ADDENDUM
Tribal Environmental Evaluation
Jamul Indian Village
Gaming Development Project

February 2014

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1.0 SUMMARY

The Jamul Indian Village (hereafter, "Tribe") has prepared this Addendum to their Final Tribal Environmental Evaluation (January 2013) (hereafter, "Final Tribal EE") to address modifications made to their previously approved Jamul Gaming Facility, located in unincorporated San Diego County (**Figure 1**). The modifications are intended to provide a more efficient layout from both construction and operational standpoints. No increase in operational use would result from the changes proposed. The square footages, building heights and design features, previously analyzed in the Final Tribal EE would not be modified by these proposed changes. No increased operational traffic would result, nor would the proposed modification affect the current access and intersection improvements currently being considered by Caltrans under a separate process.

The attached Environmental Checklist concludes that no new significant environmental impacts would result from the proposed modifications.

Temporary construction-related modifications include:

1. Extension of the temporary construction haul route from the Reservation onto the adjacent 4-acre parcel,
2. Temporary staging of construction activities on the 4-acre parcel, and
3. Revised quantity and schedule of excavated material.

Permanent operational modifications include:

1. Relocation of the fire station from the Reservation to the adjacent 4-acre parcel,
2. Relocation of the Wastewater Treatment Plant from the west side to the east side of the Reservation,
3. Modification of surface parking on the west side of the Reservation,
4. Construction of bridge pilings within the 100-year floodplain, and
5. Construction of a second Willow Creek crossing on the south side of the Reservation.

All of the proposed modifications are directed at site related efficiencies during construction/operation of the Jamul Gaming Facility. None of the changes proposed would increase the square footage, height or massing of the Jamul Gaming Facility. As stated above, no increases to off-site operational traffic would result from these changes. On-site circulation patterns would be modified; however, footprints of the proposed modifications have previously been evaluated for impacts in the Final Tribal EE. As described in detail below, the on-site haul route would be extended from the Reservation to the 4-acre parcel. The

4-acre parcel was identified as being within the development footprint for the proposed access road, so this site had previously been evaluated for development related impacts.

2.0 ADDENDUM PROJECT DESCRIPTION

Features of the Addendum include the construction of temporary and permanent features on certain areas of the Reservation and adjacent 4-acre parcel (**Figure 2**). The changes proposed are broken down below based on location of activity:

Activities on the Reservation include:

1. Relocation of the Wastewater Treatment Plant from the east to west side,
2. Reconfiguration of surface parking spaces on the west surface lot,
3. Construction of a new Willow Creek crossing on the south side,
4. Relocation of bridge pilings within the 100-year floodplain, and
5. Revised quantity and schedule of excavated material.

Activity on the adjacent 4-acre parcel includes:

1. Temporary construction staging,
2. Construction of a fire station, and
3. Construction of a temporary haul route.

The certification of the Final Tribal EE and approval of the Jamul Gaming Facility project in January, 2013 resulted in the adoption of various mitigation measures designed to mitigate construction and operational impacts. The adopted mitigation measures for the gaming project are hereby incorporated into this Addendum by reference and made part of this Addendum Project Description (**Attachment 1**). Additionally, applicable development standards identified in Section 3.2A.9 *The Gaming Complex Development and Operation Standards* of the Final EE apply to these revised features. These applicable standards include:

- Development would comply with the Federal Americans with Disabilities Act, P.L. 101-336, as amended, 42 U.S.C. Section 12101 *et seq*.

- Consistent with the Tribal-State Compact, the proposed development would also comply with the following provisions:

  - Development would be issued a certificate of occupancy by the Tribal Gaming Agency prior to occupancy;

  - Tribal Government would adopt and comply with standards no less stringent than the State of California public health standards for food and beverage handling;

- Tribal Government would adopt and comply with standards no less stringent than federal air quality, water quality, and safe drinking water standards applicable in the surrounding area;

- Tribal Government would adopt and comply with standards no less stringent than federal workplace and occupational health and safety standards;

- The 2013 Editions of the California Building Code; 2012 International Building Code; 2013 California Fire Code; 2011 County of San Diego Consolidated Fire Code; 2013 California Plumbing Code; 2012 Uniform Plumbing Code; 2013 California Mechanical Code; 2012 Uniform Mechanical Code; 2013 California Electrical Code; 2011 National Electrical Code; 2010 California Building Energy Efficiency Standards; 2013 California Green Building Standards Code; 2010 ADA Standards for Accessible Design;

- Tribal Government would adopt and comply with standards no less stringent than State Standards for tertiary treated effluent from onsite wastewater treatment facilities;

- Tribal Government would comply with Tribal codes and other applicable federal law regarding public health and safety; and,

- Tribal Government would make reasonable provisions for adequate emergency, fire, medical, and related relief and disaster services for patrons and employees of the Jamul Gaming Facility.

The Tribal Government would also meet standards identical to those established by the following State and County Codes/Ordinances when constructing and operating the proposed facility:

- Sections 67.801 through 67.811 of San Diego County Code of Regulatory Ordinances (Storm Water Ordinance);

- Sections 87.101 through 87.717 of San Diego County Code of Regulatory Ordinances (Grading Ordinance);

- Caltrans Storm Water Quality Handbook; and,

- California Storm Water BMP Handbook of Construction.

The design and construction of the Jamul Gaming Facility would be consistent with the following project studies, which are hereby incorporated into this project description:

- Fire Protection Plan Report: Jamul Indian Village. National Code Consultants, Updated February 2014. (**Attachment 2**);
- Jamul Indian Village Subarea Master Plan for Potable Water Service[1]. Martin and Ziemniak, August, 2006 (Final Tribal EE, Appendix 5);
- Geotechnical Evaluation: Jamul Indian Village. Prepared by Construction Testing and Engineering, Inc. September 15, 2011, and subsequent addenda (Final Tribal EE, Appendix 6);
- Preliminary Detention and Stormwater Analysis. October 10, 2011 (Final Tribal EE, Appendix 7), and
- Jamul Gaming Facility Wastewater Treatment and Re-use Analysis (Final Tribal EE, Appendix 2).

In addition to the features stated above, the construction plan has been modified to increase site watering from two to three times per day. Additionally, the construction site will be posted with a 15 miles per hour maximum speed limit during construction activities. Both of these measures serve to reduce the amount of particulate matter coming off the project site during construction activities.

Lastly, select setting discussions (where noted in the attached checklist) are hereby incorporated by reference into this Addendum from the *Final Tribal Environmental Evaluation: Jamul Indian Village Gaming Development Project* (January 2013).

Detailed features of the Addendum are provided below:

2.1 TEMPORARY FEATURES– CONSTRUCTION RELATED

2.1.1 RESERVATION:

Revised Quantity and Schedule of Excavated Material

The Final Tribal EE assumed that up to 200,000 cubic yards of excavated material over a 9-month period would be transported from the Reservation to a disposal facility. When the Final Tribal EE was prepared, information regarding dirt import sites for grading was not known, so a worst case assumption was used that routed trucks to/from the north and west using SR-94. Restrictions on the hours trucks could haul material were prescribed to avoid peak travel times for the route and school start and end times. The Tribe has now identified a fully permitted site south of the Reservation that will be used for

[1] / The project has been reduced in size compared to the project description presented in Appendix 5; however, water design criteria and service facilities described would apply to the Jamul Gaming Facility.

disposal of excavated materials. Truck routing to/from this site will use SR 94 south of the Project, avoiding travel through Jamul or adjacent to the high school. Exported materials will use routes to the south of the Reservation. With this rerouting of the haul route, the restriction on the hours of hauling is no longer necessary. The Tribe has also revised the duration for export of materials from an estimated 9 month period to a 7-10[2] month period.

The original estimate of 200,000 cubic yards of exported material has been refined during the plan development process. The estimate now is for transport of approximately 250,000 cubic yards of material from the Reservation over the revised 7-10 month period. This modification increases the number of trucks per day from what the Final Tribal EE assumed (60) to a revised 144. This revision will increase the number of trucks per hour from what the Final Tribal EE assumed (7) to a revised 12-15.

2.1.2 4-ACRE PARCEL:

Staging

Staging will be located on the foundation of the former fire station at the northwest corner of the 4-acre parcel. The staging facilities will include office and storage trailers, which will be used to temporarily store construction materials, equipment, and to provide construction offices. Use of the 4-acre site for staging is identified as a secondary option to locating it on the western portion of the Reservation. The location of the 4-acre site is advantageous for several reasons including:

- the site contains an existing concrete foundation,
- it is a level site,
- it is removed from existing waterways,
- the site has low ecological value,
- access back and forth to the Reservation during construction would be via Daisy Drive with no need to use SR-94, and
- regional access to the staging site would be via SR-94/Daisy Drive.

The construction work force will start/finish their shifts and take breaks within the staging facilities. On-site meetings will be held at the staging offices. Other activities within the staging area would include construction vehicle movements, as well as overnight storage of construction equipment. Deliveries to the site would occur during standard construction hours and access would occur via SR-94/Daisy Drive.

[2] / After discussions with the development team, it was determined that the nature of grading is highly variable. It was deemed reasonable, given site characteristics, that excavation could be completed in eight months using fifteen trucks per hour. Therefore, these numbers were used for purposes of the air quality analysis.

The perimeter of the site will be secured with a cyclone fence and 24-hour on-site security. General erosion control practices used will include (1) locating staging away from drainage courses and storm drain inlets/outlets, (2) using perimeter sediment barriers such as silt fences, fiber roles, straw bales, silt dikes, sand/gravel/biofilter bags, etc., and (3) using water or other soil stabilization measures to prevent excessive mobilization of material. All runoff from the staging will be directed through an onsite sediment basin prior to release to area drainage ways. Inspections will occur prior to and following each storm and at 24-hour intervals during extended storms. Built up materials adjacent to barriers will be removed to ensure integrity of the barriers.

Temporary Roads and Associated Facilities

Material excavated from the Reservation would be removed via a temporary haul road, which was originally planned to be located entirely within the limits of the existing Reservation. To facilitate a more efficient flow of traffic during construction, the Tribe proposes to extend the haul route from the Reservation onto the 4-acre parcel. Phase 1 begins excavation and export with the use of existing Daisy Drive to and from SR-94. As excavation and export proceeds, Tribal and construction truck access is separated and shifted over to the southwest side of the 4-acre parcel. As construction matures, a concrete truck route is established with concrete washouts in the area of existing Daisy Drive. A parking and lay down area will be established immediately east of the concrete truck route. This area will be used for construction parking and the lay down of construction material brought in via the concrete truck route. In all phases of construction, all traffic would enter/exit SR-94 via existing Daisy Drive. Following construction, the material would be replaced, compacted and the area revegetated as detailed in the 4-Acre Habitat Restoration Plan (**Attachment 3**).

2.2 PERMANENT FEATURES

2.2.1 RESERVATION:

Relocated Wastewater Treatment Plant

The membrane bioreactor (MBR) wastewater treatment plant and mechanical vapor compression (MVC) unit would be relocated from the parking structure to the east side of the Reservation (**Figure 3**). The location on the west side of the Reservation is within an area previously identified for surface parking. The surface parking lot has been redesigned to accommodate the relocated MBR facility. The MBR facility would be designed to operate as previously identified in the Final Tribal EE, which satisfies U.S. Environmental Protection Agency standards. The sizing of the facility is as previously identified in the Final Tribal EE. No expansion of capacity is proposed.

Modified Surface Parking

The Final Tribal EE identified a 94-space employee parking lot to be located on the west side of the Reservation (**Figure 3**). However, the Jamul Gaming Facility site plan has been modified to accommodate relocation of the MBR wastewater facility to the west side of the Reservation. To accommodate this change, the surface parking plan has been revised to include a 53-space surface parking facility (reduced from the previously proposed 94-space facility) on the east side of the Reservation within the same disturbed area as previously identified.

Construction of Bridge Pillars

The Tribal EE had assumed that all bridge abutments/pilings would be constructed outside the 100-year floodplain for Willow Creek, which flows through the Reservation. The refinement of construction plans now show cast-in-drilled-hole (CIDH) pilings located within the 100-year floodplain. There will be two CIDH pilings within the 100-year floodplain for each creek crossing).

South Bridge

The original site plan for the Jamul Gaming Facility contained one bridge on the north side of the Reservation connecting the east and west sides of the Reservation without impacting Willow Creek. The original circulation plan confined entrance and exit of emergency/ service vehicles on the east side of the Reservation via the proposed crossing on the north side of the Reservation. A more efficient circulation system has since been designed to allow emergency and wastewater vehicles to loop around to the west side of the Reservation using a proposed south crossing before exiting on the proposed north crossing. As was the case with the north crossing of Willow Creek, the proposed south crossing was designed to avoid federal and State designated waters, as well as Riparian habitat within Willow Creek. Both bridges are designed to ensure connectivity between land north and south of the Reservation for area wildlife.

2.2.2 4-ACRE PARCEL:

Fire Protection Facility: Option 2

The Final Tribal EE analyzed the construction/operation of a new fire station within the on-Reservation Jamul Gaming Facility. In addition to its site location, the Final Tribal EE includes a Fire Protection Plan that specified staffing and building specifications for fire safety. The Fire Protection Plan has been updated based on detailed design plans for the project site. Please see **Attachment 2** for the updated Fire Protection Plan.

Within this Addendum, the Tribe is including a second option (Option 2) for the location of the new fire station on the adjacent four-acre parcel to allow for greater on-Reservation site design flexibility. Options 1 and 2 would provide the Tribe with two fully-staffed/equipped, fire protection options for the Reservation and surrounding community.

The future fire station would occupy the location of the former fire station that was operated by the Rural Fire Protection District. Access to/from the SR-94 would be provided either by the existing driveway used for the previous station, or the new access road[3].

The updated Fire Protection Plan serves as the guiding document for staffing and building construction. Features of the updated Fire Protection Plan include the following:

- The Fire Command Center would be provided with equipment to conform to Section 911, 2013 edition, California Building Code, and Section 914, 2013 edition, California Fire Code.

- Staffing would consist of a Director of Public Safety, responsible for management of the Department and a minimum of two full time equivalent (FTE) Fire-Fighters/Emergency Response members per shift.

- At the discretion of the Fire Chief, separate company shifts (either three or four shifts) would be implemented throughout the life-cycles of the project during construction and after Occupancy Clearances, on a continuous full time basis.

- The Jamul Gaming Facility would necessitate a Ladder Truck (74'-105'), two engines, and a "Mini-Pumper" Fire Truck for incident responses in the parking garage. Staffing allocation would be 24-26 personnel.

- In order to participate in the Mutual Aid Program, the Jamul Fire Department will maintain one Fire Response unit with a Fire Fighter/Paramedic at all times. The Fire Department Personnel would be required to be trained on the following areas: inclusive of, under the Direction of the Tribal Fire Chief, will prepare a "Shelter-in-Place" Training Program to accommodate area residents whom may be displaced during natural or man-made disasters:

Although capable of meeting its own fire protection demands, the Jamul Fire Department intends to enter into a Mutual Aid Agreement with San Miguel Consolidated Fire Protection District, the US Fish and Wildlife Fire, area Tribal Fire Agencies, the U.S. Department of Forestry, Cal-Fire, and shared resources from the contracted Emergency Dispatch Center, or a contracted Regional Tribal Emergency Dispatch Center. The Jamul Tribe would contract directly with American Medical Services

[3] / It is not known at this time because Caltrans is currently considering access options for the gaming facility. There is a possibility that the new access road would be located at a site other than the 4-acre parcel.

(AMR) for Advanced Life Support (ALS) ambulance services. Subject to the Director of Public Safety review, the fire station facility would be staffed with an on-site paramedic and Emergency Medical Technician. Detailed fire protection and life safety features of the proposed on-site facilities are included in **Attachment 2**.

3.0 ENVIRONMENTAL CHECKLIST

I. Aesthetics

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a.) Have a substantial adverse effect on a scenic vista?		√	
b.) Substantially damage off-reservation scenic resources, including, but not limited to, tress, rock outcroppings, and historic buildings within a state scenic highway?		√	
c.) Substantially degrade the existing visual character or quality of the site and its surroundings?		√	
d.) Create a new source of substantial light or glare, which would adversely affect day or nighttime views of historic buildings or views in the area?		√	

Discussion:

The aesthetics setting for the project area is fully described in Section 4.3 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the project area view shed and regulatory setting. The aesthetics setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The new, visible feature addressed within this Addendum is the second Willow Creek crossing on the south side of the Reservation. Other visible permanent features; such as the relocated fire station (from the Reservation to the 4-acre parcel), relocated Wastewater Treatment Plant (from the parking facility on the east side of the Reservation to the parking facility on the west side of the Reservation), and the relocated bridge pillars are all facilities previously proposed that are being adjusted within the site plan. As previously stated in the Final Tribal EE (page 4.3-9), the facilities (relocated and new) would be visible to residents in a manner that is subordinate to the distant landscape and does not occlude the skyline. As such, the features of the Addendum are not expected to substantially degrade the existing visual character or quality of the site and its surroundings. Except for the relocated fire station, the extent of urbanization of the site would remain as previously analyzed. The fire station would be relocated to a site on the 4-acres that previously housed a fire station for years, so a similar built feature at this location would not be out of place. Additionally, the fire station would be subordinate to the distant landscape, would not occlude the skyline, and is not expected to substantially degrade the existing visual character or quality of the site and its surroundings. The features of the Addendum would not adversely affect a recognized scenic vista, nor would it damage recognized off-Reservation scenic resources, including trees, rock outcroppings, and historic buildings within a state scenic highway.

The exterior of the Wastewater Treatment Plant, fire station and new Willow Creek Crossing would all include downcast lighting to maintain consistency with the surrounding area. Providing lighting consistent with local County codes and ordinances would ensure that the features of the Addendum would not create a new source of substantial light or glare. Therefore, lighting associated with the features of the Addendum would not adversely affect day or nighttime views of listed historic buildings or recognized views in the area. Given the distance to the Palomar and Mount Laguna observatories and the commitment by the Tribe to use downcast lighting, the impact to the observatories from the features of the Addendum is considered less than significant. The Tribe’s restriction of outdoor light and glare via use of downcast lighting consistent with County regulations would also ensure that the impact to local

night skies would be less than significant.

II. Agriculture and Forest Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			√
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			√
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			√
d) Result in the loss of forest land or conversion of forest land to non-forest use?			√
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			√
Discussion:			
The features of the Addendum would not result in the conversion of off-Reservation lands from farmland to non-agricultural uses. The only non-Reservation lands affected by the proposed modifications include the 4-acre parcel. The 4-acre parcel is currently vacant and contains ruderal/grassland habitat. This parcel previously was used for the fire station operated by Rural Fire Protection District. No temporary or permanent impact to prime farmland, unique farmland, or farmland of statewide importance would occur from the features of the Addendum. The features of the Addendum would not result in the loss of forest land or convert forest land to non-forest use. The features of the Addendum would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). Lastly, the Addendum would not conflict with existing zoning for agricultural use or Williamson Act contract lands.			

III. Air Quality

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

Discussion:

The air quality setting for the project area is fully described in Section 4.11 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the existing air quality setting, air pollutants and regulatory setting. The air quality setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The features of the Addendum would not substantially increase construction/operational mobile source emissions beyond those considered in the Final Tribal EE. Within the Final Tribal EE, mass grading and site grading estimates were made based on general assumptions about construction activities on the project site. As such, construction related emissions associated with the south bridge (which is a project feature not previously proposed) capture construction related emissions of this additional feature. Construction related emissions were addressed in Impact 4.11(1-3) of the Final Tribal EE. Any minor temporary PM_{10} emissions resulting from placement of the proposed features (e.g., Willow Creek crossing, construction of fire station, etc.) would have also been accounted for in those calculations, which were found to be less than significant (including ozone precursors). Operational related emissions were addressed in Impact 4.11(4-8) of the Final Tribal EE.

The Wastewater Treatment Plant would be relocated to the west side of the Reservation rather than be located within the underground parking structure. Compliance with EPA standards, which is required, results in an “odor free” operation of the facility; therefore, this modified feature of the project would not result in an odor impact.

The following analysis addresses the changes proposed for export hauling (**Attachment 4**):

The change in grading schedules and quantities would not affect the analysis of consistency with the regional plan included in the Final Tribal EE Air Quality Report (Appendix 11).

Construction activities for the project would generate minor pollutant emissions. Air quality emissions were calculated using the URBEMIS2007 Version 9.2.4 computer model (URBEMIS 2007), and data from the URBEMIS2007 Version 9.2.4 Users Guide (SCAQMD 2007).

CONSTRUCTION EMISSIONS

Scenario	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Originally Jamul Gaming Facility						
1st Year Maximum Daily Emissions	6.4	60.1	31.1	0.0	77.411	18.181
2nd Year Maximum Daily Emissions	13.2	112.0	31.1	0.0	94.21	23.61
3rd Year Maximum Daily Emissions	37.9	41.18	64.3	0.0	3.1	2.8
Jamul Gaming Facility - Revised Grading						
1st Year Maximum Daily Emissions	8.0	94.3	39.9	0.1	79.4	19.4
2nd Year Maximum Daily Emissions	27.3	119.6	82.1	0.1	94.8	23.5
3rd Year Maximum Daily Emissions	49.7	36.6	77.4	0.1	2.9	2.5
Thresholds	75	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = oxides of sulfur; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter
Refer to Appendix for detailed assumptions and modeling output files.
Modeling includes watering site 3 times per day and reduced speeds on unpaved roads.

The increased grading quantities would result in increased emissions of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ above those assessed for the Jamul Gaming Facility in the Final Tribal EE. However, the increased emissions of VOC, NO_X, CO, SO_X, PM_{10} and $PM_{2.5}$ would not exceed the thresholds and not result in any new or substantially more severe air quality impacts.

The change in grading schedules and quantities would not change the findings in analysis of operational emissions included in the JIV Air Quality Report.

Sensitive populations (i.e., children, senior citizens and acutely or chronically ill people) are more susceptible to the effects of air pollution than are the general population. Land uses typically associated with sensitive receptors include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. Land uses associated with sensitive receptors in proximity (<0.25 mile) to the project site include the residential uses along SR-94 and Melody Road. As previously discussed, the construction emissions would not exceed the adopted thresholds and thus would not result in substantial local concentrations of criteria air pollutants. Operational emissions would not change from that analyzed in the Final Tribal EE.

The revised construction schedule and grading quantities would result in a slight increase in short-term diesel exhaust emissions from onsite heavy-duty equipment from what was assessed in the Final Tribal EE. The revised schedule would shorten the duration diesel PM from construction would be generated. As the dose to which the receptors are exposed is the primary factor used to determine health risk, which is a function of the concentration of a substance or substances in the environment and the duration of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, as the duration of proposed

construction activities is being shortened, the exposure would be less than the total exposure period assessed in the Final Tribal EE as well as the minimum period recommended for health risk calculation. Therefore, diesel PM generated by project construction is not expected to create conditions where the probability is greater than one in one million of contracting cancer at any sensitive receptor or to generate ground-level concentrations of noncarcinogenic TACs that exceed applicable standards.

IV. Biological Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		√	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		√	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		√	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		√	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		√	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		√	
Discussion:			
The biological resources setting for the project area is fully described in Section 4.7 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the regional setting, vegetation communities and wildlife habitat types, protected water resources, special status species and regulatory setting. The biological resources setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. There are three sensitive habitats within the project site for the Addendum: (1) Riparian, (2) Coastal Sage Scrub, and (3) Southern Coast Live Oak Riparian			

habitat. General Riparian and Southern Coast Live Oak Riparian habitat occurs within the Willow Creek corridor, which extends in a band through the Reservation. Although the pillars of the bridge crossing have been moved into the 100-year flood plain, no significant impacts to Riparian habitat would occur. The bridges would be high enough to allow for continued growth of Riparian vegetation within the Willow Creek corridor.

As disclosed in the Final Tribal EE, numerous special-status species occur in the Jamul region. The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database does not report any special status species within the project site, and numerous surveys conducted have not detected any special-status species within the site affected by the features of the Addendum. A protocol survey in 2001 did detect coastal California gnatcather on the Rancho Jamul Ecological Reserve (RJER) south of the project site. Above ground temporary use of this area for purposes described in the Addendum would not result in take of the California gnatcatcher. To ensure that no special-status plant or animal species are impacted throughout the project site, pre-construction surveys for special-status species will be performed by a qualified biologist. A preconstruction survey for the Reservation and adjacent 4-acre parcel has resulted in no significant findings (**Attachment 5**). A net-benefit to special status species would occur because this Addendum proposes a Habitat Restoration Plan for the 4-acre parcel **(Attachment 3)**. Impacts to special-status species would be less than significant.

The project site was formally assessed for wetlands and other jurisdictional water resources during a comprehensive delineation in 2007 and 2011, which was verified by USACE. Work related to the features of the Addendum on the Reservation and 4-acre parcel would not result in an impact to federal or state waters. Additionally, no impacts to wetlands would occur.

Within the vicinity of the project site, several wildlife corridors exist: the Willow Creek riparian corridor; the Jamul Creek riparian corridor; and the CDFW preserve areas (RJER and Hollenbeck Canyon Wildlife Area). No fishery resources exist in the project site because all drainages flow only ephemerally or intermittently and spawning substrate are absent. The bridge structure over Willow Creek with relocated abutments would result in a feature that is high enough to allow the continued passage of wildlife from north to south along the Willow Creek Corridor. The features of the Addendum would not significantly interfere with wildlife movement.

The 4-acre site is covered under the MSCP South County Subarea Plan, which protects natural habitats within the project site (annual grassland and coastal sage scrub). The Habitat Restoration Plan would ensure that ground disturbance, vegetation removal and other construction activities would not conflict with the natural community conservation goals of the South County Subarea Plan. This Habitat Restoration Plan would include aeration of the soil where compacted, and the planting/irrigation of native plants to re-establish habitats following construction activities. The fire station would be located on an existing disturbed site that was previously used as a fire station. With the implementation of these project features, conflicts with habitat conservation plans would be less than significant.

V. Cultural Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?		√	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		√	

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		√	
d) Disturb any human remains, including those interred outside of formal cemeteries?		√	

Discussion:

The cultural resources setting for the project area is fully described in Section 4.8 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of cultural history, cultural/paleontological resources and regulatory framework. The cultural/paleontological setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

No built resources have been recorded within the project area and no cultural resources were identified within the Reservation during the pedestrian surveys in 2010 and 2011. Six archaeological sites (CA-SDI-7683, CA-SDI-7684, CA-SDI-7685, CA-SDI-7686, CA-SDI-7687, and CA-SDI -7688) previously recorded within the Reservation are not considered eligible for National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) inclusion and have no potential to be impacted by the project since each has been disturbed, removed or destroyed by natural or human agencies during the three decades since initial recordation in 1979. On the 4-acre parcel, a series of 17 shovel test pits and one 1x1 meter test unit were placed within a 91x61 meter area. The testing revealed a light, subsurface lithic deposit. Based on the lack of integrity, the subsurface testing, and the narrow range of artifacts recovered from the site, CA-SDI-14954 was recommended as being ineligible for NHRP listing. The project description for this Addendum includes implementation of all Final Tribal EE Mitigation Measures (**Attachment 1**), which includes a worker education course, construction monitoring by a qualified archaeologist, procedures to be followed in case of discovery of artifacts, etc. Given the site on the 4-acre parcel is considered ineligible for NRHP listing and that all cultural resource mitigation measures from the Final EE would apply to this Addendum, the features of the Addendum identified for the 4-acre parcel would not result in impacts to buried cultural or paleontological resources. A less than significant impact would occur.

VI. Geology and Soils

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Expose off-reservation people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:			
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.		√	
ii) Strong seismic ground shaking?		√	
iii) Seismic-related ground failure, including liquefaction?		√	
iv) Landslides?		√	
b) Result in substantial soil erosion or the loss of topsoil?		√	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide,		√	

lateral spreading, subsidence, liquefaction or collapse?			
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		√	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?		√	

Discussion:

The geology and soils setting for the project area is fully described in Section 4.4 of the Final Tribal EE (January 2013). The setting description in the Final Tribal EE includes a discussion of regional and local geologic setting, topography and soils, mineral resources, fault rupture and earthquake hazards, and regulatory setting. The geology and soils setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The incorporation of appropriate seismic design and construction measures, as well as the adherence to the 2013 California Building Code (CBC), ensures that risks to the health or safety of workers or members of the public would be less than significant. Use of these standards would ensure that seismic hazard risks are less than significant. Given that the site is underlain by solid bedrock, liquefaction is not an issue for the project site.

The affected project area does not contain any rare, high quality, or scientifically significant geologic or topographic resources, and does not encompass any areas designated as National Natural Landmarks. The features of the Addendum would not adversely affect any known or recorded mineral resources. Construction of these features would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. Because there are no known or mapped mineral resources within the project area, development and use of the land would not be affected by such resources. Thus, implementation of the features of the Addendum would have no significant adverse effect upon mineral resources.

While cut slopes from the temporary haul route would be noticeable during construction, this cut would be filled and compacted to original grade once construction is complete. Very minor earthwork would be needed for the temporary staging on the 4-acre parcel as the staging compound would be located on the existing paved foundation of the prior fire station. These lands would be restored to existing conditions with implementation of the Habitat Restoration Plan. Construction of the fire station would include minor grading needed to remove the old fire station foundation and install a new one. Grading needed for the relocated Wastewater Treatment Plant and modified surface parking is conducted in an area previously assumed to be graded within the Final Tribal EE. Impacts to topographical features of the project site are considered minimal and would not be significantly impacted under the Addendum.

Under Clean Water Act Section 402, any construction project that disturbs at least one acre of land requires enrollment in the construction general permitting program under the National Pollutant Discharge Elimination System (NPDES). For construction on Indian reservations and federal lands, the landowner and contractor must enroll for coverage under USEPA's General Storm Water Discharge Permit for Construction Activities (NPDES No. CAR10000IF). For construction on non-federal lands in California, the landowner and contractor must enroll for coverage under the State Water Resources Control Board's General Storm Water Discharge Permit for Construction Activities (Order No. 2009-0009, NPDES No. CAS000002) prior to the initiation of construction. Coverage under either permit requires creation and implementation of an effective storm water pollution prevention plan, erosion control plan, hazardous materials management and spill response plan, and construction best management practices, all of which are designed to minimize or eliminate erosion issues and eliminate sediment discharges. With proper implementation, these plans reduce or eliminate the potential for accidental release of sediment and other pollutants during construction, as well as reduce the potential for erosion. The erosion control plan would be prepared before construction commences, and would identify the location of erosion control features necessary to protect and filter stormwater runoff. Features used during construction may include but are not limited to silt fences, fiber rolls, and gravel bag check dams. The location of permanent erosion control features such as drop inlet sediment traps, vegetated drainage swales, and energy dissipaters would also be identified. Furthermore, the project's grading plan would meet or exceed standards established by Sections 87.101 through 87.717 of San Diego County Code of Regulatory Ordinances (Grading, Clearing, and Watercourses Ordinance), which requires effective erosion control and compensatory mitigation for natural habitat loss, if applicable. As a result, erosion impacts would be less than significant.

