693.914	0.029278	0.018298	0.129731	0.189227	2.483976	0.006867
0.018306	614.7122	0.009307	0.096624	0.200372	0.22811	1.769263	0.005811
0.005377	1573.528	0.032474	0.025314	0.160928	0.234825	2.204866	0.015571
0.066801	1058.196	0.026568	0.166334	0.572001	0.651185	2.39385	0.010004
0.005137	1800.633	0.027695	0.026674	0.129448	0.18889	1.641427	0.017819
0.056794	1177.361	0.02632	0.185065	0.566653	0.645097	2.395054	0.01113
0.006946	429.6395	1.232241	0.08248	8.549451	10.47788	41.2077	0.004252
0.007012	842.5934	0.029095	0.018119	0.13087	0.187267	2.427211	0.008338
0.014722	783.5899	0.007439	0.123169	0.160153	0.182324	2.924919	0.007408
0.007237	3294.436	0.073415	0.050139	0.330687	0.482537	5.247765	0.032601
0.259968	1887.044	0.036633	0.296617	0.788697	0.89788	1.882608	0.017839
0.178618	3140.221	0.061236	0.493599	1.318396	1.500894	3.004524	0.029667
0.005824	3321.383	0.151028	0.095772	0.749567	1.093766	8.931788	0.032868
0.005474	1541.87	0.041481	0.036118	0.198672	0.289902	2.10478	0.015258
0.165055	2157.636	0.033991	0.33915	0.73181	0.833111	1.125316	0.020384
0.934825	2223.422	0.176361	0.349491	3.797001	4.322597	5.139757	0.021006
0.027203	1913.201	0.009659	0.300729	0.207959	0.236746	0.712754	0.018075
0.049891	1986.454	0.01722	0.312243	0.37074	0.422059	0.958676	0.018767
0.192402	2064.324	0.05633	0.324483	1.212775	1.380652	2.131319	0.019503
0.168028	2058.372	0.051451	0.323547	1.107732	1.261068	2.020816	0.019446
0.157498	2044.945	0.041038	0.321437	0.883531	1.005832	1.60578	0.01932
0.170483	2062.068	0.050933	0.324128	1.096571	1.248363	1.991153	0.019481
0.014894	1910.646	0.007068	0.300327	0.152163	0.173226	0.642984	0.018051
0.055379	1992.764	0.018902	0.313235	0.406946	0.463277	1.013348	0.018827
0.112819	2148.617	0.020925	0.337733	0.450511	0.512872	0.746812	0.020299
0.002307	2033.161	0.001223	0.319585	0.026326	0.029971	0.392474	0.019208
0.005849	3237.722	0.101006	0.061227	0.503175	0.734232	5.94876	0.03204
1.788538	3450.799	0.368939	0.542418	7.943152	9.042674	12.2938	0.032601
0.038893	2891.222	0.016769	0.45446	0.361042	0.411019	1.827812	0.027315
0.036561	2926.338	0.016139	0.45998	0.347476	0.395575	1.790921	0.027647
0.025519	2742.59	0.013355	0.431097	0.287524	0.327324	1.573751	0.025911
0.022461	2889.551	0.012537	0.454197	0.269925	0.307289	1.711947	0.027299
0.046375	3197.754	0.040986	0.502642	0.882419	1.004567	3.158654	0.030211

0.160237	3293.657	0.032319	0.517717	0.69582	0.792138	1.507469	0.031117
0.213259	3191.673	0.063115	0.501687	1.358856	1.546954	2.749384	0.030153
0.179757	3081.442	0.059466	0.48436	1.280288	1.45751	2.78909	0.029112
0.016255	6712.195	0.006364	1.055064	0.137019	0.155986	0.407098	0.063413
0.004383	5024.066	10.02832	1.024189	0.167502	10.26223	36.58979	0
0.126405	3009.12	0.047825	0.472992	1.029652	1.172181	2.767938	0.028429
0.14697	3097.248	0.059622	0.486844	1.283639	1.461325	3.24664	0.029261
0.004082	3260.953	0.002558	0.512576	0.055064	0.062687	0.920882	0.030808
0.007329	3776.842	0.408948	0.19927	2.225355	3.247233	82.63034	0.037375
0.003076	2461.786	0.010773	0.023232	0.033892	0.049454	0.314103	0.024361
0.007612	2231.852	0.239969	0.350816	0.003429	0.244906	0.417981	0.021099
0.005042	2337.429	7.663706	0.4765	0.109499	7.821375	53.74913	0

Miles Travelled Per Hour 10

Vehicle Type	VMT %	Grams per Hour Prorated by Fleet% Nox	PM2.5	PM10	CO2
All Other Buses	0.00469412	0.36579	0.007866	0.008222	99.58194
LDA	0.40963693	0.386396	0.025964	0.028237	2160.66
LDA	0.00433611	0.009101	0.001736	0.001814	19.80808
LDT1	0.03850856	0.080152	0.003218	0.0035	237.3051
LDT1	1.5044E-05	0.000155	9.12E-05	9.53E-05	0.131293
LDT2	0.14978721	0.413282	0.010563	0.011487	1039.394
LDT2	0.00096403	0.001395	0.000169	0.000176	5.926022
LHD1	0.07422305	0.31872	0.003669	0.003991	1167.921
LHD1	0.05595229	1.403247	0.03576	0.037377	592.0847
LHD2	0.01055463	0.047214	0.000499	0.000542	190.0502
LHD2	0.02021259	0.409012	0.010983	0.01148	237.9751
MCY	0.00615514	0.088491	0.0004	0.000428	26.44493
MDV	0.12348191	0.314254	0.007965	0.008658	1040.45
MDV	0.00316039	0.004408	0.000445	0.000465	24.76452
MH	0.00174967	0.015508	0.000116	0.000127	57.64182
MH	0.00064259	0.078584	0.001598	0.001671	12.12598
Motor Coach	0.00112347	0.131688	0.00192	0.002007	35.27945
OBUS	0.00262557	0.06163	0.000141	0.000153	87.2051
SBUS	0.00058763	0.003485	2.96E-05	3.22E-05	9.060452
SBUS	0.00277522	0.499074	0.004382	0.004581	59.8792
T6 Ag	0.00010118	0.014792	0.000905	0.000946	2.249729
T6 CAIRP heavy	0.0005573	0.027907	0.000145	0.000152	10.66224
T6 CAIRP small	7.4933E-05	0.004081	3.58E-05	3.74E-05	1.4885
T6 instate construction heavy	0.00133249	0.120685	0.002453	0.002564	27.50693
T6 instate construction small	0.00592888	0.460715	0.009531	0.009962	122.0384
T6 instate heavy	0.0137662	1.278904	0.020743	0.021681	281.5113
T6 instate small	0.01652158	1.317666	0.026948	0.028167	340.6861
T6 OOS heavy	0.00032605	0.015728	4.65E-05	4.86E-05	6.229701
T6 OOS small	4.1141E-05	0.002297	2.18E-05	2.28E-05	0.81985
T6 Public	0.00102598	0.15322	0.001107	0.001158	22.04443
T6 utility	0.00033396	0.010932	7.37E-06	7.7E-06	6.789996
T6TS	0.007049	0.096225	0.000379	0.000412	228.2271
T7 Ag	2.0407E-05	0.005732	0.000349	0.000365	0.704214
T7 CAIRP	0.00639376	0.727489	0.002379	0.002487	184.8579
T7 CAIRP construction	0.00090749	0.101184	0.000317	0.000332	26.55617
T7 NNOOS	0.00779567	0.770343	0.001903	0.001989	213.8031
T7 NOOS	0.00251159	0.280562	0.00054	0.000564	72.57366
T7 POAK	0.0018739	0.245476	0.000831	0.000869	59.92279

T7 Public	0.00122865	0.298005	0.001884	0.001969	40.46767
T7 Single	0.00434089	0.760956	0.008857	0.009257	138.5471
T7 single construction	0.00225131	0.285342	0.003872	0.004047	69.37283
T7 SWCV	0.00200716	0.207148	0.000312	0.000326	134.7245
T7 SWCV	0.00079716	0.008872	3.34E-05	3.49E-05	40.05005
T7 tractor	0.00214213	0.293573	0.002591	0.002708	64.45915
T7 tractor construction	0.00185713	0.253339	0.002611	0.002729	57.52001
T7 utility	9.9446E-05	0.005318	3.88E-06	4.06E-06	3.242888
T7IS	1.1058E-05	0.000551	7.45E-07	8.1E-07	0.417641
UBUS	0.00166931	0.004143	4.72E-05	5.13E-05	41.09477
UBUS	0.00337894	0.105484	0.000246	0.000257	75.413
UBUS	0.00246912	0.014788	0.000119	0.000125	57.71389
Total Fleet Emissions g/hr	**1**	**12.50304**	**0.206735**	**0.218315**	**9435.385**

		Grams Per Year			
Intersection Type	**Delay Hours**	**Nox**	**PM2.5**	**PM10**	**CO2**
Roundabout	3932	49161.95	812.8802	858.4135	37099935
Light Signal + Stop Sign	9295	116215.8	1921.598	2029.235	87701905
Annual Reduction	-5363	-67053.8	-1108.72	-1170.82	-5.1E+07
Pounds Per Year		-147.696	-2.44211	-2.5789	-111458
Tons Per Year		-0.07385	-0.00122	-0.00129	-55.729
Pounds Per Day		-0.40465	-0.00669	-0.00707	-305.365

	Nox	**PM2.5**	**PM10**	**CO2**
Roundabout (Tons/Yr)	0.6		0.0086	
Light Signal (Tons/Yr)	0.68		0.0128	
	-0.08		-0.0042	

CH4	N2O	ROG	TOG	CO	Sox
0.002116	0.015653	0.045563	0.05187	0.084362	0.000941
0.061728	0.037614	0.25572	0.372917	5.743476	0.021381
0.00036	0.003114	0.007746	0.008818	0.116522	0.000187
0.010319	0.005853	0.045619	0.066535	0.928193	0.002348
5.18E-06	2.06E-05	0.000112	0.000127	0.000468	1.24E-06
0.043855	0.027409	0.194321	0.283438	3.720678	0.010286
8.97E-05	0.000931	0.001932	0.002199	0.017056	5.6E-05
0.024103	0.018789	0.119445	0.174294	1.636519	0.011558
0.014866	0.093067	0.320047	0.364353	1.339414	0.005597
0.002923	0.002815	0.013663	0.019937	0.173247	0.001881
0.00532	0.037406	0.114535	0.130391	0.484102	0.00225
0.075846	0.005077	0.526231	0.644928	2.536393	0.000262
0.035927	0.022374	0.161601	0.231241	2.997166	0.010296
0.000235	0.003893	0.005061	0.005762	0.092439	0.000234
0.001285	0.000877	0.005786	0.008443	0.091819	0.00057
0.000235	0.001906	0.005068	0.00577	0.012097	0.000115
0.000688	0.005545	0.014812	0.016862	0.033755	0.000333
0.003965	0.002515	0.01968	0.028718	0.23451	0.000863
0.000244	0.000212	0.001167	0.001704	0.012368	8.97E-05
0.000943	0.009412	0.020309	0.023121	0.03123	0.000566
0.000178	0.000354	0.003842	0.004374	0.005201	2.13E-05
5.38E-05	0.001676	0.001159	0.001319	0.003972	0.000101
1.29E-05	0.000234	0.000278	0.000316	0.000718	1.41E-05
0.000751	0.004324	0.01616	0.018397	0.0284	0.00026
0.00305	0.019183	0.065676	0.074767	0.119812	0.001153
0.005649	0.04425	0.121629	0.138465	0.221055	0.00266
0.008415	0.053551	0.181171	0.206249	0.32897	0.003219
2.3E-05	0.000979	0.000496	0.000565	0.002096	5.89E-05
7.78E-06	0.000129	0.000167	0.000191	0.000417	7.75E-06
0.000215	0.003465	0.004622	0.005262	0.007662	0.000208
4.08E-06	0.001067	8.79E-05	0.0001	0.001311	6.41E-05
0.00712	0.004316	0.035469	0.051756	0.419328	0.002258
7.53E-05	0.000111	0.001621	0.001845	0.002509	6.65E-06
0.001072	0.029057	0.023084	0.02628	0.116866	0.001746
0.000146	0.004174	0.003153	0.00359	0.016252	0.000251
0.001041	0.033607	0.022414	0.025517	0.122684	0.00202
0.000315	0.011408	0.006779	0.007718	0.042997	0.000686
0.000768	0.009419	0.016536	0.018825	0.05919	0.000566

0.000397	0.006361	0.008549	0.009733	0.018522	0.000382
0.00274	0.021778	0.058986	0.067152	0.119348	0.001309
0.001339	0.010904	0.028823	0.032813	0.062791	0.000655
0.000128	0.021177	0.00275	0.003131	0.008171	0.001273
0.079942	0.008164	0.001335	0.081807	0.291681	0
0.001024	0.010132	0.022056	0.02511	0.059293	0.000609
0.001107	0.009041	0.023839	0.027139	0.060294	0.000543
2.54E-06	0.00051	5.48E-05	6.23E-05	0.000916	3.06E-05
4.52E-05	2.2E-05	0.000246	0.000359	0.009137	4.13E-06
0.00018	0.000388	0.000566	0.000826	0.005243	0.000407
0.008108	0.011854	0.000116	0.008275	0.014123	0.000713
0.189226	0.011765	0.002704	0.193119	1.32713	0
0.59819	**0.627882**	**2.532791**	**3.476486**	**23.7619**	**0.091041**

CH4	N2O	ROG	TOG	CO	Sox	CO2e* MT
2352.084	2468.833	9958.932	13669.54	93431.8	357.9737	37894448.90
5560.179	5836.166	23542.29	32313.94	220866.9	846.2271	89580087.12
-3208.09	-3367.33	-13583.4	-18644.4	-127435	-488.253	-51685638.22
-7.06629	-7.41703	-29.9193	-41.0669	-280.694	-1.07545	-113845.0181
-0.00353	-0.00371	-0.01496	-0.02053	-0.14035	-0.00054	-51.6303937
-0.01936	-0.02032	-0.08197	-0.11251	-0.76902	-0.00295	-311.9041592

CH4	N2O	ROG	TOG	CO	Sox
		0.19			
		0.3			
		-0.11			

ATTACHMENT C

BIOLOGICAL ASSSESSMENT

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1602 Spring Street, Paso Robles, CA 93446
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July 24, 2020
1259.01

Douglas Wood
Douglas Wood and Associates, Inc.
1461 Higuera Street Ste A
San Luis Obispo, CA 93401
dwaeir@aol.com
(805) 544-1680

Re: Biological Letter Report for King City Roundabout, King City, California

Dear Mr. Wood:

This letter report describes the results of a biological survey completed on a 4.3-acre Study Area, located at the intersection of East San Antonio Drive and Broadway Street/San Lorenzo Park Road within the southwestern City limits of King City, Monterey County, California (Figure 1 and Figure 2 in Attachment B). Approximate coordinates for the Study Area are 36.204986°N, -121.138008°W (WGS 84) in the Thompson Canyon U. S. Geological Survey (USGS) 7.5' topographic quadrangle. The Study Area is located on portions of Assessor Parcel Numbers (APNs) 263-910-200, 264-010-020, -180, -190, -200 and -210, 264-510-560, - 570, and -630. This survey was conducted to provide baseline biological information and an assessment of potential special status plant and animal species that could occur within the Study Area or be affected by the proposed project (Project), the installation of a roundabout at the Broadway street interchange with the US 101 northbound on- and off-ramps.

This letter report presents the results a habitat assessment, botanical and wildlife inventory, a discussion of special status species that have potential to occur within the Study Area, and an analysis of potential impacts to biological resources associated with construction of the Project. Recommendations to avoid potential impacts to biological resources are also provided.

Project Description

The proposed Project involves the installation of a roundabout, the removal of existing traffic signals, and roadway improvements (including resurfacing, restriping, installation of crosswalks, and landscaping of medians) to San Antonio Drive, San Lorenzo Park Road, Broadway Street, and the US 101 northbound on- and off-ramps. The footprint of the proposed Project is approximately 2.5 acres. The Project is situated approximately 100 feet north of the Broadway Street interchange with the US 101 northbound on- and off-ramps and would occur almost entirely within the existing roadway. A portion of the Project would encroach into adjacent parking lots as well as into

ornamentally landscaped areas that contain signage. No trees would be impacted or removed due to proposed Project activities. A Conceptual Project Design is provided as Attachment G.

Methods

Althouse and Meade, Inc. biologists Jessica Griffiths and Sarah Termondt conducted a biological survey on June 26, 2020 to determine biological and botanical resources present within the Study Area. The Study Area is comprised of the proposed Project footprint, and a 25-foot buffer around the footprint (see Figure 2 of Attachment B). The buffer area was included in the biological survey to document biological resources that may be affected by proposed Project activities. Plant and wildlife species were documented to identify any potential sensitive species or vegetation communities. All plant and wildlife species apparent at the time of the survey were recorded and are provided in Attachment C and Attachment D.

Plant species that could not be readily identified in the field were collected and identified using a taxonomic key. Biological surveys were conducted on foot to compile species lists, search for special status plants and animals, map habitats, and to photograph the Study Area. The general vegetation survey method included meandering transects with an emphasis on identifying each plant species observed and suitable habitat for potential special-status species. The entirety of the Study Area was surveyed. Botanical nomenclature used in this document follows the Jepson Manual, Second Edition (Baldwin et al. 2012, Jepson Flora Project 2019). Wildlife documentation included observations of animal presence and other wildlife sign. Birds were identified by sight or by vocalizations. Results of the botanical and wildlife surveys are summarized below.

Althouse and Meade conducted a data search from the CNDDB and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California on June 30, 2020 (CDFW 2020a, CNPS 2020). Other database searches included online herbarium specimen records for locality data within Monterey County in the Consortium of California Herbaria (CCH 2020). The data search area included the Thompson Canyon USGS 7.5-minute quadrangle and the 8 surrounding quadrangles (Paraiso Springs, Greenfield, Reliz Canyon, Pinalito Canyon, San Lucas, Bear Canyon, Cosio Knob, Espinosa Canyon). Data was compiled for sensitive plant and wildlife species and reviewed according to each species potential to occur at the Study Area. Special status species lists produced by database and literature searches were cross-referenced with the described habitat types in the Study Area. Each special status species that was determined to have potential to occur in or near the Study Area is individually discussed based on the following criteria. Lists of sensitive species known to occur within the 9-quad search area and an analysis of their potential to occur is provided in Attachment E and Attachment F.

- **Present:** The species was observed in the Study Area during field surveys.
- **High Potential:** Highly suitable habitat and CNDDB or CNPS occurrence records indicate the species is likely to occur in the Study Area. Individuals may not have been observed during field surveys; however, the species likely occurs in the project vicinity and could move onto the project site in the future.
- **Moderate Potential:** Suitable habitat is present in the Study Area and CNDDB occurrences or surveys have recorded the species within 5-miles of the project. Individuals were not observed during field surveys, but the species could be present, at least seasonally or as a transient.

- **Low Potential:** Marginally suitable habitat is present in the Study Area, and there are no occurrence records or other historical (i.e., 50 years or older) records within 10-miles of the Study Area. Individuals were not observed during surveys and are not expected to be present.
- **No Potential:** Suitable habitat for the species is not present in the Study Area, and/or the species is not known to occur in the region.

Maps were created using aerial photo interpretation and spatial data imported to Esri ArcGIS, a Geographic Information System (GIS) software program using aerial images of Monterey County (NAIP 2020).

Existing Conditions

The Study Area is north of Hwy 101 at the San Antonio Drive and Broadway Street/San Lorenzo Park Road intersection. The majority of the Study Area is currently developed (Photos 1 and 2) with existing roadway, sidewalks, and ornamental landscaping. The Salinas River is located approximately 0.15 miles to the southwest. Surrounding land uses are primarily high density residential and commercial. A cemetery is located outside of the Study Area to the northeast and open space areas associated with the Salinas River corridor are found 0.1 mile to the south. Topography within the Study Area is flat, with an elevation ranging from 91 to 93 meters above sea level. Historic aerials of the Study Area indicate that except for a few small structural additions, the existing infrastructure within and nearby the Study Area has remained relatively unchanged for over 20 years.

Photo 1. Study Area at intersection of Hwy 101 offramp and Broadway Street, facing north, June 26, 2020.

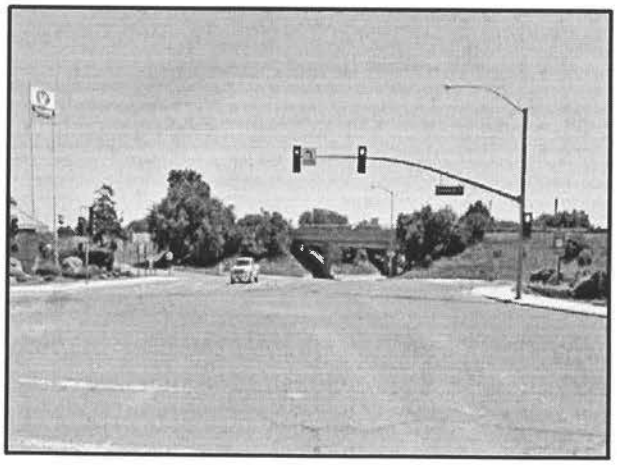

Photo 2. Study Area at intersection of San Antonio Drive and San Lorenzo Park Road, facing south, June 26, 2020.

Soils

Three soil types are represented at the Study Area (USDA 2020a, Figure 6 of Attachment B). Brief descriptions of each soil type are provided below.

Pico Fine Sandy Loam (Pf)

This soil type comprises the majority of the Study Area (93 percent) and is very deep and well-drained. It is typically encountered on mild to moderate slopes formed from calcareous alluvium derived from sedimentary rocks. Included in this map unit are small areas of Elder loam, gravelly sand, Cropley clay, and Tujunga fine sand. The permeability is rapid, and the available water capacity is moderate to high (USDA 2020b).

Mocho Silty Clay Loam (MoA)

Mocho silty clay loam is documented in the eastern portion of the Study Area (6 percent). This soil type is very deep, well drained, and a nearly level soil typical of alluvial fans and plains. It formed in alluvium weathered from sedimentary rocks. Included in this map unit are minor areas of Camarillo loam, drained; Cropley clay; Marimel silty clay loam, drained; Mocho fine sandy loam; Mocho Varient fine sandy loam; Salinas loam; and Tujunga loamy sand. Permeability of this Mocho soil is moderately slow and the available water capacity is moderate. Surface runoff is slow and the hazard of erosion is slight (USDA 2020b).

Xerorthents, loamy (Xc)

This soil type is encountered in a small area in the western section of the Study Area (1 percent). It is also very deep and well-drained on encountered on moderate and steep slopes at the end of terraces. It is derived from mixed loamy alluvium and typically its profile contains loam, clay loam within the first 60 inches. The available water storage in its profile is very high (USDA 2020b).

Habitats

The majority of the Study Area is currently developed. There is also a small area of ornamental/landscaped vegetation, and a small portion in the southern extent comprised of non-native wild oats grassland, *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (Sawyer 2009). Existing habitats and acreages are listed below in Table 1 and shown in Figure 7 in Attachment B.

TABLE 1. HABITAT TYPES WITHIN STUDY AREA

Habitat	Total Area (Acres)
Wild Oats Grassland	0.3
Ornamental/Landscaped Vegetation	0.8
Developed	3.2
TOTAL	**4.3**

Wild Oats Grassland

A small area (0.3-acre) within the southern extent of the Study Area is dominated by a mixture of non-native annual grasses and conforms with membership rules of Wild Oats Grassland, *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (Sawyer 2009). Most abundant is wild oat (*Avena barbata*), with occasional presence of wild mustard (*Hirshfeldia incana*), yellow-star thistle (*Centaurea solstitialis*), russian thistle (*Salsola tragus*), rattail sixweeks grass (*Festuca myuros*), and other non-native annual species. Individual oak trees, and a small population of

coyote brush (*Baccharis pilularis*) and holly-leaf red berry (*Rhamnus ilicifolia*) fall directly outside of the Study Area adjacent to this habitat type. This habitat is associated with disturbed north-facing slopes on the northern side of the on- and off-ramp of Highway 101. No special status species were observed in this habitat.