The construction of the temporary haul route would not result in an increase of blasting beyond that assumed in the Final EE because the haul route would be relocated from an on-Reservation location, which off-sets the amount of blasting needed. The relocation of the haul route under this Addendum would not place blasting in close proximity to sensitive receptors. Therefore, implementation of the changed features analyzed under the Addendum would not result in a significant impact.

VII. Greenhouse Gas Emissions

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

Discussion:

The greenhouse gas emissions setting for the project area is described in Section 4.11 of the Final Tribal EE (January 2013). The greenhouse gas setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. The only new permanent facility constructed under this Addendum is the second crossing of Willow Creek on the south side of the Reservation. All other features are either temporary or relocated facilities. None of the features of the Addendum would increase operational emissions beyond those already evaluated in the Final Tribal EE. No additional GHG impacts beyond those evaluated in the Final Tribal EE would be generated by the features of the Addendum. A less than significant GHG impact would occur.

The analysis below addresses the proposed changes associated with export hauling:

<u>Construction Related GHG Emissions</u>

Construction-related emissions are based on the previous assumptions and include GHG sources such as construction equipment, material delivery trucks, and construction worker vehicles. Estimated GHG emissions are presented in the table below. As shown, total construction-related GHG emissions would be 2,748.3metric tons of carbon dioxide equivalent (MT CO_2e). Given the fact that the total emissions will ultimately contribute to the 2020 cumulative emission levels, it is acceptable to average the total construction emissions over a 30 year period (SCAQMD 2008). The annual and total level of GHG emissions expected to occur from construction of the Jamul Gaming Facility is well below the level recommended by CEQ for further analysis.

CONSTRUCTION GHG EMISSIONS SUMMARY
(CO2 EMISSIONS METRIC TONS)

SOURCE	JAMUL GAMING FACILITY	JAMUL GAMING FACILITY – REVISED GRADING
1st Year GHG Emissions	387.3	797.1
2nd GHG Daily Emissions	859.4	1,357.7
3rd GHG Daily Emissions	603.1	593.6
Total	1,849.8	2,748.3
Yearly Average (2020)	61.7	91.6

As stated in the project description, the project would not alter the Jamul Gaming Facility assessed in the Final Tribal EE. Therefore, the emissions reported in that analysis are summarized in the table below for use in determining the overall GHG emissions associated with the project.

GHG EMISSIONS SUMMARY
(CO2 EMISSIONS METRIC TONS)

SOURCE	ORIGINALLY JAMUL GAMING FACILITY	JAMUL GAMING FACILITY – REVISED GRADING
Transportation	8,509.30	8,509.30
Natural Gas	954	954
Electricity	1,019.0	1,019.0
Water Usage	53	53
Wastewater Treatment	118.1	118.1
Solid Waste	68.8	68.8
Construction	61.7	91.6
Total	10,784	10,806

Total operational GHG emissions resulting from the Jamul Gaming Facility would be approximately 10,806 MT CO_2e per year. To reduce GHG emissions the project includes several mitigation measures.

Reduction Strategies

Combining all regulatory measures identified in the JIV Air Quality Report, such as Pavley, Low Carbon Fuel Standards, utility reduction goals required by the State and recycling requirements under AB 341 along with design features and the following previously identified mitigation measures, would be expected to reduce GHGs, from the Business as Usual levels, and represents the project's effort to meet it fair share of the goals under AB 32.

- The project is installing green roof technologies and will capture treated water for use in the landscaped areas and on the roof.
- The project will provide solar panels on the roof, where possible, in areas not being utilized for the green roof technologies.
- The project will provide shuttle and bus services to and from the project to reduce vehicle trips and miles traveled.
- The project will flare off and burn CH_4 produced at the Wastewater Treatment Plant to reduce CH_4 emissions up to 95%.
- The project will utilize low flow water devices High Efficiency Toilets (HET) and with specifications meeting or exceeding standards set forth by the EPA
- The project will install low energy lighting and appliances to increase building efficiency and reduce power consumption.
- The project will promote employee and patron ridesharing to help reduce vehicle trips traveled.
- The project will install dedicated parking stalls and charging stations for electric vehicles.

The project may also incorporate other emission reduction strategies that are available at the time the facilities are being built that may also achieve additional reductions in greenhouse gases.

The change in grading schedules and quantities would not affect the analysis of consistency with the GHG reduction plans or alter the findings discussed in the Final Tribal EE.

VIII. Hazards and Hazardous Materials

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		√	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		√	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			√
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			√
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			√
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			√

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			√
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			√

Discussion:

The hazards and hazardous materials setting for the project area are fully described in Section 4.6 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of current conditions and land use, previous environmental assessments, environmental database queries, site reconnaissance and regulatory setting. The hazardous and hazardous materials setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The issue of accidental release of hazardous materials during construction was addressed within Impact 4.6(1) of the Final Tribal EE. As stated in that discussion, various petroleum products and hazardous materials would be stored and used in the project area; however the NPDES requirements implemented by the project would reduce the potential impacts of accidental release of hazardous materials during construction to a less-than-significant level.

No evidence of buried storage tanks or soil or groundwater contamination or other recognized environmental conditions were found during environmental site assessments performed in the last decade. However, construction of certain features of the Addendum (e.g., haul route) would involve excavation, trenching and grading, and such earth-moving activities may uncover a previously unknown underground fuel storage tank, contaminated soil, or other hazardous material issue. This issue is considered less than significant with implementation of the Health and Safety Plan required in Mitigation 4.6(2) of the Final EE and incorporated into the project – including features of this Addendum.

Accidental release of hazardous materials during operation of the facilities (e.g., Fire Station) is less than significant because of existing regulatory and monitoring mechanisms in place as noted in the Final Tribal EE Impact 4.6(3) discussion. The same regulatory and monitoring mechanisms apply to the features of this Addendum. Therefore, potential hazards are less than significant.

Portions of the project area are covered in fuel-rich vegetation, such as grasses, leaf litter, resinous shrubs, and trees. The project area is located within an area of moderate to high fire hazard. However, potential impacts related to wildfires during project construction of the features of the Addendum are considered less than significant with implementation of Final Tribal EE Mitigation 4.6(4), which have been incorporated into the Addendum project description (**Attachment 1**).

IX. Hydrology and Water Quality

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a.) Violate any water quality standards or waste discharge requirements?			√

b.) Substantially deplete off-reservation groundwater supplies or interfere substantially with groundwater recharge such that there should 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 drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			√
c.) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation off-site?			√
d.) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?			√
e.) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run off-reservation			√
f) Otherwise substantially degrade water quality?			√
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			√
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			√
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			√
j) Inundation by seiche, tsunami, or mudflow?			√

Discussion:

The hydrology and water quality setting for the project area are fully described in Section 4.5 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of current conditions related to surface water, drainage and flooding, ground water, water quality and the regulatory setting related to these topics. The hydrology and water quality setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

Construction of the Addendum features would result in the disturbance of soils that could be subject to erosion and transported to area waterways. However, as noted in the Final Tribal EE, an erosion control plan would be created and implemented for the construction phase to address this issue. Clean Water Act Section 402 requirements would ensure a less than significant operational impact concerning petroleum hydrocarbons, heavy metals, and other pollutants generated by vehicles.

Design considerations from the County of San Diego Standard Urban Stormwater Mitigation Plan for storm water treatment and Low Impact Development will control storm water pollution and protect water quality. The Jamul Gaming Facility would utilize a combination of site planning, structural treatment devices, and best management practices.

Runoff from impervious areas of project components analyzed in this Addendum would be conveyed through a series of gutters, drop inlets, and subterranean storm drain system, into a gravel detention facility identified for the gaming facility.

In addition to the structural controls designed into the project, reduction of stormwater pollutant levels would be ensured through the use of source controls described in the San Diego County Stormwater Standards Manual. The Standards Manual requires commercial facilities to implement best management practices in the following areas: employee training; stormwater pollution prevention plans; storm drain tileage and signing; annual review of facilities and activities; pollution prevention; materials and waste management; vehicles and equipment; and outdoor areas.

The combination of structural devices and best management practices would reduce pollutants in stormwater to the maximum extent practicable. The residual pollutant concentration of the stormwater runoff would not significantly affect water quality downstream. To verify control and appropriate reduction of contaminants in surface runoff, the Tribe would implement a water quality monitoring program that would include testing for contaminants of concern. The combination of structural devices, best management practices, and monitoring would ensure that water quality is not degraded by project implementation. Therefore, a less than significant impact would result from implementation of the features analyzed in the Addendum.

As described in the Final Tribal EE, the project has engineered a stormwater detention facility to detain stormwater collected from the impervious surfaces and discharge it at a rate that matches pre-project flow conditions. The permanent features of the Addendum are not expected to significantly increase impervious surfaces given that they are being developed within areas currently assumed to contain impervious surfaces. The fire station would be constructed on a site that is currently paved; therefore, increased flows post project from this site is expected to be minimal. The additional Willow Creek crossing would generate marginal increases in runoff and the on-site detention facilities are size to accommodate these additional flows. Therefore, no significant flooding impacts would result from the features of the Addendum.

As noted in the Final Tribal EE, the channel cross-sections for this floodplain varies in width from 26 to 68 feet within, or immediately adjacent to, the project area. The modified crossing of Willow Creek includes placement of bridge pillars within the 100-year floodplain. A Preliminary Hydraulic Analysis (**Attachment 6**) concluded that upstream effects from the bridge abutment would be minimal. Additionally, the placement of bridge pillars within the 100-year floodplain would not result in downstream impacts within the RJER.

X. Land Use and Planning

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Physically divide an established community?		√	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan,		√	

specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?		√	

Discussion:

The land use and planning setting for the project area are fully described in Section 4.2 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of the regional setting, Jamul/Dulzura Subregion setting, project area setting, project site setting and a discussion of the land use guidance documents applicable to the site. The land use setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The temporary and permanent features of the Addendum are focused on the Reservation and 4-acre parcel. The features are designed to create efficiencies during construction and operation of the approved Jamul Gaming Facility. None of the proposed features would physically divide an established community.

Locating the fire station on the 4-acre parcel rather than the Reservation, would be allowed by right by the County and is considered an Essential Service under County Zoning for the Agricultural (A72) zone. Section 6905 of the County Zoning Ordinance does require staff level site plan review of a fire station located in the A72 zone. County site plan review conditions would be fully implemented by the Tribe as part of the County approval process.

. Assuming compliance with County land use requirements for the fire station, the proposed uses for the 4-acre parcel would be considered consistent with the County General Plan and Zoning Ordinance.

The entire 4-acre parcel is located within the County's Multiple Species Conservation Program (MSCP), County Subarea Plan, South County Segment, and is designated as a Pre-Approved Mitigation Area (PAMA). The County defines this as, "*A PAMA is an area identified with high biological value in which conservation will be encouraged. This will be done by providing mitigation ratios that favor developing outside of the PAMA and mitigating inside the PAMA*." Development of the 4-acre parcel would be focused on the ruderal/developed portion of the site where the prior fire facility was located and on which concrete pads now stand. Through the discretionary site plan review process for the fire station, the MSCP Subarea Plan will be followed and conditions implemented as dictated by the County.

XI. Mineral Resources

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

Discussion:
The California Geological Survey classifies land in western San Diego County according to the presence or absence of construction aggregate resources. However, the project area itself does not offer a suitable combination of soils and minerals types to warrant extraction of aggregates. There are no known mapped mines within the area or visual evidence of any mining activity. The field survey did not indicate past or present mines or quarries. The proposed grading and landform alteration associated with the site would not adversely affect known or recorded mineral resources. Alteration in the land use will not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. Because there are no known or mapped mineral resources within the project area, development and use of the land will not be affected by such resources. There are no abandoned mines, shafts or tailings that would affect development. Therefore impacts associated with mineral resources would be less than significant.

XII. Noise

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		√	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		√	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		√	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		√	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			√
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			√

Discussion:
The noise setting for the project area is fully described in Section 4.10 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of sensitive noise receptors in the project area and existing noise levels. The noise setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. Construction associated with features of the Addendum would occur on the 4-acre parcel (fire station, haul route, and staging) and Reservation (relocated Wastewater Treatment Plant, reconfigured surface parking, and Willow Creek Crossing). All construction activities are located within the construction areas evaluated in the Final Tribal EE. No uniquely different construction activities associated with features of the Addendum would be employed. Additionally, features of the Addendum would not increase operational traffic to-and-from the project site. As such, the existing Final EE analysis with mitigation measures (which are incorporated into this Addendum) would result in less than significant noise impact.

The analysis presented below addresses proposed changes associated with export hauling (**Attachment 7)**:

Construction noise in the Final Tribal EE was estimated to be approximately 76 to 78 dBA L_{eq} at 50 feet from construction activities. With the exception of grading activity, construction activities would not change from those analyzed in the Final Tribal EE. The increased grading activity would not necessitate an increase in the number of pieces of heavy construction equipment. As with the original project, construction activities would be limited to daytime hours (7:00 am to 7:00 pm) for the duration of construction. Also, all vehicles and equipment will use available noise suppression devices and be equipped with mufflers during construction activities. Therefore, hourly equivalent noise levels from construction are not anticipated to increase over what was assessed in the Final Tribal EE and increased grading activities therefore would not result in additional noise impacts.

As no additional on-site equipment would be required, the vibrations associated with construction equipment would not increase beyond those assessed in the Final Tribal EE. As a result, vibration impacts associated with construction would be less than significant. The project does not include any groundborne vibration sources associated with operation. Therefore, impacts due to vibrations are less than significant.

The proposed changes would not affect long-term noise levels. Therefore, long-term, or permanent, noise impacts would be the same as assessed under the Final Tribal EE and no new impacts on long-term noise levels would occur.

Based on engineering estimates, the revised grading quantities and shorter schedule would require 144 round-trip truck-trips per day over an 8 month period. The Final Tribal EE assumed an average of 60 round-trip truck trips per day. The increase in traffic volumes and shift in vehicle classification, i.e. the increased ratio of heavy trucks relative to other vehicles, along this segment of SR-94 would result in short-term increased noise levels along SR-94 of approximately 1 dBA as can be seen in the table below. This would be the same increase as predicted along SR-94 from the JIV to Melody Road and a 1 dBA increase along SR-94 between Melody Road and Jamacha Road. This temporary condition would cease upon project construction completion and would not represent a substantial increase in temporary noise levels.

CONSTRUCTION TRAFFIC NOISE LEVELS (dBA Leq)

Existing	Jamul Gaming Facility	Revised Project	Proposed vs. Existing	Revised vs. Existing	Delta
70.3	70.9	71.6	0.6	1.3	0.7
70.3	70.9	71.6	0.6	1.3	0.7
71.8	72.2	72.8	0.4	1.0	0.6
73.8	74.1	74.5	0.3	0.6	0.3
73.3	73.6	74.0	0.3	0.7	0.4
73.7	74.0	74.3	0.3	0.7	0.4

Based on the results of the preceding assessment, the proposed changes in project construction traffic would result in an increase in noise along SR-94 between Melody Road and Jamacha Road slightly greater than predicted in the Final Tribal EE. However, the increases would not result in any new impacts or substantially more severe impacts. Therefore, the proposed revised grading plan would result in less than significant noise impacts.

XIII. Population and Housing

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			√
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			√
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			√
Discussion:			
The population and housing setting for the project area is fully described in Section 4.16 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of population and housing within San Diego County and Jamul. The population and housing setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. The temporary and permanent features of the Addendum would not result in new or substantially more severe population and/or housing impacts.			

XIV. Public Services

	Potentially Significant Impact	Less than Significant	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:			
Fire Protection?			√
Police Protection?			√
Schools?			√
Parks?			√
Other public facilities?			√
Discussion:			
The public services setting for the project area is fully described in Section 4.12 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of water supply, wastewater service, solid waste service, electricity, natural gas and telecommunications, law enforcement, and fire protection and emergency services. The setting description within the Final Tribal EE is hereby incorporated into this Addendum			

checklist by reference. The relocated fire station would be placed in a location that was previously used for a fire station by the Rural Fire Protection District until a new facility was constructed across the highway. The new facility would be staffed and equipped the same as the facility described in the Final Tribal EE, which was to be located on the Reservation. The relocation of the fire station to the 4-acre parcel would not result in any new or substantially more severe impacts related to fire protection services. The new Willow Creek crossing would be sized to allow for use by emergency vehicles. The features of the Addendum would result in a less than significant impact related to fire protection services. None of the features of the Addendum are expected to result in additional law enforcement issues beyond those identified in the Final Tribal EE. The majority of the features of the Addendum are either temporary or a relocation of previously evaluated project features. The only permanent feature not previously evaluated is the Willow Creek crossing on the south side of the Reservation. The crossing will be sized to ensure access by emergency vehicles. A less than significant impact related to police protection would result. No schools, parks, or other public facility impacts would result from the project features.

XV. Recreation

	Potentially Significant Impact	Less than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?		√	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		√	
Discussion:			
The project area is home to a unique mix of preserves and reserves, which afford limited recreational opportunities. The Hollenbeck Canyon Wildlife Area offers hiking opportunities and is located approximately 4 miles south of the Reservation. The area is also home to a number of reserves, preserves and reservoirs, which provide recreational opportunities to area residents and visitors - Rancho Jamul Ecological Reserve, Otay Mountain Ecological Reserve, Sycuan Peak Ecological Reserve, McGintry Mountain Ecological Reserve, Otay Reservoir, Sweetwater Reservoir, as well as others. Other recreational opportunities identified by the public include school fields and stables/equestrian training centers. The features analyzed in this Addendum would not result in any significant impacts related to recreational resources.			

XVI. Transportation and Traffic

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

Discussion:

The transportation/circulation setting for the project area is fully described in Section 4.9 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of the road network, roadway segments, existing conditions, near term conditions, and horizon year conditions. The transportation/circulation setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

Changes to duration of excavation and the amount of material exported will alter the number of trucks entering and leaving the Reservation each day as compared to the analysis presented in the Final Tribal EE. The route taken to and from the Reservation will also be modified. The Final Tribal EE assumed trucks would travel to and from the north through Jamul; however, the revised plan has trucks traveling south away from Jamul to a fully permitted disposal facility south of the Reservation. The trucks are anticipated to use SR-94 to access the Reservation and would not add any trips to the side streets within the area. The inbound trips will now travel northwest on SR-94 and make a left into the site while outbound trips will make a right turn onto SR-94 from the site.

The traffic analysis undertaken for these changed operations (**Attachment 8**), shows that the project entrance/SR-94 intersection is expected to operate at LOS B or better during all analyzed hours. The Otay Lakes Road/State Route 94 intersection would operate at LOS B or better with and without the addition of the proposed construction traffic. A SR-94 delay analysis was also undertaken for the proposed haul route changes. The analysis presented in

Attachment 8 show that the maximum anticipated delay between 7:00 am and 6:00 pm is equal to approximately 5 seconds, which is not significant for the corridor. A queuing analysis was also undertaken and shows that queues along SR-94 are not projected to affect operations at adjacent intersections since the closest intersection is approximately 1,200 feet away (Attachment 8). The supplemental traffic analysis concluded that the proposed haul route changes would not have significant traffic related impacts along SR-94.

The features of the Addendum would not increase operational traffic beyond that evaluated in the Final Tribal EE. Features capable of generating operational traffic such as the fire station and Wastewater Treatment Plant were assumed to be part of the approved gaming facility and were previously analyzed in the Final Tribal EE. This Addendum shifts the location of these facilities but does not affect the amount of traffic that would leave/arrive at the project site, or the point of departure/arrival. The construction related traffic analysis of the Final Tribal EE captured on-site construction features such as staging, extended haul route, etc. Basic construction assumptions used previously to factor construction related traffic would have captured items such as the use of a staging area, and haul routes – all basic construction related functions that would have been factored into the gross calculations. Construction related traffic for items such as construction of the second Willow Creek crossing would likewise be captured by the gross construction traffic calculations generated for the Final Tribal EE. The new crossing of Willow Creek was included to create a more efficient on-site circulation system, which includes emergency vehicle access. This addition creates no traffic related impacts on, or off-site. The relocated haul-route/staging creates on-site circulation efficiencies and would continue to use the legally available entry/departure point to/from SR-94 as allowed by Caltrans. The shift from being located entirely on-Reservation to on-Reservation/4-acre parcel would not result in off-site traffic impacts. No changes to construction or operational related traffic would result from the features of the Addendum.

XVII. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		√	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		√	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		√	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?		√	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			√
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?		√	

g) Comply with federal, state, and local statutes and regulations related to solid waste?		√	

Discussion:

The utilities and service system setting for the project area is fully described in Public Works Section 4.12 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of water supply, wastewater service, solid waste service, electricity, natural gas and telecommunications, law enforcement, and fire protection and emergency services. The Public Works setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The relocated Wastewater Treatment Plant would contain the same features as previously described in the Final Tribal EE; however, the facility would now be located within the parking facility on the west side of the Reservation rather than within the parking facility on the east side. Piping to the relocated facility would be secured to underside of the bridge to allow for transport from the gaming facility. The fire station is the only Addendum feature capable of generating additional wastewater; however, the capacity of the facility would not increase if relocated to the 4-acre site. Therefore, no additional wastewater generation would result from the features of the Addendum.

The fire station is the only feature that would result in an on-going potable water demand. The amount of water needed to maintain the temporary staging compound would be considered negligible. Water supply would be via the same Otay Water District connection as would be used for construction and operation of the Jamul Gaming Facility, which is consistent with the previous analysis. Locating the temporary and permanent facilities of the Addendum on the 4-acre parcel, rather than the Reservation as currently assumed, would not result in an increase of water supply effects beyond those described previously.

Solid waste generation assumed in the Final Tribal EE would not be significantly impacted by the features of the Addendum. Construction of the fire station on the previous fire station pad on the 4-acre parcel would necessitate removal and disposal of the existing concrete. This additional concrete disposal requirement is not considered a significant contribution to the waste stream. The other feature that could add a marginal amount of solid waste is the Willow Creek bridge. As stated in the Final EE, construction waste would be recycled to the fullest extent practicable by diverting green waste and recyclable building materials from the solid waste stream. Waste that cannot be recycled would be disposed of at the Otay Landfill, which accepts construction/demolition materials, and has sufficient excess capacity to handle this small, temporary, additional waste stream. Construction impacts upon solid waste service are less than significant. No increase in operational solid waste would result from the Addendum.

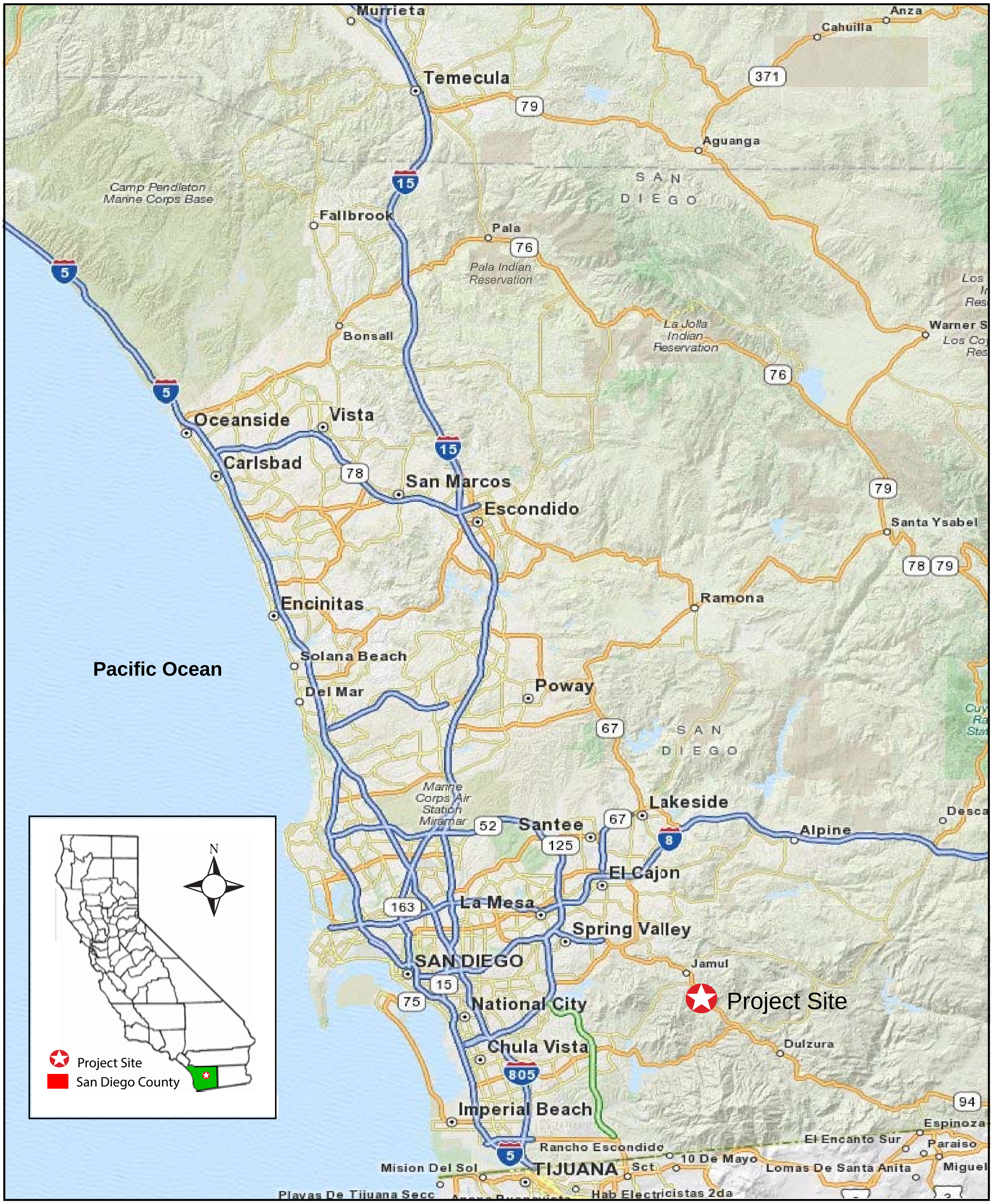
Locating temporary features on the 4-acre parcel such as haul route/staging is considered in the Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMP) will be implemented to ensure that such features result in no adverse impacts. All of the features associated with BMP would be removed once construction is complete. Runoff associated with the new on-Reservation bridge would be conveyed through a storm drainage system that ensures the runoff is transported to the gravel detention facility identified for the gaming facility. All of these features would be contained within the bridge structure. Likewise, runoff from the new fire station on the 4-acre parcel would be conveyed through a series of piping and sheet flow via inlets, spillways, back bone storm drain systems, and curbs and gutter into the project's underground Stormtech™ detention facility underneath the paved roads and cantilevered ramps to detain the increase in runoff. Treatment for runoff shall flow via curb and gutter inlets to a back bone storm drain line to another Stormtech™ detention facility prior to entering the bioretention facility adjacent to the creek. The bioretention facility is a planter area with 18 inches or more of engineered soil. Bioretention facilities work by percolating runoff through the soil which removes most pollutants before the runoff is allowed to seep into native soils below or a sub drain that carries treated runoff to a detention device or storm water conveyance system. The construction of these facilities to accommodate the new bridge and relocated fire station would not cause new significant impacts.

XVIII. Mandatory Findings of Significance

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

Discussion:

The Addendum Project Description includes features that ***would not have*** the potential to: (1) degrade the quality of the environment – all impacts evaluated are less than significant, (2) substantially reduce the habitat of a fish or wildlife species – no fisheries exist and wildlife corridors would be maintained, (3) cause a fish or wildlife population to drop below self-sustaining levels – see #2 above, (4) threaten to eliminate a plant or animal community – no threatened or endangered plant or animal community would be impacted by the features of the Addendum, (5) reduce the number or restrict the range of a rare or endangered plant or animal – see #4 above, or (6) eliminate important examples of the major periods of California history or prehistory – activity on the Reservation/4-acre parcel would not result in significant impacts to cultural/historical resources. Additionally, the Addendum features ***do not have impacts*** that are individually limited, but cumulatively considerable – the analysis concluded that there were no significant impacts associated with this project. The features of the Addendum would not result in the additional permanent loss of sensitive habitat/plants/animals and the air and noise emissions and traffic associated with features of the Addendum would not substantially exceed that previously evaluated in the Final Tribal EE. Lastly, the Addendum features ***would not*** cause a substantial adverse effect on human beings, either directly or indirectly. The Wastewater Treatment Plant would be constructed and operated to meet applicable standards, and other facilities such as the fire station and bridge would be constructed to meet applicable codes.



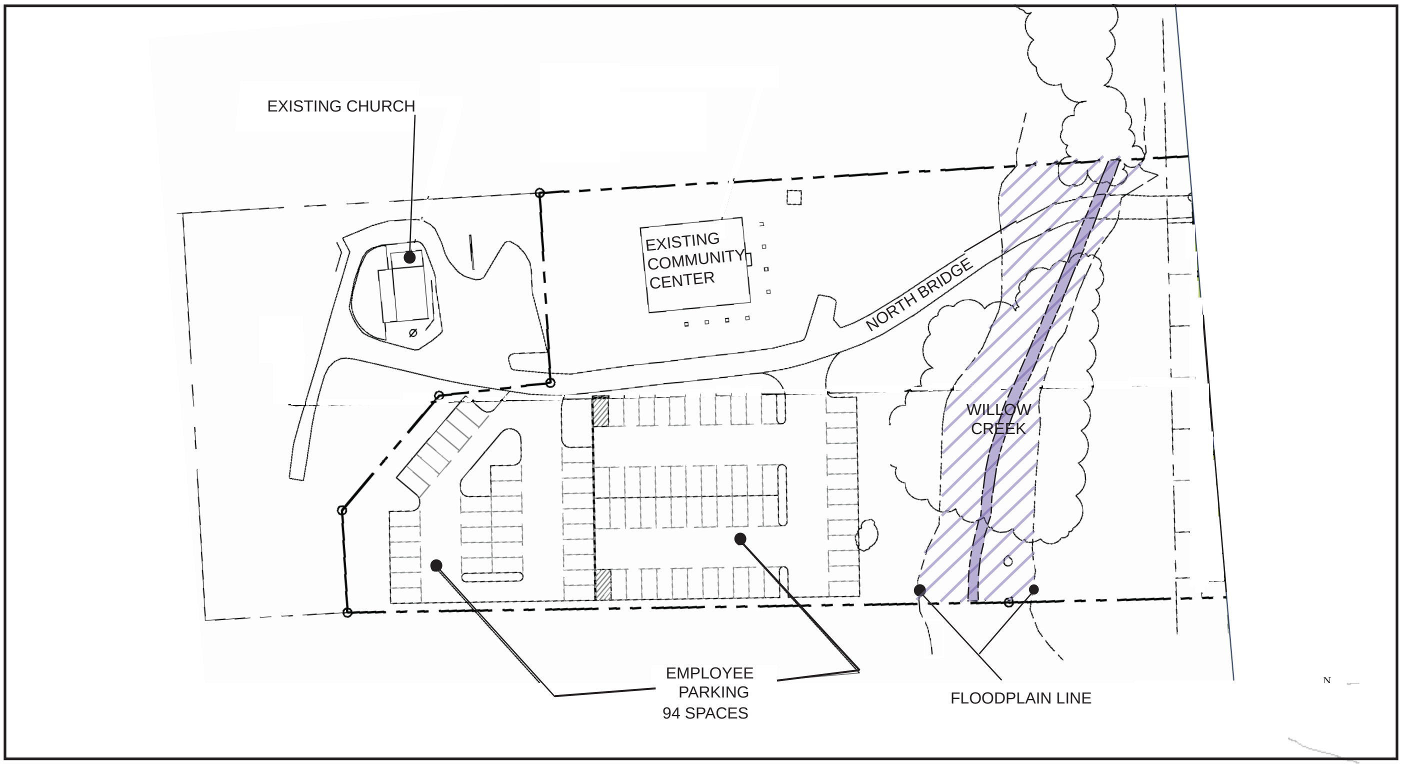
SOURCE: Microsoft Streets and Trips, 2014; EDS, 2014

Jamul Indian Village Tribal EE Addendum■

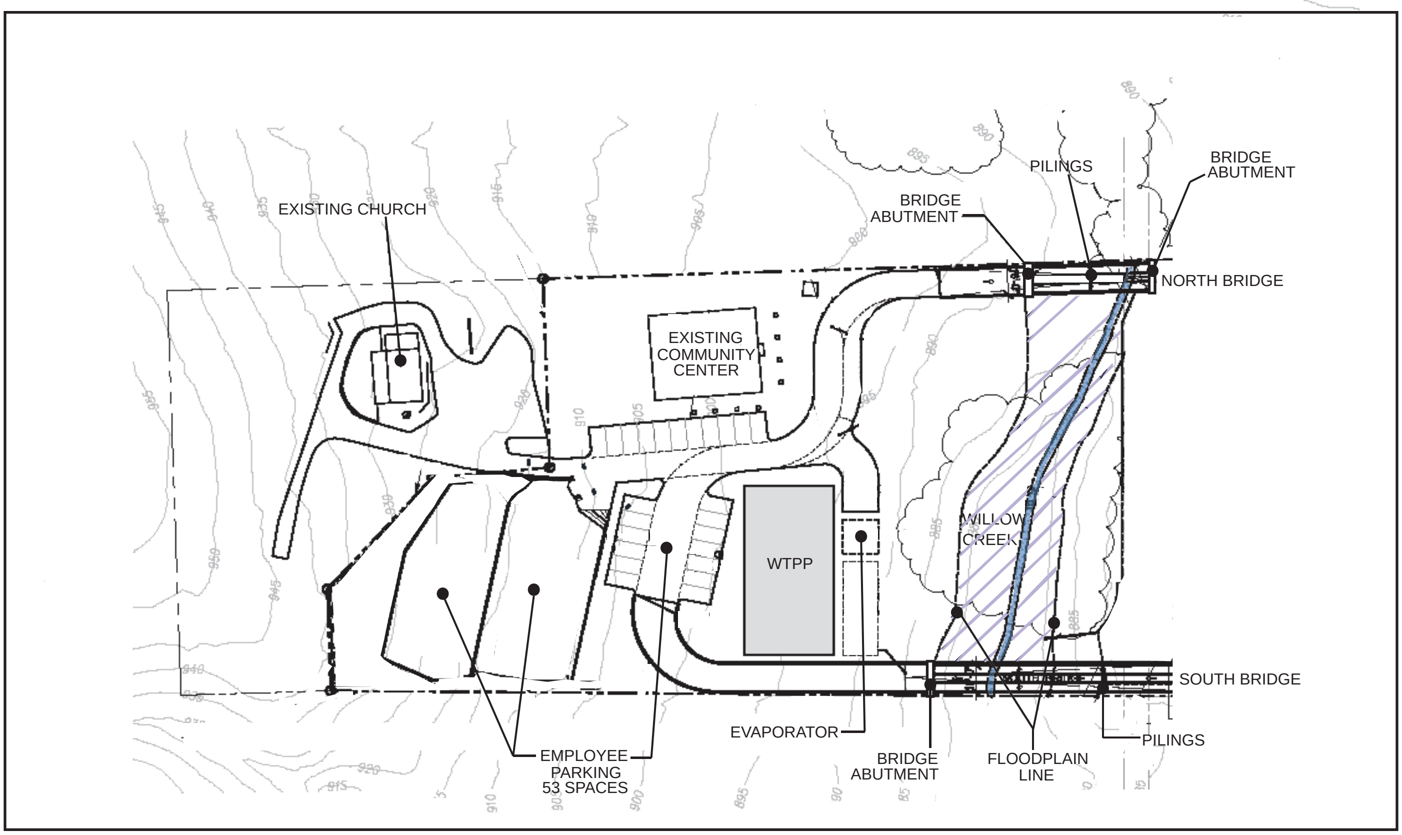
Figure 1
Regional Location Map

SOURCE: Digital Globe, 2014; EDS, 2014

Figure 2
Site Map



Original Site Plan



Revised Site Plan

SOURCE: Marnell Architecture, 2013; EDS, 2014

Figure 3
Revised On-Reservation Site Plan

ATTACHMENT 1

FINAL EE MITIGATION MEASURES

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

A. Hazardous Materials (4.6)

1. Buried Hazards or Hazardous Materials – Construction (4.6(2))

If contaminated soil or groundwater, or a buried hazardous material storage container, is encountered during project construction, work shall be halted in that area, and the type and extent of the contamination shall be identified and characterized by qualified professionals. A qualified professional, in consultation with regulatory agencies shall then develop an appropriate method to remediate the contamination. If necessary, a remediation plan shall be implemented in conjunction with continued project construction.

If any hazardous materials issues are encountered, a Health and Safety Plan (HASP) should also be implemented. A HASP prepared for the construction process, consistent with general industry standards and the Occupational Safety and Health Administration, could address any risks to construction personnel and public safety such that these health and safety risks could be mitigated to an acceptable level.

2. Risk of Causing Wildfire During Project Construction (4.6(4))

A. Use spark arresters on construction equipment,

B. Restrict vehicular parking to areas devoid of grasses or other fuels,

C. Designate safe areas for welding and metal cutting operations,

D. Prohibit smoking,

E. Properly store flammable or explosive materials, and

F. Keep construction areas wetted with water trucks and implement a fire safety/fire response plan.

B. Biological Resources (4.7)

1. Special Status Species/Protected Species (4.7(1))

A. Because special-status species or protected species that occur in the vicinity could migrate onto the Reservation between the time that the field surveys were completed and the start of construction, pre-construction surveys for special-status species and protected species should be performed by a qualified biologist to ensure that threatened or endangered species are not present. If any special-status species or protected species are detected, construction should be delayed, the appropriate wildlife agencies should be consulted (e.g. USFWS) and avoidance measures implemented. To comply with the federal laws protecting eagles and migratory birds, and to avoid any direct and indirect impacts to nesting birds (especially raptors and migratory species), pre-construction surveys for nesting birds will be performed. If active nesting is detected, the nesting area will be protected by creating a fenced buffer area that excludes construction activities until the young have fledged.

B. To comply with Fish and Game Code sections protecting nesting birds, and to avoid any direct and indirect impacts to nesting birds (especially raptors and migratory species), grubbing and clearing of vegetation on non-federal lands that may support active nests and construction activities adjacent to nesting habitat, should occur outside of the breeding season (February 15 to September 15; and as early as January 1 for raptors). If removal of habitat and/or construction activities on non-federal lands is necessary adjacent to nesting habitat during the breeding season, the applicant should retain a CDFW-approved biologist to conduct a pre-construction survey to determine the presence or absence of non-listed nesting migratory birds on or within 100 feet of the construction area, determine the presence or absence of ESA- or CESA-listed birds (e.g., coastal California gnatcatcher, least Bell's vireo) on or within 300 feet of the construction area, and determine the presence or absence of nesting raptors within 500 feet of the construction area. The pre-construction survey should be conducted within 10 calendar days prior to the start of construction on non-federal lands, the results of which should be submitted to CDFW for review and approval prior to initiating any construction activities. If nesting birds are detected by the biologist, the following buffers should be established:

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

(1) No work should occur within 100 feet of a non-listed nesting migratory bird nest,

(2) No work should occur within 300 feet of a listed bird nest, and

(3) No work should occur within 500 feet of a raptor nest.

There may be a reduction of buffer size depending on site-specific conditions (e.g., the width and type of screening vegetation between the nest and proposed activity) or the existing ambient level of activity (e.g., existing level of human activity within the buffer distance). If construction on non-federal lands must take place within the recommended buffer widths above, the project applicant should contact CDFW to determine the appropriate buffer.

2. Operational Effects from Noise or Lighting (4.7(5))

Glass used in the proposed gaming facility will contain less than 10% reflectivity.

C. Transportation (4.9)

1. Construction Traffic (4.9(1))

A. To lessen the concentration of construction traffic, the contractor shall implement a Construction Management Plan (CMP) for the project. This CMP shall be implemented as a project feature and shall include the following:

(1) Encourage construction workers to rideshare to the site,

(2) Staggering of work hours to avoid all workers arriving at the same time,

(3) Restrict alternative work hours to avoid the peak-hour commuter traffic along SR-94, and

(4) Schedule deliveries or equipment hauling to occur at off-peak times.

The above listed CMP strategies shall be documented in an appropriate format.

B. To reduce traffic safety impacts related to construction activities, the Tribe shall implement the following listed measures or other equally effective measures, including but not limited to, the use of California Highway Patrol Personnel:

(1) Speed reduction signs,

(2) Temporary flashing beacons, and

(3) Flagger managing the vehicular conflicts along SR-94 (Campo Road) and the construction entrance driveway. The flagger operations will force vehicles traveling along SR-94 (Campo Road) to reduce their speeds to a stop conditions to allow truck traffic to enter the SR-94 facility.

2. Existing Plus Project Conditions (4.9(2))

The Tribe shall finance and implement the recommended intersection improvements shown in Table 4.9-51 (see Attachment 1).

3. Near Term (2015) Plus Project Conditions (4.9(3))

A. The Tribe shall pay their fair share for the mitigation shown in Table 4.9-54 (see Attachment 2).

B. The Tribe shall pay into the County's Transportation Impact Fee for cumulatively considerable traffic impacts on County of San Diego facility (Jamacha and Sweetwater Springs Boulevard).

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

4. Horizon Year (2035) Plus Project Conditions (4.9(4))

To mitigate cumulatively considerable significant traffic related impacts at intersections and roadway segments within the Caltrans jurisdiction, the Tribe shall pay a fair-share contribution toward the construction of improvements identified in Table 4.9-57, as well as mitigation phasing displayed under Mitigation 4.9-2. To mitigate cumulatively considerable significant traffic related impacts at the intersections and roadway segments within the County of San Diego, pay toward the County's Transportation Impact Fee. The improvements shown are consistent with the County of San Diego's Mobility Element approved in 2011.

D. Noise (4.10)

1. Construction Noise and Vibration (4.10(1 and 2))

The following recommended noise abatement measures would reduce noise associated with project construction:

A. Contractors should schedule construction activities to avoid simultaneous use of several pieces of high noise level-emitting equipment, to the extent practicable,

B. Construction equipment shall be fitted with manufacturer's standard, or better, noise shielding and muffling devices to reduce noise levels to the maximum extent feasible, and

C. Equipment maintenance and staging areas shall be located as far away from local residences and hotel uses, as feasible.

D. Prepare and Implement a Blast Plan and Monitor and Record Each Blast Near Sensitive Receptors. To reduce impacts associated with air blast over-pressure generated by project-related construction activities, the project applicant(s) of all project phases shall conform to the following requirements,

(1) All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the County,

(2) Each blast shall be monitored and recorded with an air blast over-pressure monitor and ground borne vibration accelerometer approved by the Tribe that is located outside the closest residence to the blast, and

(3) A blasting plan, including estimates of the air blast over-pressure level and ground borne vibration at the residence closest to the blast, shall be submitted to the Tribe for review prior to the first blast. Blasting shall not commence until the Tribe has approved the blast plan.

2. On Site Mechanical Equipment (4.10(4))

Acoustical louvers capable of a 10 decibel reduction should be installed for all ventilation and when possible orientate the ventilation away from sensitive uses. Although not required to mitigate the impact, the Tribe will also consider the use of roof top parapet walls, screening barriers, and mechanical enclosures to ensure County Code requirements are met.

E. Air Quality (4.11)

1. Criteria Pollutants – Construction (4.11.3)

A. Minimize land disturbance,

B. Use watering trucks to minimize dust; watering should be sufficient to confine, dust plumes to the project work areas,

C. Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes,

D. Cover all trucks hauling dirt when traveling at speeds greater than 15 miles per hour.

E. Stabilize the surface of dirt piles if not removed within 2 days,

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

F. Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.

G. Minimize unnecessary vehicular and machinery activities,

H. Sweep paved streets at least once per day where there is evidence that dirt has been carried on to the roadway,

I. Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities, and

J. Remove unused material.

2. On Site Mechanical Equipment (4.11(4))

A. Install solar panels on the roof, where possible, in areas not being utilized for the green roof technologies,

B. Provide shuttle and bus services to and from the project to reduce vehicle trips and miles traveled,

C. Flare off and burned CH_4 produced at the wastewater treatment plant to reduce CH_4 emissions up to 95%,

D. Utilize low flow water devices High Efficiency Toilets (HET) and with specifications meeting or exceeding standards set forth by the EPA,

E. Install low energy utilities (i.e., lighting and appliances) to increase building efficiency and reduce power consumption,

F. Promote employee and patron ridesharing to help reduce vehicle trips traveled, and

G. Install dedicated parking stalls and charging stations for electric vehicles.

F. Public Services (4.12)

1. Law Enforcement (4.12(5))

A. Provide on-site security for gaming operations to reduce and prevent criminal and civil incidents.

B. All security guards would carry two-way radios so they are able to efficiently respond to back up and emergency related calls. This would aid in the prevention of criminal activity within gaming facilities.

C. Adopt a “Responsible Alcoholic Beverage Policy” which would include, but not be limited to, requiring patrons to prove their age and refusing service to those who have had too much to drink. This policy would be coordinated with the San Diego Sheriff's Office.

D. All parking areas would be well lit and monitored by parking staff and/or roving security guards at all times during operation. This would aid in the prevention of auto theft and other related criminal activity.

E. Areas surrounding the gaming facilities would have "No Loitering" signs in place, would be well lit and would be patrolled regularly by roving security guards. This would aid in the prevention of illegal loitering and all crimes that relate to, or require, loitering.

F. Provide traffic control with appropriate signage and the presence of peak-hour traffic control staff. This would aid in the prevention of off-site parking, which could create possible security issues.

G. The Tribe will make good faith efforts to enter into an agreement with the County regarding law enforcement services.

2. Fire Protection and Emergency Medical Services (4.12(6))

To reduce the risk of starting a wildfire during construction, the Tribe will make a good faith effort to implement the following best management practices during construction:

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

A. Use spark arresters on construction equipment,

B. Restrict vehicular parking to areas devoid of grasses or other fuels,

C. Designate safe areas for welding and metal cutting operations,

D. Prohibit smoking,

E. Properly store flammable or explosive materials, and

F. Keep construction areas wetted with water trucks and

G. Implement a fire safety/fire response plan.

G. Effects of Mitigation Measures (4.15)

1. Hydrology and Water Quality (4.15(2))

A. Implement temporary and permanent BMPs including:

(1) Temporary BMPs: fiber rolls, hydro-seeding, temporary drainage inlet protection, preserve existing vegetation, stabilized construction entrances, self-contained concrete washout area, and covered material delivery and storage areas, and

(2) Permanent BMPs: vegetate all disturbed slopes, implementing biostrips or bioswales, and detention basins. Theses BMPs would be used to prevent pollutants from entering the Waters of the United States.

B. The drainage crossing plans shall include a design that shows improvements to be located outside of the ordinary high water mark. If unable to design outside of high water make, the Tribe shall acquire a Clean Water Act Section 404 Permit from the USACOE prior to undertaking any grading activities and shall implement all permit requirements during construction and operation. Permit conditions may include the purchase of in-lieu credits at a mitigation bank, as well as the implementation of Best Management Practices during construction activities.

C. Employ plywood shoring (or a similar temporary construction barrier) and the following erosion and sediment control measures to ensure that sediment does not enter Willow Creek during construction of retaining walls.

(1) Existing vegetation will be preserved when feasible,

(2) Erosion in concentrated flow paths will be controlled by applying fiber rolls, erosion control / fiber blankets, silt fences, and plastic sheeting, and/or lining swales as required,

(3) Concentrated water flows shall be channeled away from disturbed soil areas and stockpiles. Concentrated water flows shall be conveyed in a non-eroding fashion, and

(4) Non-active areas, and all finished slopes, will be stabilized with effective soil cover (such as aggregate, paving, or vegetation) as soon as feasible after construction or disturbance is complete and no later than 14 days after construction or disturbance in that portion of the site has temporarily or permanently ceased.

D. Designate riparian areas with warning signs and fencing and avoid completely, where feasible.

2. Biological Resources (4.15(4))

A. Implement Mitigation Measure 4.7(1).

B. Implement Mitigation Measure 4.7(1)(B)

C. A monitoring biologist (approved by CDFW) shall be on site during initial clearing and grubbing of habitat on non-federal lands, and project construction within 300 feet of preserved habitat, to ensure compliance with all conservation measures. The biologist shall be knowledgeable of upland and wetland biology and ecology. The applicant shall submit the biologist's name, address, telephone

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

number, and work schedule on the Project to CDFW at least 30 days prior to initiating construction. The biologist shall perform the following duties:

(1) Oversee installation of and inspect temporary fencing and erosion control measures within or up-slope of all restoration and/or preservation areas a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control devices are repaired immediately,

(2) Monitor the work area weekly to ensure that work activities do not generate excessive amounts of dust,

(3) Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training shall include:

- The purpose for resource protection.
- The conservation measures that shall be implemented during project construction, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing).
- Environmentally responsible construction practices.
- The protocol to resolve conflicts that may arise at any time during the construction process.

(4) Halt work, if necessary on non-federal lands, and confer with CDFW and County PDS to ensure the proper implementation of species and habitat protection measures. The biologist shall report any violation to CDFW within 24 hours of its occurrence.

(5) Submit weekly letter reports (including photographs of impacted areas) to CDFW and County PDS during clearing of habitat and/or construction within 300 feet of preserved habitat on non-federal lands. The weekly reports will document that authorized impacts were not exceeded, and general compliance with all conditions. The reports will also outline the duration of species monitoring, the location of construction activities, the type of construction which occurred, and equipment used. These reports will specify numbers, locations, and sex of sensitive species (if present), observed species behavior (especially in relation to construction activities), and remedial measures employed to avoid, minimize, and mitigate impacts to sensitive species. Raw field notes shall be made available upon request by CDFW.

(6) Submit a final report to CDFW and County PDS within 60 days of the project completion that includes: as-built construction drawings with an overlay of habitat that was impacted and protected, photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conditions was achieved.

D. <u>Habitat Loss</u>: Prior to grading activities, the following habitat loss mitigation shall be implemented:

(1) Prior to development of the access road, the loss of protected habitats (grasslands, coastal scrub, coast live oak riparian forest) shall be mitigated at the ratios specified by the Biological Mitigation Ordinance, which vary from 0.5:1 to 3:1 depending upon the Tier category and whether or not the land is in a Biological Resource Core Area (either by in lieu fee payment or by deed restriction of qualified lands).

3. Cultural Resources (4.15(5))

A. The Tribe shall implement inadvertent discovery measures during all construction activities within the aaccess road and off-site intersection Improvement areas. Measures include:

(1) A worker education course for all construction personnel covering immediate work curtailment to protect cultural resources and to be conducted prior to initiation of ground-disturbing activities,

(2) Monitoring by a qualified archeologist, who meets the Secretary of the Interior's Standards for archaeologists (found at 36 CFR §61), as well as a JIV tribal monitor, of all earth-disturbing activities in close proximity to site CA-SDI-7966/11410 and CA-SDI-11051, and of all off-site earth-disturbing activities in native soils/sediments; and

(3) Procedures for discovery of cultural resources, including human remains, during construction or earth-disturbing activities if an archaeological monitor is not present.

B. In the event that any prehistoric, historic, or paleontological resources are discovered during construction-related earth-moving activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist or paleontologist, as appropriate, shall be consulted to assess the significance of the find. If any find is determined to be significant by the qualified professional, then appropriate agency and project representatives and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate course of action. All significant cultural or paleontological materials

Mitigation Measure

The Tribe will make good faith efforts to implement the mitigation measures below in accordance with the terms of Tribal Ordinance 2011-01.

recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist or paleontologist according to current professional standards.

C. If human bone or bone of unknown origin is found during construction, all work shall stop within 50 feet of the find and the San Diego County Coroner and the Tribe shall be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission (NAHC) who shall identify the most likely descendant. The most likely descendant shall work with the Tribe and the Lead Agency, as appropriate, to develop a plan for re-interment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified actions have been implemented.

4. Off Site Intersection Improvements

A. Implement Mitigation Measures 4.6(2) and 4.12(6) to reduce potential Hazardous Materials impacts to a less than significant level.

B. Prior to grading activities for any intersections impacting jurisdictional waters, the improvement plans shall include a design that shows improvements to be located outside of the ordinary high water mark. If unable to design outside of high water make, the developer shall acquire a Clean Water Act Section 404 Permit from the USACOE prior to undertaking any grading activities. Permit conditions typically include the purchase of in-lieu credits at a mitigation bank as well as the implementation of Best Management Practices during construction activities.

C. Prior to development of any of the intersection improvement areas, impacted protected habitats (grasslands, coastal scrub, coast live oak riparian forest) shall be mitigated at the ratio specified by the Biological Mitigation Ordinance, which vary from 0.5:1 to 3:1 depending upon the Tier category and whether or not the land is in a Biological Resource Core Area (either by in lieu fee payment or by deed restriction of qualified lands),

D. Implement Mitigation Measure 4.15(2)(B) to reduce potential Jurisdictional Waters impacts to a less than significant level.

E. Implement Mitigation Measure 4.15(4) to reduce biological resource impacts to a less than significant level.

F. Implement Mitigation 4.15-5 to reduce cultural resource impacts to a less than significant level.

G. Prior to development of the intersection improvement areas, any impacted County-protected plants (Group A Plants defined by County PDS), such as San Diego thornmint or Palmer's Goldenbush, shall be compensated at a 3:1 acreage ratio (either in lieu fee payment to the County or by deed restriction of qualified lands) to the satisfaction of the County of San Diego Director of Planning and Development Services.

H. The following Best Management Practices shall be implemented to protect water bodies from impacts:

(1) create and implement a Hazardous Materials Management Plan and Spill Response Plan, including the identification of specific refueling areas,

(2) create and implement an erosion control plan and a sediment monitoring plan, including the placement of jute mats, straw bales and wattles, sand bags, and vegetative covers (e.g. Hydroseed), weather monitoring, and specific inspection protocols,

(3) designated concrete washout areas and other filters for construction materials,

(4) a visual monitoring program and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs,

(5) create and implement a Hazardous Materials Management Plan and Spill Response Plan, including the identification of specific refueling areas,

(6) create and implement an erosion control plan and a sediment monitoring plan, including the placement of jute mats, straw bales and wattles, sand bags, and vegetative covers (e.g. Hydroseed), weather monitoring, and specific inspection protocols,

(7) designated concrete washout areas and other filters for construction materials, and

(8) a visual monitoring program and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs.

ATTACHMENT 2

REVISED FIRE PROTECTION PLAN

FIRE PROTECTION PLAN REPORT

JAMUL INDIAN VILLAGE

GAMING PROJECT
JAMUL, CA

PREPARED FOR:
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SEPTEMBER 30, 2011
REVISED: FEBRUARY 3, 2014

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EXECUTIVE SUMMARY

This Fire Protection Plan Report (FPP) has been developed to describe a coordinated/consolidated systems approach to the Fire Suppression and Fire Protection features for a Gaming Facility with unique fire protection aspects located on the Jamul Indian Village, Jamul, California. The primary goal of the Report is to detail how Fire Protection and Life-Safety features and any unique building elements afford the varied levels of protection contained in the ~~2010~~ 2013 Edition, California Building Standards Code, the 2011 San Diego County Consolidated Fire Code and the ~~2010~~ 2013 Editions of the CA Fire, Electrical Mechanical, Plumbing and Health Codes. Prescriptive Model Code Compliance requirements are intended to be used for the Project.

The Fire Protection Plan (FPP) addresses water supply, access, structural integrity and Fire-Resistive Building features, Fire protection Systems and equipment, impacts to emergency services, defensible space and vegetation management

The proposed Gaming Project demonstrates compliance, or offers the Same Practical Effect with applicable Fire Regulations including but not limited to; the ~~2010~~ 2013 Edition, California Fire Code, the ~~2010~~ 2013 Edition, California Building Code for Wildland/Urban Interface Building Standards. The comprehensive FPP and the Project are consistent with the California Code of Regulations (CCR) Title 24, Building and Fire Code Standards.

All applicable Fire Protection features required by each Code and any additional Fire Protection features which will be incorporated into the facility are described herein. A full description of the Fire Protection features provided in the complex and how those features interact with each other is provided.

This document will be used as a basis for architectural, civil as well as fire protection systems drawing preparation. These drawings will specifically detail the way in which the facility will comply with this document and the applicable Codes. Included in the Appendices' are Enhanced Fire-Resistive Construction Requirements, the Jamal Indian Village Tribal Council Resolution 2010-06 - Establishing the Jamul Tribal Fire Department and Resolution No. 2011-08 – Adoption of California Building Standards Code for the Proposed Project, the Alternative 1 Project Option and the Alternative 2 Project Option.

GENERAL PROJECT DESCRIPTION

The proposed Jamul Indian Village Gaming Project is intended to be developed on the Jamul Indian Village Reservation consists of the following ~~three~~ Project ~~Options~~.

1. The ~~Proposed~~ Project: This Project ~~Option~~ will consist of approximately ~~228,000~~ 203,000 square feet, Two Story Gaming Project with approximately 73,000 square feet of Gaming Area constructed over an ~~multi-level~~ Eight Level Parking Structure.

~~**2. Alternative 1**: This Project Option will consist of 119,000 111,800 square feet two-three story Gaming structure constructed over a multi-level parking structure. This Alternative 1 Project Option~~

DEFENSIBLE SPACE and VEGETATION MANAGMENT

Contained in the FPP are references to address the Defensible Space and Vegetation Management to provide optimum levels of Fire Protection for the Project. The FPP also includes a listing of Enhanced Fire-Resistive Construction Requirements for the Project. (Appendix A).

The Project Development Area is located between the adjacent grassland areas, located primarily to the South and the East of the Project's Improvement's within the Jamul Indian Village Reservation Parcel Boundaries. Contained in the FPP are the Defensible Space and Vegetation Management Plan to declare the Wildland separation distance equates as the Same Practical Effect (SPE) in lieu of the 100 foot of fuel treatment around the structures.

The Same Practical Effect (SPE) provisions are subject to review and Approval from the Director of Public Safety as the Authority Having Jurisdiction (AHJ) for the Project.

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APPLICABLE CODES AND STANDARDS

This outline documents the general fire protection design features based upon the Adoption by the California Building Standards Commission (CBSC) for construction standards set forth in the State of California. The applicable codes for Project include the following:

1. 2013 California Building Code (CBC) – Based on the 2012 Edition, International Building Code California State amendments.
2. 2013 California Fire Code (CFC) – Based on the 2012 Edition, International Fire Code (IFC) with California State amendments.
3. 2013 California Mechanical Code (CMC) – Based on the 2012 Edition, Uniform Mechanical Code (UMC) with California State amendments.
4. 2013 California Plumbing Code (CPC) – Based on the 2012 Edition, Uniform Plumbing Code (UPC) with California State amendments.
5. 2013 California Electrical Code (CEC) – Based on the 2011 Edition, National Electrical Code (NEC) with California State amendments.
6. 2011 Edition, San Diego County Consolidated Fire Code (CCFC)
7. NFPA Codes and Standards:
    - NFPA 13, Automatic Fire Sprinkler Systems
    - NFPA 10. Potable Fire Extinguishers
    - NFPA 14, Standpipe Systems
    - NFPA 20, Centrifugal Fire Pumps
    - NFPA 72, National Fire Alarm Standard
    - NFPA 110, Emergency and Standby Power Systems

This Fire Protection Plan (FPP) addresses the key features of these Codes, Standards and Guidelines. The intent of this document is to coordinate the Fire Protection approach between all design disciplines. Actual details of compliance will be further detailed in the construction documents and submittals by selected contractors.

1. SITE FIRE PROTECTION LIFE-SAFETY APPROACH

1.1. Property lines

~~1.1.1.~~ The Project Buildings are located ~~thirty (30)~~ twenty-four (24) feet or less from real property lines.

1.2. The Fire Department Access Road Design and Specifications will comply or exceed the 2013 Edition, CA Fire Code (CFC) Standards and the CCFC as follows:

1.2.1. The minimum dimensions along Fire Access Roads will be 25 feet (24 feet minimum width roadway) from back of curb to back of curb. Fire Access roads shall be designed for an inside Turning Radius of a minimum of 28 feet. The South and North Bridges will be one way traffic circulation only with a minimum 16 feet clear width on bridge due to Technical Infeasibility per the Environmental Report concerning Willow Creek.