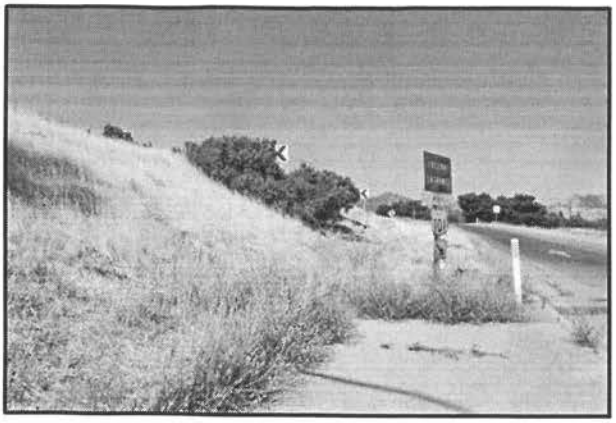

Photo 3. Wild oats grassland, facing west. Taken June 26, 2020.

Photo 4. Wild oats grassland, facing east. Taken June 26, 2020.

Ornamental/Landscaped Vegetation

Ornamental/landscaped vegetation includes ornamental plantings that comprise 0.8-acre of the Study Area. No formal vegetation community alliance exists for this habitat type. Ornamental landscaping species observed within the Study Area include lantana (*Lantana* sp.), crape myrtle (*Lagerstroemia indica*), hot-lips sage (*Salvia microphylla*), and ornamental guara (*Oenothera* sp.). Ornamental hedges, including red claws (*Escallonia* sp.) and privet (*Lingustrum* sp.), and associated disturbed areas are also present in this habitat.

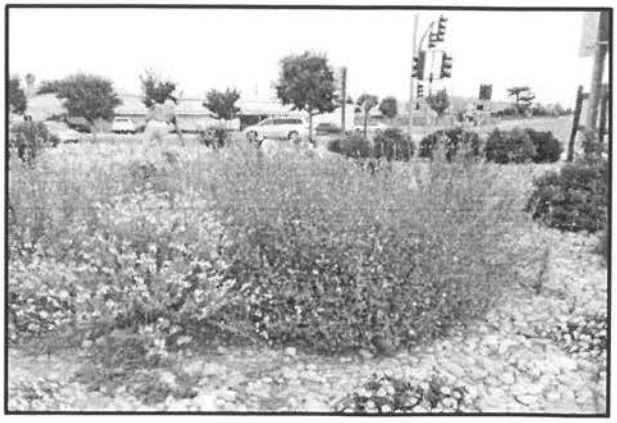

Photo 5. Ornamental landscaping within the Study Area, facing north. Taken June 26, 2020.

Photo 6. Ornamental landscaping within the Study Area, facing south. Taken June 26, 2020.

Developed

Developed areas comprise the majority of the Study Area (3.2 acres, 75 percent) and include portions of existing roadways, parking lots, and sidewalks.

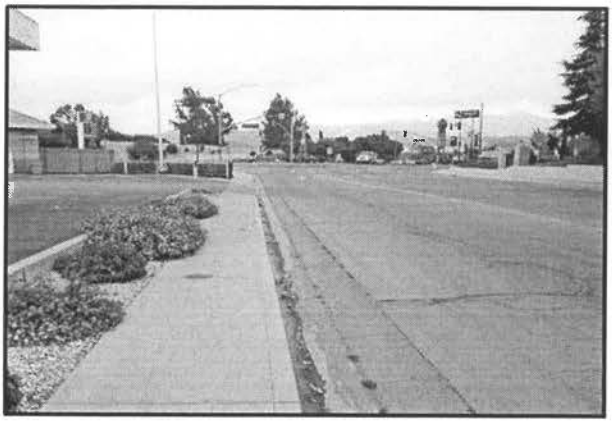

Photo 7. Developed roadways within the Study Area, facing west. Taken June 26, 2020.

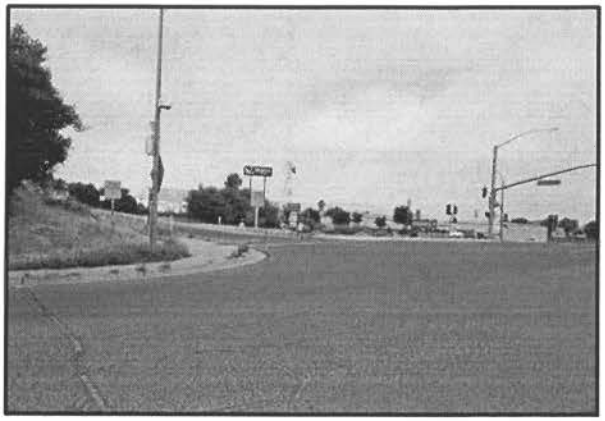

Photo 8. Developed roadways and sidewalks, facing northwest. Taken June 26, 2020.

Botany

Botanical surveys identified 55 vascular plant species comprised of 11 native and 44 non-native and ornamental species within and directly adjacent to the Study Area (Attachment C).

Wildlife

A total of 18 wildlife species were observed within the Study Area during site surveys. Species observed included those adapted to anthropogenic influences including northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*). Suitable nesting habitat is present within the Study Area within native shrubs, ornamental landscaping, and developed features including the Hwy 101 overpass bridge. The complete list of wildlife species observed during the time of the survey are presented in Attachment D.

No formal jurisdictional delineation was conducted for this assessment. No potentially jurisdictional drainages occur within the Study Area.

Sensitive Natural Communities/Special Status Species

The CNDDB and CNPS On-line Inventory of Rare and Endangered Plants of California listed 43 special status plant species and 28 special status animal species known to occur in the 9-quad search area. Figures 3 and 4 in Attachment B provides a summary of CNDDB locations within a five-mile radius of the Study Area. Historic and current land use preclude potential presence of most sensitive species within the Study Area. Three special status wildlife species and 2 special status plants have low potential to occur within the Study Area based on an analysis of known ecological requirements of the species, proximity of known records, and the habitat conditions that were observed on site on June 26, 2020. The remaining 41 special status plants and 25 special status animal species were determined to have no potential to occur due to absence of suitable habitat, soils, or other ecological conditions and are not discussed further.

Critical Habitat

No U.S. Fish and Wildlife Service (USFWS) Critical Habitat for listed species occurs within the Study Area. Critical habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) exists within a 5-mile vicinity of the Study Area (Figure 5 of Attachment B), however, no vernal pool fairy shrimp habitat is present within the Study Area.

Sensitive Plants

No sensitive plant species were observed in the Study Area during the site survey conducted on June 26, 2020. Reported locations of sensitive plant species in the vicinity of the Study Area are shown in Figure 4. Two special status plant species were determined to have low potential to occur within the Study Area (Attachment E) and are discussed below.

Douglas' Spineflower (*Chorizanthe douglasii*) is a CRPR 4.3 species endemic to San Benito, Monterey and San Luis Obispo Counties. It is known to occur on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forests habitats between 55- and 1,600-meters elevation. It is an annual herb that typically blooms between April and July. The closest known CCH record is historic and appears to have been extirpated from development. It is located approximately 0.9-mile northeast of the Study Area (SD43530; 1944). This species has low potential to occur because the small undeveloped portions of the Study Area containing highly disturbed non-native grassland with sandy soil provide very marginal habitat. Douglas' spineflower was not detected in the Study Area during the June 2020 survey.

Elegant Wild Buckwheat (*Eriogonum elegans*) is a CRPR 4.3 species endemic to the central coast of California. It is known to occur on sandy or gravelly soil in cismontane woodlands, grasslands; washes, and sometimes roadsides between 200- and 1,525-meters elevation. It is an annual herb that typically blooms between May and November. The closest known CCH record is historic and located approximately 1-mile northwest of the Study Area (SBBG179105; 1931). This species has low potential to occur because the small undeveloped portions of the Study Area containing highly disturbed non-native grassland with sandy soil provide very marginal habitat. Elegant wild buckwheat was not detected during the June 2020 survey.

Sensitive Wildlife

No sensitive wildlife species were observed in the Study Area during the site survey conducted on June 26, 2020. Reported locations of sensitive wildlife in the vicinity of the Study Area are shown on Figure 4 of Attachment B. Three special-status wildlife species have low potential to occur within the Study Area (Attachment F) and are discussed below.

Cooper's hawk (*Accipiter cooperii*) is a California Department of Fish and Wildlife (CDFW) Watch List species (for nesting occurrences only) that occurs regularly in California during the winter months and during spring and fall migration (CDFW 2018a). It is generally regarded as a regular but uncommon nesting species in San Luis Obispo County (Hall et al. 1992). Cooper's hawks frequent oak and riparian woodland habitats, and increasingly urban areas, where they prey primarily upon small birds (Curtis et al. 2006). The closest reported occurrence of nesting Cooper's hawk is located approximately 13 miles southwest of the project (CNDDB #69; 1999). There is no suitable nesting habitat present, but there is potentially suitable foraging habitat within the Study Area; therefore, there is low potential for this species to occur within the Study Area. Cooper's hawk was not observed within the Study Area during the site surveys.

Pallid bat (*Antrozous pallidus*) is a California Species of Special Concern. The pallid bat is a large long-eared bat that occurs throughout the state and occupies a wide variety of habitats. Although most common in open, dry areas ideal for foraging with rocky outcrops for roosting, pallid bats are also found regularly in oak and pine woodlands where they roost in caves, mines, rock crevices, hollow trees and buildings (Nowak et al. 1994). Bridges are also frequently used by pallid bats, often as night roosts between foraging periods (Pierson et al. 1996). The closest reported occurrence of the pallid bat is approximately 15-miles northwest of the Study Area (CNDDB #212; 1936). There is potentially suitable roosting habitat in drainage holes in the underside of the Highway 101 bridge over Broadway, but this area is subject to high noise levels and human disturbance. Therefore, pallid bat has low potential to occur within the Study Area. No pallid bats were observed within the Study Area during the site surveys.

Western bumble bee (*Bombus occidentalis*) is a Candidate for the California Endangered Species list. It is also has a Global Rank of G2G3 (imperiled and vulnerable) and a State Rank of S1 (critically imperiled). Though once widespread, disease is stipulated to be the cause of the precipitous decline in this species from southern British Columbia to central California (NatureServ 2018). The closest reported occurrence of western bumble bee is located approximately 7.5-miles southeast of the Study Area (CNDDB #277; 1935). Western bumble bee is known to utilize urban and rural habitats, and landscaped ornamentals provide potentially suitable foraging habitat for this species within the Study Area. However, these landscaped areas are highly disturbed. Therefore, western bumble bee has low potential to occur within the Study Area. Western bumble bee was not observed in the Study Area during the site surveys.

Impacts and Mitigation

The proposed Project would occupy approximately 2.5 acres when all phases of the Project are complete (refer to Figure 2 of Attachment B and Site Plans in Attachment G). The Project would affect only previously disturbed habitat including 0.1 acres of wild oat grassland, 0.2 acres of ornamental landscaping, and 2.2 acres of developed areas. No impacts to native habitat would occur due to the proposed Project. The following sections provide mitigation information and recommendations designed to reduce potential effects of the Project to a less than significant level.

Special Status Plants

Special status plants were not detected in the Study Area during the June 2020 site survey. The majority of the Study Area is developed with small portions of highly disturbed non-native wild oat grassland. The botanical survey conducted in June 2020 was appropriately timed to identify all special status plants with potential to occur in the Study Area, and no special status species were detected. The Project will not impact special status plant species. No further botanical surveys are recommended, and no mitigation is required.

Special Status Wildlife

Nesting Birds

There is low potential for Cooper's hawk, a CDFW Watch List species (for nesting occurrences only) to occur within the Study Area. There is potentially suitable foraging habitat within the Study Area for this species but no suitable nesting habitat.

is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education and public information activities related to slippers one of our duties is back raise it up back, double should and I so the slight breeze descends around for about five and air pollution. The District is also responsible for the implementation and enforcement of attainment and maintenance of Federal and State ambient air standards.

Impacts: The proposed project will not conflict with or obstruct the implementation of any air quality plan, expose sensitive receptors to substantial pollution concentrations, violate any established air quality standards or result in a net increase of any criteria pollutant for which the region is in non-attainment. Given the unoccupied nature of areas adjacent to the WWTP, the proposed project will not create objectionable smoke, ash, dust or odors affecting existing residents or other persons in the immediate area. The proposed project will not generate significant greenhouse gas emissions or conflict with any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

Recommended Mitigation Measures: Given the lack of potentially significant impacts to air quality or greenhouse gas emissions, no mitigation measures are recommended.

4.	BIOLOGICAL RESOURCES Would the project:	Significant	Unknown, Potentially Significant	Potentially Significant And Mitigated	Not Significant
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?		X		
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife service?		X		
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?		X		
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?		X		
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
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?		X		

Existing Conditions: A majority of the project area is currently developed. There is, however, a small area of ornamental/ landscaped vegetation and non-native wild oats grassland species. These three habitats are described below.

A variety of other native birds, protected under the Migratory Bird Treaty Act, may utilize habitat within the Study Area for nesting. The following mitigation recommendation is provided to avoid impacts to nesting birds.

BIO-1 **Nesting Bird Preconstruction Survey**. If work is planned to occur between February 1st and August 31st, within one week of ground disturbance activities, a pre-construction nesting bird survey shall be conducted by a qualified biologist. If surveys do not locate nesting birds, construction activities may be conducted. If nesting birds are located, no construction activities shall occur within 100 feet of non-raptor bird nests and 500 feet of raptor nests until chicks are fledged. The qualified biologist may increase or decrease the buffer on a case by case basis in consultation with CDFW, if the species, location, topography, or work scope support the determination. A pre-construction nesting bird survey report detailing survey findings and recommendations for appropriate worker and Project-related avoidance shall be provided to the lead agency.

Mammals

One special status mammal species, pallid bat, a CDFW Species of Special Concern, was determined to have low potential to occur within the Study Area in drainage holes under the Highway 101 road bridge. Due to the high level of noise and human disturbance, this area is not suitable for a maternal roost. There is low potential for this area to be used as a night roost. The proposed Project will not impact the bridge. If present, roosting pallid bats may be temporarily disturbed by construction noise, but no permanent impacts are anticipated. Consequently, no additional mitigation is recommended.

Invertebrates

One special status invertebrate species, western bumble bee, a Candidate State Endangered Species, has low potential to occur within the Study Area. Landscaped ornamental flowers provide suitable nectar sources for this species. Approximately 0.2 acres of potential foraging habitat for this species would be impacted by the proposed Project. However, landscaping will be installed as part of the proposed Project, and there are many other landscaped areas in the immediate vicinity, including a drought-tolerant native plant garden at the northeast corner of the intersection of San Antonio Drive and Broadway Street. Therefore, impacts to this species, if present, are anticipated to be negligible and no mitigation is recommended.

Thank you for allowing us to be of assistance. If you have any questions or concerns, please call me at (805) 237-9626.

Sincerely,

Jessica L Griffiths

Jessica Griffiths
Senior Biologist

Attachments

- **Attachment A. References**
- **Attachment B. Figures**
- **Attachment C. Vascular Plant List**
- **Attachment D. Wildlife List**
- **Attachment E. Special Status Plants Reported from the Region**
- **Attachment F. Special Status Animals Reported from the Region**
- **Attachment G. Conceptual Project Design**

ATTACHMENT A. REFERENCES

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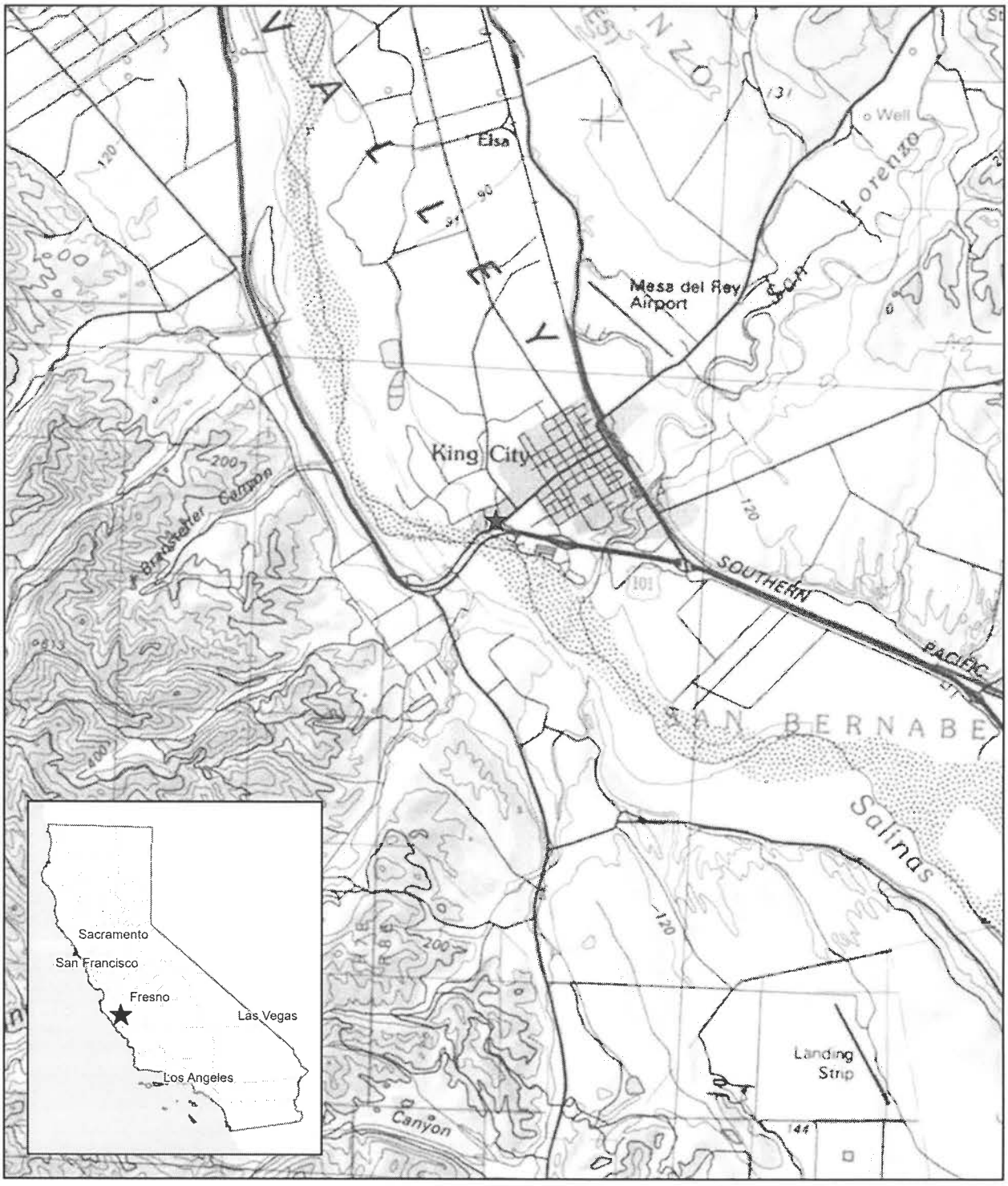
ATTACHMENT B. FIGURES

- Figure 1. USGS Topographical Map
- Figure 2. Aerial Photograph
- Figure 3. California Natural Diversity Database Plant Records
- Figure 4. California Natural Diversity Database Animal Records
- Figure 5. USFWS Critical Habitat
- Figure 6. Soils
- Figure 7. Biological Resources

Figure 1. United States Geological Survey Topographic Map



Legend

★ Project Location

N

0 1 2 Miles

King City Roundabout
Map Center: 121.13646°W 36.197°N
King City, Monterey County

USGS Quadrangle: Thompson Canyon

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 23, 2020 05:10 PM by SAF

Figure 2. Aerial Photograph

Legend

Project Area (2.5 acres)

Study Area (25-Foot Buffer, 4.3 acres)

N

0 100 200 300 Feet

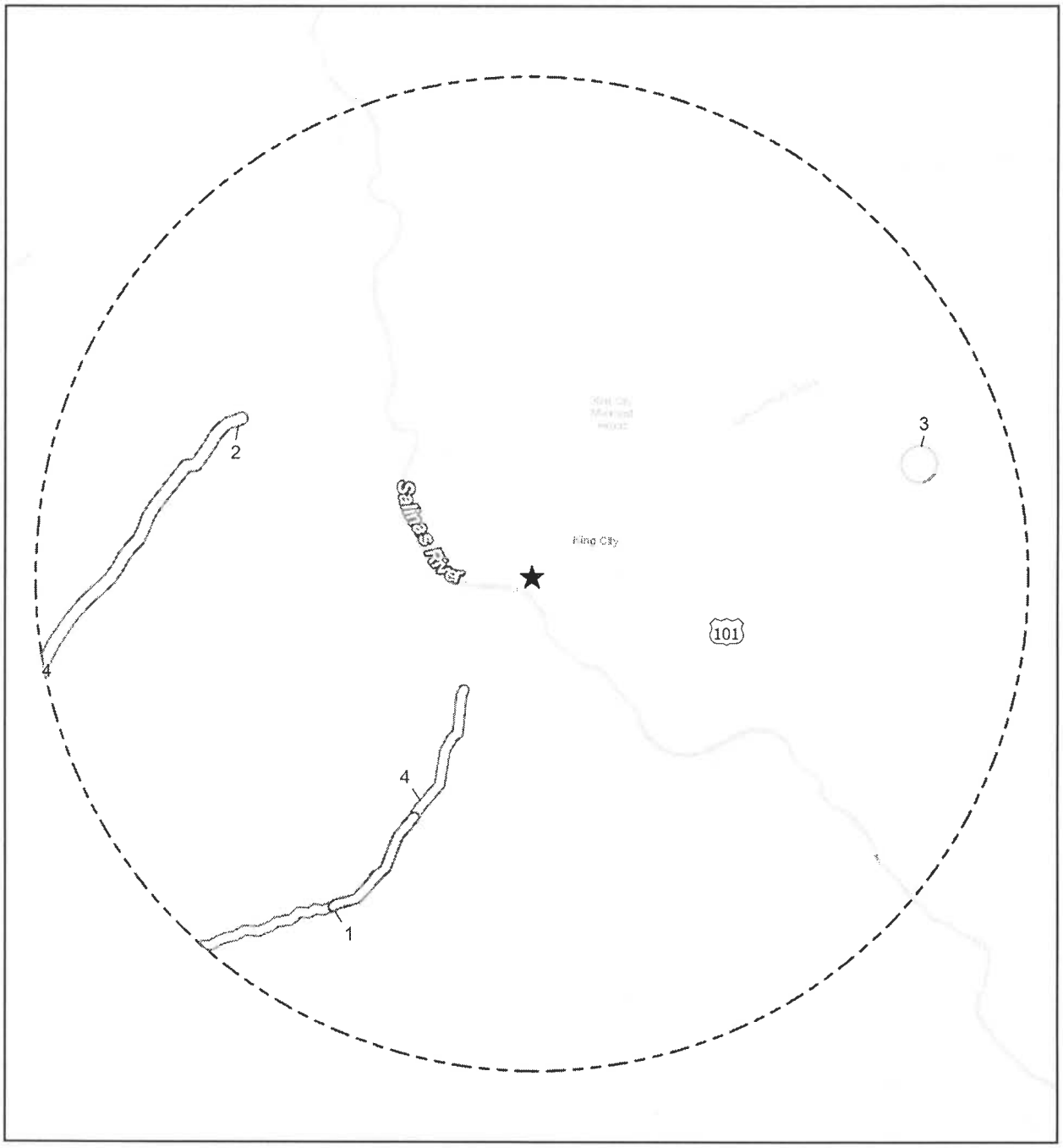
Kign City Roundabout
Map Center: 121.13789°W 36.2054°N
King City, Monterey County

Imagery Source: ESRI World Imagery

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 21, 2020 04:32 PM by SAF

Figure 3. California Natural Diversity Database Plant Records



Label	Common Name
1	Davidson's bush-mallow
2	Pale-yellow layia
3	Recurved larkspur
4	Umbrella larkspur

Legend

Study Area Location

5-Mile Radius

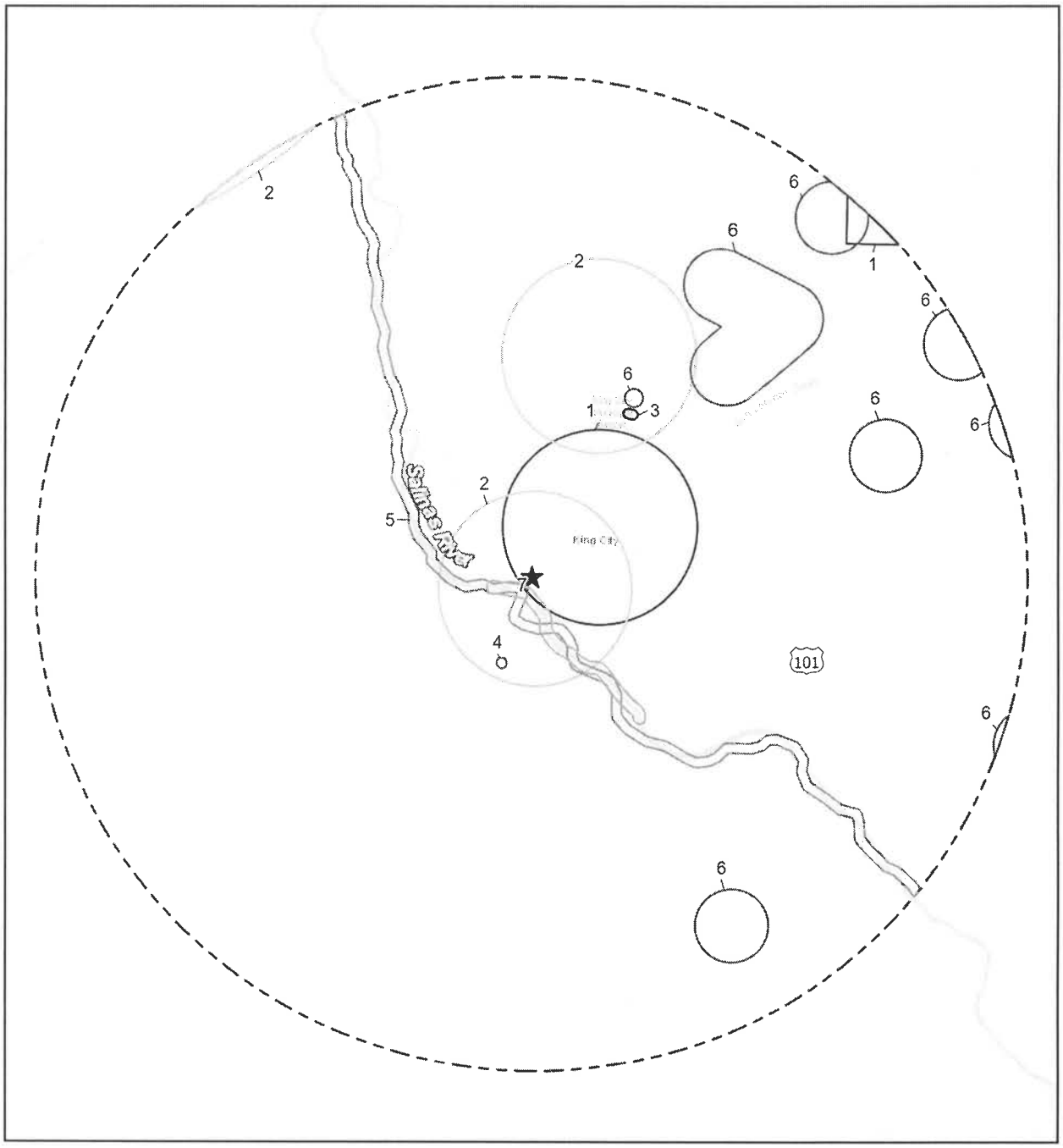
N

0 0.5 1 2 Miles

King City Roundabout
Map Center: 121.13781°W 36.20542°N
King City, Monterey County

CNDDB GIS Data Last Updated: July 2020

Figure 4. California Natural Diversity Database Animal Records



Label	Common Name
1	American badger
2	Bank swallow
3	Burrowing owl
4	Northern California legless lizard
5	Pajara/Salinas hitch
6	San Joaquin kit fox
7	Western pond turtle

Legend

★ Project Location

5-Mile Radius

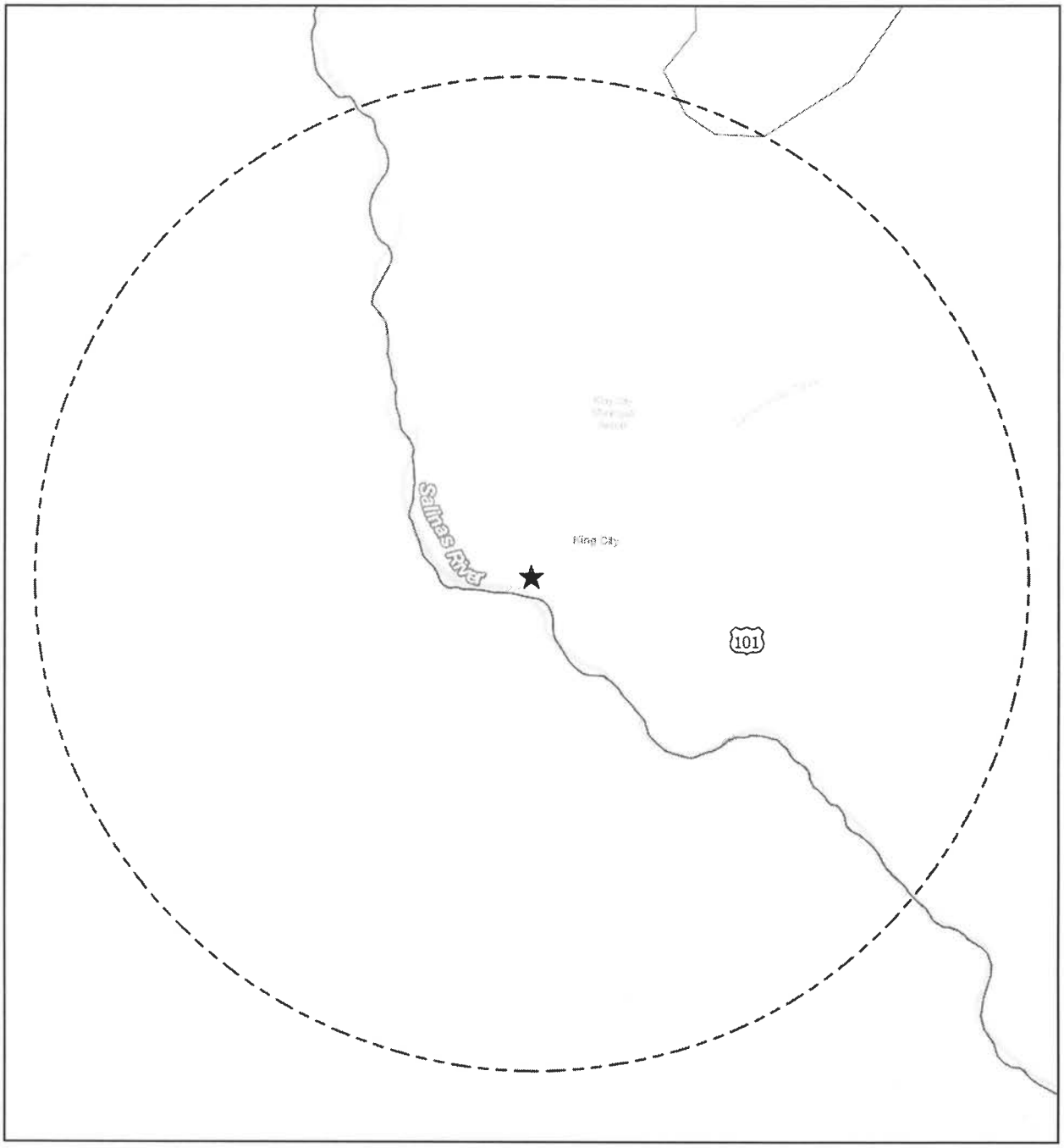
N

0 0.5 1 2 Miles

King City Roundabout
Map Center: 121.13781°W 36.20542°N
King City, Monterey County

CNDDB GIS Data Last Updated: July 2020

Figure 5. United States Fish and Wildlife Service Critical Habitat



Legend

- Project Location
- 5-Mile Radius

Critical Habitat

- Critical Habitat
- Vernal pool fairy shrimp

N

0 0.5 1 2 Miles

King City Roundabout
Map Center: 121.13781°W 36.20542°N
King City, Monterey County

USFWS Critical Habitat Data Last Updated: August 14, 2019

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BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 15, 2020 05:41 PM by JBB

Figure 6. USDA Soil Survey

Soil Type	Study Area
MoA: Mocho silty clay loam, 0 to 2 percent slopes	6%
Pf: Pico fine sandy loam	93%
Xc: Xerorthents, loamy	1%

N

0 50 100 150 Feet

Legend

Study Area
(4.3 acres)

King City Roundabout
Map Center: 121.13781°W 36.20542°N
King City, Monterey County

Source: USDA NRCS Soil Survey

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 15, 2020 10:31 AM by JBB

Figure 7. Biological Resources

Legend

- Study Area (4.3 acres)

Habitats

- Developed (3.2 acres)
- Wild Oats Grassland (0.3 acre)
- Ornamental Landscaping (0.8 acre)

N

0 75 150 Feet

King City Roundabout
Map Center: 121.13781°W 36.20542°N
King City, Monterey County

Biological Survey Date: 06/29/2020

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 23, 2020 05:08 PM by JBB

ATTACHMENT C. VASCULAR PLANT LIST

Common Name	Scientific Name	Special Status	Origin
Trees - 6 Species			
Ornamental cypress	*Cupressus* sp.	None	Introduced
Ornamental pine	*Pinus* sp.	None	Introduced
Chinese pistache	*Pistacia chinensis*	None	Introduced
Coast live oak	*Quercus agrifolia*	None	Native
Tree tobacco	*Nicotiana glauca*	None	Introduced
Arroyo willow	*Salix lasiolepis*	None	Native
Shrubs – 15 Species			
Century plant	*Agave americana*	None	Introduced
Mexican fleabane daisy	*Erigeron* sp.	None	Introduced
Ornamental red claws	*Escallonia* sp.	None	Introduced
Crape myrtle	*Lagerstroemia indica*	None	Introduced
Lantana	*Lantana* sp.	None	Introduced
Lavender	*Lavendula* sp.	None	Introduced
Privet	*Lingustrum* sp.	None	Introduced
Chinese fringe flower	*Loropetalum chinense*	None	Introduced
creeping myoporum	*Myoporum parvifolium*	None	Introduced
Ornamental gaura	*Oenothera* sp.	None	Introduced
hot-lips ornamental sage	*Salvia microphylla*	None	Introduced
Coyote brush	*Baccharis pilularis*	None	Native
Coffeeberry	*Frangula californica*	None	Native
Toyon	*Heteromeles arbutifolia*	None	Native
Holly-leaf redberry	*Rhamnus ilicifolia*	None	Native
Forbs – 26 Species			
California amaranth	*Amaranthus californicus*	None	Native
Yellow star thistle	*Centaurea solstitialis*	None	Introduced
Eucalyptus	*Chenopodium album*	None	Introduced
Bindweed	*Convolvulus arvensis*	None	Introduced
African daisy	*Dimorphotheca* sp.	None	Introduced
Asthma weed	*Erigeron bonariensis*	None	Introduced
Redstem filaree	*Erodium cicutarium*	None	Introduced

Common Name	Scientific Name	Special Status	Origin
California poppy	*Eschscholzia californica*	None	Native
Chinesecaps	*Euphorbia crenulata*	None	Native
Spotted spurge	*Euphorbia maculata*	None	Introduced
Geranium	*Geranium molle*	None	Introduced
Seaside heliotrope	*Heliotropium curassavicum* var. *oculatum*	None	Native
Wild mustard	*Hirschfeldia incana*	None	Introduced
Prickly lettuce	*Lactuca serriola*	None	Introduced
Perennial pepperweed	*Lepidium latifolium*	None	Introduced
Cheeseweed	*Malva parviflora*	None	Introduced
California burclover	*Medicago polymorpha*	None	Introduced
English plantain	*Plantago lanceolata*	None	Introduced
Prostrate knotweed	*Polygonum aviculare*	None	Introduced
Purslane	*Portulaca oleracea*	None	Introduced
Jersey cudweed	*Pseudognaphalium luteoalbum*	None	Introduced
Cat's eyes	*Salsola tragus*	None	Introduced
Common groundsel	*Senecio vulgaris*	None	Introduced
Milk thistle	*Silybum marianum*	None	Introduced
Common sow thistle	*Sonchus oleraceus*	None	Introduced
Puncture vine	*Tribulus terrestris*	None	Introduced
Graminoids – 8 Species			
Slender wild oat	*Avena barbata*	None	Introduced
Rescue grass	*Bromus catharticus*	None	Introduced
Red top brome	*Bromus madritensis* subsp. *rubens*	None	Introduced
Ornamental thaching reed	*Egalia* sp.	None	Introduced
Rattail sixweeks grass	*Festuca myuros*	None	Introduced
Foxtail barley	*Hordeum murinum*	None	Introduced
Smilo grass	*Stipa miliacea* var. *miliacea*	None	Introduced
Melic	*Melica imperfecta*	None	Native

ATTACHMENT D. WILDLIFE LIST

Common Name	Scientific Name	Special Status	Habitat
Birds – 18 Species			
Red-winged Blackbird	*Agelaius phoeniceus*	None	Marshes, fields
California Scrub-jay	*Aphelocoma californica*	None	Oak, riparian woodlands
Oak Titmouse	*Baeolophus inornatus*	Special Animal (nesting)	Oak woodland
Anna's Hummingbird	*Calypte anna*	None	Many habitats
Rock Pigeon	*Columba livia*	None	Urban areas
American Crow	*Corvus brachyrhynchos*	None	Many habitats, esp. urban
Brewer's Blackbird	*Euphagus cyanocephalus*	None	Open habitats
House Finch	*Haemorhous mexicanus*	None	Riparian, grasslands, chaparral, woodlands, urban
Acorn Woodpecker	*Melanerpes formicivorus*	None	Oak woodland, urban areas with oaks
Northern Mockingbird	*Mimus polyglottos*	None	Riparian, chaparral, woodlands, urban
House Sparrow	*Passer domesticus*	None	Urban
Nuttall's Woodpecker	*Picoides nuttallii*	None	Oak, riparian woodlands
Bushtit	*Psaltriparus minimus*	None	Woodlands, chaparral
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	None	Riparian, lakes, open areas
Eurasian Collared Dove	*Streptopelia decaocto*	None	Urban areas
European Starling	*Sturnus vulgaris*	None	Agricultural, livestock areas
Tree Swallow	*Tachycineta bicolor*	None	Oak, riparian woodlands, open areas near water
American Robin	*Turdus migratorius*	None	Streamsides, woodlands, urban parks

ATTACHMENT E. SPECIAL STATUS PLANTS REPORTED FROM THE REGION

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	**Heart-Leaved Thorn-Mint**	*Acanthomintha obovata* ssp. *cordata*	-/- G4T3/S3 4.2	Apr-Jul	Grassy slopes, oak woodland, chaparral, vertic clay	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
2.	**San Benito Thorn-Mint**	*Acanthomintha obovata* ssp. *obovata*	-/- G4T3T4/S3S4 4.2	Apr-Jul	Grassy slopes, oak woodland, chaparral, vertic clay, occasionally serpentine	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
3.	**Douglas' Fiddleneck**	*Amsinckia douglasiana*	-/- G4/S4 4.2	Mar-May	Valley and foothill grassland. Dry habitats with unstable shaly sedimentary slopes. 150-1600 m.	None. No suitable habitat (soils) is present in the Study Area.
4.	**Indian Valley Spineflower**	*Aristocapsa insignis*	-/- G1/S1 1B.2	May-Sep	Cismontane woodland. Sandy substrates. 180-1070m.	None. No suitable habitat is present in the Study Area. No known records within 10-mile vicinity.
5.	**Salinas Milk-Vetch**	*Astragalus macrodon*	-/- G4/S4 4.3	Apr-Jul	Open hillsides, sometimes follows burns, on bare ridges and along draws. On shale, sandstone, or serpentine. 250-950 m.	None. No suitable habitat is present in the Study Area. No known records within 5-mile vicinity.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
6.	**Brewer's Calandrinia**	*Calandrinia breweri*	-/- G4/S4 4.2	Mar-Jun	Chaparral, coastal scrub. Disturbed sites, burns. Sandy to loamy soil. <1200 m.	None. No suitable chaparral or coastal scrub habitat is present in the Study Area. No known records within 10-mile vicinity.
7.	**Dwarf Calycadenia**	*Calycadenia villosa*	-/- G3/S3 1B.1	May-Oct	Dry, rocky hills, ridges, grassland, openings in foothill woodland	None. No suitable habitat is present in the Study Area. No known records within 10-mile vicinity.
8.	**Hardham's Evening-Primrose**	*Camissoniopsis hardhamiae*	-/- G2/S2 1B.2	Mar-May	Sandy soil, limestone, disturbed oak woodland	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
9.	**Lemmon's Jewelflower**	*Caulanthus lemmonii*	-/- G3/S3 1B.2	Feb-May	Pinyon juniper woodland, Grassland, chaparral, scrub	None. No suitable habitat is present in the Study Area which is highly disturbed. No known records within 10-mile vicinity.
10.	**Santa Lucia Purple Amole**	*Chlorogalum purpureum* var. *purpureum*	FT/- G2T2/S2 1B.1	Apr-Jun	Open woodland	None. No suitable open woodland habitat is present in the Study Area. No known records within 10-mile vicinity.
11.	**Douglas' Spineflower**	*Chorizanthe douglasii*	-/- G4/S4 4.3	Apr-Jul	Coastal scrub, valley and foothill grassland. Sand or gravel.	Low. Very marginal habitat exists in the non-developed portions of the Study Area. Historic record CCH (SD43530; 1944) located within 1 mile of Study Area to the northeast and appears to have been extirpated.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
12.	**Monterey Spineflower**	*Chorizanthe pungens* var. *pungens*	FT/- G2T2/S2 1B.2	Apr-Aug	Sandy soils in coastal dunes or more inland within chaparral. 3-270 m.	None. No suitable habitat is present in the Study Area. No extant records within 10-miles.
13.	**Robust Spineflower**	*Chorizanthe robusta* var. *robusta*	FE/- G2T1/S1 1B.1	Apr-Sep	Sandy terraces and bluffs or in loose sand. 5-245 m	None. No suitable habitat is present in the Study Area. No extant records within 10-miles.
14.	**Jolon Clarkia**	*Clarkia jolonensis*	-/- G2/S2 1B.2	Apr-Jun	Dry woodland, chalk rock scree substrates.	None. No suitable habitat (soils) is present in the Study Area.
15.	**Lewis' Clarkia**	*Clarkia lewisii*	-/- G4/S4 4.3	May-Jul	Coastal scrub, woodland, chaparral	None. No suitable habitat is present in the Study Area. No known records within 5-mile vicinity.
16.	**Monkey-Flower Savory**	*Clinopodium mimuloides*	-/- G3/S3 4.2	Jun-Oct	Moist places, streambanks, chaparral, woodland	None. No suitable mesic habitat is present in the Study Area. No known records within 5-mile vicinity.
17.	**San Antonio Collinsia**	*Collinsia antonina*	-/- G2/S2 1B.2	Mar-May	Margins of oak scrub on white shale scree	None. No suitable habitat (soils) is present in the Study Area. No known records within 5-mile vicinity.
18.	**San Francisco Collinsia**	*Collinsia multicolor*	-/- G2/S2 1B.2	Feb-May	Moist, +- shady scrub, forest.	None. No suitable habitat is present in the Study Area. No known records within 5-mile vicinity.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
19.	**Small-Flowered Morning-Glory**	*Convolvulus simulans*	-/- G4/S4 4.2	Mar-Jul	Clay substrates, occasionally serpentine, annual grassland, coastal-sage scrub, chaparral.	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
20.	**Rattan's Cryptantha**	*Cryptantha rattanii*	-/- G4/S4 4.3	Apr-Jul	Rocky, gravelly slopes, grassland, coastal scrub, chaparral, foothill woodland	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
21.	**Recurved Larkspur**	*Delphinium recurvatum*	-/- G2?/S2? 1B.2	Mar-Jun	Poorly drained, fine, alkaline soils typically in *Atriplex* scrub.	None. No suitable *Atriplex* scrub habitat is present in the Study Area, which is highly disturbed.
22.	**Umbrella Larkspur**	*Delphinium umbraculorum*	-/- G3/S3 1B.3	Apr-Jun	Moist oak forest. Mesic sites.	None. No suitable mesic habitat is present within the Study Area.
23.	**Yellow-Flowered Eriastrum**	*Eriastrum luteum*	-/- G2/S2 1B.2	May-Jun	On bare sandy decomposed granite slopes.	None. No suitable habitat (soils) is present within the Study Area. No known records within 10-mile vicinity.
24.	**Butterworth's Buckwheat**	*Eriogonum butterworthianum*	-/CR G2/S2 1B.3	Jun-Jul	Dry sandstone outcrops and crevices.	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
25.	**Elegant Wild Buckwheat**	*Eriogonum elegans*	-/- G4G5/S4S5 4.3	May-Nov	Usually in sandy or gravelly substrates; often in washes, sometimes roadsides.	Low. Very marginal habitat (highly disturbed roadside with sandy loam soil) is present in the Study Area. One historic record (SBBG179105; 1931) is located 1-mile northwest of the Study Area.
26.	**Western Heermann's Buckwheat**	*Eriogonum heermannii* var. *occidentale*	-/- G5T2/S2 1B.2	Jul-Oct	Gravel bars, steep, clay slopes, often serpentine	None. No suitable habitat (soils) is present in the Study Area. Species (perennial shrub) was not detected during surveys.
27.	**Stinkbells**	*Fritillaria agrestis*	-/- G3/S3 4.2	Mar-Jun	Clay, often vertic, occasionally serpentine	None. No suitable habitat (soils) is present in the Study Area. No known records within 5-mile vicinity.
28.	**Phlox-Leaf Serpentine Bedstraw**	*Galium andrewsii* ssp. *gatense*	-/- G5T3/S3 4.2	Apr-Jul	Dry, rocky places in serpentine soil, chaparral or open oak/pine woodland	None. No suitable habitat (soils) is present in the Study Area. No known records within 10-mile vicinity.
29.	**Cone Peak Bedstraw**	*Galium californicum* ssp. *luciense*	-/- G5T3/S3 1B.3	Mar-Sep	Pine, oak forests	None. No suitable woodland habitat is present in the Study Area. No known records within 10-mile vicinity.
30.	**Santa Lucia Horkelia**	*Horkelia yadonii*	-/- G3/S3 4.2	Apr-Jul	Sandy meadow edges, seasonal streambeds in chaparral or foothill-pine woodland	None. No suitable riparian habitat is present in the Study Area. No known records within 5-mile vicinity.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
31.	**Santa Lucia Dwarf Rush**	*Juncus luciensis*	-/- G3/S3 1B.2	Apr-Jul	Wet, sandy soils of seeps, meadows, vernal pools, streams, roadsides	None. No suitable mesic habitat is present in the Study Area. No known records within 10-mile vicinity.
32.	**Salinas Valley Goldfields**	*Lasthenia leptalea*	-/- G3/S3 4.3	Feb-Apr	Openings in woodland	None. No suitable woodland habitat is present in the Study Area. No known records within 10-mile vicinity.
33.	**Pale-Yellow Layia**	*Layia heterotricha*	-/- G2/S2 1B.1	Mar-Jun	Open areas with clay soil, sometimes +- alkaline	None. No suitable habitat (soils) is present in the Study Area.
34.	**Spring Lessingia**	*Lessingia tenuis*	-/- G4/S4 4.3	May-Jul	Openings in chaparral, woodland	None. No suitable woodland/chaparral habitat is present in the Study Area. No known records within 10-mile vicinity.
35.	**Indian Valley Bush-Mallow**	*Malacothamnus aboriginum*	-/- G3/S3 1B.2	Apr-Oct	Open rocky slopes	None. No suitable habitat (soils) is present in the Study Area. Species (perennial shrub) was not detected during surveys.
36.	**Davidson's Bush-Mallow**	*Malacothamnus davidsonii*	-/- G2/S2 1B.2	Jun-Jan	Sandy washes	None. No suitable habitat (soils) is present in the Study Area. Species (perennial shrub) was not detected during surveys.
37.	**Carmel Valley Bush-Mallow**	*Malacothamnus palmeri* var. *involucratus*	-/- G3T2Q/S2 1B.2	Apr-Oct	Chaparral. Talus hilltops and slopes, sometimes on serpentine. Fire dependent.	None. No suitable chaparral habitat is present in the Study Area. Species (perennial shrub) was not detected during surveys.