1.2.2. Fire Access Roads will be designed and maintained to support the imposed loads of Fire Apparatus of not less than 75,000 and will be paved to provide all-weather driving capabilities. Roadways shall be designed to withstand actual Fire Apparatus loads and Ladder Truck Stabilizer Pads.

1.2.3. Dead-ends will not exceed 150 feet unless an approved area for turning around a Fire Apparatus is provided.

1.2.4. Slope Gradient for Fire Apparatus will not exceed 15%. The angle of departure and angle of approach of a Fire Access Road shall not exceed 12%.

1.2.5. All Fire Access Roads and areas adjacent to Buildings shall have a minimum vertical clearance of thirteen feet six inches (13'6").

1.2.6. The Project will have Primary and Secondary Fire Department/ Emergency Services Access Roads. The Jamul Indian Village will maintain, modify and perform due diligence to eliminate Fire Hazards from combustible vegetation on each side of the Primary and Secondary Fire Access Routes consistent with the 2013 Edition, CFC, the CCFC and recognized industry fire access road standards.

1.3 Water Supply/Fire Flows:

1.3.1 Onsite Potable Water will be supplied by Otay Water District. Existing 12" water line is installed at Panhandle Drive to serve the Project. Otay Water District will provide the primary ~~and secondary~~ water supply for the Project.

1.3.2 Fire Flows: The ~~Alternative 2~~ Project ~~Option~~ will require a minimum of ~~1,500~~ 2500 Gallons per Minute (GPM) for a minimum Flow Duration of ~~Two (2)~~ Four (4) Hours. ~~The Alternative 1 Project Option will~~

~~require Fire Flows of 1500 2500 GPM for the Flow Duration of Three (3) Hours. The Proposed Project will require a minimum of 1500 2500 GPM for the Flow Duration of Four (4) Hours.~~

1.4 Onsite Fire Hydrants:

1.4.1 All portions of each building shall be within 150 feet of a Fire Hydrant. A minimum of ~~Three (3) onsite Fire Hydrants shall be provided for the Proposed Alternative 2 Project Option and a minimum of~~ Four (4) onsite Fire Hydrants for the Proposed Project ~~and the Alternative 1 Project Option.~~

1.5 Tribal Fire Department:

1.5.1 The Jamul Indian Village Tribal Council Approved the establishment of a Tribal Fire Department. On July, 7, 2010, the Jamul Indian Village Tribal Council Approved Resolution #2010-06 which is authorized under Public Law 93-638 to establish a Tribal Fire Department and a Tribal Community Emergency Response Team (CERT) to provide for an onsite Fire Protection Services, Emergency Medical Services and to prepare for Disaster Reponses. (Appendix B)

1.5.2 The Jamul Indian Village Tribal Council has appointed selected individuals to perform the due diligence as the Jamul Fire Department Management Team, inclusive of Director of Public Safety and Emergency Services, Assistant Fire Chief/Fire Operations Officer, Fire Marshal, Tribal Emergency Management Coordinator and Community Liaison/Tribal CERT Coordinator.

1.5.3 The Jamul Indian Village Tribal Council adopted the National Incident Management System (NIMS) and directed staff to train all Team Members and/or Employees on NIMS Standards.

1.5.4 Fire Station: The Tribe will construct an onsite Fire Station to address the Fire Protection equipment and staffing needs for each of the three Project Options.

1.5.5 Fire Department Staffing:

The Jamul Indian Village Tribal Fire Department will be located onsite through the life of the Projects and during Casino operations. Fire Department Staffing will consist of a Director of Public Safety, responsible for management of the Department and a minimum of two FTE Fire-Fighters/Emergency Response members per shift. At the discretion of the Director of Public Safety, separate company shifts, (either three or four shifts) would be implemented throughout the life-cycles of the Projects during construction and after Occupancy

Clearances, on a continuous full time company levels for Casino operations.

1.5.6 Fire Department Equipment & Staffing

The Jamul Indian Village Fire Department will necessitate a minimum of the following Equipment & Staffing listing per ~~each of the three Gaming Project Options~~. Project-Scope.

A. ~~The Alternative 2 Option:~~

This ~~Gaming~~ Project ~~Option~~ will require a minimum of two engines, staffed with three personnel; a Captain, an Engineer and a Fire-Fighter. Subject to review by the Director of Public Safety (AHJ) a four person engine Company may be preferred for the Project. Staffing estimate would be 12 -14 personnel. Equipment maintenance could be contracted out with adjacent Fire District, Fire Department or Certified Mechanic.

B. ~~The Alternative 1 Option:~~

This ~~Gaming~~ Project ~~Option~~ will necessitate a 74' -105' Ladder Truck and two engines and a "Mini-Pumper" Fire Truck for Incident Responses in the Parking Garage. Staffing allocation would be 24–26 personnel.

C. The ~~Proposed~~ Project:

The ~~Proposed~~ Project will require ~~the same~~ Fire Department Equipment & Staffing as ~~the Alternative 1 Project~~ identified in Sections A, B & C.

1.5.7 Fire Department Training Standards:

The Jamul Indian Village Fire Department intends to participate in the Mutual Aid Program, the Fire Department Personnel will maintain one Fire Response unit with a Fire-Fighter/EMT at all times. Fire Department Personnel will be trained on the following areas, inclusive of, under the Direction of the Tribal Fire Chief, will prepare a "Shelter-in-Place" Training Program to accommodate area residents whom may be displaced during natural or man-made disasters:

1. Hazardous Materials Awareness and Operations (Sara Title III, CFR: 1910.120)
2. Permit Required Confined Space (CFR: 1910:146)
3. Affirmative Action Training (Title VII; 1964 Civil Rights)
4. Injury and Illness Prevention Training (CCR: 3203
5. Personal Selective Equipment (CCR: 3401 (b)(6)

6. SCBA: CCR 3409, ANSI Z88.5.8.3 CCR: 5144 ©
7. SCBA Ability Training (ANSI Z88. 5.8.3)
8. Wildland/Fire Shelters (CCR: 3410(g), NFPA 295 3-2)
9. Multi-Casualty Incident Training (H&S Code 1797.151)
10. Triage (H&S Code 1798.170)
11. Vehicle Extraction (CCR: 100075)
12. Cardiopulmonary Resuscitation (CCR: 100025, H&S Code 1797.182, PC: 13518)
13. Sudden Infant Death Syndrome (SB 1067)
14. Bloodborne Pathogens (CCR: 5193(e)(5)
15. Incident Command System (SB 1841-1993, Firescope Act)
16. NIMS 700
17. Standardized Emergency Systems (SEMS) GC: 8707)
18. CA DMV Class B Driving Program for Fire Apparatus Engineers and Designated Drives (CA DMV DL 170)

Additional areas for Training Standards:

19. Electric Vehicle Response
20. Swift Water Emergency Rescues
21. Incident Command System (ICS)
22. High Rise Response and ICS
23. Emergency Vehicle Operations Course.
24. Cal-Fire Fighting Training Curriculum

All Jamul Indian Village Fire Department suppression personnel will be required to perform a minimum of twenty hours (20) per month of Training. The Training can be structured as either classroom or operations drills. The Captains will be responsible to ensure the Training hours are recorded. The AHJ may augment the minimum hours of Training will either specialized classes and/or designated Training at Regional Training Centers.

1.5.8 Fire Department Mutual Aid/Emergency Medical Services

The Jamul Indian Village Fire Department will offer to engage into a Mutual Aid Agreement based on the qualifications of the Department's Personnel and Equipment with local Agencies, inclusive of San Miguel Consolidated Fire Protection District, the US Fish and Wildlife Fire, area Tribal Fire Agencies, the US Dept of Forestry, Cal-Fire, and shared resources from the contracted Emergency Dispatch Center, or a contracted Regional Tribal Emergency Dispatch Center. The Jamul Indian Village will either provide their own Ambulance Service or contract to an outside Agency (AMR) or another Agency (Sycuan, Pala, Mercy, etc.). An Advanced Life Support (ALS) or Basic Life Support (BLS) Ambulance will be assigned onsite for the Proposed Project.

1.6 Defensible Space and Vegetation Management

1.6.1 The Project Development Area is located adjacent to Wildland Areas which consists of Short Grass (less than 12in tall Grass) with small and medium height Coastal Sage Brush spread intermittingly on varied intervals. Defensive Space criteria mandates that either a one hundred foot barrier exists between Structures and the Wildland Areas requiring the 100 ft Defensible Space will be Mitigated and compliant utilizing Mitigation Measures involving the Same Practical Effect (SPE) determinations as Approved by the Authority Having Jurisdiction (AHJ).

1.6.2 Specific Mitigation Measures and Design Considerations: Each of the Project's structures will be constructed to Enhanced Fire – Resistive Building Requirements. All exterior architectural components shall be designed and constructed to Enhanced Fire-Resistive Building Materials. Each of the Projects will be equipped with Automatic Fire Sprinklers designed and installed per NFPA 13-10. The multi-level parking structures will be constructed of Concrete, Masonry and Steel Building Elements, and equipped with Automatic Fire Sprinklers (NFPA 13-10 and Wet-Standpipe Systems installed per NFPA 14-10. All exterior Glazing materials exposed to the Defensible Space will be multi-layered panels with one panel required to be tempered glazing.

1.6.3 One Hundred-foot Fuel Modifications Zones (FMZ): In the cases where the 100 ft Fuel Modification Zone (FMZ) requirement cannot be met due to Property Boundary limitations, Mitigation Measures qualifying as Same Practical Effect (SPE) may be implemented. This is consistent with the Accepted Engineering Practices for Wildland and Structures Interface. Short Grass (less than 12in. tall) which exists at the southern and Eastern Boundaries of the Project. These Parcels are Off-Reservation of which the Jamul Tribe has no direct control to mitigate the Short Grass growth.

As such, due to the Short Grass Fuel Loads that in the event of a Wildland Fire, ~~it is calculated~~ <u>Fire Behavior Calculations were derived from the Standard National Fuel Model, FM-1 Short Grass utilizing a wind speed 41 mph will have a Rate of Spread of 732 ft/min, a Fire Line intensity of 1,415 btu/sec resulting that the anticipated Flame Lengths</u> would not exceed Thirteen Feet (12' 7") ~~at a wind sped of 12 MPH~~, inclusive of a worst case scenario is a Santa Ana wind conditions at excess of 41 MPH will still not exceed Thirteen Feet (12' 7") in anticipated Flame Length As designed, the Project's exterior wall would not create a negative impact for the Project's Exterior Building Envelope and a threat to the Health Safety & General Welfare of the Building's Occupants or to Emergency Services First Responders. The Jamul Indian Village Fire Department will serve as first responders with a response time in less than two minutes. Jamul Tribal Fire-Fighters will be trained on NWCG Red Carded for Wildland Fire Control. Hence, the Same Practical Effect (SPE) is concluded due to the adjacent Short Grass and minimum Sage Brush Fuel Loads. It is recommended to the AHJ to Approve the Same Practical Effect (SPE) in lieu of designing the Project with the 100 ft. Defensible Space requirements.

1.6.4 Onsite Landscaping, Green Roof Plantings: All Onsite Landscaping will be designed and consistent with the County of San Diego Acceptable Plant Listings for Fire Prone Areas. All Onsite Plants will be specified as species which will not advance Fire or threaten the Structure.

2. GENERAL FIRE-RESISTIVE CONSTRUCTION ASPECTS

2.1. General Construction Classification:

2.1.1. ~~Each of the three Gaming Project Option's~~ The Project Building will be a minimum of Type I-A Fire-Resistive Construction. The multi-level parking garages will be constructed and classified as Type I-A construction.

2.2. The fire resistance rating of the building elements (as defined in CBC Table 601) is as follows::

GIVEN: Type I-A Construction for the Proposed Project, Alternative1 & Alternative 2 Option

Building Element	Fire Resistance Rating	Construction to Comply with CBC
Structural Frame	3 Hour	Table 601, Section 602
Exterior Walls: < 30 ft to property line	2 Hour	Table 602, Section 602
Bearing Walls: Interior Exterior	3 Hour 3 Hour	Table 601 ,Section 602
Non-bearing Walls	None (or as required by other sections of the code)	N/A

Building Element	Fire Resistance Rating	Construction to Comply with CBC
Floor (including supporting members and joists)	2 Hours – NOTE: 3 Hours Separation per CBC Section 509.2	Section 712, 509.2, Table 601, Section 602
Roof Assembly (including supporting members and joists)	1 1/2 hours	Table 601, Chapter 15

2.2.1. The Structural Frame will be a minimum of 3-Hour Fire-Resistive Construction per CBC Table 601, except that portions of the structural frame and bearing walls that support the roof only may be of 2-hour fire-resistive construction.

2.2.1.1. The Secondary Members, which include members that have no direct connections to the columns and bracing members that are not designed to carry gravity loads, are not a part of the structural frame. Such secondary members will have the fire-resistance rating required for the corresponding floor/roof assembly.

2.2.1.2. All Structural Members that support more than 2 floors or more than one roof or floor will be protected individually on all sides (Section 704.2). Column protection is required to be extended through the ceiling

2.2.1.3. The required Fire-Resistance Rating for seismic isolation system components is the same as required for the column, wall or other structural element in which it is installed and is required to comply with Section 704.12.

2.3. Exterior walls

2.3.1. Exterior walls and exit enclosures will comply with the requirements of CBC Section 705 per Section 1022.1.

2.3.2. All Openings into the building will be required to be protected per the area and distance limitations of CBC Section 705.

2.4. Roof Construction

2.4.1. Roof coverings will be minimum Class A materials per CBC Table 1505.1.

3. OCCUPANCY CLASSIFICATION

3.1. The Gaming Structure and Parking Garage will be a mixed-use building. Primary Occupancy Classification is Group A-2.

3.1.1. Dining Rooms/Restaurants: A-2

3.1.2. Gaming: Floor :~~A-3~~ A-2

3.1.3. Parking Garage: S-2

3.2. Group B:

3.2.1. Offices and Back-of House Uses.

3.3. Group F:

3.3.1. Fire Pump room/mechanical and electrical equipment rooms/engineering rooms:

3.3.2. Kitchens: F-2

3.4. Group M: Retail Stores

3.5. Group S-1: Moderate Hazard Storage Rooms.

4. FIRE RESISTIVE SEPARATIONS

4.1. Occupancy Separations

4.1.1. Nonseparated use provisions will be used in accordance with CBC Section 508.3.2. Therefore, occupancy separations and incidental use separations are not required and will not be provided.

4.2. Other Separations

Separation Type	Fire Resistance Rating	Wall Type	CBC Section
Corridor	N/A – Project Building are Auto. Sprinkler Systems per NFPA 13	Fire partition (Sec. 709)	Table 1018.1; Section 1018.
Garage Separation	3 hour	Horizontal & Vertical	Section 509
Shafts	2 hour for three or more floors	Fire Barrier & Horizontal Assembly (Sec. 708 & 712)	Section 708
Trash/Laundry Chute Access & Termination Rooms	N/A	Fire barrier (Sec. 707)	Section 708.13.3 708.13.4
Stairs	1 hour, connecting 3 stories or less 2 hour, connecting 4 or more stories	Fire barrier (Sec. 707)	Section 1022.1

Separation Type	Fire Resistance Rating	Wall Type	CBC Section
Pressurized Enclosure Vestibule	2 hour NOTE: High Rise Provision >75' above Fire department Access	Fire barrier (Sec. 707)	Section 1022.9
Exit Passageway	1 hour, but not less than that required for the connecting enclosure	Fire barrier (Sec. 707)	Section 1023.3
Horizontal Exit	2 hour	Fire barrier (Sec. 707)	Section 1025.2
Elevator Lobbies	Equal to the corridor rating provided.	Fire partition (Sec. 709)	Section 708.14.1
Elevator Machine Room	2 hour	Fire barrier (Sec. 707)	Section 3006.4
Smoke Zone (smoke control)	1 hour	Smoke barrier (Sec. 710)	Section 710.3
Fire Pump Room	2 hour	Fire barrier (Sec. 707)	Section 913. NFPA 20
Fire Command Center (FCC)	1 hour	Fire barrier (Sec. 707)	Section 911.1
Emergency Electrical Room	1 hour	Fire barrier (Sec. 707)	CBC Chapter 27 & CA Electrical Code – Emergency Onsite Power Generator.

4.2.1. Elevator lobbies, where required, will be constructed of non-combustible, 1-hour rated fire partitions with smoke- and draft-control assemblies per Exception 5 to CBC Section 708.14.1.

4.2.1.1. Elevator lobbies opening into a fire-resistance rated corridor will be 1-hour fire-resistance rated fire partitions per CBC Section 708.14.1. Openings into the lobby will be 20-minute smoke- and draft-control assemblies per CBC Table 715.4.

4.2.1.2. Smoke partitions are permitted in lieu of fire partitions to separate the elevator lobby at each floor where the building is equipped throughout with an automatic sprinkler system installed in accordance with CBC Section 903.3.1.1.

4.2.1.3. Elevator lobbies are not required for elevators serving three stories or fewer.

4.2.1.4. Elevator lobbies are not required on the Ground Level per Exception No. 1 to CBC Section 708.14.1.

4.2.1.5. Smoke Management Zones; N/A at this time.

4.3. Opening Protection

4.3.1. The Exterior Wall Openings are allowed to be non-rated and of an unlimited amount since the building is fully-sprinklered. For Exterior Wall Openings at Ten feet or greater, premised on area of openings may be either Protected (45 minutes) or non-rated premised on application of CBC Table 705.8. Exception: Refer to Appendix A for Wildland Interface Exterior Wall Openings.

4.3.2. Penetrations:

4.3.2.1. All penetrations will be properly sealed and protected. Through-penetrations and membrane penetrations will be protected as required by CBC Section 713.3 and 713.4.

4.3.2.2. Penetrations in smoke barriers: N/A

4.3.2.3. Through-penetrations: An approved fire-stop system with an F-rating at least equivalent to the assembly being penetrated will be used.

4.3.2.4. Membrane penetrations: Recessed fixtures will be installed such that the fire resistance of the assembly is not compromised.

4.3.3. Doors

4.3.3.1. Fire doors will be tested in accordance with NFPA 252 or UL 10C.

4.3.3.2. Fire door fire-protection ratings will be (Table 715.4) as follows:

Type and Rating of Assembly	Door Fire Resistance Rating
3-hour fire walls and fire barriers	3 hour
2-hour fire walls and fire barriers	1½ hour
2-hour shaft or exit enclosures, Including exit passageways	1½-hour smoke- and draft-control assemblies
1-hour shaft or exit enclosures, Including exit passageways	1-hour smoke- and draft-control assemblies
Other 1-hour fire barriers	¾-hour

Type and Rating of Assembly	Door Fire Resistance Rating
1 hour corridor walls, designated smoke barrier walls, and elevator lobbies	20-minute smoke- and draft-control assemblies
Other 1-hour fire partitions	¾-hour
Vestibule to stairwell	20-minute smoke- and draft-control assemblies

4.3.3.3. Rated doors in corridors and smoke barriers are required to be smoke and draft control assemblies tested in accordance with UL 1784. The letter "S" will be shown on the label (Section 715.4.5.3)

4.3.3.4. Because the building is fully sprinklered, none of the fire doors are required to have a maximum transmitted temperature end point (Section 715.4.4, Exception).

4.3.4. The fire resistance rating of windows in fire rated assemblies is to be in accordance with Table 715.5.

4.3.5. Joint Systems

4.3.5.1. Joints in between fire rated assemblies are required to be protected by an approved fire resistant joint system. This system is intended to block the passage of fire.

4.3.5.2. The joint created at the intersection of the curtain wall and the floor is to be sealed with an approved material or system. The system is intended to prevent the passage of flame and hot gases.

4.3.6. Duct & Air Transfer Openings (Section ~~712~~ (716) and ~~716~~ 717)

4.3.6.1. Dampers are required to be provided with an access panel.

4.3.6.2. Since fans will be in operation in the system during a fire, dampers are required to be listed for use in a dynamic system.

4.3.6.3. When part of the smoke control system, smoke dampers and Combinations Fire & Smoke Dampers (CFSD) will be monitored by the fire alarm system for their appropriate position.

4.3.6.4. Required at the following:

Type of Assembly	Required Protection
Fire wall	Fire damper.

Type of Assembly	Required Protection
Fire barrier	Fire damper. Do not penetrate exit enclosures and exit passageways. *Exception:* penetration of 1 hour rated walls by a ducted HVAC system of at least 26 gage sheet steel.
Shaft enclosure	Fire/Smoke damper.
Fire partition	Fire damper.
Corridors	Smoke damper. (Fire damper also required if the corridor is rated.)
Floor penetration, when not in a shaft	Fire/Smoke damper

4.3.6.5. Fire Dampers:

- 4.3.6.5.1. 1½ hr rated damper is required in a wall rated less than 3 hours.
- 4.3.6.5.2. 3 hr rated damper is required in a wall rated 3 hr or more.
- 4.3.6.5.3. If a fire damper interferes with the operation of the smoke control system, use an approved alternate protection (716.2.1)
- 4.3.6.5.4. Fire dampers are not required when steel exhaust sub-ducts are provided or when ducts are part of an approved smoke control system. See Section 716.5.3, Exception #1.
- 4.3.6.5.5. Fire dampers will comply with the requirements of UL555. Only fire dampers labeled for use in dynamic systems will be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.

4.3.6.6. Smoke Dampers:

- 4.3.6.6.1. Leakage not less than Class II.
- 4.3.6.6.2. Elevated temperature rated not less than 250°F. A higher temperature rating can be justified if needed as part of a smoke control system (where a higher smoke temperature is anticipated).
- 4.3.6.6.3. Smoke dampers will close open activation of a listed smoke detector as outlined in Section 4.3.6.9.4 of this report.

4.3.6.7. Where both a fire and a smoke damper are required, combination fire/smoke dampers (CFSD) can be used.

4.3.6.8. Damper Operation

4.3.6.8.1. Dampers will fail to the closed position, unless otherwise required as a part of a programmed smoke management sequence.

4.3.6.8.2. Smoke damper, fire damper, and CFSDs will close upon activation of specific fire alarm initiating devices within the zone of origin, as well as fixed temperature fusible link and dedicated duct mounted smoke detector, except where programmed to remain open for proper functioning of the mechanical smoke management systems.

4.3.6.8.3. When part of the smoke control system, dampers will be monitored by the fire alarm system for their appropriate position, as described in the Smoke Management System section of this report.

4.3.6.9. Combination Fire and Smoke Dampers (CFSD)

4.3.6.9.1. CFSD will have a minimum leakage rating of Class II and a minimum elevated temperature rating of 250°F per CBC Section 716.3.2.

4.3.6.9.2. CFSD will have a minimum leakage rating of Class II and a minimum elevated temperature rating of 350°F when part of a smoke control system.

4.3.6.9.3. CFSD and smoke damper actuation methods.

4.3.6.9.4. The CFSD and smoke damper will close upon actuation of a listed smoke detector or detectors installed in accordance with CBC Section 716.3.2.1 and one of the following methods, as applicable.

4.3.6.10. Where a damper is installed within a duct, a smoke detector will be installed in the duct within 5 feet of the damper with no air outlets or inlets between the detector and the damper. The detector will be listed for the air velocity, temperature and humidity anticipated at the point where it is installed. Other than in mechanical smoke control systems, dampers will be closed upon fan shutdown where local smoke detectors require a minimum velocity to operate.

4.3.6.11. Where a damper is installed above smoke barrier doors in a smoke barrier, a spot-type detector listed for releasing service will be installed on either side of the smoke barrier door opening.

4.3.6.12. Where a damper is installed within an unducted opening in a wall, a spot-type detector listed for releasing service will be installed within 5 feet horizontally of the damper.

4.3.6.13. Where a damper is installed in a corridor wall or ceiling, the damper will be permitted to be controlled by a smoke detection system installed in the corridor.

4.3.6.14. Where a total-coverage smoke detector system is provided within areas served by a heating, ventilation and air-conditioning (HVAC) system, dampers shall be permitted to be controlled by the smoke detection system.

5. INTERIOR WALL, CEILING AND FLOOR FINISHES:

5.1. Wall and ceiling flame spread allowance with automatic sprinklers throughout (per Table 803.9). Classifications are in accordance with ASTM E84.

5.1.1. Exit enclosures and passageways (all occupancies): Class B.

5.1.2. Corridors: Class C.

5.1.3. Corridors – all other occupancies: Class B.

5.1.4. Rooms and enclosed spaces (all occupancies): Class C.

5.1.5. Any space classified as an atrium: Class B.

5.2. Wall and ceiling finishes other than textiles can also be tested in accordance with NFPA 286 and comply with the acceptance criteria in Section 803.1.2.1.

5.3. Interior finish materials are to be fastened in a manner such that the materials will not become readily detached when subject to room temperatures of 200°F for not less than 30 minutes.

5.4. For application of interior finish to wall ceilings or structural elements having a fire resistance rating, see Section 803 1.4.

5.5. Insulation will have a flame spread in accordance with Section 719.3 in an exposed or concealed installation insulation (including insulation covering pipe or tubing) will have a flame spread index of not more than 25 and a smoke developed index of not more than 450.

5.6. Smoke-developed index of all ceiling and wall finish materials will not exceed 450.

5.7. Textiles on walls or ceilings will have a Class A flame spread index and will be fully protected by automatic fire sprinklers. Alternatively, the materials will meet the criteria of the NFPA 286 room corner test, or Method B protocol of the NFPA 265 room corner test (Section 803.6). Expanded vinyl wall coverings will comply with these requirements for textile wall coverings (Section 803.7)

5.8. Floor finishes will comply with Section 804. This does not include the following finishes: wood, vinyl, linoleum or terrazzo and resilient floor covering materials not composed of fibers. Since the building is sprinklered, the floor finishes need only comply with the DOC FF-1 "pill test" (CPSC 16 CFR, Part 1630).

5.9. Decorative materials and trim will be provided in accordance with Section 806.

5.9.1. The amount of non-combustible decorative material is not limited.

5.9.2. Decorative materials meeting the flame propagation criteria of NFPA 701 will not exceed 10% of the aggregate area of walls and ceilings. Testing and approval of these materials is to be by an approved agency.

5.9.3. If covering more than 10%, the materials are required to be considered interior finish.

5.10. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base is not allowed in Group A occupancies.

5.11. Interior trim, other than foam plastic, will have a minimum Class C flame spread and smoke-developed index and will not exceed 10% of the aggregate wall or ceiling area in which it is located (excluding handrails and guardrails).

5.12. Foam plastics will not be used as interior finish or trim except as provided for in Sections 2603.9 and 2604.

5.12.1. All foam plastic requires a thermal barrier between it and the interior of the building (Section 2603.4), except when used as interior trim in accordance with Section 2604.

5.12.2. Foam plastics are acceptable where tested in accordance with NFPA 286 (with the acceptance criteria of Section 803.2), FM 4880, UL 1040 or UL 1715. They must also meet the flame spread requirements of Chapter 8.

5.12.3. Foam plastics used as interior trim are required to comply with Section 2604.2. The amount is not to exceed 10% of the aggregate wall and ceiling area of the room.

5.12.4. Plastic veneer will comply with the requirements of SNBC Chapter 8.

5.13. Light-transmitting plastic used as interior finish or decorative materials will be compliant with Sections 2606, 2607, 2608 and 2611.

6. MEANS OF EGRESS

6.1. Occupant load factors for the expected occupancies:

Occupancy	Occupant Load Factor
Mechanical/Electrical equipment rooms/storage	300 ft^2 per person (gross)
Casino Floor	11 ft per person (gross)
Kitchens	200 ft^2 per person (gross)
Offices	100 ft^2 per person (gross)
BOH Locker Rooms	50 ft^2 per person (gross)
Lounge/Bar/Dining Rooms	15 ft^2 per person (net)

6.2. Egress from a space will not pass though intervening rooms except where intervening rooms are accessory, not a Group H occupancy, and provide a discernable path of travel to an exit per CBC Section 1014.2. Egress within residential units will not pass through other sleeping areas, toilet rooms or bathrooms.

6.3. Travel distance to an exit (exterior exit door, exit passageway or enclosed stair) will not exceed 250 feet per CBC Table 1016.1.

6.4. Common path of travel will not exceed 75 feet, or 100 feet in Group B, F, and S occupancies per CBC Section 1014.3.

6.5. Where more than one exit or exit access doorway is required, the exit access will be arranged such that there are no dead ends in corridors greater than 20 feet in length or when the length of the dead-end corridor will be less than 2.5 times the least width of the corridor per CBC Section 1018.4. Dead ends in corridors serving Group B and F occupancies may be extended to 50 feet.

6.6. Number of means of egress

6.6.1. Two means of egress will be provided for spaces as required by CBC Table 1015.1. For occupant loads greater than 1000, a minimum of four exits required. In particular, two means of egress will be provided from Group A, B and F spaces with an occupant load greater than 49, Group S spaces with an occupant load greater than 29.

6.6.2. Boiler rooms which exceed 500 feet of floor area and house equipment having an input of more than 400,000 Btuh will be of 1-hour fire-resistive construction and will have two means of egress per CBC Section 1015.3.

6.7. Separation of exits

6.7.1. Spaces that require access to more than one means of egress will have two exits separated by more than one-third the diagonal distance of the space per CBC Section 1015.2.

6.8. Stairs

6.8.1. Enclosed stairs will discharge directly to the exterior of the building at grade or at a point providing direct access to grade, or will continue through a 2-hour rated horizontal extension of the stair enclosure leading to the exterior at grade. When the stair is pressurized the horizontal extension will also be pressurized.

6.8.2. Per the CBC, in the event occupied floors are more than 75 feet above the lowest level of fire department access, all enclosed exit stairs will be pressurized as required by CBC Section 1022.9 Pressurized stair enclosures will contain pressurized entrance vestibules.

6.8.3. The 2-hour wall construction for the exit enclosure will include both the stair and the vestibule as a single element, with a 1½-hour door at the vestibule/corridor interface. The stair to vestibule construction will also be 2-hour wall construction with a 20-minute door at the vestibule/stair interface. Pressurized stairs are identified on the Architectural Plan.

6.9. Doors

6.9.1. Egress doors, including roof level stair entrances, will be operable from the egress side without the use of a key or special knowledge or effort.