	Common Name	Scientific Name	Federal/ State Status Global/ State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
38.	**Santa Lucia Bush-Mallow**	*Malacothamnus palmeri* var. *palmeri*	-/- G3T2Q/S2 1B.2	May-Jul	Chaparral. Dry rocky slopes, mostly near summits.	None. No suitable rocky chaparral habitat is present in the Study Area. Species (perennial shrub) was not detected during surveys.
39.	**Shining Navarretia**	*Navarretia nigelliformis* ssp. *radians*	-/- G4T2/S2 1B.2	Mar-Jul	Grassland and cismontane woodland. Often on clay and alkaline sites, sometimes vernal pools. 65-1,000 m.	None. No suitable undisturbed grassland habitat or clay soil is present in the Study Area. No known records within 10-mile vicinity.
40.	**San Benito Pentachaeta**	*Pentachaeta exilis* ssp. *aeolica*	-/- G5T2/S2 1B.2	Mar-May	Grassland, woodland	None. No suitable undisturbed grassland habitat is present in the Study Area. No known records within 10-mile vicinity.
41.	**Hooked Popcornflower**	*Plagiobothrys uncinatus*	-/- G2/S2 1B.2	Apr-May	Chaparral, canyon sides, rocky outcrops, +- fire follower	None. No suitable rocky outcrop habitat is present in the Study Area. No known records within 5-mile vicinity.
42.	**San Gabriel Ragwort**	*Senecio astephanus*	-/- G3/S3 4.3	May-Jul	Steep rocky slopes in chaparral/coastal-sage scrub and oak woodland	None. No suitable rocky slope habitat is present in the Study Area. No known records within 5-mile vicinity
43.	**Hickman's Checkerbloom**	*Sidalcea hickmanii* ssp. *hickmanii*	-/- G3T2/S2 1B.3	May-Jul	Chaparral, on dry ridges.	None. No suitable chaparral habitat is present in the Study Area.

Habitat characteristics are from the Jepson manual and the CNDDB.
State/Rank Abbreviations:

FE: Federally Endangered
FT: Federally Threatened
PE: Proposed Federally Endangered
PT: Proposed Federally Threatened
CE: California Endangered
CR: California Rare
CT: California Threatened
CCE: Candidate for California Endangered
CCT: Candidate for California Threatened

California Rare Plant Ranks:

CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 4: Plants of limited distribution - a watch list

CRPR Threat Ranks:

0.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 - Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Global/State Ranks

G1/S1 – Critically Imperiled
G2/S2 – Imperiled
G3/S3 – Vulnerable
G4/S4 – Apparently Secure
G5/S5 – Secure

Q – Element is very rare but there are taxonomic questions associated with it.
Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

ATTACHMENT F. SPECIAL STATUS ANIMALS REPORTED FROM THE REGION

	Common Name	Scientific Name	Federal /State Status Global/ State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	**Cooper's Hawk**	*Accipiter cooperii*	-/- G5/S4 WL	Oak woodland, riparian, open fields. Nests in dense trees, esp. coast live oak.	Low. There is no suitable nesting habitat present, but there is potentially suitable foraging habitat within the Study Area.
2.	**Tricolored Blackbird**	*Agelaius tricolor*	-/CT G2G3/S1S2 SSC	Requires open water, protected nesting substrate, & foraging area with insect prey near nesting colony.	None. No suitable habitat is present within the Study Area.
3.	**California Tiger Salamander**	*Ambystoma californiense*	FT/CT G2G3/S2S3 WL	Need underground refuges, ground squirrel burrows & vernal pools or other seasonal water for breeding.	None. No suitable habitat is present within the Study Area.
4.	**Arroyo Toad**	*Anaxyrus californicus*	FE/- G2G3/S2S3 SSC	Rivers with sandy banks, willows, cottonwoods, and sycamores. Prefers loose gravelly soils in drier portions of their range.	None. No suitable habitat is present within the Study Area.
5.	**Northern California Legless Lizard**	*Anniella pulchra*	-/- G3/S3 SSC	Sandy or loose loamy soils under coastal scrub or oak trees. Soil moisture essential.	None. No suitable habitat is present within the Study Area.
6.	**Pallid Bat**	*Antrozous pallidus*	-/- G5/S3 SSC	Rock crevices, caves, tree hollows, mines, old buildings, and bridges.	Low. There is potentially suitable roosting habitat in drainage holes in the underside of the Highway 101 bridge over Broadway, but this area is subject to high noise levels and human disturbance.

	Common Name	Scientific Name	Federal /State Status Global/ State Rank CDFW Status	Habitat Preference	Potential to Occur
7.	**Golden Eagle**	*Aquila chrysaetos*	-/- G5/S3 FP	Nests in large, prominent trees in valley and foothill woodland. Requires adjacent food source.	None. No suitable habitat is present within the Study Area.
8.	**Great Blue Heron**	*Ardea herodias*	-/- G5/S4 SA	Rookeries located in tall trees near foraging areas.	None. No suitable habitat is present within the Study Area.
9.	**Burrowing Owl**	*Athene cunicularia*	-/- G4/S3 SSC	Burrows in squirrel holes in open habitats with low vegetation.	None. No suitable habitat is present within the Study Area.
10.	**Western Bumble Bee**	*Bombus occidentalis*	-/CCE G2G3/S1 SA	Wide variety of natural, agricultural, urban, and rural habitats. Flower-rich meadows of forests and subalpine zones.	Low. There are landscaped areas with planted flowers within the Study Area.
11.	**Townsend's Big-Eared Bat**	*Corynorhinus townsendii*	-/- G3G4/S2 SSC	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None. No suitable habitat is present within the Study Area.
12.	**Western Pond Turtle**	*Emys marmorata*	-/- G3G4/S3 SSC	Permanent or semi-permanent streams, ponds, lakes.	None. No suitable habitat is present within the Study Area.
13.	**Pajaro/Salinas Hitch**	*Lavinia exilicauda harengus*	-/- G4T2T4/S2S4 SSC	Large pools and lagoons in the Salinas and Pajaro River systems.	None. No suitable habitat is present within the Study Area.

	Common Name	Scientific Name	Federal /State Status Global/ State Rank CDFW Status	Habitat Preference	Potential to Occur
14.	**Monterey Roach**	*Lavinia symmetricus subditus*	-/- G4T2T3/S2S3 SSC	Tributaries to Monterey Bay, specifically the Salinas, Pajaro, & San Lorenzo drainages.	None. No suitable habitat is present within the Study Area.
15.	**San Joaquin Coachwhip**	*Masticophis flagellum ruddocki*	-/- G5T2T3/S2? SSC	Open, dry, treeless areas, including grasslands and saltbush scrub; takes refuge in burrows and under shaded vegetation	None. No suitable habitat is present within the Study Area.
16.	**Monterey Dusky-Footed Woodrat**	*Neotoma macrotis luciana*	-/- G5T3/S3 SSC	Variety of habitats with moderate to dense understory vegetation	None. No suitable habitat is present within the Study Area.
17.	**Steelhead - South-Central California Coast Dps**	*Oncorhynchus mykiss irideus pop. 9*	FT/- G5T2Q/S2 SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	None. No suitable habitat is present within the Study Area.
18.	**Pinnacles Optioservus Riffle Beetle**	*Optioservus canus*	-/- G1/S1 SA	Found on rocks and in gravel of riffles in cool, swift, clear streams.	None. No suitable habitat is present within the Study Area.
19.	**Salinas Pocket Mouse**	*Perognathus inornatus psammophilus*	-/- G4T2?/S1 SSC	Annual grassland and desert shrub in Salinas Valley, with friable soils	None. No suitable habitat is present within the Study Area.
20.	**Coast Horned Lizard**	*Phrynosoma blainvillii*	-/- G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	None. No suitable habitat is present within the Study Area.

	Common Name	Scientific Name	Federal /State Status Global/ State Rank CDFW Status	Habitat Preference	Potential to Occur
21.	**Foothill Yellow-Legged Frog**	*Rana boylii*	-/CCT G3/S3 SSC	Partly shaded, shallow streams and riffles with rocky substrate. Min. 15 weeks for larval development.	None. No suitable habitat is present within the Study Area.
22.	**California Red-Legged Frog**	*Rana draytonii*	FT/- G2G3/S2S3 SSC	Lowlands and foothills in or near sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks for larval development.	None. No suitable habitat is present within the Study Area.
23.	**Bank Swallow**	*Riparia riparia*	-/CT G5/S2 SA	Nests colonially in riparian and other lowland habitats west of the desert. Requires vertical banks or cliffs with sandy soils (to dig cavities) near streams, lakes, or the ocean.	None. No suitable habitat is present within the Study Area.
24.	**Western Spadefoot**	*Spea hammondii*	-/- G3/S3 SSC	Vernal pools in grassland and woodland habitats	None. No suitable habitat is present within the Study Area.
25.	**Coast Range Newt**	*Taricha torosa*	-/- G4/S4 SSC	Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	None. No suitable habitat is present within the Study Area.
26.	**American Badger**	*Taxidea taxus*	-/- G5/S3 SSC	Needs friable soils in open ground with abundant food source such as California ground squirrels.	None. No suitable habitat is present within the Study Area.
27.	**Least Bell's Vireo**	*Vireo bellii pusillus*	FE/CE G5T2/S2 SA	Riparian habitat, near water or dry streambed, <2000 ft. Nests in willows, mesquite, Baccharis.	None. No suitable habitat is present within the Study Area.

	Common Name	Scientific Name	Federal /State Status Global/ State Rank CDFW Status	Habitat Preference	Potential to Occur
28.	**San Joaquin Kit Fox**	*Vulpes macrotis mutica*	FE/CT G4T2/S2 SA	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose textured sandy soil and prey base.	None. No suitable habitat is present within the Study Area.

*not listed in the CNDDB or CNPS for the search area, but possibly for the location.

Federal and State Status Abbreviations:

FE: Federally Endangered
FT: Federally Threatened
PE: Proposed Federally Endangered
PT: Proposed Federally Threatened
CE: California Endangered
CT: California Threatened
CCE: Candidate for California Endangered
CCT: Candidate for California Threatened

Global/State Ranks:

G1/S1 – Critically Imperiled
G2/S2 – Imperiled
G3/S3 – Vulnerable
G4/S4 – Apparently Secure
G5/S5 – Secure
Q – Element is very rare but there are taxonomic questions associated with it.
Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

California Department of Fish and Wildlife Rank:

WL: Watch List
SSC: Species of Special Concern
FP: Fully Protected
SA: Special Animal

ATTACHMENT G. CONCEPTUAL PROJECT DESIGN

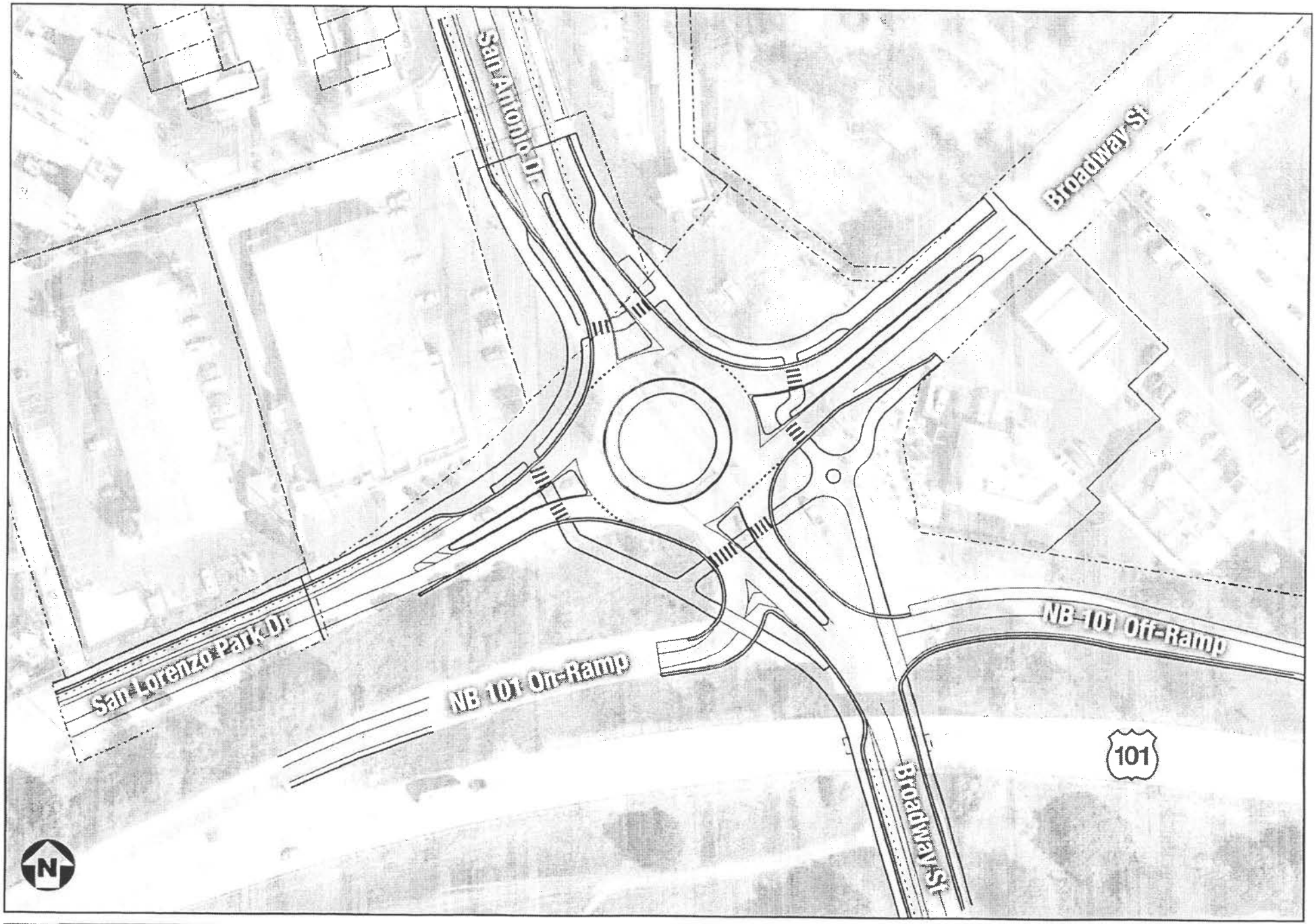


FIGURE 3: Conceptual Project Design
Roundabout at US 101 and Broadway Street

Kimley»Horn

ATTACHMENT D

CULTURAL RESOURCES ASSESSMENT

CULTURAL RESOURCE INVENTORY SURVEY OF AN INTERSECTION WITH SAN ANTONIO ROAD, BROADWAY, AND SAN LORENZO PARK DRIVE, KING CITY, MONTEREY COUNTY, CALIFORNIA

Prepared for:

Douglas Wood & Associates
1461 Higuera Street, Suite A
San Luis Obispo, CA 93401

Prepared by:

Nancy Farrell
Cultural Resource Management Services
829 Paso Robles Street
Paso Robles, California 93446

September 2020

Thompson Canyon 7.5' Quadrangle

Evidence of Sacred/Religious Site?	No
Evidence of Native American Remains on Site?	No
Evidence of Anything of Archaeological Significance?	No
Positive Findings of Historical Significance?	No

CRMS

CULTURAL RESOURCE MANAGEMENT SERVICES

CRMS Project No. 54-980

TABLE OF CONTENTS

INTRODUCTION

King City and the California Department of Transportation plan the construction of a new traffic roundabout at a location in the northern part of the City near Highway 101. Presently, there are four streets (Broadway, San Antonio Drive, San Lorenzo Park Road) intersecting at nearly the same location as the nearby northbound on-ramp and off-ramp to Highway 101 (Figure 1, 2, 3 and 4). To minimize traffic congestion, the plan is to construct a roundabout so that all traffic will all flow in a seamless circular fashion. This will also eliminate numerous traffic signals At the request of Mr. Douglas Wood, Cultural Resource Management Services (CRMS) conducted an Archaeological Inventory Survey of the ± 5 acre location. In accordance with the California Environmental Quality Act (CEQA), and the requirements of the Monterey County Planning and Building Inspection, a literature and records search and field survey was conducted in order to identify and evaluate any prehistoric or historic cultural resources on the property.

In addition, as part of an early participation notice, letters were sent to Native American tribes, organizations and individuals. The list of recipients was provided by the Native American Heritage Commission (NAHC), and is comprised of those groups and individuals thought to have a cultural interest in this area, notifying them of the proposed project, inviting them to consult, and requesting information or concerns regarding the proposed project. A Sacred Lands Search was conducted at the Native American Heritage Commission (NAHC). Concurrent with that search, Native Americans and Native American groups cited by the NAHC were contacted. There was one response to the letters written, noted specifically in Exhibit B.

ENVIRONMENTAL CONTEXT

The property is located at the western edge of King City, California, centered on iles east of California State Highway 101. The project area lies on the broad plain just east and north of the Salinas River. Elevation is 335 ft. ASL.

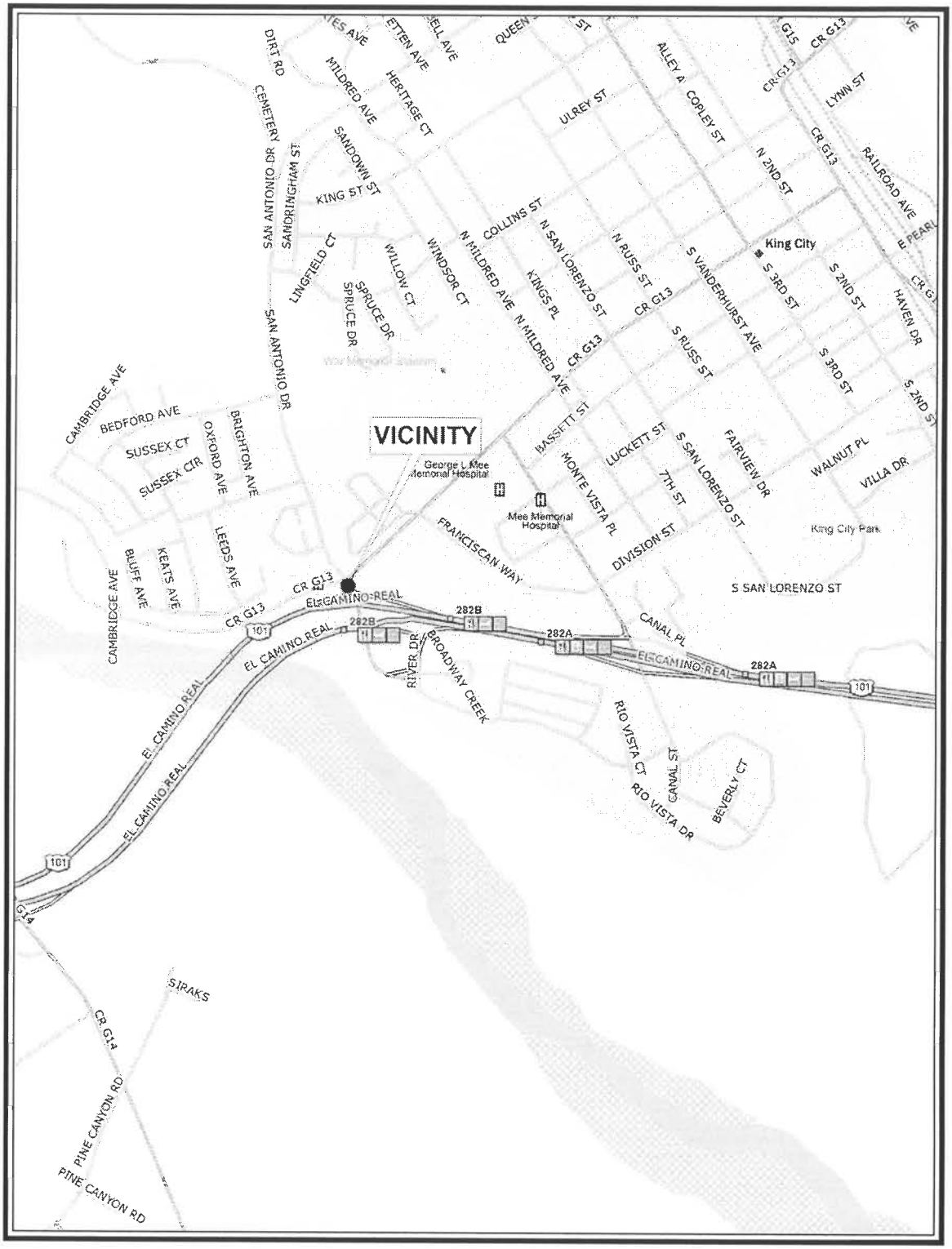


Figure 1: Vicinity Map (No Scale)