6.9.2. Egress doors will swing in the direction of exit travel when serving an occupant load of 50 or more per CBC Section 1008.1.2.

6.9.3. Neither stair nor stair vestibule doors will be locked to restrict access from the stair into any residential unit corridor.

6.9.4. Fire doors will meet the requirements for rate of temperature rise and positive pressure, as may apply.

6.10. Exit Signs and Means of Egress Illumination

6.10.1. Illuminated exit signs will be provided at exit doors and where otherwise necessary to clearly indicate the direction of exit travel when two or more exits are required per CBC Section 1011.1. No point in a corridor will be more than 100 feet from the nearest visible exit sign.

6.10.2. Tactile exit signs shall be provided per CBC Section 1011.3 and will be located at::

6.10.2.1. Grade level exterior exit doors.

6.10.2.2. Stairwell exit doors.

6.10.2.3. Exit access doors from rooms that require visual exit signs.

6.10.2.4. Horizontal exit doors.

6.10.3. Interior corridors serving meeting rooms and lounge areas occupancies as required by the code will have internally illuminated low level exit signs, the bottom of which will not be less than six or more than eight inches above finished floor per CBC Section 1011.6. When installed adjacent to exit doors, they will not exceed 4 inches from the door frame.

6.10.3.1. Low-level exit signs may be excluded if path marking is installed at the floor level or no higher than 8 inches above the floor level. Path marking will be continuous, except as interrupted by doors, corridors or similar architectural features.

6.10.4. Normal power for exit signage and means of egress illumination will be supplied from the building wiring. Emergency power will be provided by the emergency generator.

6.10.5. Emergency illumination of at least one footcandle will be provided at the walking surface level per CBC Section 1006.2.

6.11. Exit enclosures will not have any penetrations into the enclosure other than exit doors from normally occupied spaces. Piping and conduit may penetrate the stair but only to serve systems that are within the stair. Such penetrations will be protected by a listed through penetration firestop system of the appropriate rating.

7. EMERGENCY SIGNAGE

7.1. A sign stating "IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS." will be posted adjacent to each elevator call station on all floors. This sign will also provide a pictorial representation and indicate that the elevator will not operate and that exit stairs should be used.

7.2. Stairway identification signs will be provided in compliance with CBC Section 1022.8

7.2.1. The signs will designate the floor level, the terminus of the top and bottom of the stair, and the stair identification.

7.2.2. The signs will state the story floor level.

7.2.3. The signs will state the availability of roof access from the stairway.

7.2.4. The signs will be located 5 feet above the floor landing in a position that is readily visible when the doors are in the open and closed positions.

7.2.5. The signs will be coordinated with the fire alarm system descriptions and elevator call level.

7.3. Tactile floor designation signs will also be installed within the stairs per CBC Section 1022. 8.1.

7.4. A sign indicating the floor level will be posted facing each set of elevator doors approximately 5 feet above the floor. Numerals will be at least 5 inches high with a 3/4 inch stroke.

7.5. The emergency elevator will be identified by the international symbol for emergency medical services (star of life), which will be at least 3 inches high and placed inside on both sides of the hoistway door frame.

7.6. Access points to fire and smoke dampers will be permanently identified on the exterior by a label with letters not less than ½-inch in height reading SMOKE DAMPER or FIRE DAMPER.

7.7. Signs will be placed on each fire department connection indicating the minimum required flow and pressure for sprinkler and standpipe system demand.

7.8. A sign will be placed on the exterior of the building at the point of access to the Fire Pump Room. Additional signage will be placed at the doors to the Fire Pump Room interior to the building.

7.9. Signage will be provided on the exterior access door of the Fire Pump Room, the FCC, Main Electric Room and the Emergency Power Generator Enclosure.

8. SUPPRESSION SYSTEMS

8.1. Automatic Sprinkler Protection

8.1.1. Wet-pipe, hydraulically calculated automatic sprinkler systems will be provided throughout.

8.1.2. Automatic sprinklers will be supplied by a combined standpipe system and will be interconnected at the lowest level.

8.1.3. Automatic sprinkler systems will be designed to comply with the requirements of NFPA 13 - 10. A minimum 10 psi safety margin will be incorporated in all sprinkler system hydraulic calculations.

8.1.4. Fire protection piping will be non-combustible where required by NFPA 13-10.

8.1.4.1. Approved steel and/or chlorinated polyvinyl chloride (CPVC) sprinkler piping may be used within the building in accordance with the requirements of NFPA 13 -10.

8.1.5. Automatic sprinklers will be zoned as follows:

8.1.5.1. Each floor MAY constitute a single sprinkler zone. The net floor area for each level served is under 52,000 ft^2, which is the maximum area allowed per zone.

8.1.5.2. The elevator machine rooms and tops of hoistways will also be sprinklered, as well as within 24-inches of the bottom of the elevator hoistway pit. Since the machine room will be sprinklered, elevator shunt trip systems are required and will be provided.

9.9.2. Duct mounted smoke detectors installed in accordance with CBC Sections 907.2.13.1.1 and 907.3.1.

9.9.3. Fire Pump status (pump running, loss of phase, phase reversal, alternate power source).

9.9.4. Fire water storage tank high and low water level status, if provided onsite.

9.10. System smoke detectors will be provided at the following locations:

9.10.1. Each elevator lobby/landing and elevator machine room.

9.10.2. In each interior corridor on floors serving residential units.

9.10.3. At the top of each elevator hoistway.

9.10.4. Where fire-protection rated doors are held open by magnetic devices.

9.10.5. Where necessary to close smoke/fire dampers when duct detectors are not installed.

9.10.6. In all rooms that contain a fire alarm control unit and are not continuously occupied.

9.10.7. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection.

9.10.8. Within 5 feet of each entrance to pressurized stairs when area detection is not provided.

9.11. Duct type smoke detectors will be provided at the following locations:

9.11.1. Air handling unit supply and return air duct serving any system delivering more than 2,000 Cubic Feet per Minute (cfm).

9.11.2. Main supply and return plenums at each air conditioning system downstream of the last inlet.

9.11.3. Where necessary to close fire/smoke dampers. Duct type smoke detectors used for fire/smoke damper closure will be listed for low air flow velocities.

9.12. Heat detectors will be provided at the top of each elevator hoistway and within 2 feet of each sprinkler within elevator machine rooms for the purpose of elevator shunt trip.

10. FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEMS

10.1. Voice Alarm System

10.1.1. All fire alarm initiating devices will activate audible and visual warning devices. An alert tone, followed by automatic voice instructions, will occur throughout the building on a selective basis in accordance with

CBC Section 907.2..1.1. Alarms will occur on the fire floor, the floor above and the floor below. This includes alarms on each side of the horizontal exit.

10.1.2. The FCC will contain controls for manually activating the voice alarm system on a selective, general and all-call basis.

10.1.3. The voice alarm system will be designed and installed in accordance with CBC Section 907.5.2.2 and NFPA 72 Section 6.9. It will provide 15 db above ambient throughout the protected areas.

10.1.4. The FCC will contain controls for manual operation of the voice alarm system.

10.1.5. Speakers will be provided throughout the protected areas, including the residential units.

10.2. Audible zones

10.2.1. The voice alarm system will be zoned to be coordinated with fire alarm, sprinkler, smoke control, and egress zones.

10.2.2. Speakers in stairwells and elevator cabs will be designed such that they can only be activated manually from the FCC. Only live voice announcement capabilities will be provided in these locations (no pre-recorded messages in stairs or elevators). Live voice messages will be manually activated from the FCC.

10.2.3. Throughout the building, specific fire alarm devices, the Fire Alarm/Smoke Control Matrix Plans will initiate a general alarm on the floor of origin, the floor above and the floor below.

10.3. Listed Visual Notification Devices:

10.3.1. Will be installed in accordance with NFPA 72 National Fire Alarm Standard.

10.3.2. Will be installed at all accessible public and common use locations in accordance with ICC/ANSI A117.1 and ~~2010~~ <u>2013</u> Edition, CBC requirements.

10.3.3. Visual appliances will be wall-mounted at no less than 80 inches and no greater than 96 inches above the finished floor or 6 inches below the ceiling, whichever is lower.

10.3.4. .

10.4. Fire department phone jacks, or potable radios will be installed to allow communication between the FCC and the following locations:

10.4.1. Each elevator car and elevator landing.

~~10.4.2. Within each tower stair at every main floor landing and roof level landing, adjacent to the entry door.~~

10.4.3. Emergency and standby power rooms (generator room).

10.4.4. Fire pump room.

11. SMOKE MANAGEMENT SYSTEM

11.1. Passive Smoke Management

11.1.1. Due to the level of compartmentation proposed for this building, passive smoke control design concepts will be used for all levels.

11.1.2. Mechanical and electrical equipment rooms that do not communicate via airflow with any adjacent space will be considered passive enclosures.

11.1.3. The Basement levels, if provided, will be treated as passive zones, separated from the levels above and below by the 2-hour fire-resistive floor slab.

11.2. Stair and vestibule pressurization systems: High Rise Provisions: Occupied Floor located >75' above lowest level Fire department Access.

11.2.1. All enclosed exit stairs will be pressurized to maintain at least 0.05 inches water .column (WC) positive relative to the vestibule.

11.2.2. The vestibule will be pressurized to maintain a pressure difference of 0.05 inches W.C. negative relative to the stairway and 0.05 inches W.C. positive relative to the fire floor. These pressure differences are maintained with all the doors closed.

11.2.3. A separate fan and shaft will be used to pressurize the stair. The shaft is separated with a minimum 2-hour fire-resistance separation from the remainder of the building and considered a part of the stair enclosure.

11.2.4. Pressure differentials will not be so high as to cause the door opening forces to exceed 30 pounds maximum.

11.2.5. The upper portion of the stairway enclosure will be provided with a barometric relief vent capable of discharging a minimum of 2,500 cfm of air at the design pressure differential.

11.2.6. The systems will operate manually or automatically upon activation of specific fire alarm initiating devices as documented in the Fire Alarm/Smoke Control Matrix included in Appendix A.

11.2.7. Multiple point injection into the stair shaft will be employed with regards to stair pressurization.

11.2.7.1. Vestibule pressurization will be achieved via leakage through the door between the stair and the vestibule.

11.2.8. Manual override and status indicators will be provided on the firefighter's graphic smoke control panel in the FCC.

11.3. HVAC duct detectors will automatically de-energize air handling units and annunciate at the fire alarm system.

11.4. Monitoring of smoke management fans and dampers.

11.4.1. Fans will be monitored with UL-listed current sensors or differential pressure transmitters, to verify air flow.

11.4.2. Fire/smoke dampers associated with mechanical smoke control systems or mop-up systems will be monitored for open/closed status as required for proper operation of the smoke control systems. Where only one position required for life safety purposes, monitoring will be provided only for that position only.

11.5. Fans, dampers, controls and other elements of the mechanical smoke management systems will be connected to the standby power supply. Where volatile memories are utilized, a UPS system (battery power) will be provided with appropriate surge protection. Fans, dampers, controls and other elements of the Fire Department mop-up systems will not be connected to the standby power supply

11.6. System response time will conform to the requirements of CBC Section 909. Proper operation of fans, dampers, and automatic doors will be indicated at the smoke control panel within 60 seconds after receipt of an alarm condition at the fire alarm control panel.

11.7. Smoke Management System Ducts

11.7.1. Duct material and joints will be capable of withstanding the probable temperatures and pressures to which they are exposed.

11.7.2. Ducts that traverse smoke zones will be leak tested to 1.5 times the maximum design pressure. Measured leakage will not exceed 5 percent of design flow.

11.7.2.1. Smoke control ductwork entirely within and serving the respective smoke zone, such as the stairwell pressurization shaft will not require pressure testing.

11.7.3. Ducts will be supported directly from building structural elements by substantial, non combustible supports.

11.8. Smoke Management Fans

11.8.1. Smoke management fan motors will have a minimum service factor of 1.15.

11.8.2. Number of belts on belt drive units will be 1.5 times the standard number with a minimum of 2.

11.8.3. Fans will be of the centrifugal, tube axial or vane axial type. Propeller fans will not be used.

11.9. Doors in Smoke Barriers

11.9.1. Minimum 20-minute fire-protection rating with smoke- and draft-control assembly.

11.9.2. Doors will be automatic or self-closing.

11.9.2.1. Doors in smoke barriers that are normally open will be provided with magnetic hold open devices that will release upon activation of a local smoke detector or activation of the respective smoke control system.

11.10. General Testing Procedure is provided as follows:

11.10.1. Testing of smoke management systems will be by an approved Special Inspections Agency and will consist of the following:

11.10.1.1. Verify sequence of operation as indicated on the smoke control/fire alarm matrix and control diagrams.

11.10.1.2. Verify door opening forces on pressurized stairwells and vestibules do not exceed 30 pounds.

11.10.1.3. Verification of the proper sequence of operation for fans and dampers.

11.10.1.4. Verification of proper transfer of secondary power and operation of smoke control systems on primary and secondary power.

11.10.1.5. The Fire Protection and Life-Safety Systems will be operated and tested by the Contractor under simulated emergency conditions in the presence of the Owners Representative.

11.10.2. Passive Zone Method Testing

11.10.2.1. Passive elements will be pressure tested using a door fan test configuration. The allowable leakage rate will be calculated by the engineer of record using the criteria set forth in the CBC.

11.10.2.1.1. Pressure tests will be performed at a minimum of two dormitory units per floor. If the allowable leakage rate is exceeded, the rooms will be resealed and retested. All failed rooms will be retested to verify compliance after repairs have been completed.

11.10.2.1.2. Pressure tests will be performed within the residential unit corridors on both sides of the horizontal exits walls on a minimum of four floors. If the allowable leakage rate is exceeded, the corridors will be resealed and retested. All failed corridors will be retested to verify compliance after repairs have been completed

11.10.3. Stair/vestibule pressurization fans will be activated in accordance with the functional matrix and the pressure differential will be measured between the stair and vestibule and the vestibule and adjacent floor area. The pressure differential will be shown to maintain 0.05" w.c. positive between the stair and vestibule, as well as the vestibule and floor. Door forces will be measured to verify that a maximum 30 pound force is not exceeded. The barometric relief vent at the top of the pressurized exit enclosures will be verified to discharge a minimum of 2,500 cfm of air when the design pressure in the stair and vestibule is achieved.

11.11. A graphic Anunciator Control Panel for the mechanical smoke control systems will be provided in the FCC, and will contain the following:

11.11.1. On/off/auto control switches, which operate stairwell pressurization fans and any associated dampers.

11.11.2. Fans will be annunciated on a per-stair basis.

11.11.3. White lights will indicate that fans and dampers are configured for normal status.

11.11.4. Red lights will indicate that fans and dampers are configured for off or closed status.

11.11.5. Green lights will indicate that fans and dampers are configured for on or open status.

11.11.6. Yellow lights will indicate that fans and dampers are not properly configured (fault status).

11.11.7. Each stairwell will be provided with separate controls and status indicators.

11.11.8. A detail documenting the proposed layout of the graphic annunciator panel will be submitted for review and approval prior to fabrication.

12. FIRE COMMAND CENTER:

~~REQUIRED FOR THE PROPOSED PROJECT AND THE PROPOSED ALTERNATIVE 1 PROJECT:~~

12.1. The Fire Command Center (FCC) will be located in the Parking Garage and will have direct access from the exterior. A minimum of three (3) Reserve or Jamul

Tribal Firefighter/EMT will be assigned to the to the FCC 24 hours per day. The FCC will also serve as the Casino EMT Office.

12.2. The FCC is at least ~~100~~ 200 ft² with a minimum dimension of ~~8~~ 10 feet and will contain the required panels, equipment and reference materials.

12.3. Annunciation of active fire protection systems will be provided at the FCC. The following items will be located in the FCC.

12.3.1. Fire detection and alarm system annunciator panels including the Firefighter's Smoke Control Panel (FSCP). Annunciation will occur via LCD at the fire alarm control panel and via LED at a graphic annunciator panel in accordance with CBC Section 907.6.3.1.

12.3.2. Fire Pump status indicators. Indicators include Fire Pump running, loss of phase, phase reversal and controller connected to alternate source.

12.3.3. ~~Secondary water supply tank level indicator, as required.~~

12.3.4. Status indicators and controls for stairwell pressurization fans.

12.3.5. Standby and emergency power status indicators.

12.3.6. Elevator status panel for elevator cabs, visually indicating the location of the elevators and whether they are operational.

12.3.7. Voice alarm system panels with a microphone cord of sufficient length to reach all points of the room.

12.3.8. Fire Department voice communication system(s) and six (6) hand-held phone sets.

12.3.9. Automatic Fire Sprinkler valve and waterflow detector display panels.

12.3.10. A telephone for Fire Department use with direct access to the public telephone system. Cord will be of sufficient length to reach all parts of the room.

12.3.11. Up-to-date master gas, electric and exit drawings, as well as fire sprinkler/standpipe and fire alarm drawings, a copy of the current approved FPR and a half-size set of the approved building drawings.

12.3.12. A work table, desks and chairs.

12.3.13. Generator supervision devices, manual start and transfer features.

12.4. Details of the annunciation and control panels to be installed in the FCC

12.5. The FCC will not be used for housing of any boiler, heating unit, generators, combustible storage or similar hazardous equipment or storage.

13. EMERGENCY AND STANDBY POWER

13.1. A new emergency generator will be provided to supply emergency and standby power for this project.

13.2. The generator will be located <u>either on the</u> exterior <u>or inside</u> ~~to~~ the ~~gaming~~ <u>Parking</u> Structure.

13.3. The emergency power systems will supply the following:

13.3.1. Exit signs and means of egress illumination.

13.3.2. Lighting circuits for elevator cabs, FCC, mechanical equipment rooms and secondary fire department response location.

13.3.3. Fire alarm and supervisory systems.

13.3.4. Fire detection and supervisory systems.

13.3.5. Sprinkler alarm and supervisory systems.

13.3.6. All required communication and public address systems.

13.3.7. The electric fire pumps.

13.3.8. Fire pump controllers and status panels.

13.4. Standby power will be provided for the following:

13.4.1. Smoke management systems, panels and controls, including stair and vestibule pressurization systems.

13.4.2. Elevators (one at a time in each bank).

13.4.3. Continuously operating exhaust fans where fire/smoke dampers have been omitted (bathroom/toilet exhaust fans).

13.4.4. Air conditioning for elevator machine rooms.

13.4.5. Accessible means of egress elevator.

13.5. Transfer Time

13.5.1. 10 seconds for Emergency Power items listed in Section 13.3.

13.5.2. 60 seconds to full power for items listed in Section 13.4.

13.6. Generators will be provided with manual controls for activation and de-activation remotely at the fire command center.

14. ELEVATORS

14.1. Standby power will be provided for one elevator in each bank and will automatically be transferable to all other elevators in the bank to allow for recall to the designated level. Manual transfer of power to each elevator will be provided at the elevator status panel in the FCC.

14.2. Hoistway Venting

14.2.1. Elevator shafts will be vented to the exterior.

14.2.2. The vent area will be at least 3.5% of the shaft area with not less than 3 ft^2 per elevator.

14.2.3. Each hoistway will be vented independently of other hoistways.

14.2.4. Hoistways will not be vented through the elevator machine rooms.

14.2.5. Hoistway provided with an automatic vent dampers will have the dampers activated upon detection of smoke from any of the elevator lobby smoke detectors or detectors at the top of each hoistway.

14.2.5.1. In addition, manual controls for the hoistway vent dampers will be provided on the Plans located in the FCC.

14.2.5.2. Hoistway vent damper status will be provided on Building Plans.

14.3. See Section 4.2 of the FPP for information on elevator shaft construction and elevator lobby construction requirements.

14.4. Each elevator landing will be provided with area smoke detector(s) installed within its/their listing(s).

14.5. With elevators under normal or standby power, activation of an elevator lobby or machine room smoke detector will cause automatic recall of all elevators serving that bank. The cabs will return nonstop to the porte cochere level or designated Level of Exit Discharge. If detection occurs at the lobby level, the elevators will recall to the casino level.

14.6. Manual Overrides

14.6.1. A three-position (on/off/bypass) key-operated switch will be provided at the lobby level for each bank of elevators for emergency override.

14.6.2. A three-position (on/off/hold) key-operated switch will be provided inside each elevator cab.

14.6.3. Elevator keys will be provided for Jamul Village Fire Department use in case of emergency in a lockable cabinet in the FCC.

14.7. Each elevator machine room will be provided with smoke detector(s) installed within its/their listing(s).

14.8. Fire Department Emergency Elevator

14.8.1. At least one elevator will be provided for fire department emergency access to all floors. The elevator will be able to accommodate a 24-inch by 84-inch ambulance stretcher in the horizontal, open position.

14.8.2. Any emergency elevator provided in accordance with CBC Section 3002.4 will be identified with the international symbol for emergency medical services (star of life). The symbol will not be less than 3 inches high and shall be placed inside both sides of the hoistway door frame.

14.9. Since the elevator machine rooms and top of hoistways will be provided with sprinklers, elevator power shunt trip will be provided. An override for elevator shunt will be provided within the FCC to allow for power to be transferred back to these elevators after a shunt condition.

15. HAZARDOUS MATERIALS

15.1. Emergency Generator fuel storage

15.1.1. The fuel storage is located as a self-contained double wall Fuel Tank as part of the Emergency generator

15.1.2. The Emergency Generator Manufacture will provide specifications indentifying the number gallons of diesel fuel in the Fuel Tank and hours of operation anticipated given the Fuel Tank quantity.

15.1.3. Fuel storage will comply with the hazardous materials provisions of the 2013 Edition, California Fire Code (CFC), Chapters 27 & 34. for Class II, Combustible Liquids

NOTE: Listing of HAZ-MAT as such becomes available		

15.2. Detailed lists of chemical types and quantities will be provided under separate cover as a separate permit submittal. This information will be provided to demonstrate compliance with the California Building Code Section 414.

16. PERIODIC OPERATIONS AND MAINTENANCE

16.1.1. All active Fire Protection systems and devices will be regularly tested in accordance with the applicable codes and standards by qualified individuals.

16.1.2. Records of maintenance and testing will be retained on-site and presented to AHJ representatives upon request.

17. FUTURE MODIFICATIONS

17.1.1. Any future modifications and expansions will be documented in amendments/addenda to this FPP. The document will be prepared by a design professional licensed in the State of California working within the area of their expertise.

17.1.2. As appropriate, licensed design professionals will be included in the design of all renovations/expansions.

18. CONTROL DIAGRAMS AND QUALITY ASSURANCE SPECIAL INSPECTOR

18.1.1. A Special Inspector will be retained by the Owner to verify compliance with Section 909.

18.1.2. Three (3) copies of control diagrams pertinent to the Smoke Management systems will be submitted for approval prior to beginning QAA testing and rough mechanical inspections.

19. ACCEPTANCE TESTING

19.1.1. Three (3) copies of a document describing testing procedures of all active fire protection systems will be submitted at least 60 days prior to final testing.

19.1.2. The final mechanical QAA report will be submitted inspections department by the smoke control special inspection agency for review and approval at least seven (7) days prior to final testing.

19.1.3. See also Section 11.10 of this Report for information on smoke control system testing.

20. CONCLUSION

The devices, systems and approaches outlined in this report are intended to provide a level of life safety and property protection which are in compliance with the applicable codes. This level of protection is based on the interaction of both active and passive Pire Protection features. Active systems include fire suppression and detection systems, as well as emergency and standby power, communications and mechanical smoke control. Passive features include compartmentation with fire-resistive separations, Type IA construction, MOE systems and Flame-Spread Index (FSI) limitations.

Nothing in this document is intended to imply non-code compliance.

This report provides Fire Protection Planning Guidelines as developed for the Jamul Indian Village Gaming Project Options Working drawings and specifications will be coordinated to comply with the Fire Protection features outlined in this document.

Prepared By:

NATIONAL CODE CONSULTANTS

Kenneth G. Larsen, CBO

CERTIFIED BUILDING OFFICIAL
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Expires 11.9.15
INTERNATIONAL CODE COUNCIL

DISTRIBUTION:

Summit Project Management
Attn: Steve Davis, AIA, Principal

Environmental Data Systems
Attn: Joe Broadhead, Principal

Project Management Team

ATTACHMENT 3

HABITAT RESTORATION PLAN: 4-ACRE PARCEL

HABITAT RESTORATION PLAN
FOR THE 4-ACRE PARCEL:
JAMUL GAMING FACILITY PROJECT

December 21, 2013

Prepared for:

ENVIRONMENTAL DATA SYSTEMS, INC.

and

JAMUL INDIAN VILLAGE

Prepared by:

NATURAL INVESTIGATIONS COMPANY
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INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

On behalf of Environmental Data Services Inc. and the Jamul Indian Village, Natural Investigations Company has prepared this habitat restoration plan for the proposed temporary construction activity on the 4-acre parcel (the Plan Area), approximately one mile south of the community of Jamul, in unincorporated San Diego County (Figure 1 and Figure 2). The Tribe proposes to temporarily use the adjacent 4-acre parcel as a haul route, equipment and office area, and stockpiling/staging area during construction of the gaming facility. The Construction Staging Compound may be located on the foundation of the former fire station at the northeast corner of the 4-acre parcel (Figure 2). The Staging facilities will include office and storage trailers, which will be used to temporarily store construction materials, equipment, and to provide construction offices.

1.2. RESTORATION PLAN PURPOSE AND GOALS

To offset issues associated with habitat degradation, such as compaction from vehicles or the spread of invasive species, a Habitat Restoration Plan will be implemented. This Restoration Plan, developed in cooperation with CDFW, will consist of the following tasks:

- Removal of invasive species
- Aeration of the soil where compacted, and
- Planting and irrigation of native plants to re-establish or enhance existing natural habitats to the same or higher-quality condition

To ensure that no special-status plant or animal species are impacted, pre-construction surveys for special-status species would be performed by a CDFW-approved biologist. If special-status species are detected, CDFW and USFWS would be consulted and avoidance measures implemented.

2. EXISTING CONDITIONS

The Plan Area is located within the Peninsular Ranges geographic subregion, which is contained within the Southwestern geographic subdivision of the larger California Floristic Province (Hickman 1993). The region is in climate Zone 21 – “Ocean-influenced southern California”, characterized by infrequent frost, with mild to hot, dry summers and mild, wet winters moderated by marine air influx (Hickman 1993; Brenzel 2001). The topography of the Plan Area is undulating and slopes generally westward toward the Willow Creek drainage, and ultimately, to the south. The elevation ranges from approximately 800 feet to 1,000 feet above mean sea level. The general direction of surface runoff in the Plan Area is to the southwest via Willow Creek, an intermittent drainage tributary to Jamul Creek.

The Plan Area currently contains two terrestrial natural community/habitat types: non-native annual grassland; and ruderal/developed (Figure 3). Non-native annual grassland is the dominant natural plant community in the Plan Area, and consists of open fields of non-native pasture grasses and weedy forbs. These annual grasslands have replaced native habitats of perennial bunchgrasses or coastal scrub. Grazing disturbances, rather than periodic wildfires, keep this plant community from undergoing successional changes to woodland or scrub. Plant species common in this community include European annual grasses (*Avena, Bromus, Hordeum, Festuca*), and forbs, such as turkey mullein (*Eremocarpus setigerus*), yellow star thistle (*Centaurea solstitialis*), and black mustard (*Brassica nigra*).

3. POTENTIAL PROJECT IMPACTS

Temporary cyclone fence would be constructed by using prefabricated panels and post stands or by digging post holes and linking fencing together. Minor surface leveling may be needed to ensure stability of the fence. No wholesale grading of the 25-foot strip of land would occur.

The Plan Area will be used as a haul road and material laydown area. No major trenching, grubbing, or grading of the Plan Area is proposed during construction activities. Other temporary construction-related modifications include the surface placement of plastic (PVC) conduit for temporary utilities.

These construction activities may result in soil compaction and the trampling of vegetation. Irrigation for fire suppression may stimulate the growth of invasive plant species. Construction vehicles or equipment may inadvertently transport weeds.

4. MITIGATION

4.1. AVOIDANCE AND MINIMIZATION MEASURES

The Contractor will, to the extent practical, minimize ground disturbance, vehicular traffic, and vegetation destruction within the Plan Area. A pre-construction biological survey will be performed before any construction, enhancement, or revegetation work occurs within the Plan Area to ensure that listed species and other special-status species are not present.

4.2. HABITAT RESTORATION

4.2.1. Restoration Activities

The following restoration activities will be performed:

- Any native plant that is destroyed will be replaced with the identical species
- Where soil is severely compacted from construction activities, soil aeration will be performed with a plug aerator or spike aerator.
- Any invasive plant species that were established during construction activities will be removed by hand.
- Areas currently containing non-native grassland that were degraded or destroyed will be converted to native grassland (Figure 4).

4.2.2. Target Vegetation Types

Target vegetation types were selected based on the existing topography, soils, and surrounding vegetation, and historical aerial photo interpretation. Whenever possible, enhancement of currently disturbed vegetation to in kind, high quality habitat will be preferred over full revegetation. No native plants will be intentionally removed or harmed during revegetation or enhancement procedures. Target vegetation types are described next.

NATIVE GRASSLAND

The following Holland Vegetation Types (Oberbauer et al. 2008) were selected as the target vegetation communities for revegetaton of native grassland:

42110 Valley Needlegrass Grassland

Description: A midheight (to 2 ft) grassland dominated by perennial, tussock-forming *Stipa* (*Nasella*) pulchra. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as *Sanicula*, *Sidalcea*, *Sisirynchium, Eschscholzia* or *Lasthenia* are present. The percentage cover of native species at any one time may be quite low, but is considered native grassland if 20% aerial cover of native species is present.

Site Factors: Usually on fine-textured (often clay) soils, moist or even waterlogged during winter, but very dry in summer. Often interdigitates with Oak Woodlands (71100) on moister, better-drained sites. In San Diego County this becomes Montane Perennial grassland above approximately 2000 feet in elevation.

Characteristic Species: *Achillea borealis*, *Achyrachaena mollis*, *Agoseris heterophylla*, [*Avena fatua*], *Bloomeria crocea, Brodiaea lutea,* [*Bromus diandrus, B. mollis, B. madriatensis* ssp. *rubens*], *Chlorogalum pommeridianum, Clarkia purpurea, Dodecatheon jefferyi*, *Eschscholzia* spp., *Lasthenia* spp., *Melica californica, M. imperfecta, Orthocarpus attenuatus*, *Plantago hookeriana californica*, *Poa scabrella*, *Sanicula* spp., *Sidalcea* spp., *Sisirynchium* spp., *Stipa cernua*, *Stipa* (*Nasella*) *pulchra*.