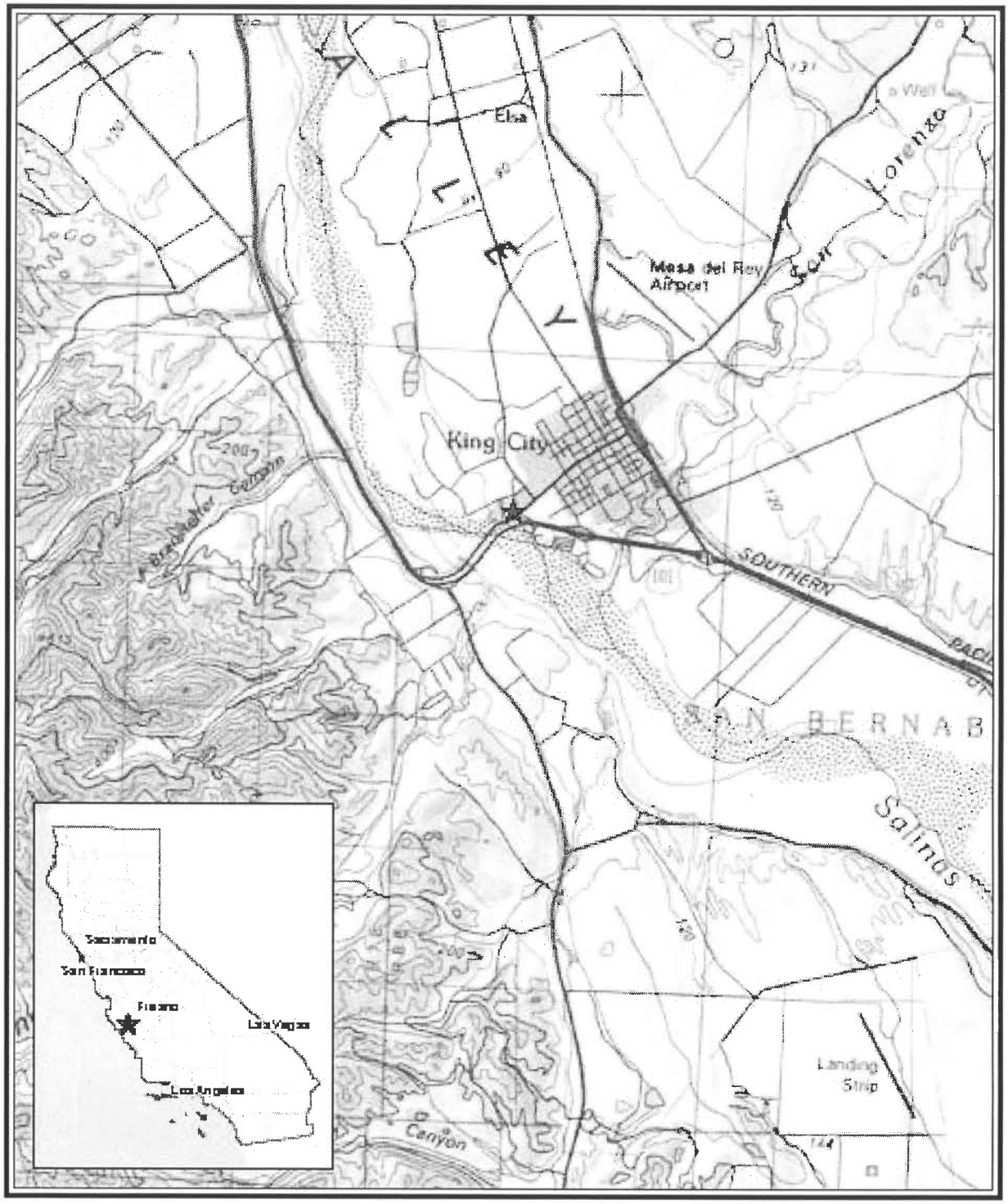
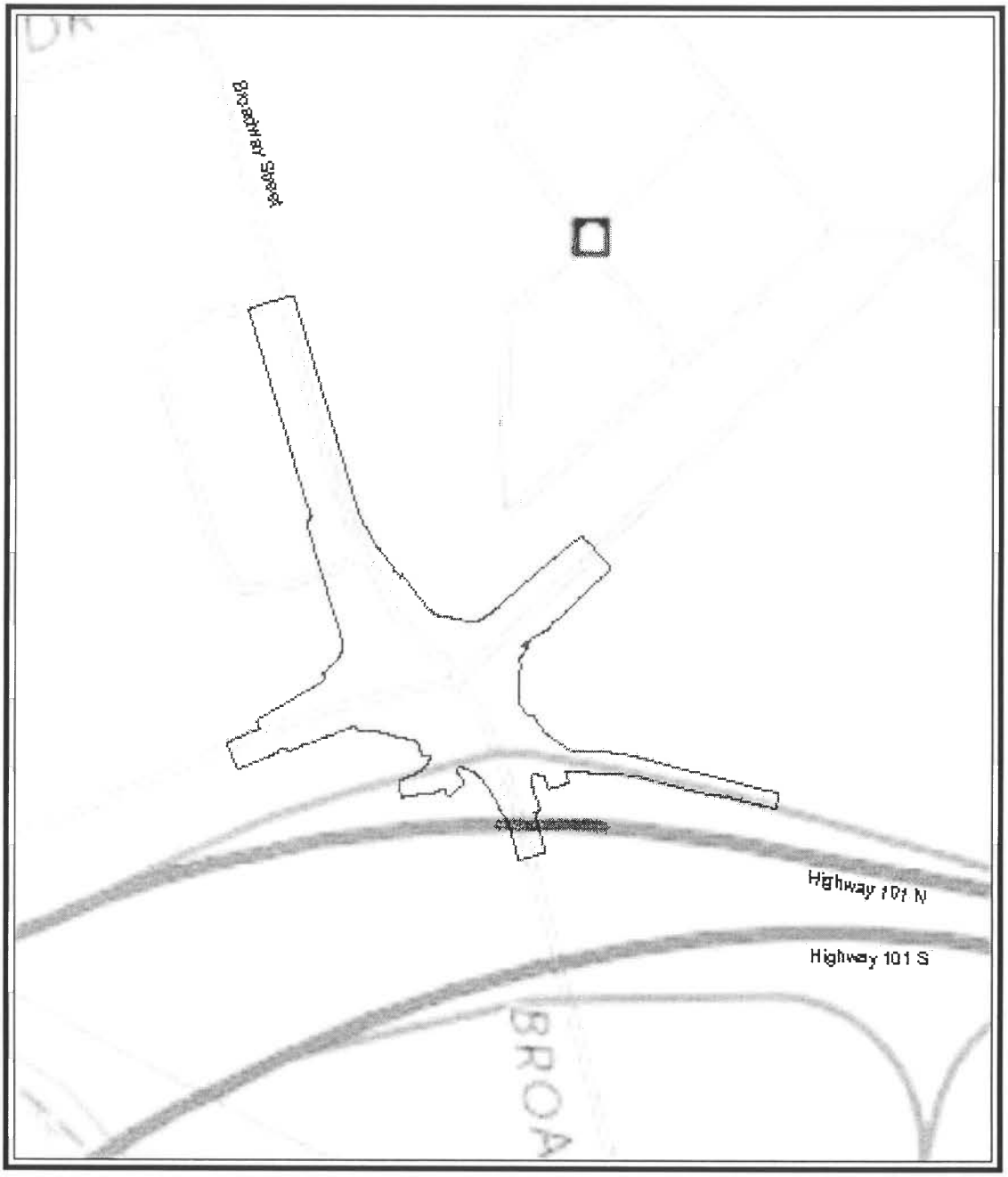


Figure 2: Portion of USGS 7.5' Quadrangle, Thompson Canyon, CA



igure 3: Portion of USGS Quadrangle, Thompson Canyon, CA Showing Project Outline

Graphic Courtesy of Althouse and Meade, Inc.

Figure 4: Aerial Photo With Project Outline In Red

Graphic Courtesy of Althouse and Mead, Inc.

Climate

Little evidence exists to claim that the local climate has undergone much major change over the most recent few thousand years. The weather pattern is characterized by very warm, dry summers and cool, moist winters. An average of 50 days have temperatures below freezing and snowfall is rare.

Water Sources

Annual rainfall here averages about 11 inches. The nearest permanent natural water source is the Salinas River located approximately 1/4 mile to the west (Figure 2). Tributaries of the river occur in the hills to the east and west and would have provided seasonal water to prehistoric populations..

Geology and Pedology

Geologically, the area is part of the Paso Robles Formation, a Pleiocene formation consisting chiefly of conglomerate, conglomeratic sandstone, and sandstone. This is underlain by Monterey Shale (Durham 1965). The soil is Pico fine sandy loam. Found on flood plains, this soil is gray-brown in color and of medium to fine texture (Cook 1978: 59).

Flora

Natural vegetation in the project region consists of open areas of sparse annual and perennial grasses such as California sagebrush (*Artemesia Californica*), and Chamise (*Adenostoma fasciculatum*). Currently, the only extant vegetation is ornamentals planted by Caltrans landscapers..

Fauna

Fauna commonly occurring in the surrounding area include black-tailed deer (*Odocoileus hemionus columbianus*), coyote (*Canis latrans*), mountain lion (*Felis concolor*),bobcat (*Lynx rufus*). black-tailed jackrabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus* spp.), badger *(Taxidea taxus*), black bear (*Ursus americanus*) and historically, grizzly bear (*Ursus horribilis*) and tule elk (*Cervus elaphus nannoides*). A number of ground squirrels (*Spermophilus* spp.), the western gray squirrel (*Sciurus griseus*), gophers (*Thomomys* spp.), mice (*Microtus* spp. and *Peromyscus* spp.), and a variety of reptiles such as western diamondback rattlesnake (*Crotalus atrox*), and amphibians are also present.

CULTURAL BACKGROUND

Prehistoric Overview

Archaeological evidence indicates that the interior Coast Ranges have a long history of occupation by Native American groups, perhaps extending back 10,000 years or more. Because of the small amount of archaeological work that has occurred in this area, a definitive cultural historical sequence has not yet been constructed for this region. Olsen and Payen (1969) constructed a cultural chronology for the eastern portion of the region based on materials from San Luis, Little Panoche, and Los Baños Reservoirs. The dating of individual cultural units was later revised by Mikkelsen and Hildebrandt (1990) based on the *Olivella* bead typology developed by Bennyhoff and Hughes (1987). The summary of the interior Southern Coast Ranges archaeological sequence described below is adapted from Hildebrandt (2006). This in turn was distilled from the information gained from a series of excavations in the last three decades (Hylkema 1993; Berg and Hildebrandt 2000; Jones 2000, 2003; Haney *et al.* 2002; Basgall 2003; Carpenter *et al.* 2004; Stevens *et al.* 2004; Jones and Haney 2005).

Early Holocene/Millingstone Period (9000BP to 5500 BP)

Evidence for Millingstone period occupations in this region is sparse. At the Grayson site (MER-94) in the San Luis Reservoir area, the deepest levels of this multi-component deposit was a suite of artifacts including millingstones, handstones, small shaped mortars and pestles, simple flaked stone tools, perforated stone pendants, and beads made of whole *Olivella* shells (Olsen and Payen 1969). At site SLO-1920/H, on the Santa Ysabel Ranch near Paso Robles, four radiocarbon dates on bone and shell fell between 9000 and 8000 cal BP. One of these dates came from Washington clam, suggesting that there was movement between coastal and inland areas (Stevens *et al.* 2004:176). The site also yielded shaped, basin millingslabs and large, side-notched projectile points similar to artifacts found at Cross Creek (Fitzgerald 2000) and Diablo Canyon (Greenwood 1972), and that bear "a more general resemblance to Millingstone Horizon sites from other areas of California" (Stevens *et al.* 2004:175).

Early Period (ca. 5500 BP to2500 BP)

The Early period is marked by the appearance of mortars and pestles and contracting-stemmed projectile points (Olsen and Payen 1969; Jones 1993). Other artifacts found with Early period occupations are also found in Millingstone period

sites including *Olivella* class L beads, large side-notched projectile points, and millingslabs and handstones. Early Period materials have been found at several locations within the interior South Coast Ranges. During a series of archaeological surveys along the ridgetops between Pacheco Pass and Priest Valley, Mark Hylkema (1993) found sites containing Rossi Square-stemmed and Contracting-stemmed points, milling tools, pitted petroglyphs, and evidence of human burials. This survey data and the examination of several private artifact collections, led Hylkema to conclude that people were intensively occupying the upland valleys and drainages of the central Diablo Range between about 4500 and 1650 BP.

Evidence of Early Period use at four sites on Camp Roberts, near the southern end of the Coast Ranges, included large Side-notched, Contracting-stemmed, and (Rossi) Square-stemmed dart points, and a single rectangular *Olivella* L-series bead. Carpenter *et al.* (2004). Jones and Haney excavated two Early Period middens at Fort Hunter Liggett: CA-MNT-569A (1997a) and CA-MNT-1918 (2005). The characteristic Early Period (or "Hunting Culture") assemblages of these and other comparable sites are dominated by large, stemmed projectile points and bifaces, handstones and millingslabs. They describe the Hunting Culture pattern at Fort Hunter Liggett as a "hybrid of foraging and collecting," a "fairly generalized oak forest adaptation in which meat was emphasized over vegetal resources" (Jones and Haney 2005: 165). This pattern seems to have dominated the Fort Hunter Liggett area for thousands of years, existing virtually unchanged from about 5500 BP to about 700 BP, or the beginning of the Late Period.

Middle Period (ca. 2500 to 1000 BP)

The Middle period is well represented at sites along the central coast and increasingly in interior regions as well. The types of artifacts found during this period are similar to those from the Early period although a larger number of bone implements and bead types are known (Olsen and Payen 1969; Jones and Waugh 1995). Projectile points tend to be contracting-stemmed types with large side-notched and square-stemmed points apparently no longer used. The Hylkema surveys (1993) in the Diablo Range produced evidence that intensive occupation of the upland valleys and drainages continued through most of the Middle Period.

Excavations at Cottonwood Canyon, on the east slope of the mountains 16 miles east of Cholame, yielded a deep midden and a diverse assortment of materials dating primarily to between ca. 2500 and 500 BP (Basgall and Giambastiani 1999). Artifacts included non-utilitarian items like shell beads and ornaments, as well as large, deep, well-shaped bowl mortars. Basgall and Giambastiani (1999:369-374) suggest that the project sites saw "prolonged residential use" focused on the collection and processing of grass and juniper seeds, acorns, rodents, reptiles, and freshwater fishes.

At Camp Roberts Basgall (2003) reported strong evidence for Middle Period occupations at sites CA-SLO-1169 and CA-SLO-1778. Lower levels of the midden at SLO-1169 produced Contracting-stemmed dart points and nearly all of the ground and battered stone. Vertebrate remains from the site reflected use of local, terrestrial species, especially rabbits, hares, and squirrels. Flotation samples were dominated by acorns and goosefoot seeds.

The Middle Period is well documented at Fort Hunter Liggett. Excavations at site CA-MNT-521 have shown that Middle period occupations in that area resemble those found along the coast (Jones and Haney 1997a). Seasonality studies on faunal remains from this major midden site indicated that during this period people in the interior were hunting deer during the fall and winter, and traveling to the coast in spring and early summer to collect mussels. Faunal profiles suggest that fish and shellfish were only minor elements of the diet for inland people at this time.

Middle/Late Transition (ca. 1000 BP to 700 BP)

In reports from excavations at Camp Roberts, Basgall (2003) and Carpenter *et al.* (2004) used the cultural chronology developed by Jones and Ferneau (2002) for the San Luis Obispo coast, which includes a Middle/Late Transition Period at 1000 BP-750 BP. Sites dating to the Middle/Late Transition are quite rare. In many regions of California this period is marked by disruptions in settlement patterns and subsistence activities, possibly linked to the Medieval Warm Period or the Medieval Climatic Anomaly, periods of severe and prolonged drought (Stine 1994; Jones *et al.* 1999). Artifact assemblages are characterized by bowl mortars, shaped pestles, and square- and tapered-stemmed projectile points.

Late/ProtoHistoric Period (ca. 700 BP to Historic Contact)

Most of the late sites investigated in the region so far spanned the Late and Proto Historic periods. Late Period assemblages from the interior Southern Coast Ranges are distinguished by a suite of new shell and steatite bead types, small side-notched and triangular (Cottonwood) arrow points, and hopper mortars as well as many artifact types found in earlier periods (Olsen and Payen 1969). At Santa Ysabel Ranch near Paso Robles, Stevens *et al.* (2004) identified a "unique Late and Mission period occupation" at site CA-SLO-2077/H Stevens *et al.* (2004:122) note "significant differences" between the faunal assemblages at SLO-2077/H and at the much earlier site SLO-1920/H: the later deposit yielded higher proportions of small animals (dominated by lagomorphs) to large ones, and lower numbers of estuarine shellfish species.

Late prehistoric/proto historic occupation is well documented at Camp Roberts. At SLO-1169, Basgall (2003) found a dramatic increase in the amount of shellfish remains during this period, but the exploitation of terrestrial fauna showed little change over time. Nearly all assemblages were dominated by rabbits and squirrels, with "regular but likely more sporadic use of artiodactyls and aquatic resources (pond turtle and fish)" (Basgall 2003:184). At other Camp Roberts sites, Carpenter et al. (2004) saw the same increase in shellfish, but a somewhat different trend in non-marine resources The faunal assemblages from multi-component site SLO-1180 showed a decline in artiodactyls over time and consistent increases in birds, fishes, and turtles, suggesting intensified use of nearby riparian habitats. Late-period occupants of the Camp Roberts area were intensifying their use of both local riparian animals and non-local marine shellfish, though not of larger game animals.

At Fort Hunter Liggett, CA-MNT-879 produced a substantial assemblage of artifacts and faunal remains (Haney *et al.* 2002). These included Desert-series projectile points (Desert Side-notched and Cottonwood), steatite and abalone disk beads, types E and K *Olivella* beads, handstones, shaped pestles, and portable mortars. Excavations at MNT-910 and MNT-1748/H recovered beads, projectile points, and other materials very similar to those from MNT-879, as well as drills and bead-making detritus, stone spheres, hopper mortars and bowl and bedrock mortars. Archaeobotanical remains from features at MNT-1748/H reflected economic intensification, with greater use of acorn, pine, and buckeye nuts (Jones and Haney 2005). During this period there was

a change in focus from deer hunting to a residential pattern with bedrock mortars concentrated in the blue-oak woodland and valley oak savannah, and a shift from deer to rabbits and hares as the primary game animal.

There is clearly still a great deal to learn about the prehistory of the interior south coast ranges, but comparisons between findings in coastal areas and the small amount of work conducted locally show that a similar set of cultural changes probably occurred in both areas. On the whole, the Late Period assemblages from a wide area of the central coast and interior regions appear superficially similar, but this was probably a time of continued cultural differentiation due to higher population densities..

Ethnographic Overview

At the time of European contact, the surrounding region was occupied by the Salinan people. Salinan territory extended along the coast, and inland to the crest of the Coast Range. To the northwest and northeast were the Esselen and the Ohlone, to the south were the Chumash, and to the east lived the Tachi and Tulamni bands of the Southern Valley Yokuts (Baldwin 1971; Mason 1912:108; Poherecky 1964:15). The Salinan, like nearly all of California's original inhabitants, practiced a semi-sedentary hunting and gathering economy. Habitations would have been located at the confluence of streams, at the edge of creeks or rivers, and in the vicinity of springs. Temporary camps would also be found near specialized resource procurement locations and along travel routes such as ridge tops (Breschini 1993).

The economy of the Salinan, as observed at the time of European contact, was based upon an annual cycle of gathering and hunting. Vegetal foods, especially acorns, provided the bulk of the diet. Acorns were stored in large willow-twig granaries until needed, then ground in a stone mortar. The tannic acid present in the acorn meal was leached out with water, and the result was cooked into a gruel. Other important plant foods included wild grass and other hard seeds, roots, tubers and corms, and various fruits and berries. Major animal foods included a diverse assortment of terrestrial mammals, marine and freshwater fish, shellfish, birds, as well as reptiles and insects. It is likely that people were mobile enough to take advantage of plant and animal foods when and where they occurred. Diets varied from season to season, and from year to year, depending on what was available at any one time. Native Americans tended the

land and managed the resources by such traditional methods as periodic burning, and pruning and harvesting techniques that fostered sustained and healthy plant and animal resources (Anderson 2005).

Hunting of animals and birds was accomplished with snares, traps, spears, and during the Late Period, the bow and arrow. Stone, bone, wood and shell all provided materials for the production of tools. Stone tools and the debris from their manufacture and maintenance are the most likely to be seen in an archaeological context. Stone work included projectile points, scrapers and choppers. Pecked and ground stone objects include bowl mortars, pestles, metates, basket mortars, stone bowls, notched pebble net sinkers, and steatite arrow shaft straighteners. Ornaments were made of steatite and serpentine. Bone and shell tools were also manufactured; especially bone awls and C-shaped fishhooks. Shell beads of mussel and abalone were the basis of the Salinan "currency", with value being assigned based on the color or the shell (Hester 1978: 502).

Salinan traditional lifeways were altered early on and few people outside of the mission system were present to record what remained of the Salinan culture after secularization (Mason 1912). The descendants of these peoples still live in the region and are active in a vigorous effort at cultural revitalization utilizing surviving knowledge of tribal elders, historical accounts, museum collections, and early anthropological literature (Rivers and Jones 1993).

Historic Overview

The earliest well-documented descriptions of this region by European peoples come from accounts by members of Don Gaspar de Portola's land expedition, which passed through the region on September 26, 1769, camping in what would later be part of King City (Lonnberg 1975). The Anza party, with Padre Pedro Font, rested northwest of the area at Los Ositos in 1774 (Hoover *et al.* 1996:219).

Permanent Spanish settlement of the region began with the founding of Mission San Antonia de Padua, about 20 miles southwest of present day King City, in 1771 (Mason 1912: 106). According to Pedro Fages (1972) there were 20 villages within a radius of 20 miles of the mission. The village of *Atnel* (or *Chuclac*), was located north of the present project area and across the Salinas River; names from this village are in the

register at Mission San Antonio (Hester 1978: 501; Priestly 1972: 55). To the north, along the banks of the Salinas River, Mission Nuestra Señora de la Soledad, was founded in 1791 by Father Lasuén to honor "Our Lady of Solitutde, one of the the names of the Virgin Mary. The church was destroyed by floods in 1828 and rebuilt in a slightly different location in 1832. Mission San Miguel, named for the Archangel Saint Michael, was founded by Franciscan Father Fermin Francisco de Lasuen in 1797. Its construction was meant to close the gap between Mission San Antonio to the north and Mission San Luis Obispo to the south. Father Buenaventura Sitjar, who had ministered for years at Mission San Antonio and was fluent in the local Salinan language, baptized 25 youth on the day the Mission was established.

At the missions, the native people "learned the Spanish language, Catholic religious traditions, and Hispanic agricultural and ranching skills" (Milliken 2006: 1). Induction into the missions had a devastating effect on the local inhabitants, requiring them to live and work at the mission and abandon their former lifeways. Under the guidance of the mission fathers, the natives were instructed in farming methods, including the production of wheat, beans and various kinds of fruit. The earliest farming was intended to foster independence for the mission community, thus making the import of supplies up from Mexico unnecessary. Most native villages were abandoned by 1805, and their inhabitants had either moved to one of the Missions or fled the area. When anthropologists Kroeber, Mason, and Merriam worked among the Salinan in the early twentieth century, they found only three Salinan families, all living northwest of Jolon. By the beginning of the 20th Century, the Salinan had been integrated into American society (Gibson 1983; King 1984).

Mexican Period

In 1822, Mexico attained independence of Spain and California became a Mexican territory. The Secularization Act, passed by the Mexican congress in 1833, provided for the immediate break-up of the missions and the transfer of mission lands to Mexican citizens and Indians. Work toward this end began in 1834 under Governor Figueroa. Grants were made to individuals by the governor on the recommendation of the local *alcalde* of the Mission. Secularization was particularly hard on Mission Soledad; the property served as a ranch house, a grocery store and then a restaurant, eventually sitting abandoned for almost one hundred years until it was sold in 1946 for eight hundred dollars. By the late 1840s, most of the vast church land holdings had

been distributed as ranchos to private citizens. Many of the natives who had survived the Spanish colonization period, and who were supposed to receive some of this redistributed land, went on to build and staff these ranchos. Rancho San Lorenzo was granted to Feliciano Soberanes in 1841 by Governor Juan Alvarado. Soberanes was the son of Jose Maria Soberanes, part of the Portola Expedition in 1769 and was an *alcalde* of Monterey from 1838-39. The 21,884-acre land grant extended along the east bank of the Salinas River and encompassed present-day King City. Rancho lands were generally acquired to provide pasturage for herds of semi-wild cattle. Agriculture was characterized by subsistence garden plots and was not conducted on a large scale.

American Period

The 1848 Treaty of Guadalupe Hidalgo, which ended the Mexican-American War and ceded California to the United States, provided that Spanish and Mexican land grants would be honored. As required by the Land Act of 1851, a claim for Rancho San Lorenzo was filed with the Public Land Commission in 1852 and the grant was patented to Feliciano Soberanes in 1866, although he had already sold it. In 1856 Eugene Sherwood, a former British Army captain, bought Rancho San Lorenzo and brought his family to the rancho. The Sherwoods' residence on the Rancho was ended by the floods of 1861-1862 and the severe drought that followed.

In 1884 Charles H. King, a businessman who had come west in the 1850s, acquired 13,000 acres of the Rancho San Lorenzo, locating his ranch headquarters three miles north of what is now King City. Against local advice, King planted 6,000 acres of wheat (Fisher 1945: 219). The sporadic southward expansion of the Southern Pacific Railroad into the Salinas Valley contributed to, and benefitted from, the settlement and agricultural production surged in the 1880s. In an effort to ease getting his grain crop to market, King allowed the approaching Southern Pacific Railroad line to lay tracks across King Ranch land. In 1886 the Southern Pacific Railroad completed service as far south as a station known as King's, although the area was locally called "Hog Town" due to the plethora of feral hogs roaming the stubble of the grain fields. Here, King constructed a depot and warehouse at his proposed townsite. A town plat was laid out in July 1886 and the city grew quickly, due to its advantageous location as a shipping hub. The Coast Line Stage Company, which had run stage coaches through the region since the 1850s, announced the permanent location of their headquarters at Kings City.

The post office opened in 1887 with Edwards S. Brown, the brother-in-law of C.H. King, appointed as Postmaster. By 1900, the town had a population of three hundred; the town was incorporated under the name "City of King" in 1911. J. Ernst Steinbeck, father of the novelist John Steinbeck, claimed to have been the first permanent resident of King City, as the first agent for the Southern Pacific Milling Company, whose flour mill and warehouse were built next to the railroad tracks running through town.

Agriculture has played the major role in King City history, although the crops have changed. While grain was the primary crop in the region, large scale sugar beet production was introduced by Claus Spreckels. Even before the construction of the worlds largest sugar mill in 1887, in the northern part of the Salinas Valley, at what is now the village of Spreckels. Spreckels had arranged contracts with farmers all over the Valley. The mill continued production until 1982. At the end of the nineteenth century, the Salinas Valley saw the advent of innovative agricultural engineering technology—large-scale irrigation, canal building, steam-powered pumps, and deep-water wells. Between 1910 and 1930, the city became famous for growing pink beans. King City Pinks were sold around the country. The First World War helped boost this bean popularity. By the turn of the twentieth century, irrigation was an essential part of agriculture in the Salinas Valley and led the way to increased crop diversification. Today vegetables and grapes are the major crops.

RECORDS RESEARCH

A search of maps and records was undertaken by the Northwest Information Center, Sonoma State University, which provides archaeological site data for Monterey County under agreement with the California Office of Historic Preservation. The records were consulted for all known archaeological sites and previous cultural resource surveys within one-half mile radius of the project area. Also consulted were the National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Resources, California Historical Landmarks, California Points of Historical Interest, and the Caltrans Historic Highway Bridge Inventory

Nineteen cultural resources investigations have taken place within the one-half mile search area. (Fritz et al 1975; Lonnberg 1975; Moress 1975; Brandau and Wardell

1978; Geiger and Wardell 1978;Breschini 1993a, 1993b; Thornton 1994; Busby 1998a, 1998b; Rosikiewicz 2002; Supernowicz 2005; Supernowicz and Billat 2005; Doane and Breschini 2011; Peak & Associates 2011; O'Hara and Donaldson 2011; Kiaha and Carr 2013; Jones and Leach-Palm 2013; JTP Historical Consulting 2013; Roland-Nawi and Levulett 2013; Hudlow 2018). Six of these surveys covered a portion of the present study area.

No prehistoric archaeological sites have been recorded within the search area, although one piece of rhyolytic debitage, the result of stone tool manufacture, was found (flaking debris (Hudlow 2018). The lack of sites in the immediate vicinity of King City is consistent with the ethnographic literature which places villages at the edge of the Salinas Valley and a lack of settlements on the valley floor. However, more temporary occupations along the Salinas River and San Lorenzo Creek may have been part of the settlement system, now obscured or eroded by the meandering river and creek channels.

There are recorded historic resources within the search area. The Robert Stanton Auditorium, built in 1939 as a WPA project, is an excellent example of the Art Moderne style, designed by architect Robert Stanton of Carmel has elliptical rounded corners, Doric-style columns, an expansive curved stairway leading to recessed oak and glass double doors. A bas-relief triptych above that doors, by artist Joseph Jacinto Mora, depicts notable multi-cultural scenes of historic importance. Mora's distinctive art is incorporated into the building's design both inside and out. It was listed on the National Register of Historic Places in 1991. Another recorded historic resource in the vicinity is the King City Fire Station , built in 1937. Due to extensive remodeling, it was not considered significant (Thornton 1994; Rosikiewicz 2002).

DESCRIPTION OF FIELD SURVEY

The property was investigated to the extent possible by Nancy Farrell and Ron Rose of CRMS on August 11, 2020. Natural mineral soil visibility was nil. The entire project area is either paved or landscaped. (Figure 2) above identifies the survey area on the Thompson Canyon 7.5' USGS Quadrangle (Figure 4) shows the area and surrounding.

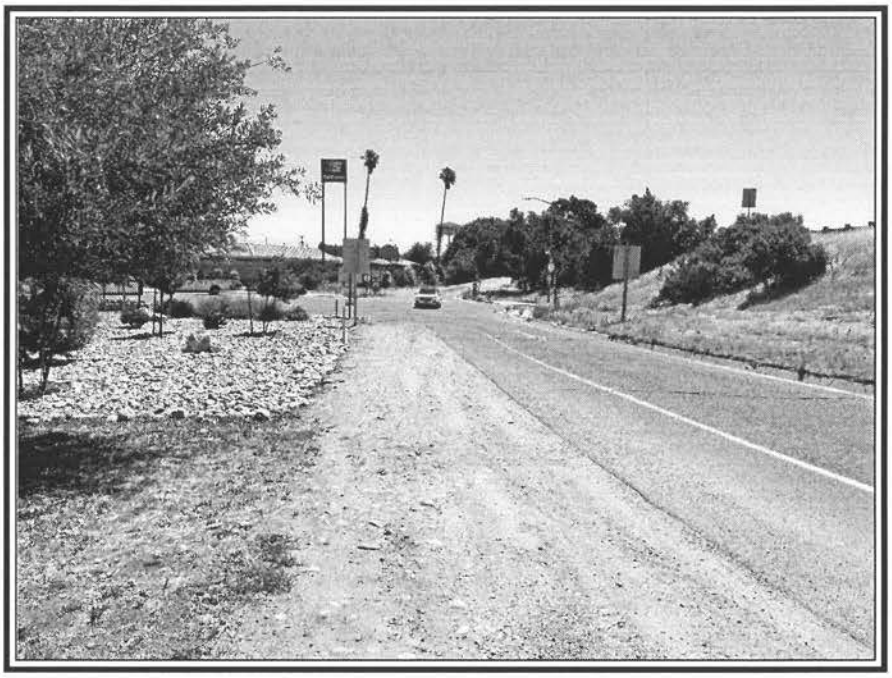


Figure 5: US 101 North On-Ramp-View To East

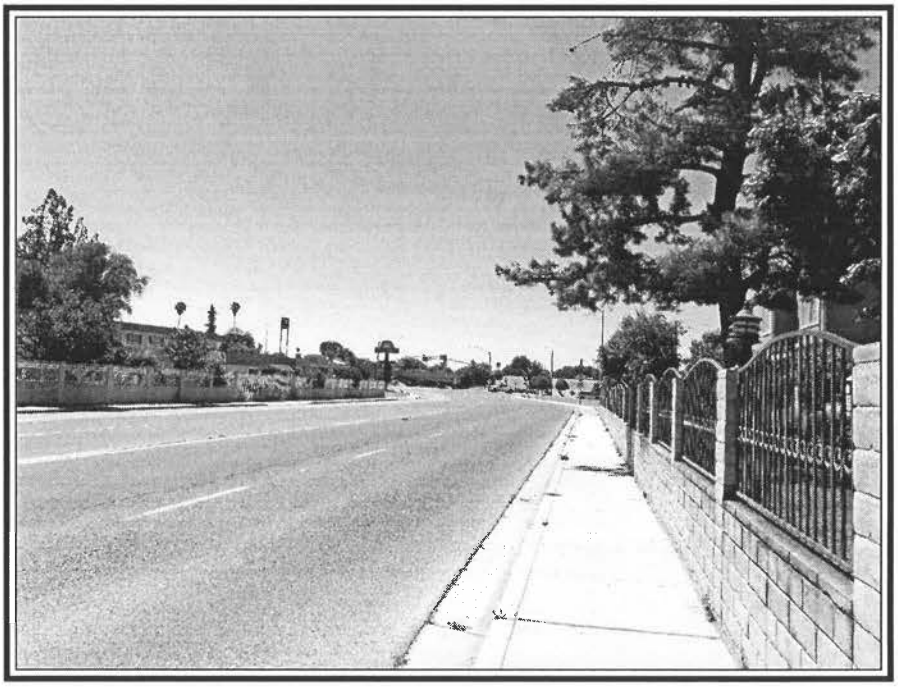


Figure 6: Broadway-View To West

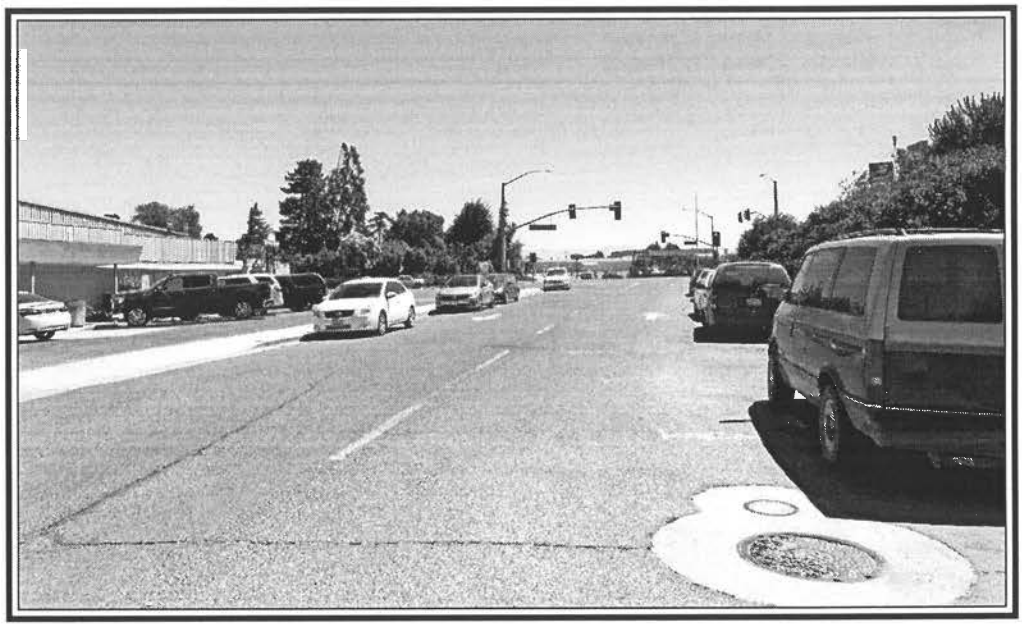


Figure 7: San Antonio Drive-View South

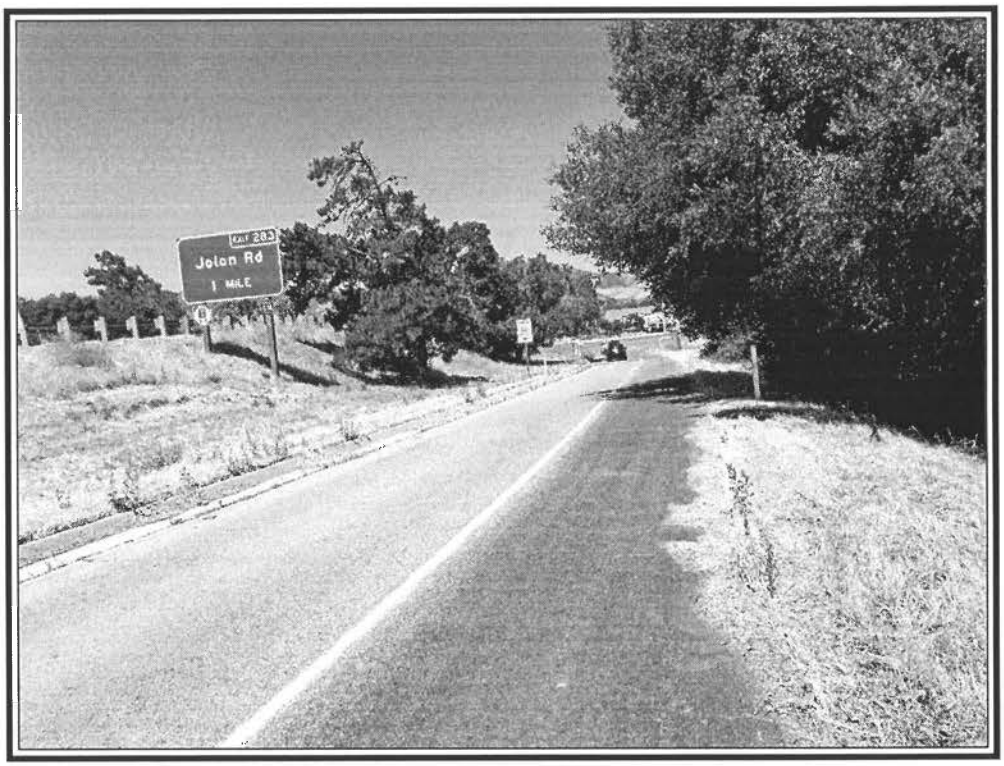


Figure 8: US 101 North Offramp-View To West

RESULTS OF INVESTIGATION AND RECOMMENDATIONS

The surface investigation resulted in photography of the project area. No original surfaces were visible and no historic or archaeological materials were seen. Prior construction at this location has been intensive. This makes it highly unlikely that any historical remains are intact or *in situ*.

Due to the fact that no significant cultural resources were located on the subject property, no further archaeological investigations are recommended. It is always possible, however unlikely, that significant cultural resources could lie buried below the surface. Therefore, if artifacts, burials, or other indicators of significant cultural resources are encountered during grading or other earth-moving construction activities, work should stop immediately and a qualified archaeologist should be called to the site to evaluate the find and suggest mitigation measures, if necessary.

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EXHIBIT A

Records and Literature Search
Northwest Information Center
Sonoma State University
Rohnert Park, CA

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

6/22/2020

NWIC File No.: 19-2081

Nancy Farrell
Cultural Resource Management Services
829 Paso Robles St.
Paso Robles, CA 93446

Re: King City Roundabout

The Northwest Information Center received your record search request for the project area referenced above, located on the Thompson Canyon USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a ½ mi. radius:

Resources within project area:	P-27-002322
Resources within ½ mi. radius:	P-27-001738, P-27-002820
Reports within project area:	S-15060, 21218, 45858
Reports within ½ mi. radius:	S-3473, 3483, 5412, 17180, 25515, 30328, 38440, 51704

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☒ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Caltrans Bridge Survey:	☒ enclosed	☐ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☐ not requested	☒ nothing listed

*Notes:

** Current versions of these resources are available on-line:

Caltrans Bridge Survey: https://dot.ca.gov/SearchResults?q=caltrans+bridge+survey

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Annette Neal

Researcher

EXHIBIT B

Letter To Native American Heritage Commission (NAHC)
Reply From NAHC
Letter To Native Americans and Groups
Response To Letters Written

CRMS
CULTURAL RESOURCE MANAGEMENT SERVICES

Cultural Resource Management Services
829 Paso Robles Street
Paso Robles, CA 93446
Phone 805-237-3838
Fax 805-237-3849

June 17, 2020

Mr. Steven Quinn
Associate Governmental Program Analyst
California Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

RE: Phase I Inventory Survey,
King City Roundabout, Broadway and Hwy 101, King City, CA

Dear Mr. Quinn

King City, and CalTrans intend to construct a roundabout at Broadway, San Antonio and Highway 101, to alleviate traffic congestion.

Cultural Resource Management Services (CRMS) has been retained, to prepare a Phase I surface survey as well as provide an early participation notice to interested Native Americans and Native American groups relative to the proposed construction project.

Please review the sacred lands files for any Native American Sacred resources or sites that may be within or adjacent to the area of potential effect (APE). Please verify that any sacred sites in the vicinity are not in the APE. The project area is within the incorporated limits of King City, Monterey County, and is identified on the attached portion of the USGS Thompson Canyon 7.5' Quadrangle. The study area falls within,, Township 20 South, Range 8 East MDM. The project location is depicted as a salmon colored polygon. As the area was part of a Rancho, there are no section lines.

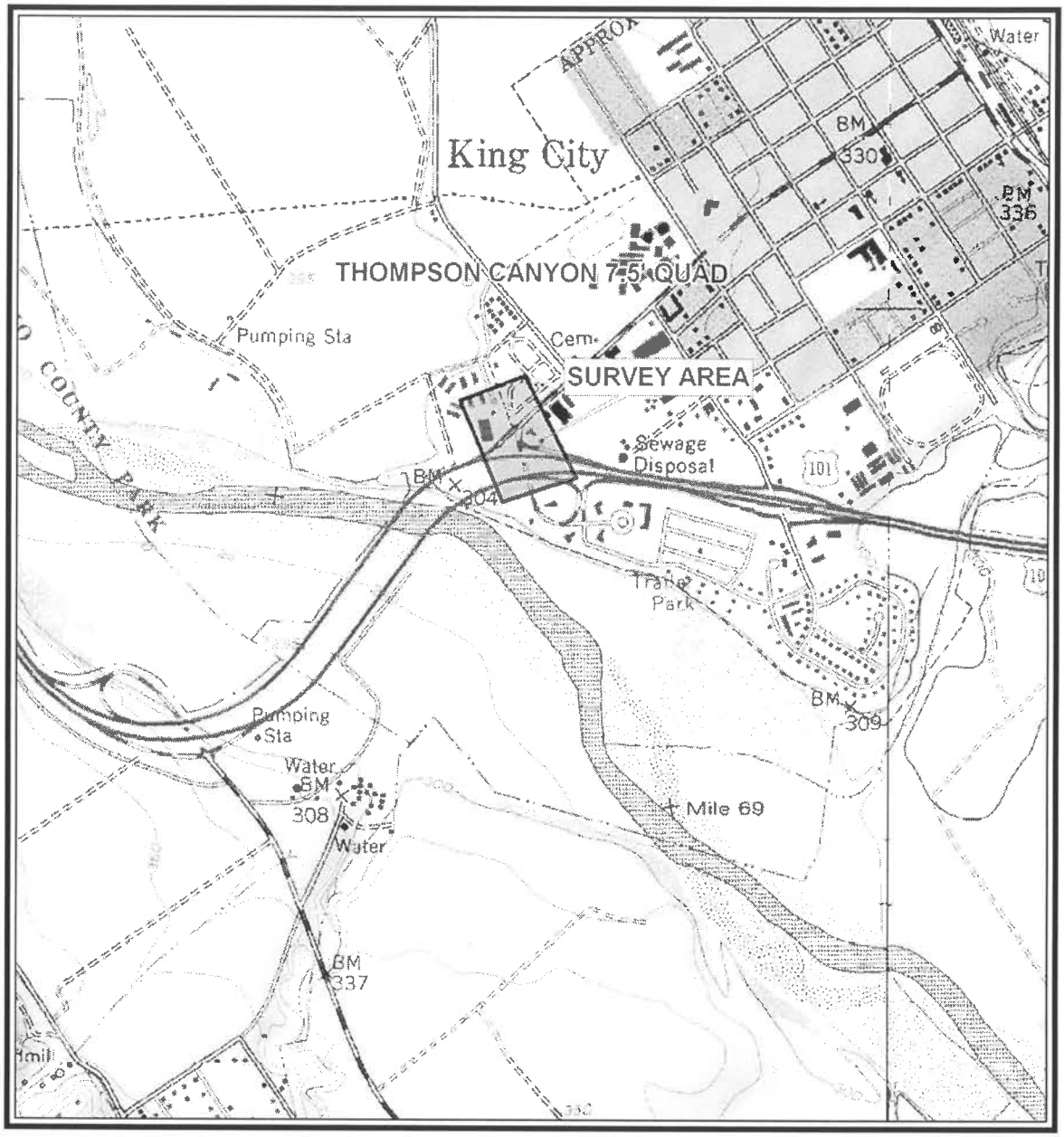
Also provide a list, including names and addresses, of Native American individuals and organizations who may have knowledge of cultural resources in the project area; or who may have a concern or wish to comment on the project.

If you have any questions contact me at the phone number or address shown, or by email ronrose@crms.com. We look forward to your reply.

Best regards,

Ron Rose
Vice President

Encl: Portion of USGS 7.5' Quadrangle Thompson Canyon, CA



Portion of USGS 7.5' Quadrangle, Thompson Canyon, CA

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 18, 2020

Ron Rose, Vice President
Cultural Resource Management Services

Via Email to: ronrose@crms.com

Re: Phase I Inventory Survey, King City Roundabout Broadway and Hwy 101 Project, Monterey County

Dear Mr. Rose:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Sarah.Fonseca@nahc.ca.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment

CRMS
CULTURAL RESOURCE MANAGEMENT SERVICES

Cultural Resource Management Services
829 Paso Robles Street
Paso Robles, CA 93446
Phone 805-237-3838
Fax 805-237-3849

XXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXX

July 1, 2020

RE: Phase I Inventory Survey, King City, CA
Broadway and US 101, Portion of USGS 7.5' Quadrangle, Thompson Canyon

XXXXXXXXXXXXXX:

King City and CalTrans intend to construct a roundabout on Broadway, San Antonio and Northbound US 101, to help alleviate traffic congestion.

Cultural Resource Management Services (CRMS) has been retained, to prepare a Phase I surface survey as well as provide an early participation notice to interested Native Americans and Native American groups relative to the proposed construction project.

The project area is within the incorporated limits of King City, Monterey County, and is identified on the attached portion of the USGS Thompson Canyon 7.5' Quadrangle. The study area falls within,, Township 20 South, Range 8 East MDM. The project location is depicted as a salmon colored polygon. As the area was part of a Rancho, there are no section lines.

Please contact me as soon as possible if you or your organization have any information about the study area, including any knowledge of any possible Sacred Sites, or concerns about the anticipated project. You may phone me or write me at the numbers and address listed or email me at: ronrose@crms.com. Once again, if you wish to comment, respond as soon as possible

Best regards,

Ron Rose
Vice President

Encl: Portion of USGS 7.5' Quadrangle, Thompson Canyon, CA

The letter on the previous page was sent to the following Native Americans and Groups. XXXX substituted For Address and Salutation.

Native American Heritage Commission
Native American Contact List
Monterey County
6/18/2020

Amah MutsunTribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org
Costanoan
Northern Valley Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
Woodside, CA, 94062
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com
Costanoan

Costanoan Rumsen Carmel Tribe
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This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Phase I Inventory Survey, King City Roundabout Broadway and Hwy 101 Project, Monterey County.

PROJ-2020-003450 06/18/2020 10:27 AM 1 of 1

RESPONSE TO LETTERS WRITTEN

July 1, 2020 Email From Patti Dunton

Greetings Ron, I have forwarded this to Fred Segobia to respond to. Please us us know of the phase I out come.

Take Care, Patti

Patti

Field survey was negative.