Distribution: Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, but now much reduced. The relationship of this type to the Potrero Grasslands of the Peninsular Ranges needs clarification. In San Diego County: Alpine (Wright's Field), Ramona, Olivenhain, San Marcos, Camp Pendleton, Rincon, Mesa Grande (?), Eagle Peak Road (?), and Otay Mesa.

42300 Wildflower Field

Description: An amorphous grab bag of mostly native, herb-dominated types noted for conspicuous annual wildflower displays. Dominance varies from site to site and from year to year at a particular site. In San Diego County, often a subtype of Creosote Bush Scrub (33100), Wet Montane Meadow (45110), Foothill/Montane Perennial Grassland (42400), and formerly on coastal mesas.

Site Factors: Usually on fairly poor sites (droughty, low in nutrients), associated with Grasslands or Oak Woodlands on surrounding, more productive sites. In San Diego County, mostly on sandy soils.

Characteristic Species: *Eschscholtzia californica, Gilia bicolor, Layia platyglossa, Lupinus bicolor, Orthocarpus attenuatus, O. purpuresens*, *Oenothera* spp.

Distribution: Valleys and foothills of the Californian Floristic Province except the north coast (too wet) region. Below about 2000 ft. in the north, 4000-5000 ft. in the south. In San Diego County: Lower Coyote Creek near Borrego Springs, Mataguay, Upper Cuyamaca Valley.

42400 Foothill/Mountain Perennial Grassland

Description: Generally isolated grasslands within Oak or Pine Woodland or Chaparral and associated with meadows with a range of Marshland, Big Basin Sagebrush or Steppe.

Characteristic Species: *Nasella pulchra, Leymus triticoides, Hordeum brachyantherum, Agrostis* spp., *Muhlenbergia rigens, Poa pratensis, Cirsium tioganum, Pteridium aquilinum, Iris missouriensis*

Distribution: Corte Madera, upper Rancho Guejito, Spoke Ranch, and all major valleys in the Palomar Cuyamaca, and Laguna Mountains.

5. RE-VEGETATION PLAN

5.1. REMOVAL OF WEEDS / INVASIVE SPECIES

Non-native, invasive plants that established because of construction activities will be removed by either hand-pulling or hand digging with hoes or other implements. Any large woody species will be cut and the stump left to reduce erosion. A six foot radius will be cleared of weeds around each new planting.

Any soil, soil amendments, or mulch that are imported into the Plan Area will be certified weed-free.

5.2. PLANTING PLAN

All container plants, cuttings, and seed stock obtained will be derived from local genetic sources and be locally native species (i.e., no cultivars). All containers must be at least 1 gallon in size. The species list of all replacement plants is presented in Table 1 following. Final siting, planting densities, and planting styles will follow randomly spaced, naturally clumped patterns and may be modified by the consulting biologist.

All planting holes will be pre-irrigated prior to planting and irrigated again following planting ("watering-in"). A berm of soil must be created around each planting with approximately a 3-foot radius to capture rain from surface runoff or to hold water from supplemental watering activities. Any staking should be removed after 1 year to prevent girdling or weakened stems from forming.

Container plants will be mulched at a depth of 4 inches and diameter of 4 feet or 2 times the diameter of the dripline of the plant, whichever is greater. Mulch will consist of coarse organic matter low in salts, pathogens, weed seeds, and inorganic materials. Mulch will not be placed directly against the main stem of the plant to prevent decay.

It is recommended that the temporary perimeter fencing installed for construction activities remain in place during the plant establishment period, to deter unauthorized access and trampling. Signage is also recommended to inform visitors of the restoration processes and prohibit access to restored areas.

Should mammal herbivory pose a significant threat to Project success, exclusionary fencing or browse cages may be installed around plantings, such as caging with metal t-posts and hardware fencing in at least a 3-foot radius away from the plant stem.

TABLE 1. NATIVE GRASSLAND REVEGETATION PLANT PALETTE

Taxonomic Name	**Common Name**
Achillea borealis	Common yarrow
Achyrachaena mollis	Blow wives
Agoseris heterophylla	Mountain dandelion
Agrostis spp.	Bentgrass
Aristida temipes var. hamulosa	Hook three-awn grass
Bloomeria crocea var. crocea	Common golden star
Brodiaea lutea	Golden brodiaea
Calochortus splendens	Lilac mariposa
Castilleja exserta	Common owl's clover
Castilleja (*Orthocarpus*) *attenuatus*	Narrow-leaved owl's clover
Chlorogalum pommeridianum	Soaproot
Clarkia purpurea	Winecup fairyfan
Dichelostemma capitatum	Blue dicks
Eschscholzia californica	California poppy
Deinandra fasciculate	Fascicled tarweed
Deinandra paniculata	Paniculate tarweed
Hordeum brachyantherum	Meadow barley
Lasthenia californica	Coast goldfields
Lupinus bicolor	Lindley's annual lupine
Melica imperfect	California melic
Oenothera spp.	Primrose
Poa pratensis	Kentucky bluegrass
Poa scabrella	Pacific bluerass
Sanicula spp.	Sanicle
Sidalcea spp.	Checkerblooms
Sisyrinchium spp.	n/a
Stipa lepida	Foothill needlegrass
Stipa pulchra	Purple needlegrass
Nemophila menziesii	Baby blue eyes
Plantago erecta	California plantain
Sisyrinchium bellum	Blue-eyed grass

5.3. MAINTENANCE AND MONITORING PLAN

5.3.1. Irrigation

For at least 1 year, replacement plantings must be protected from drought stress by installation of an irrigation system or at the least, supplemental waterings within the bermed area of each replacement planting (or broadcast watering for grasses). Periodic deep waterings, rather than frequent shallow waterings, are preferred. Watering must be sufficient to wet the soil within the bermed area to a depth of 30 inches, and without causing soil erosion. Replacement plantings must be protected from fire damage by maintaining a defensible area by clearing away, trimming, or otherwise suppressing tall grasses and weeds. Regular mulching is recommended to facilitate fire protection and reduce watering requirements.

5.3.2. Weed and Pest Control

Weed eradication will be conducted as necessary to minimize competition that could prevent establishment of native species; but will be conducted no less than two times during the first year. Hand-pulling or mechanical removal will be the only methods employed. As needed, herbivore exclusion measures should be employed.

5.3.3. Supplemental Planting and Seeding

The replacement plant survivability goal is 80% coverage at the end of 1 year. After 1 year, should the recruitment of native species fail following non-native plant removal or should more than 20% coverage of the grasses, forbs, or container plants fail or fall into poor health, supplemental planting will ocurr using the same species or another species from the plant palette. All supplemental planting will occur within fall and winter months when planting and germination conditions are more favorable.

6. REFERENCES

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Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California”, Robert F. Holland, Ph.D., October 1986.

FIGURES

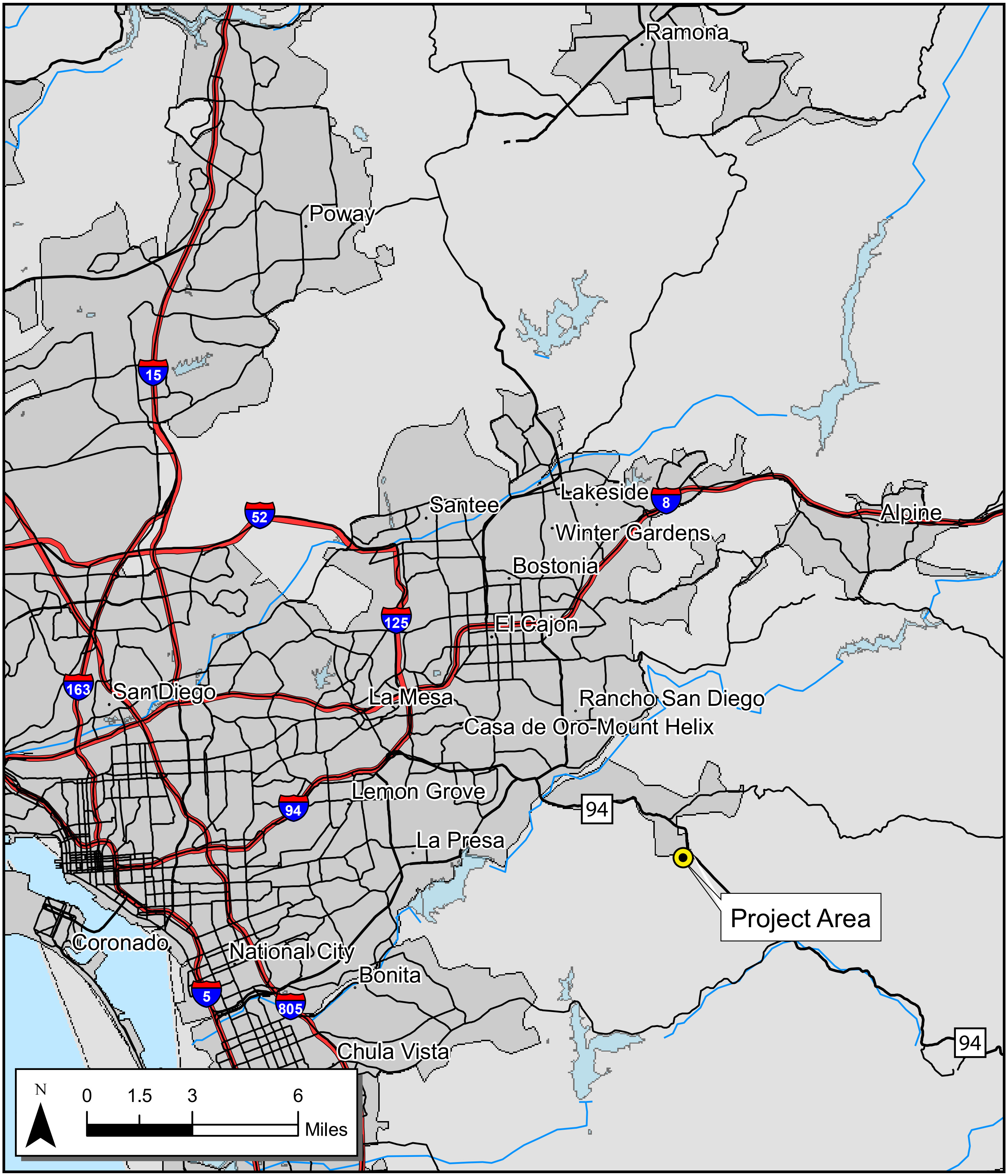

Figure 1. Location of the Project Area


TEMPORARY/CONSTRUCTION BMP LEGEND
HYDROSEEDING, PLANTING, GEOTEXTILES, MATS & FIBER ROLLS PER SS-2, SS-3, SS-4, & SS-7.
MATERIAL DELIVERY AND STORAGE AREA PER WM-1
SOLID WASTE MANAGEMENT PER WM-5
HAZARDOUS WASTE MANAGEMENT PER WM-6
SANITARY WASTE MANAGMENT WM-9
CONCRETE WASTE MANAGEMENT PER WM-8
SILT FENCE PER SC-1 OR GRAVEL BAGS PER SC-6 & SC-8 OR STRAW WATTLES PER SC-5
STOCKPILE MANAGEMENT
STABILIZED CONSTRUCTION ENTRANCE
SANDBAG PER SC-6 & SC-8
MS
SWM
WM-9
CWM
WM-3
STAGING AREA
STABILIZED CONSTRUCTION ENTRY
PEACEFUL VALLEY RANCH RD
CAMPO RD
EX ACCESS EASEMENT PER DOC #2012-0104143, RECORDED FEB. 23, 2012
EXIT. AC. TO REMAIN
FUTURE STORMWATER TANK PAD
PE 889.5
COMMUNITY BUILDING
FUTURE ADMINISTRATION AREA
915.0
920.0
ALTERNATIVE STAGING AREA
LIMITS OF FLOODPLAIN
DESILTING BASIN
872.0 BOTTOM OF PIT
FUTURE BIOFILTRATION AREA
PE 888.5
PROPOSED LIMIT OF PIT
SCALE: 1" = 50'
0
50
100

Vegetation Communities

- Non-native Grassland
- Ruderal / Developed
- Study Area

Existing Vegetation Communities within 4-Acre Parcel

Jamul Indian Village Gaming Development Project

Proposed Restored Vegetation Communities within 4-Acre Parcel

Jamul Indian Village Gaming Development Project

ATTACHMENT 4

SUPPLEMENTAL AIR QUALITY ANALYSIS

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February 7, 2014

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Subject: Jamul Indian Village Gaming Facility Project Supplemental Construction Air Quality and Greenhouse Gas Assessment – San Diego

The proposed Jamul Indian Village (JIV) Gaming Project (project) is located on a 6.2 acre reservation held in trust by the United States for the benefit of the JIV. The external boundaries of the reservation lie within the Community of Jamul, County of San Diego. The reservation has direct access to State Highway 94 via the Reservation Road located approximately 1, 700 feet south of Melody Road.

The proposed project would consist of the development of a gaming facility with corresponding support uses. The noise impacts associated with the JIV project was fully assessed in the *Air Quality Analysis for the Jamul Indian Village Gaming Facility* (JIV Air Quality Report) (LDN 2012). The JIV Air Quality Report analyzed the excavation and export of 200,000 cubic yards of soil requiring approximately 60 trucks per day (120 two-way trips). Recent revisions to the project have increased the required export by 50,000 cubic yards and reduced the schedule by several months, thus necessitating the use of additional trucks to export the material. It has been calculated approximately 144 trucks per day would be required for exporting materials. This is equivalent to 288 two-way trips. Additional changes during construction activities include watering three times per day rather than two times, and limiting truck speeds on unpaved surfaces to no greater than 15 miles per hour during construction activities. No other changes to the schedule are proposed and the same quantity and type of equipment would be used.

The purpose of this analysis is to provide an evaluation of air quality and greenhouse gas (GHG) impacts resulting from the proposed changes in grading quantities and hauling schedule relative to the previous impacts assessed in the JIV Air Quality Report.

Air Quality

Terminology

The following is a brief summary of terms used in this re-evaluation. For a detailed discussion of air quality and GHG terminology and concepts, please see the JIV Air Quality Report.

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The US Environmental Protect Agency (EPA) has established ambient air quality standards for various classes of criteria pollutants through the authority of the Clean Air Act (CCA). The CAA requires the EPA to set ambient air quality standards (AAQS) for six common pollutants, known as criteria pollutants. The pollutants regulated as criteria pollutants are: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and respirable and fine particulate matter (PM_{10} and $PM_{2.5}$). These EPA standards are called the National Ambient Air Quality Standards (NAAQS). Additionally, the California Air Resources Board (CARB) has established the California Ambient Air Quality Standards (CAAQS).

The proposed project is located within the San Diego Air Basin (SDAB). The SDAB is currently classified as a non-attainment area under the ozone NAAQS and a non-attainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and ozone under the CAAQS.

The San Diego Air Pollution Control District (SDAPCD) is the agency that regulates air quality in the SDAB. The SDABCD currently maintains air quality monitoring stations throughout the greater San Diego metropolitan region that continuously record air pollutant concentrations and meteorological information. These measurements are then used by scientists to help forecast daily air pollution levels. The SDAPCD does not provide guidance for determining the significance of impacts under CEQA.

According to the CEQA guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make significance determinations, where available. SDAPCD has not adopted significance criteria for a project's construction- or operations-related air quality impacts. However, the County of San Diego (County) has published guidelines for determining significance of air quality under CEQA for projects located in unincorporated San Diego County. The County guidelines are not directly applicable to the proposed project but will be considered in the determination of impacts for this analysis. The County screening level thresholds (SLT) are shown in Table 1.

TABLE 1
SDAPCD SCREENING CRITERIA

Units	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Lbs. per Hour	--	25	100	25	--	--
Lbs. per Day	75	250	550	250	100	55
Tons per Year	13.7	40	100	40	15	10

VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = oxides of sulfur; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter
SOURCE: County of San Diego 2007.

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Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

The change in grading schedules and quantities would not affect the analysis of consistency with the regional plan included in the JIV Air Quality Report.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Emissions

Less than significant impact. Construction activities for the project would generate minor pollutant emissions. As currently planned, construction would commence in early 2014. Sources of construction-related air emissions include fugitive dust from earthwork activities; construction equipment exhaust; construction-related trips by workers, delivery trucks, and material-hauling trucks; and construction related power consumption (Table 2). Construction of the project would be temporary and associated impacts would cease upon completion. Air quality emissions were calculated using the URBEMIS2007 Version 9.2.4 computer model (URBEMIS 2007), and data from the URBEMIS2007 Version 9.2.4 Users Guide (SCAQMD 2007).

TABLE 2
CONSTRUCTION EMISSIONS

Scenario	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Originally Proposed Project						
1st Year Maximum Daily Emissions	6.4	60.1	31.1	0.0	77.41	18.18
2nd Year Maximum Daily Emissions	13.2	112.0	31.1	0.0	94.21	23.61
3rd Year Maximum Daily Emissions	37.9	41.18	64.3	0.0	3.1	2.8
Proposed Project - Revised Grading						
1st Year Maximum Daily Emissions	8.0	94.3	39.9	0.1	**79.4**	19.4
2nd Year Maximum Daily Emissions	27.3	119.6	82.1	0.1	**94.8**	23.5
3rd Year Maximum Daily Emissions	49.7	36.6	77.4	0.1	2.9	2.5
Thresholds	75	250	550	250	100	55
Significant Impact?	No	No	No	No	Yes	No

VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = oxides of sulfur; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter
Refer to Appendix for detailed assumptions and modeling output files.
Note: Modeling assumes watering site 3 times per day and applying 15 MPH speed limit on unpaved surfaces.

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As shown in Table 2, the increased grading quantities and shorter schedule would result in increased emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ above those assessed for the proposed project in 2012 and 2013. However, emissions of VOC, NO_X, CO, SO_X, PM_{10} and $PM_{2.5}$ would not exceed the thresholds and these emissions would not result in new impacts in either year.

<u>Operation Emissions</u>

The change in grading schedules and quantities would not change the findings in analysis of operational emissions included in the JIV Air Quality Report.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

No new impacts. Refer to Responses a and b.

d) Expose sensitive receptors to substantial pollutant concentrations?

Sensitive populations (i.e., children, senior citizens and acutely or chronically ill people) are more susceptible to the effects of air pollution than are the general population. Land uses typically associated with sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. Land uses associated with sensitive receptors in proximity (<0.25 mile) to the project site include the residential uses along SR-94 and Melody Road. However, as previously discussed under b), the project would not exceed the screening criteria after mitigation, and thus would not exceed the NAAQS or CAAQS, thus the project would not result in substantial local concentrations of criteria pollutants.

The revised construction schedule and grading quantities would result in a slight increase in short-term diesel exhaust emissions from onsite heavy-duty equipment over what was assessed in the JIV Air Quality Report. As indicated in the project description, the revised schedule would shorten the duration diesel PM from construction would be generated. As the dose to which the receptors are exposed is the primary factor used to determine health risk, which is a function of the concentration of a substance or substances in the environment and the duration of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments should be based on a 9 to 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, as the duration of proposed construction activities is being shortened, the exposure would be less than the total exposure period assessed in the JIV Air Quality Report as well as the minimum period recommended for health risk calculation.

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Therefore, diesel PM generated by project construction is not expected to create conditions where the probability is greater than one in one million of contracting cancer at any sensitive receptor or to generate ground-level concentrations of noncarcinogenic TACs that exceed applicable standards.

Greenhouse Gas Emissions

Terminology

GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

The primary GHGs associated with development projects are considered to have high global warming potential (GWP). GWP is a concept developed to compare the primary GHGs capability to trap heat in the atmosphere relative to another gas; GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere (“atmospheric lifetime”). GHGs emitted at lower rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2. The concept of CO_2-equivalency (CO_2e) is used to account for the different GWPs of GHGs to absorb infrared radiation.

Similarly, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates.

Applicable Standards and Regulations

The Tribe does not have any specific GHG reduction thresholds however California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32) and Senate Bill 97 (SB97). AB32 requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels and SB97 a "companion" bill directed amendments to the California Environmental Quality Act (CEQA) statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. AB 32 requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels or roughly a 28.3% reduction. Significance thresholds have not been adopted but are currently being discussed. AB 32 is specific as to when thresholds shall be defined. AB32 guidelines are not directly applicable to the proposed project but will be considered in the determination of impacts for this analysis.

Mr. Joe Broadhead
Environmental Data Systems
1007 7th Street, Suite 308
Sacramento, CA 95814

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Impact Analysis

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Related GHG Emissions

Construction-related emissions are based on the previous assumptions and include GHG sources such as construction equipment, material delivery trucks, and construction worker vehicles. Estimated GHG emissions are shown in Table 3. As shown, total construction-related GHG emissions would be 1,849.82 MT CO_2e. Given the fact that the total emissions will ultimately contribute to the 2020 cumulative emission levels, it is acceptable to average the total construction emissions over a 30 year period (SCAQMD 2008).The annual and total level of GHG emissions expected to occur from construction of the Proposed Project is well below the level recommended by CEQ for further analysis.

TABLE 3
CONSTRUCTION GHG EMISSIONS SUMMARY
(CO2 EMISSIONS METRIC TONS)

SOURCE	PROPOSED PROJECT	PROPOSED PROJECT – REVISED GRADING
1st Year GHG Emissions	387.3	797.1
2nd GHG Daily Emissions	859.4	1,357.7
3rd GHG Daily Emissions	603.1	593.6
Total	1,849.8	2,748.3
Yearly Average (2020)	61.7	91.6

Operational Emissions

As stated in the project description, the project would not alter the proposed project assessed in the JIV Air Quality Report. Therefore, the emissions reported in that analysis are summarized in Table 4 for use in determining the overall GHG emissions associated with the project.

As show in Table 4, total operational GHG emissions resulting from the Proposed Project would be approximately 10,806 MT CO_2e per year. To reduce GHG emissions the project includes several mitigation measures.

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TABLE 4
GHG EMISSIONS SUMMARY
(CO_2 EMISSIONS METRIC TONS)

SOURCE	ORIGINALLY PROPOSED PROJECT	PROPOSED PROJECT – REVISED GRADING
Transportation	8,509.30	8,509.30
Natural Gas	954	954
Electricity	1,019.0	1,019.0
Water Usage	53	53
Wastewater Treatment	118.1	118.1
Solid Waste	68.8	68.8
Construction	61.7	83.7
Total	10,784	10,806

Reduction Strategies

Combining all regulatory measures identified in the JIV Air Quality Report, such as Pavley, Low Carbon Fuel Standards, utility reduction goals required by the State and recycling requirements under AB 341 along with design features and the following previously identified mitigation measures, would be expected to reduce GHGs, from the Business as Usual levels, and represents the project's effort to meet it fair share of the goals under AB 32.

- The project is installing green roof technologies and will capture treated water for use in the landscaped areas and on the roof.
- The project will provide solar panels on the roof, where possible, in areas not being utilized for the green roof technologies.
- The project will provide shuttle and bus services to and from the project to reduce vehicle trips and miles traveled.
- The project will flared off and burned CH_4 produced at the wastewater treatment plant to reduce CH_4 emissions up to 95%.
- The project will utilize low flow water devices High Efficiency Toilets (HET) and with specifications meeting or exceeding standards set forth by the EPA
- The project will install low energy utilities (i.e., lighting and appliances) to increase building efficiency and reduce power consumption.
- The project will promote employee and patron ridesharing to help reduce vehicle trips traveled.
- The project will install dedicated parking stalls and charging stations for electric vehicles.

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The project may also incorporate other emission reduction strategies that are available at the time the facilities are being built that may also achieve additional reductions in greenhouse gases.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The change in grading schedules and quantities would not affect the analysis of consistency with the GHG reduction plans or alter the findings discussed in the JIV Air Quality Report.

ATTACHMENT 5

PRE-CONSTRUCTION SURVEY RESULTS

TO:
Mr. Joe Broadhead
Environmental Data Systems
1007 7th Street, Suite 308
Sacramento CA 95814

and

Jamul Indian Village

SUBJECT:
Technical Memo: Third Pre-construction Biological Survey for the Jamul Gaming Facility Project, Jamul, CA.

Introduction

The Jamul Indian Village (Tribe) and their contractor are mobilizing to construct a gaming facility on its Reservation approximately one mile south of the community of Jamul. A Tribal Environmental Evaluation was prepared, and approved in January 2013, that evaluated the off-reservation impacts of the proposed gaming facility pursuant to the Tribal-State Compact Between the State of California and the Jamul Indian Village signed on October 5, 1999, as well as the Jamul Indian Village Tribal Gaming Project Environmental Review Ordinance.

Mitigation measure # 4.7(1) Special Status Species/Protected Species of the Tribal Environmental Evaluation specified:

- preconstruction surveys for special-status species and listed species must be performed by a qualified biologist
- pre-construction surveys for nesting birds will be performed (if during breeding season - February 15 to September 15; and as early as January 1 for raptors)

This technical memo documents the findings of the third preconstruction survey for federally-listed species and other special-status species and was performed to fulfill these mitigation measures, as well as a general mitigation measure to protect biological resources.

Methods

Dr. G.O. Graening performed two previous biological surveys on the mornings of November 26 and December 12, 2013. This latest survey was conducted on January 29, 2014, with a morning temperature of approximately 55 degrees Fahrenheit warming to 75 F by midday. The survey area consisted of the entire Jamul Indian Village, the 4-acre parcel, and an additional 25 foot buffer around these parcels. Survey efforts emphasized the search for any special-status species or habitats that had documented occurrences, in databases queried, within the survey area or vicinity. Focal species consisted of least Bell's vireo, coastal California gnatcatcher, southwestern willow flycatcher, arroyo toad, Quino checkerspot butterfly, Hermes copper butterfly, and any rare plants or occupied nests. Field glasses were used to assist in the ocular surveys. Wildlife sign—tracks, feathers and shedding, burrows, scat, etc.—were interpreted to detect species not actually seen. All visible fauna and flora observed were recorded in a field notebook and identified to the appropriate taxon. Where detected, the location of any special-status species was georeferenced with a geographic positioning system receiver with accuracy of 1 meter or better.

Results

Vegetation Types and Plants Present

The project area within the Jamul Indian Village currently contains three terrestrial natural community/habitat types: ruderal/urbanized (approximately 4.6 acres); non-native annual grassland (1.0 acre); and coast oak riparian (0.4 acre). A small remnant (> 0.1 acre) of coastal scrub is also present. On the 4-acre parcel, the majority of area is ruderal/urbanized, and the rest is non-native annual grassland. Most vegetation was in a dormant stage during this winter season. Although the CNDDB lists rare plants in the vicinity of the project area, no special-status plant species were detected during these field surveys. Previous botanical surveys did not detect any special-status plant species within this study area. Lists of all plant species found within the project area can be found in:

- Pacific Southwest Biological Services. 2011. A Botanical Inventory of the 6-acre Jamul Rancheria, Jamul, San Diego County, California. Prepared for Environmental Data Systems, Inc. Prepared by R. Mitchell Beauchamp, Pacific Southwest Biological Services, Inc., National City, California.

- Pacific Southwest Biological Services. 2013. A Botanical Inventory of the Roadways and Proposed Route Improvements Associated with the Jamul Rancheria, Jamul, San Diego County, California. Prepared for Environmental Data Systems, Inc. Prepared by R. Mitchell Beauchamp, Pacific Southwest Biological Services, Inc., National City, California. 19 pp.

Wildlife Habitat and Animals Present

Most animals were absent or dormant during this winter season. The following animals were detected during the survey: desert cottontail (*Sylvilagus audubonii*); scat of coyote (*Canis latrans*); fence lizards (*Sceloporus occidentalis*); ants (Formicidae); small rodent burrows (probably *Perognathus*); crow (*Corvus brachyrhynchos*); and common songbirds such as sparrows (*Melospiza*) and finches (*Spinus*). No special-status animal species were detected during these field surveys.

No active nests were detected, although abandoned stick nests were present in the coast live oak canopy in the Willow Creek riparian corridor inside and north of the project area.

Conclusions and Recommendations

No federally-listed species or other special-status species were detected during this pre-construction survey. No impacts to federally-listed species or critical habitat have occurred to date.

FROM:

G. O. Graening, PhD, MSE

TO:
Mr. Joe Broadhead
Environmental Data Systems
1007 7th Street, Suite 308
Sacramento CA 95814

and

Jamul Indian Village

SUBJECT:
Technical Memo: Pre-construction Biological Survey for the Jamul Gaming Facility Project, Jamul, CA.

Introduction

The Jamul Indian Village (Tribe) is proposing to construct a 228,000 square foot gaming facility on its Reservation approximately one mile south of the community of Jamul. A Tribal Environmental Evaluation was prepared that evaluated the off-reservation impacts of the proposed gaming facility pursuant to the Tribal-State Compact Between the State of California and the Jamul Indian Village signed on October 5, 1999, as well as the Jamul Indian Village Tribal Gaming Project Environmental Review Ordinance.

Mitigation measure # 4.7(1) Special Status Species/Protected Species of the Tribal Environmental Evaluation specified:

- preconstruction surveys for special-status species and listed species must be performed by a qualified biologist
- pre-construction surveys for nesting birds will be performed (if during breeding season - February 15 to September 15; and as early as January 1 for raptors)

This technical memo documents the findings of the preconstruction surveys for special-status species and listed species performed to fulfill these mitigation measures.

Methods

Dr. G.O. Graening performed the biological survey on November 24, 2013. Weather conditions were cool and hazy, with a morning temperature of approximately 40 degrees Fahrenheit warming to 70 F by midday. The survey area consisted of the entire Jamul Indian Village, the 4-acre parcel, and an additional 20 foot buffer around these parcels. Survey efforts emphasized the search for any special-status species or habitats that had documented occurrences, in databases queried, within the survey area or vicinity. Field glasses were used to assist in the ocular surveys. Wildlife sign—tracks, feathers and shedding, burrows, scat, etc.—were interpreted to detect species not actually seen. All visible fauna and flora observed were recorded in a field notebook and identified to the appropriate taxon. Where detected, the location of any special-status species was georeferenced with a geographic positioning system receiver with accuracy of 1 meter or better.

Results

Vegetation Types and Plants Present

The project area currently contains three terrestrial natural community/habitat types: ruderal/urbanized (approximately 4.6 acres); annual grassland (1.0 acre); and coast oak riparian (0.4 acre). A small remnant (> 0.1 acre) of coastal scrub is also present.