There was no response from Fred Segobia

ATTACHMENT E

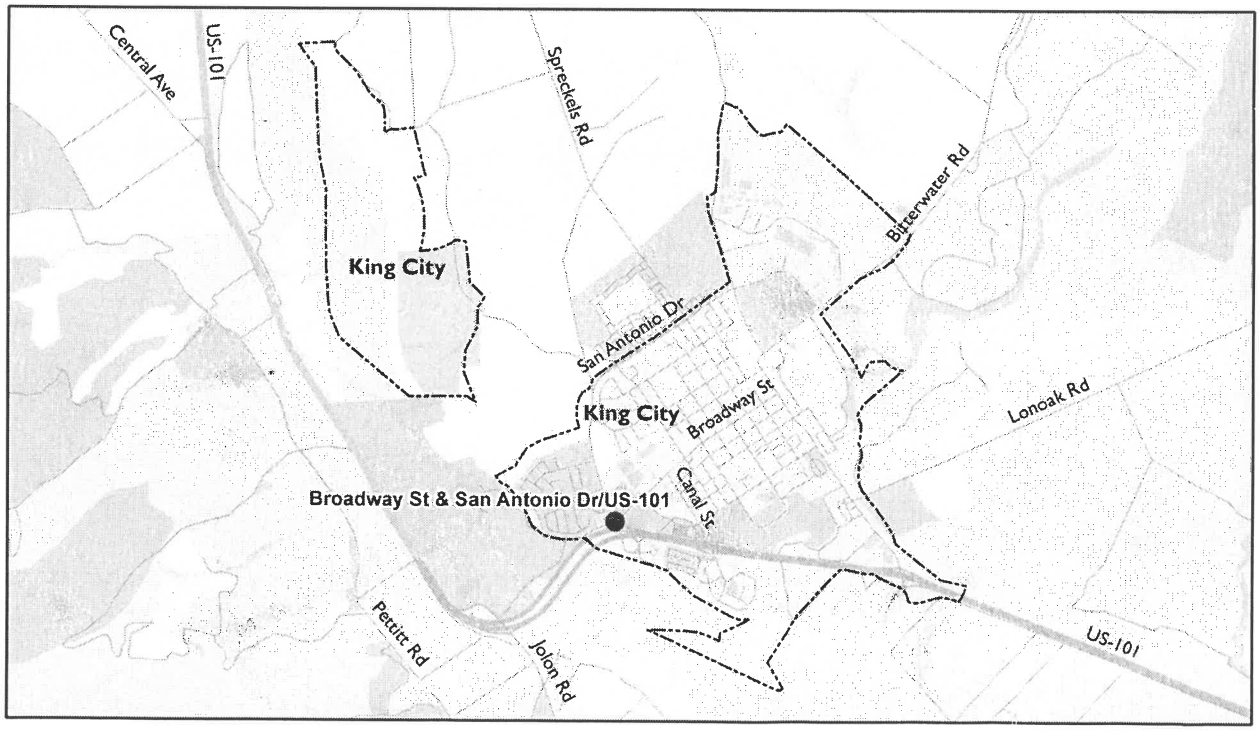
TRAFFIC ANALYSIS

Regional Roundabout Study – Utilizing Caltrans' Intersection Control Evaluation
Section 3:

King City

Study Intersections:

- BROADWAY STREET AT SAN ANTONIO DRIVE / US 101 NORTHBOUND RAMP TERMINALS



Transportation Agency for Monterey County

Prepared by Kittelson & Associates, Inc.

KING CITY SCREENING SUMMARY

STUDY OVERVIEW

An Intersection Control Evaluation (ICE) was performed to objectively evaluate and screen intersection control alternatives at the following intersection(s):

Study Intersection	Intersection Number
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	KGC-01

This screening summary provides an overview of performance measures used to calculate the return on investment for study intersections under King City jurisdiction. Results of the analysis and preferred traffic control type are presented in graphical form for quick reference.

Following the screening summary, a section is provided for each study intersection summarizing the design year peak hour operations, site constraints, concept layouts, and benefit cost calculations for each control alternative.

The table below lists the symbols of intersection control types evaluated (refer to the intersection summary for the list of alternatives evaluated at each intersection).

Control Type	Legend	
	Existing	Proposed
Stop Sign		
Traffic Signal		
Roundabout	N/A	

RETURN ON INVESTMENT SUMMARY

Benefit Cost Ratio Scoring

Benefit cost (B/C) ratios were calculated for each study intersection. The B/C ratio measures the expected return on investment when either a proposed stop control or a proposed signal controlled intersection is compared relative to a proposed roundabout controlled intersection.

B/C = 1.00: A B/C ratio of 1.00 is a neutral rating. This indicates that the return on investment for either stop or signal control improvement is equal to a roundabout.

B/C < 1.00: A B/C ratio less than 1.00 indicates that a stop/signal will provide a better return on investment when compared to a roundabout.

B/C > 1.00: A B/C ratio greater than 1.00 indicates that a roundabout provides a better return on investment when compared to either stop or signal control.

B/C = NA-R: When the cost of a roundabout is less than the cost of a stop/signal and the roundabout provides benefits over the stop/signal, a B/C ratio cannot be computed. This special case is denoted by "NA-R" and indicates that a roundabout provides a better return on investment when compared to a stop/signal.

Benefit Cost Ratio Results

Based on data provided by King City, a holistic B/C score was developed based on the net present value (i.e., life cycle duration using a discount rate of 4%) for the following five performance measures:

- ***Safety Benefit***
- ***Delay Reduction Benefit***
- ***Emission Reduction Benefit***
- ***Operations and Maintenance Costs***
- ***Initial Capital Costs***

The resulting B/C ratio and the preferred intersection control type based on return on investment for each study intersection(s) is as follows:

Study Intersection	B/C Ratio	Preferred Control
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	**1.49**	

SUMMARY OF KEY PERFORMANCE MEASURES

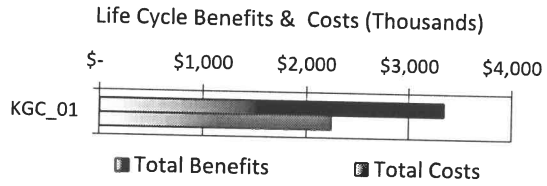
As stated above, five performance metrics were evaluated at each study intersection to calculate the B/C ratio. The performance measures used to calculate the ***benefits*** of a roundabout compared to a stop or traffic signal are:

- ***Safety Benefit*** (of a roundabout)
- ***Delay Reduction Benefit*** (of a roundabout)
- ***Emission Reduction Benefit*** (of a roundabout)

Performance measures used to calculate the ***costs*** of a roundabout compared to a stop or traffic signal are:

- ***Operations and Maintenance Cost*** *(*added costs of a roundabout)
- ***Initial Capital Cost*** (added costs of a roundabout)

The summation of the performance measure benefits and performance measure costs are illustrated below for each intersection:



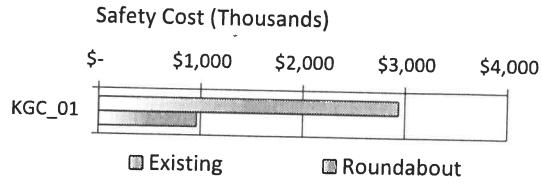
A brief overview of each performance measure and the assumptions used to calculate the performance measure costs are provided below. A bar chart illustrating the calculated cost of each performance measure by intersection control type is provided for each intersection. Following the performance measure overview is a table summarizing the preferred form of intersection control based solely on the results of individual performance measure.

Benefit Performance Measures

The following performance measures are used to calculate the benefit, or cost savings, of a roundabout compared to stop or signal control. For each performance measure, the roundabout provides a benefit if the calculated life-cycle cost of the roundabout is less than the life-cycle cost of stop or signal control. The magnitude of the benefit is the difference between the life-cycle cost of the stop or signal less the life-cycle cost of the roundabout.

Safety

Safety measures the societal cost associated with the predicted number and severity of collisions that may occur for each proposed intersection control type. The number of predicted collisions was calculated using Highway Safety Manual predictive methods and crash modification factors. The societal cost of property damage only (PDO) collisions is consistent with the *Caltrans Life-Cycle Benefit-Cost Analysis Economic Parameters 2012*. The societal cost of fatal/injury collisions are a weighted average based on the 2012 SWITRS proportion of fatal/injury collisions. Safety costs are the summation of predicted PDO and fatal/injury collisions.

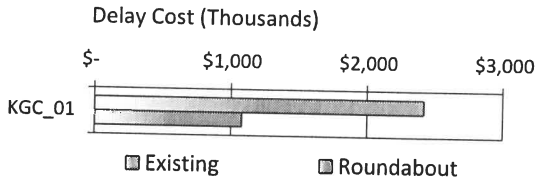


Based solely on the lowest predicted life-cycle cost for safety, the preferred intersection control type for each study intersection is as follows:

Safety **Study Intersection**	**Preferred Control**
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	

Delay

Delay measures the societal cost associated with the number of person-hours of delay at the intersection during the study period. Consistent with the *Caltrans Life-Cycle Benefit-Cost Analysis Economic Parameters 2012*, vehicle occupancy of 1.15 is used to convert delay to person-hours of delay at a value of $17.35 per vehicle-hour of delay.



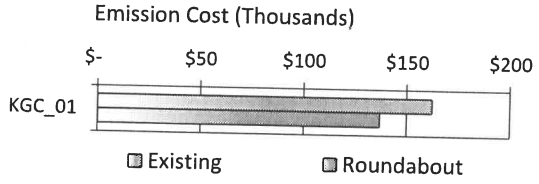
Based solely on lowest expected person hours of delay, the preferred intersection control type for each study intersection is as follows:

Delay **Study Intersection**	**Preferred Control**
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	

Emissions

The emissions performance measure calculates the societal cost associated with exposure to health based pollutants emitted by motor vehicles. Pollutant emissions are running emissions based on the average speed of vehicles traveling through the intersection during the study period. Pollutant emissions evaluated include reactive organic gasses (ROG), nitrogen oxides (NOx), and particulate matter (PM10). The societal cost of emissions is calculated using emission data from the California Air Resource Board (CARB) *Methods to Find the Cost-Effectiveness of Funding Air Quality Projects, Table 4 Emission Factors by Speed, April 2013* and cost per ton data from *Caltrans Life-Cycle Benefit-Cost Analysis Economic*

Parameters 2012 for emissions (Note: VOC is assumed to be synonymous with ROG).



Based solely on fewer tons per year of mobile source pollutant emissions (i.e., fewer vehicle stops, fewer hard acceleration events, higher average speeds through the intersection) and the societal cost associated with exposure to these health based pollutant emissions, the preferred intersection control type for each study intersection is as follows:

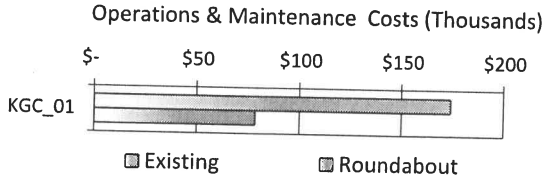
Emissions Study Intersection	Preferred Control
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	

Cost Performance Measures

The following performance measures are used to calculate the added cost of a roundabout compared to stop or signal control. For each performance measure, the roundabout adds to the cost of the intersection if the calculated life-cycle cost of the roundabout is greater than the life-cycle cost of stop or signal control. The magnitude of the cost is the difference between the life-cycle cost of the roundabout less the life-cycle cost of the stop or signal.

Operations and Maintenance

The operations and maintenance performance measure incorporates common annualized costs associated with operating and maintaining the proposed type of intersection control. Common costs include signal timing and maintenance, power consumption for signal operations and intersection illumination, landscape maintenance, and pavement rehabilitation. Average annualized costs were used if intersection specific costs were not provided.

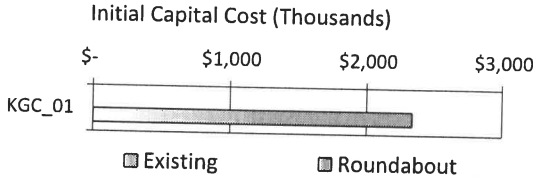


Based solely on lowest expected annual operations and maintenance costs, the preferred intersection control type for each study intersection is as follows:

Operations and Maintenance Study Intersection	Preferred Control
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	

Initial Capital Costs

The initial capital costs performance measure estimates the capital costs needed to plan, design, and construct the proposed intersection improvement. The capital costs include construction, capital support, and right of way.



Based solely on lowest estimated initial capital cost, the preferred intersection control type for each study intersection is as follows:

Initial Capital Cost Study Intersection	Preferred Control
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	NO PROJECT

NOTE: The existing alternative has the lowest cost.

Summary of B/C Performance Measures

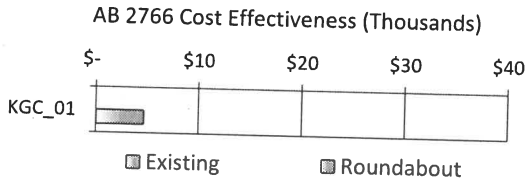
The following table summarizes the five performance measures evaluated at each project location.

Study Intersection	Preferred Intersection Control by Performance Measure					
	Safety	Delay	Ops. & Maint.	Emission	Capital Cost	B/C
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals					NO PROJECT	

COST EFFECTIVENESS TO REDUCE POLLUTANT EMISSIONS (AB 2766 GRANT)

The cost effectiveness to reduce pollutant emissions measures the return on investment of funding intersection improvements based on the California Air Resources Board (CARB) Cost Effectiveness Analysis Tools for the Motor Vehicle Registration Fees Program (AB 2766) and the Congestion Mitigation and Air Quality (CMAQ) Program. The emission factors used in the calculations are based on the year 2013 Table 4 Emission Factors by Speed for Project Life 6-10 years. The assumed funding amount is $400,000 with an effectiveness period equaling the life cycle analysis period. The discount rate for emissions is 3% and the capital recovery factor (CRF) is 0.12.

Intersection alternatives with a cost effectiveness to reduce pollutant emissions of $20,000 or less should be considered for grant funding through the Motor Vehicle Registration Fees Program (AB 2766) administered by the Monterey Bay Unified Air Pollution Control District (MBUAPCD). This funding source could help with the cost to TAMC and King City.

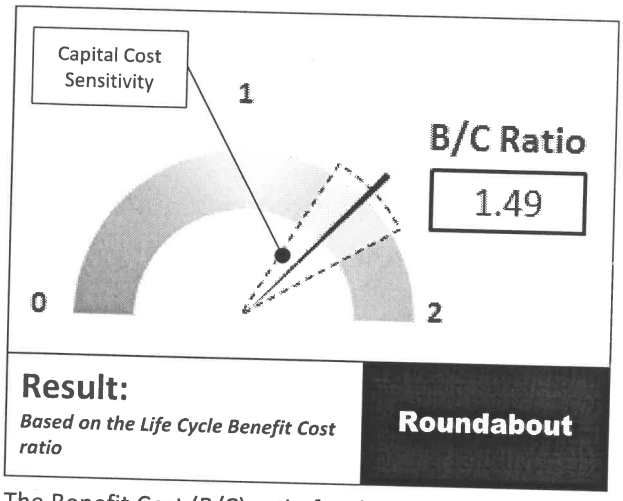


Based solely on lowest cost per ton in reducing pollutant emissions, the preferred intersection control type for each study intersection is provided below.

AB 2766 Cost Effectiveness Study Intersection	Preferred Control
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	

NOTE: Only the alternative with the lowest cost effectiveness score is reported. Both alternatives may be cost effective to reduce pollutant emissions.

BROADWAY STREET AT SAN ANTONIO DRIVE / US 101 NORTHBOUND RAMP TERMINALS



The Benefit Cost (B/C) ratio for the Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals intersection is 1.49. Based on the B/C ratio, the form of intersection control with the greatest potential return on investment is a roundabout.

CAPITAL COST SENSITIVITY

The B/C ratio for this study intersection is not sensitive to estimated capital costs. Based on the B/C ratio's sensitivity to estimated capital costs, the preferred intersection control is unlikely to change with further refinement of the project costs as proposed improvements progress through detailed planning and design. The B/C ratio would reduce to 1.00 if initial capital costs for the construction of the roundabout exceed $3.4M and all other performance measures remained unchanged.

Noteworthy performance measures driving the B/C ratio are *safety and delay.* The total life cycle benefits of the roundabout are estimated at $3,340,000 when compared to a traffic signal. The total life cycle benefit includes an estimated $1,600 reduction in annual operations and maintenance costs when compared to a traffic signal.

Operationally, the roundabout configuration is a superior alternative to serve existing and forecast traffic. The existing signal control on Broadway Street at San Antonio Drive and the existing stop control on the US 101 northbound ramp terminal, or no project alternative, operates with acceptable delay for the existing traffic demand condition. Operations are expected to degrade to unacceptable levels as demand reaches forecast design year levels. In terms of vehicle queuing, vehicles queues are expected to exceed available storage for all movements on northbound Broadway Street and left turn movements on westbound Broadway Street. The proposed signal control alternative is not expected to improve overall operations at the intersection, but signal improvements are expected to improve ramp operations. There may be other considerations,

Summary of Existing Conditions

Intersection	Roadway	Corridor Context				Multimodal Transportation		
		Cross Section	Functional Classification	Speed (mph)	Regional Context	Transit Service	Active Transportation Links: Pedestrian Considerations	Active Transportation Links: Bicycle Routes
Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals	San Antonio Drive (north) / Broadway Street (south) (King City)	North: 4-lane divided. South: 2-lane undivided south.	Local	35 north, 25 south	Serves residential, commercial business, and institutional uses. Provides circulation throughout King City.	Service provided by Monterey-Salinas Transit Line 23. (No service provided on San Lorenzo Park Road)	Sidewalks provided. Crosswalks are provided at signalized intersection.	No bike lanes provided.
	Broadway Street (east) / San Lorenzo Park Road (west) (King City)	East: 2-lane divided. West: 2-lane undivided. On-street parking.	Local	25	Serves residential, commercial business, and institutional uses. Provides circulation throughout King City.		Sidewalks provided. Crosswalks are provided at signalized intersection.	No bike lanes provided.
	US 101 Northbound Ramp Terminals (Caltrans)	1-lane.	Highway	60	Provides on/off access to/from northbound US 101.		No sidewalks. Crosswalks provided.	No bike lanes provided.

constraints, and project factors identified in future design evaluations that could affect the feasibility and prioritization of a specific configuration.

The intersection evaluation was based on traffic operations for the 2040 design year. The year 2015 was assumed for the baseline "build" condition for a total 25 year life cycle duration to determine the B/C ratio.

For the purpose of this study, the B/C ratio was calculated for the roundabout vs. no project condition. The calculated B/C ratio assumes $0 in initial capital costs for improvements to the existing intersection. Operations for the proposed signal are expected to have greater delay than the no project alternative. Therefore, proposed signal improvements will likely increase the *delay reduction benefit* and decrease the *added capital cost of a roundabout*. The result would generate a B/C ratio greater than the no project alternative.

Refer to the Intersection Cost Comparison for intersection Number KGC-01E on the following pages for a complete summary of the Life Cycle Benefit/Cost Analysis.

EXISTING CONDITIONS

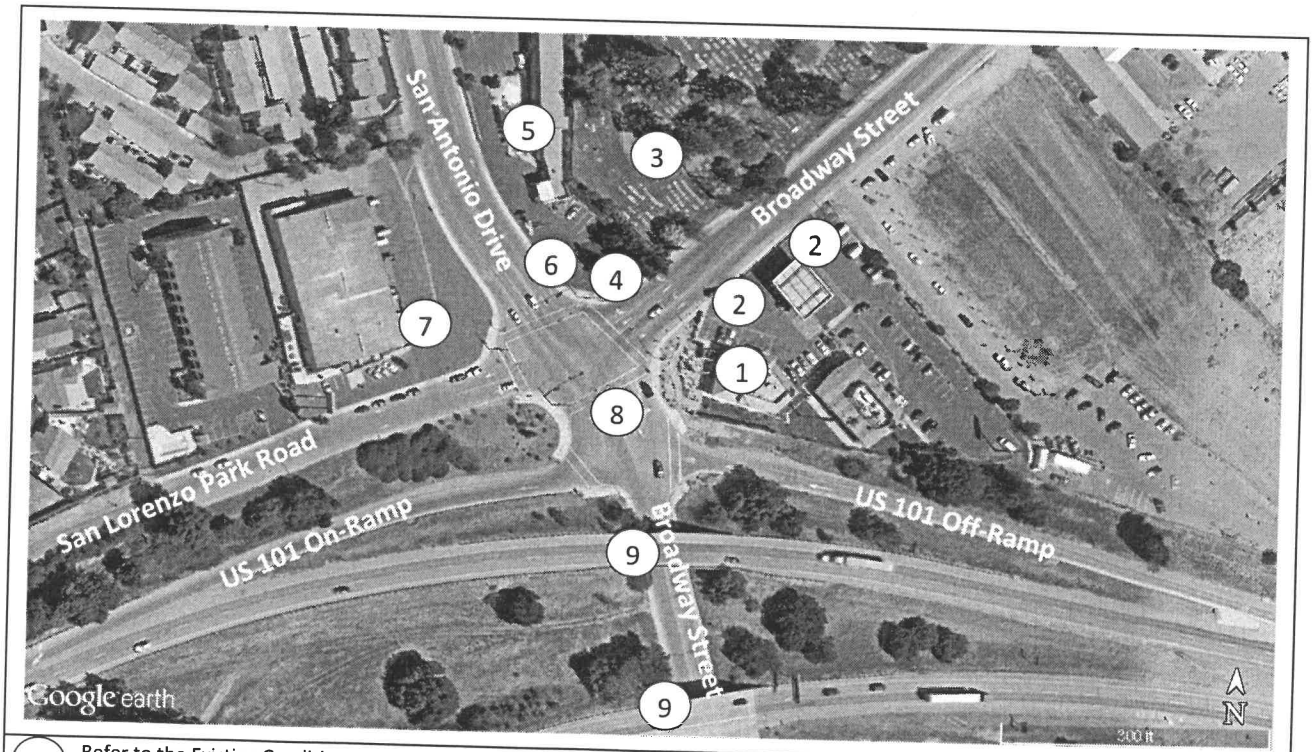
This section provides a brief overview of the transportation facilities and geometric characteristics of the roadways within the study area. This section also describes the existing conditions and constraints identified at the study location.

The Broadway Street at San Antonio Drive / US 101 Northbound Ramp Terminals intersection is two closely spaced intersections with two types of traffic control. The Broadway Street at San Antonio Drive intersection is controlled by a traffic signal. The Broadway Street at US 101 Northbound Ramp Terminal intersection is controlled by a two-way stop on the minor approach, or off-ramp.

Parcels in the east, northeast, and northwest quadrants are developed. The easterly parcel is a service station with a structure close to the intersection and is considered a fatal flaw if disturbed. The existing signalized intersection is within City of Greenfield right of way and the existing stop control intersection is within Caltrans right of way.

Existing design constraints and considerations at the study intersection include (see map for locations):

1. Service station (fatal flaw if disturbed)
2. Service station driveway
3. King City Cemetery
4. King City welcome sign / gateway feature
5. Days Inn King City
6. Days Inn driveway
7. Urgent care
8. Intersection spacing
9. US 101 overcrossing



1 Refer to the Existing Conditions section on the previous page for description of the design constraint.

The Summary of Existing Conditions table describes the study area roadways. An aerial view of the project location with existing design constraints is provided on the previous page.

PLANNED IMPROVEMENTS

No planned improvements were identified.

INTERSECTION CONTROL ALTERNATIVES

The existing and proposed intersection control options that were evaluated at the study intersection include:

Control Type	Legend
Existing Signal and Stop	
Proposed Signal improvements	
Proposed Roundabout	

Design Year Traffic

Traffic data for 2015 AM and PM peak hour volumes was provided by the City. 2040 peak hour volumes were calculated using a 2.4% annual compound growth rate for all movements.

Signal Control (Existing)

With signal control, demand is adequately served for both peak hours under existing and design year conditions. Vehicle queuing for northbound Broadway Street extends beyond the existing two-way stop controlled intersection at the US 101 northbound ramp terminals. Queuing for the westbound Broadway Street left turn lane exceeds available storage under the existing condition. Vehicle queuing is expected to increase with travel demand, impacting ramp operations and driveway access on the easterly leg of Broadway Street.

Two-Way Stop Control (Existing)

Note: The two-way stop control intersection was evaluated using static, isolated intersection analysis. Microsimulation of the combined stop control and signal controlled intersections is recommended for further study.

Demand is adequately served for both peak hours under existing conditions. Beginning in design year 2030, off-ramp operations are expected to perform at unacceptable levels of delay. Under existing conditions, westbound vehicle movements are not coordinated with the signal at Broadway Street and San Antonio Drive. As a result, westbound vehicles turning left, or continuing through, are unable to distinguish southbound vehicles turning right on to the on-ramp, or continuing south. It is also difficult for stopped westbound vehicles to determine when westbound left turning Broadway Street vehicles are given a green arrow.

Signal Control - Modification

With signal control modifications, the existing two-way stop control intersection will be signalized and coordinated with the signal at Broadway Street and San Antonio Drive. The US 101 northbound off-ramp would operate with a dedicated phase creating 5-leg intersection operations. The signal would continue to operate with split phasing on all approaches.

For the signal control modification, additional lanes are required on the following approaches:

- US 101 Off-ramp: Add one lane
- Broadway Street (east leg): Add one left turn lane
- Broadway Street (south leg): Add one approach lane and one departure lane.

The signal modifications would require reconstruction of the US 101 overcrossing.

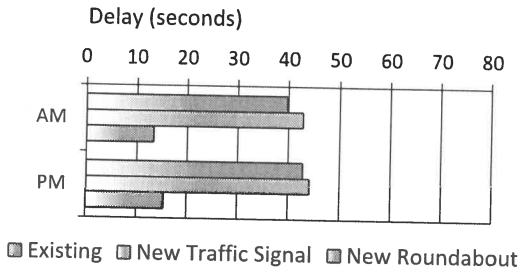
The additional lanes and reconfiguration of signal will also impact crossing distance as well as overall cycle length for protected phasing. Bike lanes and transit stops are not provided at the intersection therefore the reconfiguration of the intersection will not create an impact to these facilities.

Roundabout Control

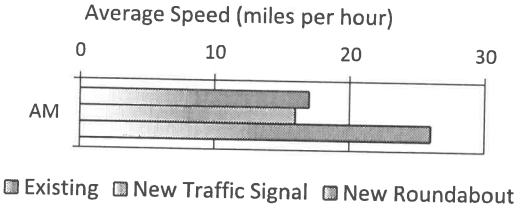
With roundabout control, a single lane roundabout with single lane approaches and departures will improve intersection performance. The single lane roundabout is expected to perform below capacity for both peak hours through design year 2025 conditions. It is expected that between 2030 and 2040, a single westbound Broadway Street right turn lane will be needed. The roundabout is expected to provide superior operations compared to the existing conditions and proposed signal modification alternative.

TRAFFIC OPERATIONS SUMMARY

The following bar chart illustrates the peak hour intersection delay for design year traffic operations by intersection control form. Refer to the Intersection Control Alternative Summary table for additional information.



The following bar chart illustrates the calculated average speeds through the study intersection used to determine AB 2766 cost effectiveness.



PERFORMANCE MEASURE SUMMARY

The following table summarizes the five performance measures evaluated to calculate the B/C ratio and the cost effectiveness to reduce pollutant emissions. Refer to the Screening Summary for a brief overview of each performance measure and the assumptions used to calculate the performance measure costs. Refer to the Intersection Cost Comparison table for performance measure costs and B/C ratio calculations.

Intersection alternatives that may be considered for grant funding through the Motor Vehicle Registration Fees Program (AB 2766) administered by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) are noted in the Performance Measure Summary Table. Alternatives with a cost effectiveness to reduce pollutant emissions of $20,000 or less are identified.

Performance Measure Summary Performance Measure	Preferred Control
Benefits	
Safety	
Delay	
Emission	
Costs	
Operations and Maintenance	
Initial Capital Cost	NO PROJECT
Return on Investment	
Life Cycle B/C Ratio	
AB 2766 Cost Effectiveness	
Cost effectiveness < $20,000	

Recommendations for Further Study

The following recommendations for further study will likely have the greatest effect on the B/C ratio and the potential return on investment:

- Forecast design year traffic volumes at the study intersection.
- Traffic microsimulation, such as VISSIM, of project area.
- Evaluation roundabout design checks, especially evaluation of roundabout intersection sight distances for vehicles on US 101 northbound off-ramp and entry speed of northbound Broadway Street vehicles.
- Project approval and coordination with Caltrans.
- Preliminary engineering, topographic survey of US 101 overcrossing and service station.

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

TAMC Regional ICE Study Intersection Number **KGC-01E**

01/16

Intersection Cost Comparison

Broadway Street/San Antonio Drive/US-101 Ramps (Existing Signal + Stop Condition)
King City, California

Cost Performance Measure	Intersection Type					
	Roundabout			Traffic Signal + Two-Way Stop		
	Annual Quantity	Annual Cost	Total Discounted Life Cycle Cost	Annual Quantity	Annual Cost	Total Discounted Life Cycle Cost
SAFETY						
Predicted Fatal/Injury Crashes	0.35	$ 51,880	$ 810,470	1.14	$ 168,878	$ 2,638,228
Predicted PDO Crashes	0.93	$ 9,488	$ 148,225	1.85	$ 18,850	$ 294,480
Subtotal - Safety Costs	-	**$ 61,368**	**$ 958,695**	-	**$ 187,728**	**$ 2,932,708**
DELAY						
Delay to Persons in Vehicles (hours)	3932	$ 41,456	$ 1,077,859	9295	$ 93,093	$ 2,420,430
Subtotal - Delay Costs	-	**$ 41,456**	**$ 1,077,859**	-	**$ 93,093**	**$ 2,420,430**
OPERATIONS & MAINTENANCE						
Cost of Signal Retiming				-	$ 333	5,207
Cost of Power for Signal				-	$ 4,255	66,472
Cost of Illumination	6	$ 873	$ 13,632	4	$ 582	9,088
Cost of Landscaping Maintenance	-	$ 2,000	$ 31,244			
Cost of Signal Maintenance				-	$ 1,200	18,746
Cost of Pavement Rehabilitation			$ 33,320			$ 74,554
Subtotal - Operations and Maintenance Costs	-	**$ 2,873**	**$ 78,196**	-	**$ 6,370**	**$ 174,069**
EMISSIONS						
Tons of ROG	0.19	$ 183	$ 2,856	0.30	$ 284	$4,443
Tons of NOX	0.60	$ 7,724	$ 120,664	0.68	$ 8,827	$137,901
Tons of PM10	0.0086	$ 853	$ 13,322	0.0128	$ 1,279	$19,984
Subtotal - Emissions Costs		**$ 8,760**	**$ 136,842**		**$ 10,391**	**$ 162,328**
INITIAL CAPITAL COSTS						
Construction Cost			$ 1,384,735			$ -
Construction Cost - Structures			$ -			$ -
Capital Support			$ 693,000			$ -
Right-of-Way			$ 259,000			$ -
Subtotal - Initial Capital Costs			**$ 2,336,735**			**$ -**
NET PRESENT VALUE			**$ 4,451,486**			**$ 5,527,207**

NOTE: Safety and Delay performance measures are the summation of the exsitng signal and stop controlled intersections.

LIFE CYCLE BENEFIT/COST ANALYSIS

BENEFITS - Roundabout compared to Traffic Signal	
Safety Benefit of Roundabout	$1,974,013
Delay Reduction Benefit of Roundabout	$1,342,571
Emission Reduction Benefit of Roundabout	$25,486
Total Benefits	**$3,342,070**
COSTS - Roundabout compared to Traffic Signal	
Added O&M Costs of a Roundabout	-$95,872
Added Capital Costs of a Roundabout	$2,336,735
Total Costs	**$2,240,863**

LIFE CYCLE (25 YEAR) BENEFIT/COST RATIO

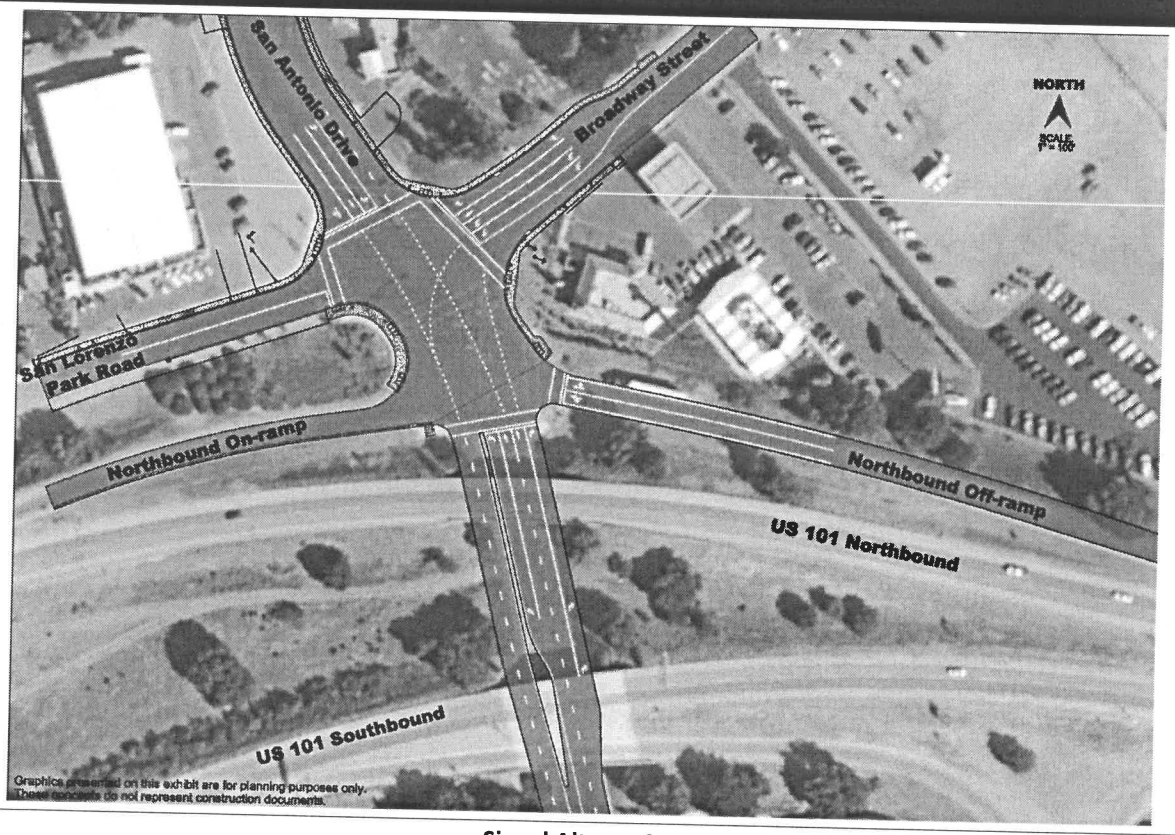
1.49

B/C Preferred: Roundabout Alternative

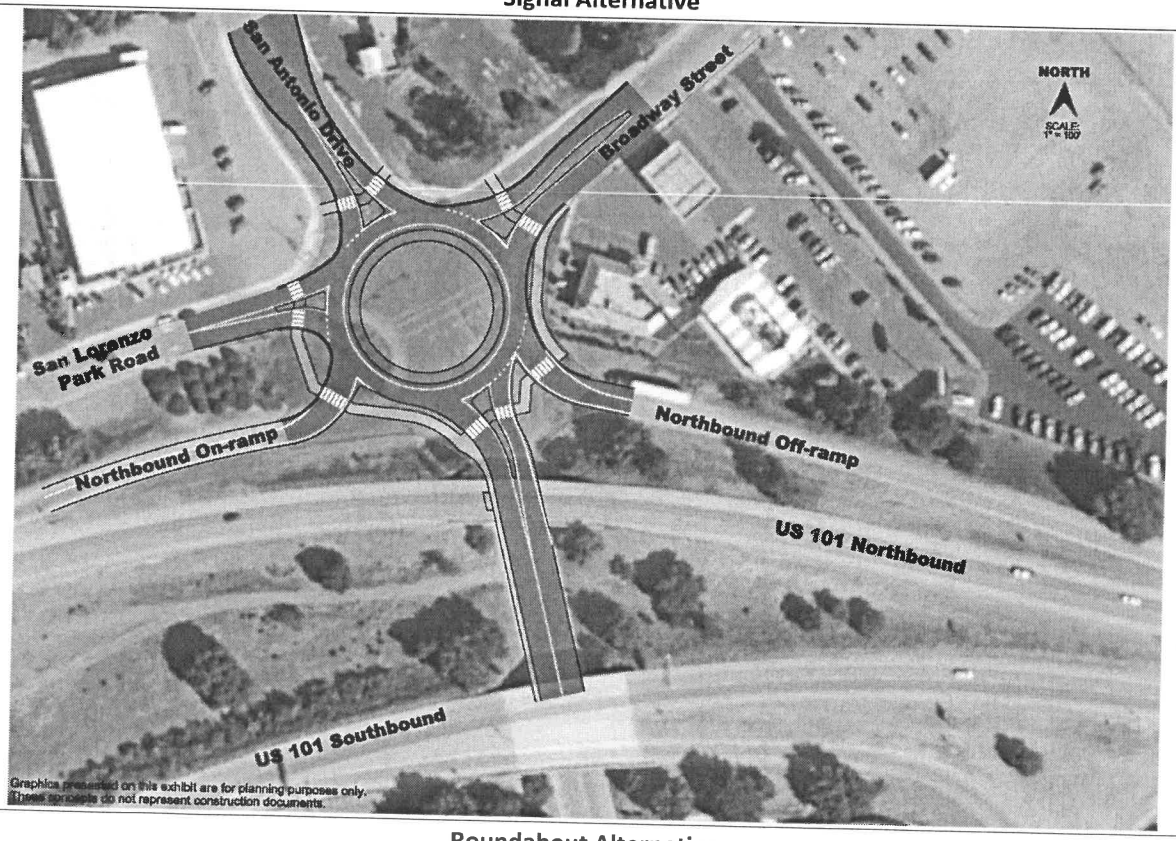
AIR QUALITY ANALYSIS

AIR QUALITY	**Roundabout (vs. existing)**	**ffic Signal + Two-Way Stop (vs. existi**
Annual Emission Reduction (lb/year)	393	N/A No Emission Change
Cost Per Pound Per Life	$58.38	N/A No Emission Change
AIR QUALITY COST EFFECTIVENESS ($ / ton / year)	**$4,671**	**N/A No Emission Change**

Intersection Improvement Alternatives



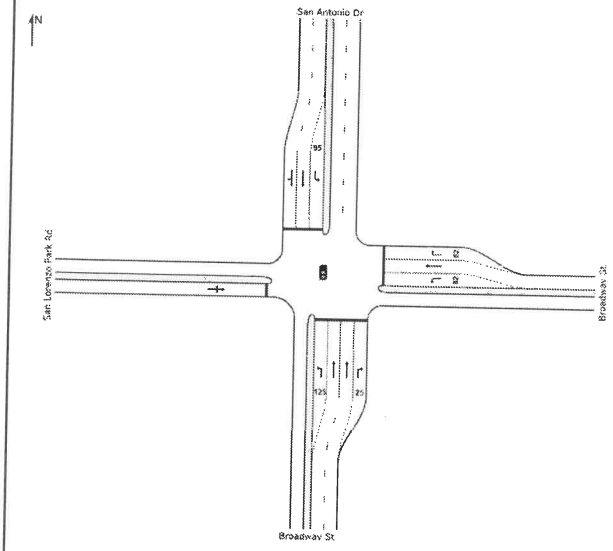
Signal Alternative



Roundabout Alternative

Note: Intersection alternative improvements are conceptual and for planning purposes only. Alternatives are not to scale.

Intersection Control Alternative Summary

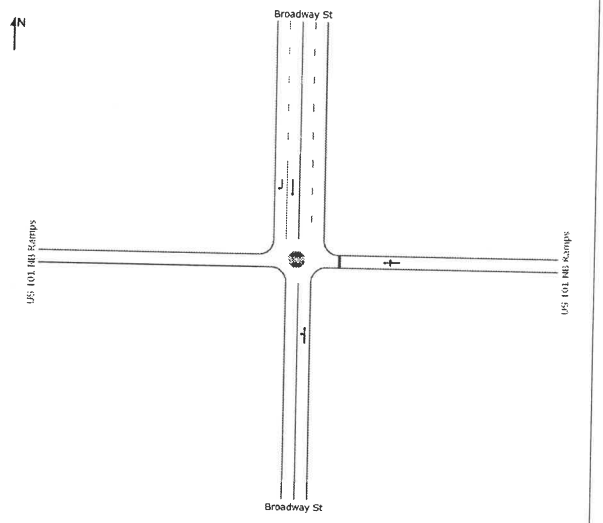


EXISTING INTERSECTION
SIGNAL

Summary of Operations						
	AM			PM		
Design Year	LOS	Delay (s)	95% Queue (ft)	LOS	Delay (s)	95% Queue (ft)
2015	B	18.6	107 (SBT)	B	19.0	160 (WBL)
2030	C	23.1	192 (SBT)	C	24.4	248 (WBL)
2040	D	36.2	334 (NBR)	C	31.0	367 (WBL)

NOTES:

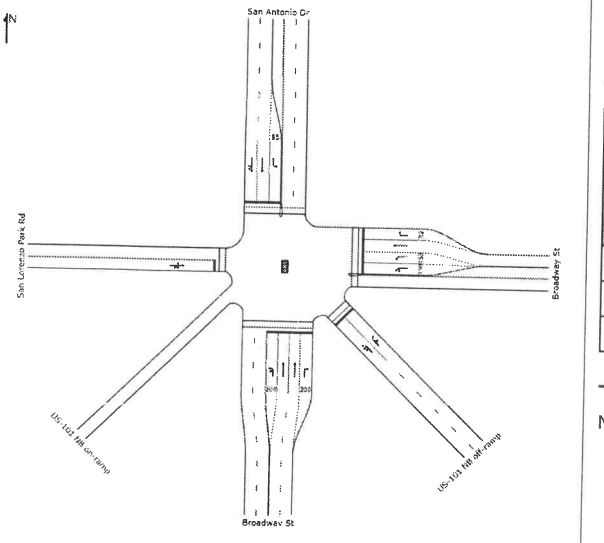
1. NB Broadway Street queues will exceed available storage affecting NB US-101 Ramps for all scenarios.
2. WBL Broadway Street will also exceed available storage for all scenarios.



EXISTING INTERSECTION
STOP

Summary of Operations						
	AM			PM		
Design Year	LOS	Delay (s)	95% Queue (ft)	LOS	Delay (s)	95% Queue (ft)
2015	C	15.1	13 (WB)	C	16.5	25 (WB)
2030	C	23.6	30 (WB)	D	26.2	63 (WB)
2040	F	51.5	78 (WB)	F	106.7	210 (WB)

NOTES:



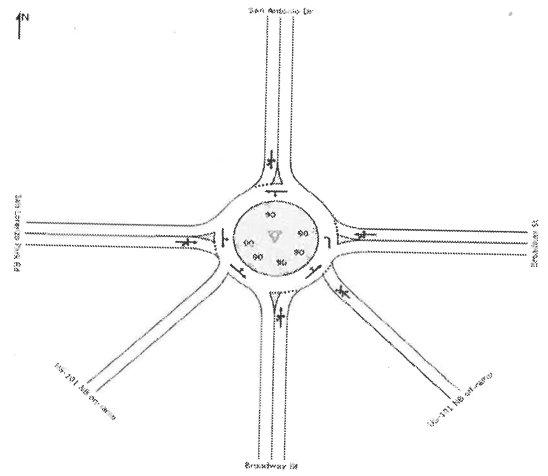
ALTERNATIVE 1
SIGNAL MODIFICATIONS

Summary of Operations						
	AM			PM		
Design Year	LOS	Delay (s)	95% Queue (ft)	LOS	Delay (s)	95% Queue (ft)
2015	C	25.5	222 (NBR)	C	26.5	194 (NBR)
2030	C	32.4	347 (NBR)	C	35.4	330 (NBR)
2040	D	42.8	550 (NBR)	D	44.1	515 (NBR)

NOTES:

1. WBL Broadway Street will exceed available storage for the 2030 p.m. peak hour

Intersection Control Alternative Summary

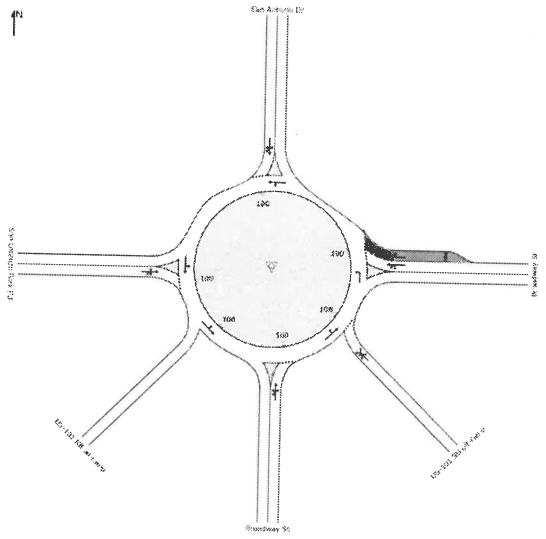


ALTERNATIVE 2
ROUNDABOUT

Summary of Operations						
	AM			PM		
Design Year	LOS	Delay (s)	95% Queue (ft)	LOS	Delay (s)	95% Queue (ft)
2015	A	6.2	66 (NB)	A	7.5	74 (NB)
2030	A	9.1	127 (NB)	B	15.0	235 (WB)

NOTES:

1. Significant queues are noted for WB Broadway Street during the 2015 and 2030 p.m. peak hour.



ALTERNATIVE 2a
ROUNDABOUT

Summary of Operations						
	AM			PM		
Design Year	LOS	Delay (s)	95% Queue (ft)	LOS	Delay (s)	95% Queue (ft)
2040	B	13.3	235 (NB)	C	15.4	296 (NB)

NOTES:

1. A 100 foot westbound right turn lane is added.

Regional Intersection Control Evaluation

Transportation Agency of Monterey County

Appendix A: LOS Concept

Transportation Agency for Monterey County

Prepared by Kittelson & Associates, Inc.

LEVEL-OF-SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from "A" to "F".

SIGNALIZED INTERSECTIONS

The six level-of-service grades are described qualitatively for signalized intersections in Table B1. Additionally, Table B2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service "D" is generally considered to represent the minimum acceptable design standard.

Table B-1: Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

1 Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2000).

Table B-2: Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2000 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table B3. A quantitative definition of level of service for unsignalized intersections is presented in Table B4. Using this definition, Level of Service "E" is generally considered to

represent the minimum acceptable design standard.

Table B3: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	• Nearly all drivers find freedom of operation. • Very seldom is there more than one vehicle in queue.
B	• Some drivers begin to consider the delay an inconvenience. • Occasionally there is more than one vehicle in queue.
C	• Many times there is more than one vehicle in queue. • Most drivers feel restricted, but not objectionably so.
D	• Often there is more than one vehicle in queue. • Drivers feel quite restricted.
E	• Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. • There is almost always more than one vehicle in queue. • Drivers find the delays approaching intolerable levels.
F	• Forced flow. • Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table B-4: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

The level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths should be considered because of their impacts on the operational and safety performance of the intersection. By focusing on a single MOE

for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

ROUNDABOUT INTERSECTIONS

The levels of service (LOS) criteria for automobiles in roundabouts are given in Table B-5. As the table notes, LOS F is assigned if the volume-to-capacity ratio of a lane exceeds 1.0 regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay. The thresholds in Table B-5 are based on the considered judgment of the Transportation Research Board Committee on Highway Capacity and Quality of Service.

Table B-5: Level-of-Service Criteria for Roundabout Intersections

Control Delay (s/veh)	Level of Service by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	v/c > 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

*For approaches and intersection-wide assessment, LOS is defined solely by control delay

Roundabouts share the same basic control delay formulation with two-way and all-way STOP-controlled intersections, adjusting for the effect of YIELD control. However, at the time of publication of 2010 edition of the Highway Capacity Manual (HCM), no research was available on traveler perception of quality of service at roundabouts. In the absence of such research, the service measure and thresholds have been made consistent with those for other unsignalized intersections, primarily on the basis of this similar control delay formulation.