Although the CNDDB lists rare plants in the vicinity of the project area, no special-status plant species were detected during this field survey. Previous botanical surveys did not detect any special-status plant species. Lists of all plant species found within the project area can be found in:

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Wildlife Habitat and Animals Present

The following animals were detected during the survey: scat of coyote (*Canis latrans*); fence lizard (*Sceloporus occidentalis*); metalmark butterfly (*Apodemia* sp.); ants (Formicidae); small rodent burrows (prob. *Perognathus* sp.); crow (*Corvus brachyrhynchos*); red-tailed hawk (*Buteo jamaicensis*); and common songbirds. No special-status animal species were detected during this field survey.

No active nests were detected, although abandoned raptor stick nests were present in the Willow Creek riparian corridor north of the project area.

Conclusions and Recommendations

No federally-listed species or other special-status species were detected during this pre-construction survey. Because special-status species that occur in the vicinity could migrate onto the project area between the time that the field surveys were completed and the start of construction, it is recommended that a follow-up pre-construction survey for special-status species and nesting birds be performed by a qualified biologist to ensure that threatened or endangered species are not present if more than 60 days lapses between this survey date and the beginning of construction.

FROM:

G. O. Graening, PhD, MSE

TO:
Mr. Joe Broadhead
Environmental Data Systems
1007 7th Street, Suite 308
Sacramento CA 95814

and

Jamul Indian Village

SUBJECT:
Technical Memo: Third Pre-construction Biological Survey for the Jamul Gaming Facility Project, Jamul, CA.

INTRODUCTION

The Jamul Indian Village (Tribe) and their contractor are mobilizing to construct a gaming facility on its Reservation approximately one mile south of the community of Jamul. A Tribal Environmental Evaluation was prepared, and approved in January 2013, that evaluated the off-reservation impacts of the proposed gaming facility pursuant to the Tribal-State Compact Between the State of California and the Jamul Indian Village signed on October 5, 1999, as well as the Jamul Indian Village Tribal Gaming Project Environmental Review Ordinance.

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This technical memo documents the findings of the third preconstruction survey for federally-listed species and other special-status species and was performed to fulfill these mitigation measures, as well as a general mitigation measure to protect biological resources.

METHODS

Dr. G.O. Graening performed two previous biological surveys on the mornings of November 26 and December 12, 2013. This latest survey was conducted on January 29, 2014, with a morning temperature of approximately 55 degrees Fahrenheit warming to 75 F by midday. The survey area consisted of the entire Jamul Indian Village, the 4-acre parcel, and an additional 25 foot buffer around these parcels. Survey efforts emphasized the search for any special-status species or habitats that had documented occurrences, in databases queried, within the survey area or vicinity. Focal species consisted of least Bell's vireo, coastal California gnatcatcher, southwestern willow flycatcher, arroyo toad, Quino checkerspot butterfly, Hermes copper butterfly, and any rare plants or occupied nests. Field glasses were used to assist in the ocular surveys. Wildlife sign—tracks, feathers and shedding, burrows, scat, etc.—were interpreted to detect species not actually seen. All visible fauna and flora observed were recorded in a field notebook and identified to the appropriate taxon. Where detected, the location of any special-status species was georeferenced with a geographic positioning system receiver with accuracy of 1 meter or better.

Results

Vegetation Types and Plants Present

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Wildlife Habitat and Animals Present

Most animals were absent or dormant during this winter season. The following animals were detected during the survey: desert cottontail (*Sylvilagus audubonii*); scat of coyote (*Canis latrans*); fence lizards (*Sceloporus occidentalis*); ants (Formicidae); small rodent burrows (probably *Perognathus*); crow (*Corvus brachyrhynchos*); and common songbirds such as sparrows (*Melospiza*) and finches (*Spinus*). No special-status animal species were detected during these field surveys.

No active nests were detected, although abandoned stick nests were present in the coast live oak canopy in the Willow Creek riparian corridor inside and north of the project area.

Conclusions and Recommendations

No federally-listed species or other special-status species were detected during this pre-construction survey. No impacts to federally-listed species or critical habitat have occurred to date.

FROM:

G. O. Graening, PhD, MSE

ATTACHMENT 6

PRELIMINARY HYDRAULIC ANALYSIS

SDE

Engineering | Surveying | Planning

Annie S. Aguilar, PE | **Ivan R. Fox,** PE | **Barry L. Munson,** PE, QSD | **Andrew G. Karydes,** PLS | **Laurie Simon,** Principal Planner

SDE 5481

January 28, 2014

Brandon T. Moore
Marnell Companies
222 Via Marnell Way
Las Vegas, Nevada 89119

Subject: Preliminary Hydraulic Analysis for Northerly Bridge

Reference: 1. *Willow Creek Bridge Locations, Hollywood Casino-Jamul, California*, prepared by Marnell Architecture, dated January 16, 2014.

2. *Jamul Casino and Resort Project, Hydrology and Drainage & Flood Storage Study*, prepared by Martin and Ziemniak, dated September 9, 2006.

Mr. Moore,

SDE has performed a preliminary hydraulic analysis for the northerly bridge crossing proposed for the Hollywood Casino as shown on Reference 1. This analysis was performed to compare the existing and proposed water surface elevations at the northerly property line to determine if bridge construction affected upstream (offsite) water surface conditions during peak flow events. The peak flow used for the analysis was 392 cfs, which is from Reference 2.

The analysis for the existing condition consisted of analyzing the existing asphalt road crossing Willow Creek and culvert (36" cmp) in the flow line of Willow Creek. This section was taken approximately 25' south of the northerly property line of the project site. The road section was modeled as a parabolic weir and the culvert using inlet control. Our analysis indicated that the headwater elevation upstream from the weir/culvert will be approximately 888.9, which is 1.8 feet above the low point in the weir. This indicates that the headwater upstream from the weir will create ponding northerly of the north property line of the project site in excess of 100'.

The bridge crossing for the proposed condition was modeled along the northerly property line as an irregular channel with a bridge abutment within the channel on the easterly side. The analysis assumed that the abutment is a constriction that creates a ponded condition upstream. This is a conservative assumption since a majority of the channel section is in its natural state and flow in the westerly side of the creek is not affected by the abutment. The headwater for the ponded condition upstream from the bridge was determined to be 888.1.

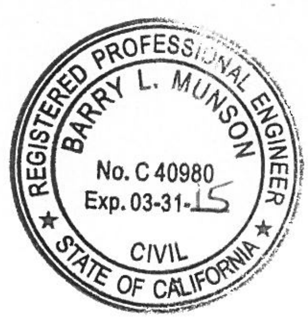
Based on a comparison of the analyses of existing and proposed conditions, the headwater for the weir crossing in the existing condition is higher and controls. This indicates that any backwater effects, or increase of headwater from the bridge abutment, will be submerged below the weir headwater and any upstream effects from the bridge abutment will be minimal.

In addition, we have reviewed the proposed southerly bridge crossing along the south property line. The abutments do not encroach into the channel on either side and will have no downstream effects on the flow. Further, the CIDH piles represent a small encroachment relative to the entire cross section of flow and will not create any significant impact to the flow downstream from the site.

If you have any questions, please do not hesitate to contact our office.

San Dieguito Engineering, Inc.
Sincerely,

Barry L. Munson, PE
Principal Engineer



JAMUL

HYDROLOGIC STUDY

WEIR AND PIPE ANALYSIS

PROJECT NAME: Jamul Indian Village
PROJECT NUMBER: 5481
DATE: 1/21/2014
COMMENT:

COORD: N32°42' E116°52'

Q100 (cfs) 392
Weir Coeff "C") 2.005

Elev	T	Hm	Q weir <1>	Q pipe <2>	Qtotal	
889.0	69	1.8	334	77	411	Solution between 88.9 and 89.0=
888.9	67	1.7	298	76	374	Headwater Elevation
888.8	64	1.6	260	75	335	
888.7	62	1.5	228	73	301	
888.6	59	1.4	196	72	268	
888.5	57	1.3	169	71	240	
888.4	55	1.2	145	70	215	
888.3	52	1.1	120	69	189	
888.2	50	1	100	67	167	
888.1	47	0.9	80	66	146	
888.0	45	0.8	65	65	130	
887.2	0	0	0	58	58	Low Point in Dip
882.4	0	0	0	0	0	Inlet 36" CMP

<1> Q=C x T x Hm^1.5
<2> From Bureau of Public Roads Inlet Control Chart

Worksheet for Section 115+00 w/bridge 20140116

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01139	ft/ft
Discharge	392.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+90.00	898.00
0+90.01	891.30
0+91.60	891.00
0+98.30	890.00
1+00.00	889.28
1+14.85	887.74
1+36.30	886.62
1+46.61	883.39
1+57.99	885.19
1+58.00	898.00

LOW PT NORTH ℄ 886.94 POST DEV

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+90.00, 898.00)	(0+90.01, 891.30)	0.013
(0+90.01, 891.30)	(1+57.99, 885.19)	0.030
(1+57.99, 885.19)	(1+58.00, 898.00)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	3.55	ft

Worksheet for Section 115+00 w/bridge 20140116

Results

Elevation Range	883.39 to 898.00 ft	
Flow Area	50.99	ft²
Wetted Perimeter	30.14	ft
Hydraulic Radius	1.69	ft
Top Width	27.75	ft
Normal Depth	3.55	ft
Critical Depth	3.55	ft
Critical Slope	0.01139	ft/ft
Velocity	7.69	ft/s
Velocity Head	0.92	ft ← $\frac{V_n^2}{2g}$
Specific Energy	4.46	ft
Froude Number	1.00	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.55	ft
Critical Depth	3.55	ft
Channel Slope	0.01139	ft/ft
Critical Slope	0.01139	ft/ft

* $HW_{ELEV} = FL + D_n + (1 + k_e)\frac{V_n^2}{2g}$

$= 883.39 + 3.55 + (1+0.3)\,0.92$

$= 888.14$ OK < 888.9 WEIR TAILWATER

* ASSUMED FULL PONDED CONDITION → WORST CASE

Cross Section for Section 115+00 w/bridge 20140116

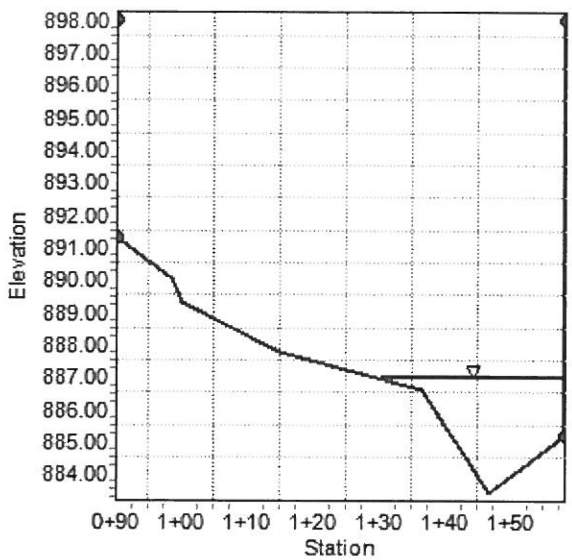
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01139	ft/ft
Normal Depth	3.55	ft
Discharge	392.00	ft³/s

Cross Section Image



Worksheet for Section 115+00 Pre-Development

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02130	ft/ft
Discharge	392.00	ft³/s
Section Definitions		

Station (ft)	Elevation (ft)	
0+84.50	892.00	
0+91.60	891.00	
0+98.30	890.00	
1+00.00	889.28	
1+14.85	887.74	
1+36.30	886.62	
1+46.61	883.39	NORTH ℄ LOW POINT WS = 886.38
1+59.86	885.55	
1+69.70	888.25	
1+70.40	889.00	
1+72.30	890.00	
1+74.30	891.00	
1+75.40	892.00	

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+84.50, 892.00)	(1+75.40, 892.00)	0.030

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 115+00 Pre-Development

Results

Normal Depth		2.99	ft
Elevation Range	883.39 to 892.00 ft		
Flow Area		40.75	ft²
Wetted Perimeter		26.54	ft
Hydraulic Radius		1.54	ft
Top Width		25.80	ft
Normal Depth		2.99	ft
Critical Depth		3.45	ft
Critical Slope		0.01147	ft/ft
Velocity		9.62	ft/s
Velocity Head		1.44	ft
Specific Energy		4.43	ft
Froude Number		1.35	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth		0.00	ft
Length		0.00	ft
Number Of Steps		0	

GVF Output Data

Upstream Depth		0.00	ft
Profile Description			
Profile Headloss		0.00	ft
Downstream Velocity		Infinity	ft/s
Upstream Velocity		Infinity	ft/s
Normal Depth		2.99	ft
Critical Depth		3.45	ft
Channel Slope		0.02130	ft/ft
Critical Slope		0.01147	ft/ft

Cross Section for Section 115+00

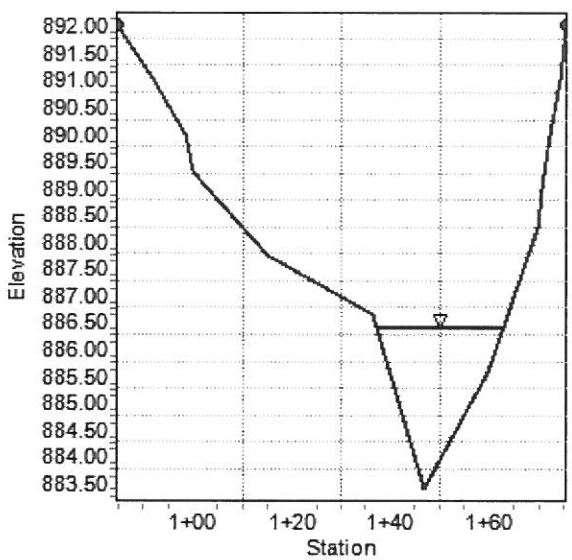
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02130	ft/ft
Normal Depth	2.99	ft
Discharge	392.00	ft³/s

Cross Section Image



ATTACHMENT 7

SUPPLEMENTAL NOISE ANALYSIS

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028 phone 760-473-1253
www.ldnconsulting.net fax 760-689-4943

February 5, 2014

Mr. Joe Broadhead
Environmental Data Systems
1007 7th Street, Suite 308
Sacramento, CA 95814

Subject: Jamul Indian Village Gaming Facility Project Supplemental Construction Noise Assessment – San Diego

The proposed Jamul Indian Village (JIV) Gaming Project (project) is located on a 6.2 acre reservation held in trust by the United States for the benefit of the JIV. The external boundaries of the reservation lie within the Community of Jamul, County of San Diego. The reservation has direct access to State Highway 94 via the Reservation Road located approximately 1,700 feet south of Melody Road.

The proposed project would consist of the development of a gaming facility with corresponding support uses. The noise impacts associated with the JIV project was fully assessed in the *Noise Technical Analysis for the Jamul Indian Village Gaming Facility* (JIV Noise Report) (LDN 2012). The JIV project analyzed assumed the excavation and export of 200,000 cubic yards of soil requiring approximately 60 trucks per day (120 two-way trips). Recent revisions to the project have increased the required export by 50,000 cubic yards and reduced the schedule by several months, thus necessitating the use of additional trucks to export the material. It has been calculated approximately 144 trucks per day would be required for exporting materials (288 two-way trips). No other changes to the schedule are proposed and the same type and quantity of equipment would be used.

The purpose of this analysis is to provide an evaluation of noise impacts resulting from the proposed changes in grading quantities and hauling schedule relative to the previous noise impacts assessed in the JIV Noise Report.

Terminology

The following is a brief summary of terms used in this re-evaluation. For a detailed discussion of noise terminology and concepts, please see the JIV Noise Report. The noise descriptors used for this study are the 1-hour equivalent noise level (L_{eq}) and the CNEL.

The L_{eq} is the average A-weighted decibel [dBA] sound level over a one-hour period. The CNEL is a 24-hour A-weighted average sound level [dBA L_{eq}] from midnight to midnight obtained after the addition of 5 decibels (dB) to sound levels occurring between 7:00 P.M. and 10:00 P.M., and 10 dB to sound levels occurring between 10:00 P.M. and 7:00 A.M. A-weighting

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is a frequency correction that often correlates well with the subjective response of humans to noise. Adding 5 dB and 10 dB to the evening and nighttime hours, respectively, accounts for the added sensitivity of humans to noise during these time periods.

Sound from a small localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level decreases or drops off at a rate of 6 dBA for each doubling of the distance. The drop-off rate for a line source, such as traffic, is 3 dBA for hard site conditions each doubling of distance.

Change in noise levels is perceived as follows: 3 dBA barely perceptible, 5 dBA readily perceptible and 10 dBA perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2009).

Applicable Standards and Regulations

The applicable noise regulations and standards are detailed in the JIV Nosie Report (LDN 2012). For this analysis, a construction traffic increase of 5 dBA or more above existing traffic would be considered significant.

Impact Analysis

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction noise in the JIV Noise Report was estimated to be approximately 76 to 78 dBA L_{eq} at 50 feet from construction activities. With the exception of grading activity, construction activities would not change from those analyzed in the JIV Noise Report. The increase grading activity would not necessitate an increase the number of pieces of heavy construction equipment, just the length of activity. As with the original project, construction activities would be limited to daytime hours (7:00 am to 7:00 pm) for the duration of construction. Also, all vehicles and equipment will use available noise suppression devices and be equipped with mufflers during construction activities. Therefore, hourly equivalent noise levels from construction are not anticipated to increase over what was assess in the JIV Noise Report and therefore would not result in additional noise impacts.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

As with noise the only changes would be during the grading period. As no additional on-site equipment would be required, the vibrations associated with construction equipment would not increase beyond those assessed in the JIV Noise Report. As a result, vibration impacts associated with construction would be less than significant. The project does not include any groundborne vibration sources associated with operation. Therefore, impacts due to vibrations are less than significant.

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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The only changes proposed are associated with the length of grading activities and the quantity of excavated soil. These changes would not affect long-term noise levels. Therefore, long-term, or permanent, noise impacts would be the same as assessed under the JIV Nosie Report and no new impacts on long-term noise levels would occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

As noted, the proposed changes would increase the quantity of soil exported and a resultant increase in the number of trucks hauling soil. Based on engineering estimates, the revised grading quantities and shorter schedule would require the export of 288 round truck-trips per day over an 8 month period. The JIV Nosie Report assumed an average of 120 round truck trips per day. The increase in traffic volumes and shift in vehicle classification, i.e. the increased ratio of heavy trucks relative to other vehicles, along this segment of SR-94 would result in short-term increased noise levels along SR-94 of approximately 1 dBA as can be seen in Table 1. This would be the same increase as predicted along SR-94 from the JIV to Melody Road and a 1 dBA increase along SR-94 between Melody Road and Jamacha Road. This temporary condition would cease upon project construction completion and would not represent a substantial increase in temporary noise levels.

TABLE 1
CONSTRUCTION TRAFFIC NOISE LEVELS (dBA Leq)

Existing	Proposed Project	Revised Project	Proposed vs. Existing	Revised vs. Existing	Delta
70.3	70.9	71.6	0.6	1.3	0.7
70.3	70.9	71.6	0.6	1.3	0.7
71.8	72.2	72.8	0.4	1.0	0.6
73.8	74.1	74.5	0.3	0.6	0.3
73.3	73.6	74.0	0.3	0.7	0.4
73.7	74.0	74.3	0.3	0.7	0.4

Summary

Based on the results of the preceding assessment, the proposed changes in project construction traffic would result in an increase along SR-94 between Melody Road and Jamacha Road than predicted in the JIV Noise Report. However, the increases would not result in new impacts or require new mitigation. Therefore, the proposed revised grading plan would result in less than significant impacts.

ATTACHMENT 8

SUPPLEMENTAL TRAFFIC ANALYSIS

Kimley-Horn and Associates, Inc.

Memorandum

Suite 600
401 B Street
San Diego, California
92101

To: Gus Silva, Caltrans

From: Leo Espelet, PE, Kimley-Horn and Associates

Date: September 13th, 2013

Subject: JIV – Traffic Flagging Operations Analysis

The following memorandum was prepared to document an evaluation of the potential temporary and intermittent traffic stoppages associated with the Traffic Management Plan (TMP) for the grading phase of the Jamul Indian Village project.

Project Background

This TMP is a mitigation measure for the Jamul Indian Village Gaming Project (Gaming Project) to reduce the traffic impacts related to its construction activities as stated in Table 2-1 of the Jamul Indian Village Final Tribal EE, dated January 2013. The Gaming Project would be located on a 6.2 acre reservation held in trust by the United States for the benefit of the Jamul Indian Village located along State Route 94 (SR 94) in the community of Jamul. This reservation has direct access to SR 94 via Daisy Drive and Reservation Road, both located approximately one-quarter mile south of Melody Road.

The grading phase is assumed to have the highest volume of construction traffic for the construction of the Gaming Project. Given the inherent uncertainties involved in grading operations, including unforeseen below ground conditions, amount of rock vs. soil, bulking (the tendency for excavated soil to expand depending on its geological characteristics), weather and other factors, it is impossible to quantify exactly how may trucks will be involved on a daily basis or for exactly how long the hauling operation will continue, However, a reasonable estimate can be based on a range of truck loads per day as well as a range of overall duration for the grading export phase. It is estimated that 12-15 truckloads can be hauled per hour for the duration of the grading phase of construction, which it is expected to last from 7-10 months, depending on the above factors. The trucks and other construction related vehicles are anticipated to utilize SR 94 to access the Gaming Project site and not add any trips to the side streets within the area. The inbound trips would travel northwest on SR 94 and make a left into the Site while outbound trips would make a right turn onto SR 94 from the Site.

Construction access to the site along SR 94 will be facilitated by a flagger operation that will stop traffic along SR 94 temporarily to allow the safe entrance of hauling trucks to SR 94 and from SR 94 to the Site. The traffic handling plan prepared for this project based on Caltrans Standard Plans and requirements is included in **Appendix A**. The following analysis includes an evaluation of the following:

- Expected intersection delay at the construction entrance point
- Expected queuing at the construction entrance point
- Anticipated operations at the Otay Lake Road and SR 94 intersection with and without the anticipated construction traffic
- Additional delay anticipated along SR 94 due to the additional construction traffic

Intersection Delay Analysis at the Construction Entrance Point

A delay evaluation at the proposed construction entrance point was conducted for each hour between 7:00 a.m. and 6:00 p.m. using the intersection analysis methodology outlined in the 2000 Highway Capacity Manual (2000 HCM). The 2000 *HCM* published by the Transportation Research Board establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

To analyze the operation of the proposed construction entrance with a flagger operation, the intersection was analyzed as a signal-controlled intersection. This is the most representative analysis method for the flagger configuration and is a conservative form of evaluating the operations of the intersection.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The criteria for the various levels of service designations are given in **Table 1**.

Per Caltrans requirements, all signalized intersections are expected to operate at LOS C or better.

Synchro 8.0 (Trafficware) was used for the analysis. Synchro 8.0 uses the methodologies outlined in the 2000 *Highway Capacity Manual (HCM)*.

The existing peak-hour volumes along SR 94 were collected on Wednesday July 10, 2013. A copy of the traffic count worksheet is included in **Appendix B**. The construction traffic was estimated to be 15 trucks per hours, which maximizes the grading operations within the site. A Passenger Car Equivalent (PCE) of 2.5 was applied to the anticipated truck traffic entering/exiting the site. For the analysis proposed, the equivalent of 38 vehicles per hour will be entering and exiting the proposed construction driveway. **Figure 1** illustrates the peak-hour volumes at the SR 94 / proposed construction entrance driveway used in the evaluation.

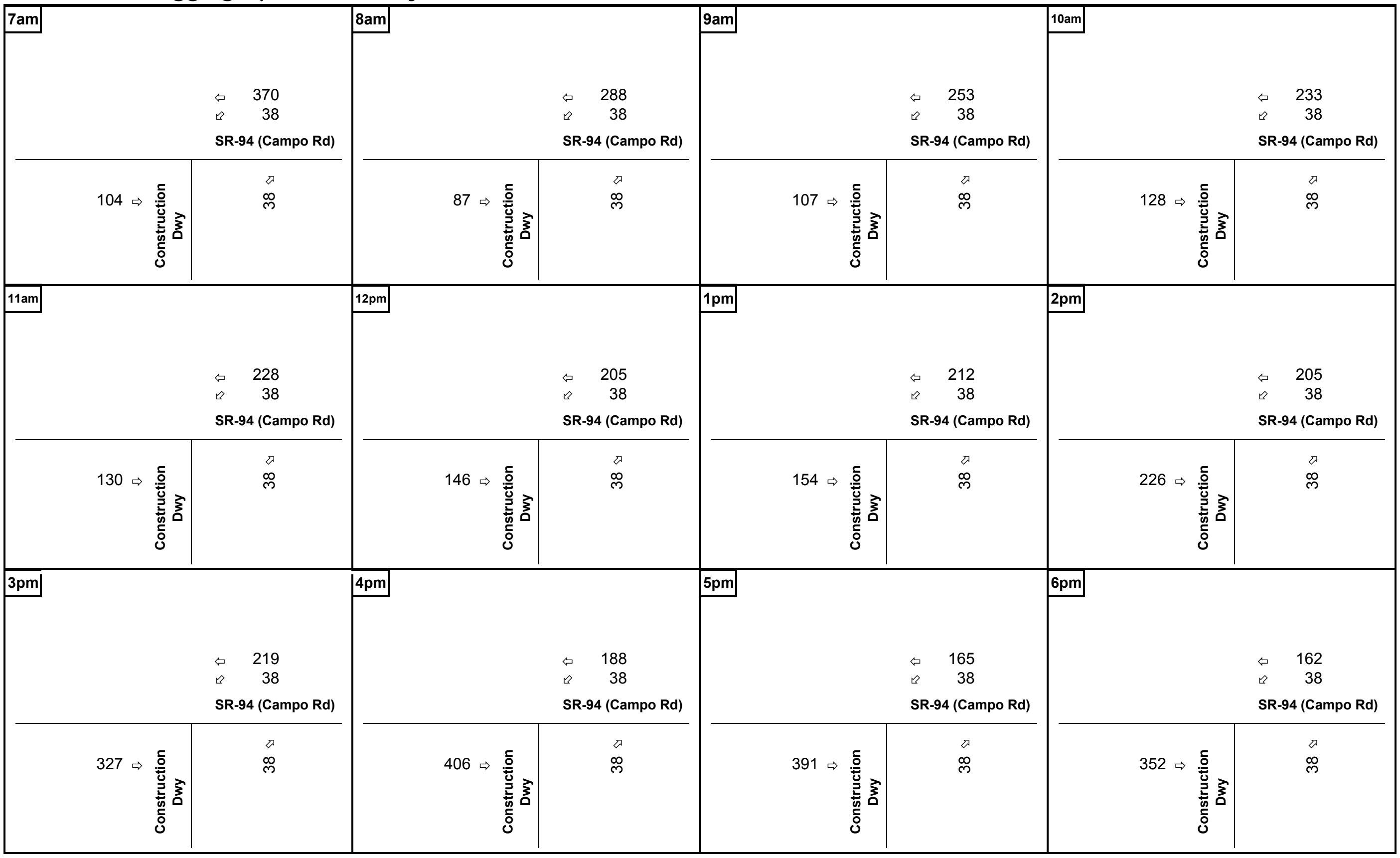
TABLE 1
LOS CRITERIA FOR INTERSECTIONS

LOS	Control Delay (sec/veh) Signalized Intersections (a)	Description
A	<u><</u>10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and <u><</u>20.0	Operations with good progression but with some restricted movement.
C	>20.0 and <u><</u>35.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and <u><</u>55.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines
E	>55.0 and <u><</u>80.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	Operations that is unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2

Table 2 illustrates the results of the hourly evaluation of the proposed construction entrance and the SR 94 intersection. As shown in the table, the driveway is expected to operate at LOS B or better during all analyzed hours. The delays are expected to be fairly constant with the peak delay occurring at 8:00 a.m. A copy of the Synchro worksheets used for this analysis is included in **Appendix C**.

JIV- Traffic Flagging Operation Analysis



Legend

X = TURNING VOLUMES

NOT TO SCALE

TABLE 2
INTERSECTION LEVEL OF SERVICE ANALYSIS

Campo Road (SR 94) & Construction Driveway		
Time	**Delay[(a)](s)**	**LOS**
7:00 AM to 8:00 AM	8.8	A
8:00 AM to 9:00 AM	11.8	B
9:00 AM to 10:00 AM	11.3	B
10:00 AM to 11:00 AM	11.2	B
11:00 AM to 12:00 PM	11.1	B
12:00 PM to 1:00 PM	6.2	A
1:00 PM to 2:00 PM	11.0	B
2:00 PM to 3:00 PM	10.7	B
3:00 PM to 4:00 PM	10.7	B
4:00 PM to 5:00 PM	11.0	B
5:00 PM to 6:00 PM	10.9	B
6:00 PM to 7:00 PM	8.0	A

(a) *Delay refers to the worst movement.*

Queuing Evaluation at the Construction Entrance Point

A queuing analysis was conducted at the proposed construction access point. **Table 3** displays the estimated traffic queues at these intersections with the proposed flagger operations. The analysis was conducted using the Synchro 8.0 software package. All expected queues are expressed as the 50th and 95th percentile queue. The 95th percentile represents the queues that would be expected to be exceeded only 5% of the time. The maximum 95th percentile queue is expected between 4:00 p.m. and 5:00 p.m. and would extend approximately 138 feet. As shown in the table, queues along SR 94 are not projected to affect operations at adjacent intersections since the closest intersection is approximately 1,200 feet away. A copy of the queuing analysis worksheets is included in **Appendix D**.

Intersection Analysis at the Otay Lakes Road and SR 94 Intersection

An intersection level of service analysis was conducted at the Otay Lakes Road and SR 94 intersection to document whether or not the addition of project related construction traffic would cause a temporary impact at this intersection during construction. This analysis assumes that no time restrictions would be imposed on the construction traffic from 7 a.m. to 6 p.m. Existing peak-hour volumes used for the analysis were collected on January 27, 2012 and July 10, 2013. A total of five peak-hours were analyzed, which provides a complete representation of the intersection operations during the entire working hours and captures the peak-hour periods during the morning and afternoon hours. **Figure 2** illustrates the volumes used for this analysis with and without the anticipated construction traffic. **Table 4** illustrates the results of the intersection level of service analysis with and without the construction related traffic. As shown in the table, the intersection would operate at LOS B or better with and without the addition of the proposed construction traffic. A copy of the Synchro worksheets used for this analysis is included in **Appendix E**.

Additional Delay Anticipated Along SR 94

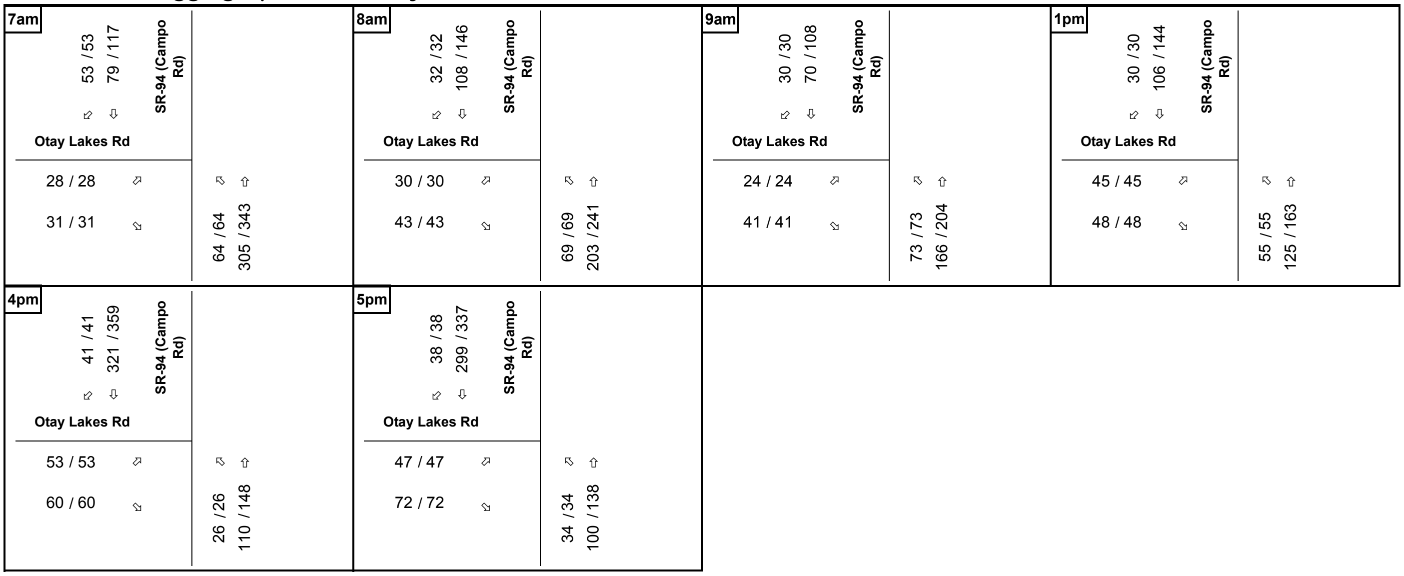
To estimate the additional delay caused by the construction traffic to the SR 94 highway, a two-lane highway analysis was conducted for the with and without construction traffic conditions. The analysis was conducted between the segments of Reservation Road to Otay Lakes Road. This segment is used to represent the additional delay per mile associated with the construction traffic. Level of service for the SR 94 highway is based on a combination of two parameters: percent time spent following (PTSF) and average travel speed in miles/hour (MPH). The PTSF represents the average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway. This parameter represents the freedom to maneuver and convenience of travel along a facility. PTSF and average travel speed are calculated based on equations and adjustment factors provided in Chapter 15 of the *2010 Highway Capacity Manual*, which are determined based on highway parameters and vehicle volumes and composition.

The criteria for the various levels of service designations for two-lane highway facilities such as the SR 94 highway are given in **Table 5**.

TABLE 3
INTERSECTION QUEUING ANALYSIS

Campo Road (SR 94) & Construction Driveway						
	50th Percentile Queues (ft)			95th Percentile Queues (ft)		
Time	**EB**	**WB**	**NB**	**EB**	**WB**	**NB**
7:00 AM to 8:00 AM	10	49	4	24	94	17
8:00 AM to 9:00 AM	13	55	4	32	108	17
9:00 AM to 10:00 AM	15	48	4	37	96	17
10:00 AM to 11:00 AM	19	44	4	43	89	17
11:00 AM to 12:00 PM	19	43	4	43	87	16
12:00 PM to 1:00 PM	10	17	3	25	41	15
1:00 PM to 2:00 PM	23	40	4	51	82	16
2:00 PM to 3:00 PM	35	39	4	73	80	17
3:00 PM to 4:00 PM	55	42	5	106	85	17
4:00 PM to 5:00 PM	72	36	5	138	75	17
5:00 PM to 6:00 PM	69	32	5	132	68	17
6:00 PM to 7:00 PM	27	14	4	60	34	17

JIV- Traffic Flagging Operation Analysis



Legend

X / Y = BASELINE / WITH CONSTRUCTION TURNING VOLUMES

NOT TO SCALE

Kimley-Horn and Associates, Inc.

FIGURE 2

Otay Lakes Road / SR 94 Traffic Volumes

K:\SND_TPTO\095848001 - JIV Design\Traffic\Excel\TMP Analysis\[848001TMP01.xlsm]Otay Lakes Figure 1-16

TABLE 4
INTERSECTION LEVEL OF SERVICE ANALYSIS

Campo Rd (SR 94) & Otay Lakes Rd Intersection Delay				
	Existing Conditions		With Construction Traffic	
Time	**Delay (s)**	**LOS**	**Delay (s)**	**LOS**
7:00 AM to 8:00 AM	13.6	B	14.7	B
8:00 AM to 9:00 AM	12.7	B	13.7	B
9:00 AM to 10:00 AM	11.9	B	12.7	B
4:00 PM to 5:00 PM	13.4	B	14.5	B
5:00 PM to 6:00 PM	13.1	B	14.2	B

TABLE 5
LOS CRITERIA FOR TWO-LANE HIGHWAY CLASS I FACILITIES

LOS	Percent time spent following (PTSF) (a)	Average Travel Speed (MPH) (a)	Description
A	≤35.0	>55.0	Free-flow operations, motorists can travel at desired speed and passing demand is well below capacity.
B	>35.0 and ≤50.0	>50.0 and ≤55.0	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.
C	>50.0 and ≤65.0	>45.0 and ≤50.0	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.
D	>65.0 and ≤80.0	>40.0 and ≤45.0	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.
E	≤80.0	<40.0	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.
F	N/A	N/A	Heavily congested flow.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 12

The two-lane highway calculations were performed using the HCS 2010 software (Version 6.1).

Table 6 shows the average travel speed and PTSF results of the two lane highway analysis with and without the proposed construction traffic. **Table 7** shows the projected travel time along Campo Road (SR 94) between Otay Lakes Road and Reservation Road. Travel times were calculated by dividing the corridor length by the average travel speed. As shown in the table, the maximum anticipated delay between 7:00 a.m. and 6:00 p.m. is equal to approximately 5 seconds, which is not significant for the corridor. A copy of the HCS 2010 worksheets used for this analysis is included in **Appendix F**.

TABLE 6
HCS 2010 TWO-LANE HIGHWAY ANALYSIS

	Existing		With Construction Traffic	
Time	**ATSd**	**PTSF**	**ATSd**	**PTSF**
7:00 AM	46.7	71.0	46.0	70.6
8:00 AM	47.5	68.1	47.0	69.2
9:00 AM	47.8	63.8	47.3	65.5
10:00 AM	47.6	63.2	46.9	65.8
11:00 AM	47.6	62.4	47.0	65.0
12:00 PM	47.5	61.5	46.9	63.7
1:00 PM	47.4	61.5	46.8	63.8
2:00 PM	46.8	59.0	46.2	59.7
3:00 PM	45.9	55.2	45.2	55.9
4:00 PM	45.9	45.8	45.4	48.3
5:00 PM	45.9	43.9	45.3	47.4
6:00 PM	45.9	46.3	45.1	49.8

ATSd: Average Travel Speed (miles per hour)

PTSF: Percent Time Spent Following (%)

TABLE 7
CORRIDOR TRAVEL TIME ANALYSIS

	Travel Time		
Time	**Existing**	**With Construction Traffic**	**Increased Travel Time (sec)**
7:00 AM	294	298	4
8:00 AM	289	292	3
9:00 AM	287	290	3
10:00 AM	288	292	4
11:00 AM	288	292	4
12:00 PM	289	292	4
1:00 PM	289	293	4
2:00 PM	293	297	4
3:00 PM	299	303	5
4:00 PM	299	302	3
5:00 PM	299	303	4
6:00 PM	299	304	5

Travel time measured in seconds.

Summary of Findings

The analysis presented in this report documents that the proposed construction traffic for the Gaming Casino project, will not have a significant traffic related impact along SR 94 with the proposed truck route and flagger operation.

Please contact me if you have any questions.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Leo Espelet, P.E.
RCE# 71532

Attachments:

- A – Traffic Handling Plan
- B – Traffic Count Sheets
- C – Synchro Sheets for Construction Driveway
- D – Synchro Sheets for Queuing Analysis
- E – Synchro Sheets for Otay Lakes Road
- F – HCS 2010 Sheets

APPENDICES

APPENDIX A

- Traffic Handling Plan

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	94	R20.0/R22.0	1	3

REGISTERED CIVIL ENGINEER 09-12-13 DATE

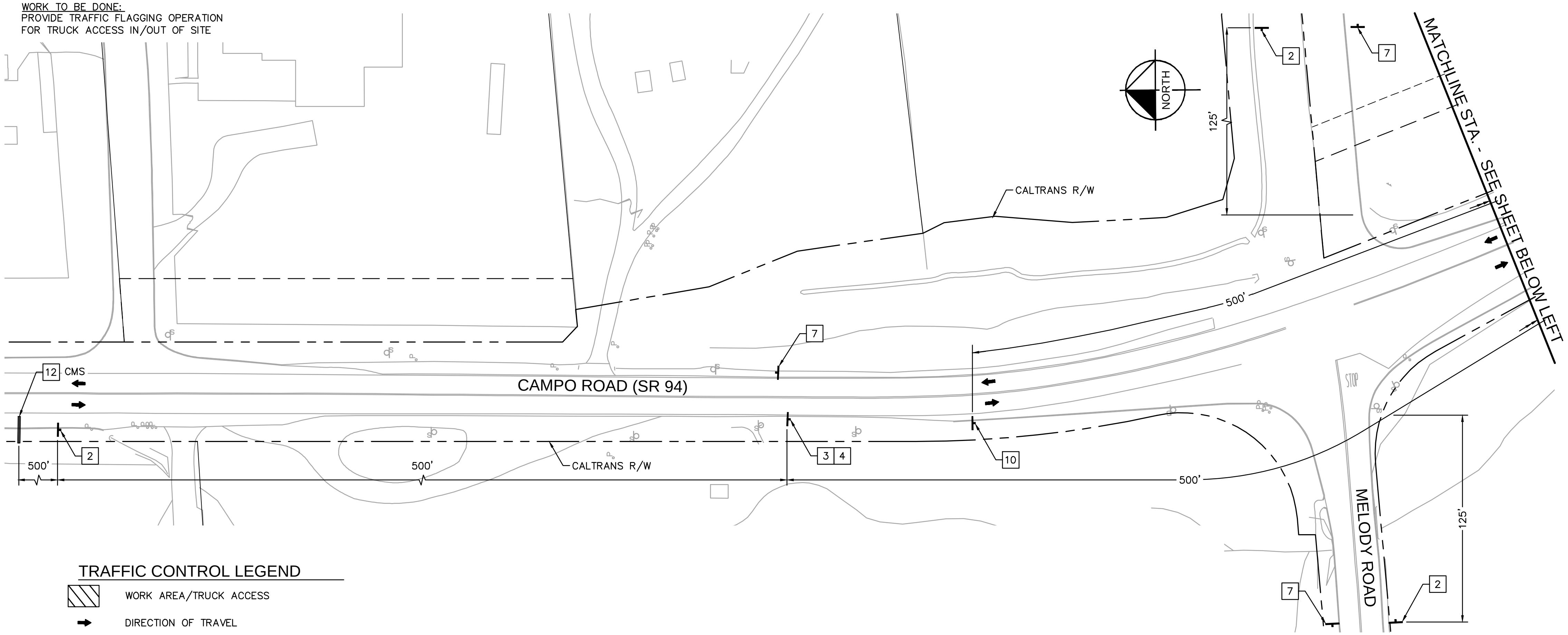
REGISTERED PROFESSIONAL ENGINEER LEONARDO E. ESPELET No. 71532 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

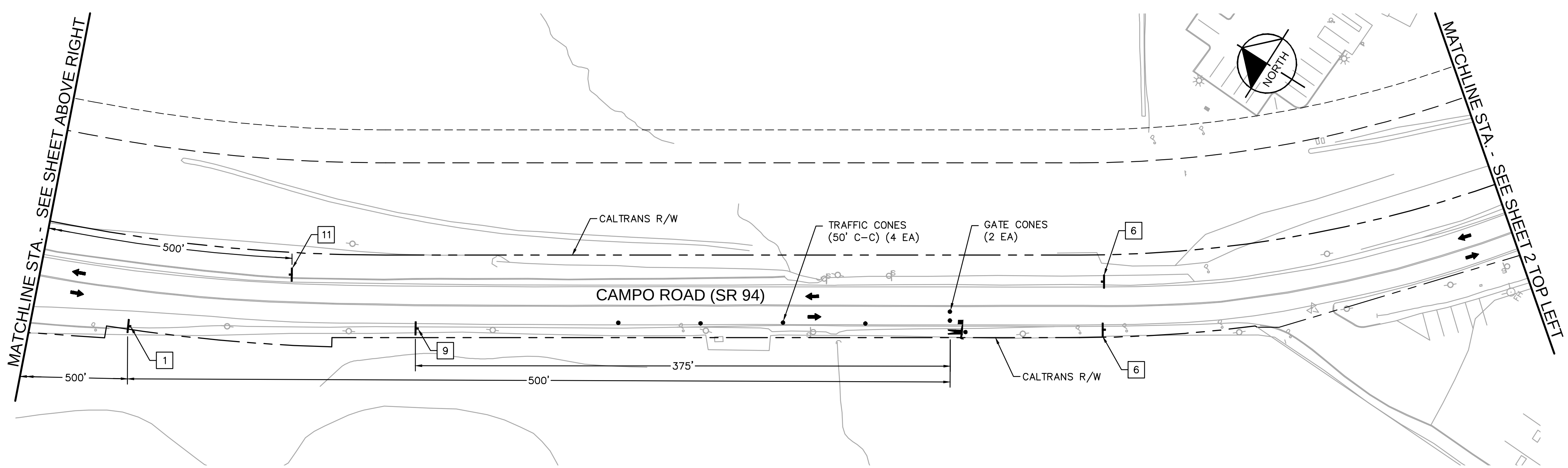
KIMLEY-HORN AND ASSOCIATES, INC.
401 B STREET, SUITE 600
SAN DIEGO, CA 92101

WORK TO BE DONE:
PROVIDE TRAFFIC FLAGGING OPERATION FOR TRUCK ACCESS IN/OUT OF SITE



TRAFFIC CONTROL LEGEND

- WORK AREA/TRUCK ACCESS
- DIRECTION OF TRAVEL
- TEMPORARY SIGN
- TRAFFIC CONE
- FLAGGER
- CONSTRUCTION AREA SIGN
- INTERNATIONAL 5500i DUMP TRUCK
- CHANGEABLE MESSAGE SIGN



TRAFFIC CONTROL NOTES

1. THIS PLAN ACCURATE FOR TRAFFIC HANDLING ONLY.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
3. CONSTRUCTION AREA SIGNS WITHIN WORK AREAS SHALL BE PORTABLE.
4. CONTRACTOR SHALL COVER EXISTING SIGNS WHERE THEY CONFLICT WITH CONSTRUCTION SIGNING.
5. SEE 2010 REVISED STANDARD PLAN T13 (TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAY).
6. PORTABLE CHANGEABLE MESSAGE SIGN TO DISPLAY MESSAGE AS DIRECTED BY THE ENGINEER.
7. COVER EXISTING REGULATORY SPEED LIMIT SIGNS THAT HAVE A LEGEND GREATER THAN THE REDUCED SPEED LIMIT WITH NON-TRANSULCCENT MATERIAL.
8. ALL TEMPORARY REGULATORY SPEED REDUCTIONS SIGNS TO BE STATIONARY AND MADE OF FABRIC.
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CONSTRUCTION AREA SIGNS

SIGN NO.	SIGN CODE	PANEL SIZE	SIGN MESSAGE
1	W3-4	48"X48"	"BE PREPARED TO STOP"
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3	C9A (CA)	48"X48"	FLAGGER AHEAD
4	C29 (CA)	36"X9"	"1000 FT"
5	C37 (CA)	36"X42"	"TRAFFIC CONTROL, WAIT AND FOLLOW PILOT CAR"
6	R4-1	48"X36"	"DO NOT PASS"
7	G20-2	48"X24"	"END ROAD WORK"
8	R1-1	36"X36"	"STOP"
9	C17 (CA) (FRONT)	36"X36"	"ROAD WORK SPEED LIMIT 45"
10	R2-4	48"X48"	"45 ZONE AHEAD"
11	C17 (CA) (BACK)	36"X36"	"END 45 SPEED LIMIT"
12	CMS	--	"REDUCED SPEED AHEAD"

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

SCALE 1"=40'

SC-01

REVISED BY | DATE REVISED

L. ESPELET | J. COLLINS

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR | L. ESPELET

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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LAST REVISION 09-12-13

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	94	R20.0/R22.0	2	3

REGISTERED CIVIL ENGINEER 09-12-13 DATE

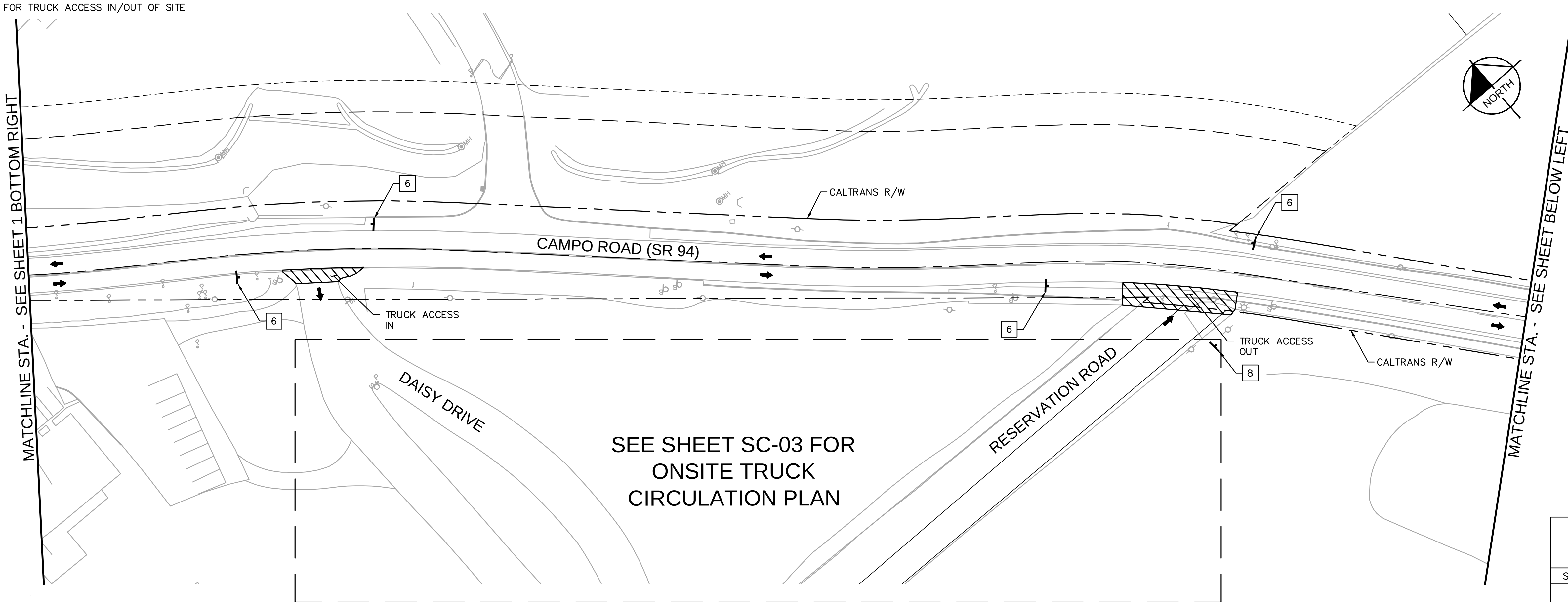
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER LEONARDO E. ESPELET No. 71532 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

KIMLEY-HORN AND ASSOCIATES, INC.
401 B STREET, SUITE 600
SAN DIEGO, CA 92101

WORK TO BE DONE:
PROVIDE TRAFFIC FLAGGING OPERATION FOR TRUCK ACCESS IN/OUT OF SITE



TRAFFIC CONTROL LEGEND

- WORK AREA/TRUCK ACCESS
- DIRECTION OF TRAVEL
- TEMPORARY SIGN
- TRAFFIC CONE
- FLAGGER
- CONSTRUCTION AREA SIGN
- INTERNATIONAL 5500i DUMP TRUCK
- CHANGEABLE MESSAGE SIGN

CONSTRUCTION AREA SIGNS

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12	CMS	--	"REDUCED SPEED AHEAD"

TRAFFIC CONTROL NOTES

1. THIS PLAN ACCURATE FOR TRAFFIC HANDLING ONLY.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
3. CONSTRUCTION AREA SIGNS WITHIN WORK AREAS SHALL BE PORTABLE.
4. CONTRACTOR SHALL COVER EXISTING SIGNS WHERE THEY CONFLICT WITH CONSTRUCTION SIGNING.
5. SEE 2010 REVISED STANDARD PLAN T13 (TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAY).
6. PORTABLE CHANGEABLE MESSAGE SIGN TO DISPLAY MESSAGE AS DIRECTED BY THE ENGINEER.
7. COVER EXISTING REGULATORY SPEED LIMIT SIGNS THAT HAVE A LEGEND GREATER THAN THE REDUCED SPEED LIMIT WITH NON-TRANSULCCENT MATERIAL.
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TRAFFIC CONTROL NOTES (CONT.)

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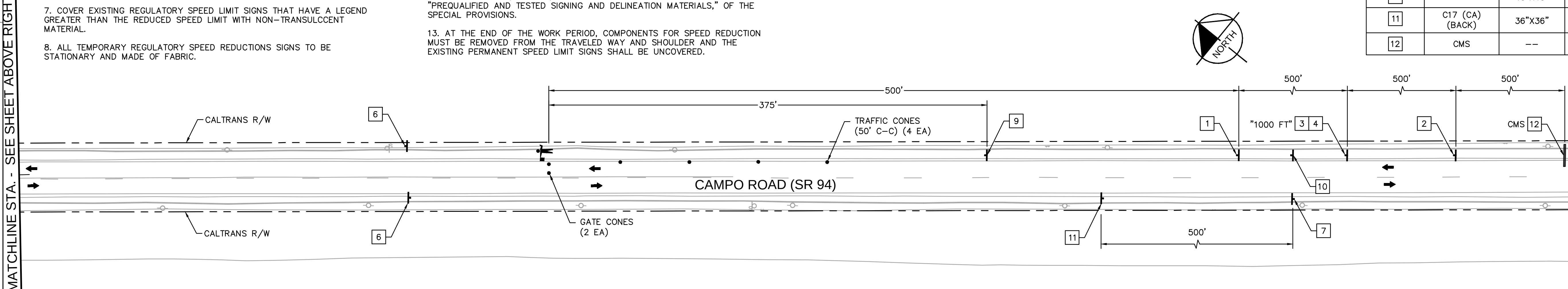

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

SCALE 1"=40'

SC-02

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR	L. ESPELET
CALCULATED-DESIGNED BY	L. ESPELET
CHECKED BY	J. COLLINS
REVISED BY	DATE REVISED

LAST REVISION 09-12-13

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	94	R20.0/R22.0	3	3

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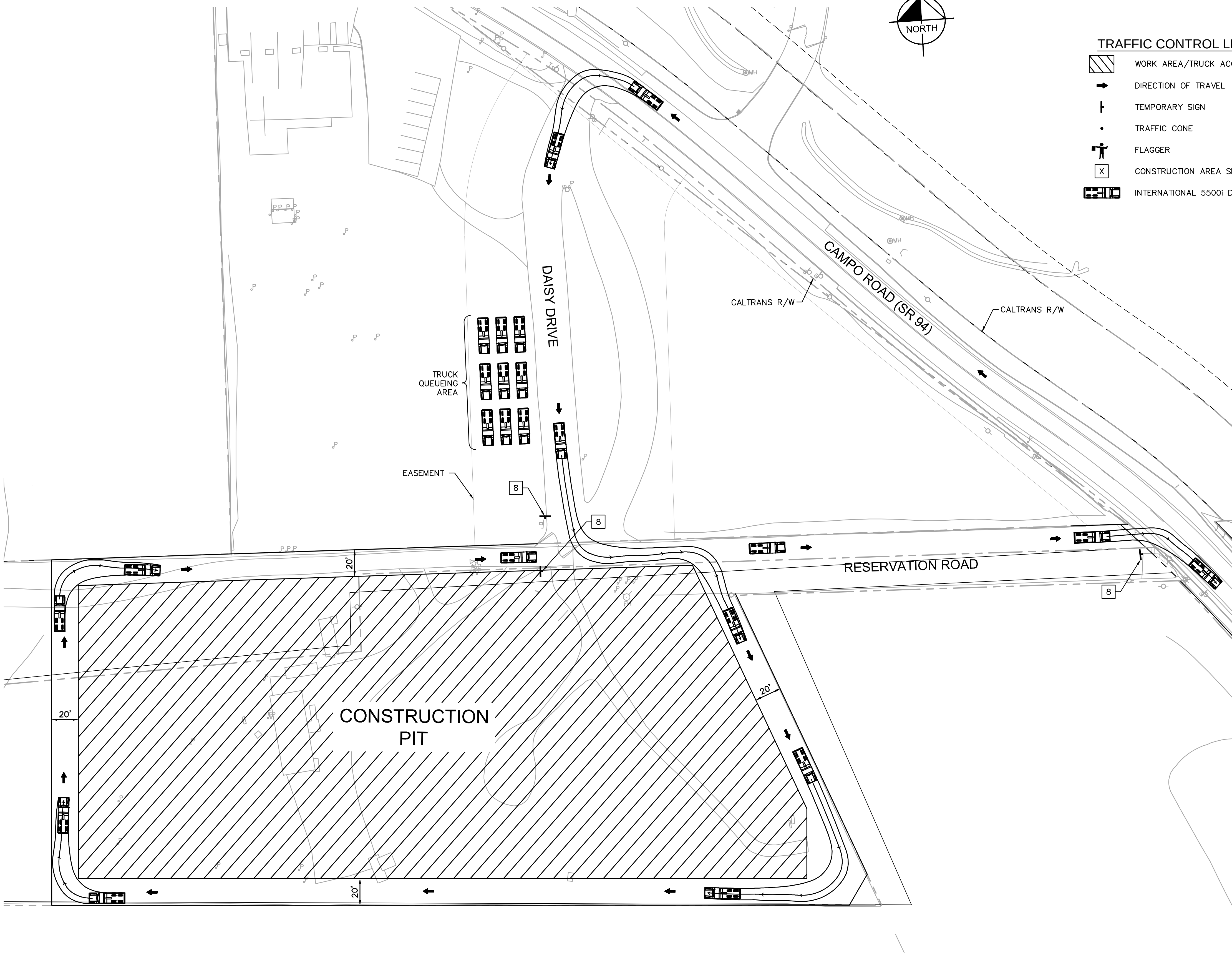

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SC-03

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®

CONSULTANT FUNCTIONAL SUPERVISOR L. ESPELET
CALCULATED-DESIGNED BY L. ESPELET
CHECKED BY J. COLLINS
REVISED BY
DATE REVISED

LAST REVISION 09-12-13

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APPENDIX B

- Traffic Count Sheets

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-94 (Campo Rd) and Otay Lakes Rd , City of Jamul

Date: 1/26/2012

Day: Thursday

Project #: CA12_4018_009

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

SR-94 (Campo Rd)

Otay Lakes Rd

Southbound Approach

Lanes	0	0	0	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0

Eastbound Approach

Lanes	AM	NOON	PM
	305	0	163
0	0	0	0
1	92	0	321
0	52	0	41

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
274	0	110	1
77	0	26	1
128	0	381	

CONTROL

1-Way Stop (NB)

Northbound Approach

AM	129	31	0	36	AM
NOON	0	0	0	0	NOON
PM	67	53	0	60	PM
		0	1	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	0	0
NOON	0	0
PM	0	0

West Leg

AM	NOON	PM
305	0	163
144	0	362

East Leg

AM	NOON	PM
351	0	136
128	0	381

South Leg

AM	129	67
NOON	0	0
PM	67	113

Total Volume Per Leg

North Leg

AM	0
NOON	0
PM	0

West Leg

AM	NOON	PM
449	0	525

East Leg

AM	NOON	PM
479	0	517

South Leg

AM	196
NOON	0
PM	180

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-94/Campo Rd and Otay Lakes Rd , City of Jamul

Date: 7/10/2013

Day: Wednesday

Project #: CA13_4257_009

N

SR-94/Campo Rd

Otay Lakes Rd

Peak Hour Summary

AM Peak Hour	900 AM
NOON Peak Hour	
PM Peak Hour	100 PM

Southbound Approach

	Right	Thru	Left	Exit
Lanes	0	1	0	
AM	30	70	0	190
NOON	0	0	0	0
PM	30	106	0	170

Eastbound Approach

	AM	NOON	PM
Exit (westbound)	103	0	85

Lanes	Movement	AM	NOON	PM
0	Left	24	0	45
1	Thru	0	0	0
0	Right	41	0	48

Westbound Approach

Movement	AM	NOON	PM	Lanes
Left	0	0	0	0
Thru	0	0	0	0
Right	0	0	0	0

	AM	NOON	PM
Exit (eastbound)	0	0	0

CONTROL

1-Way Stop EB

Northbound Approach

	Exit (southbound)	Left	Thru	Right
AM	111	73	166	0
NOON	0	0	0	0
PM	154	55	125	0
Lanes		1	1	0

Count Periods	Start	End
AM	9:00 AM	10:00 AM
NOON		
PM	1:00 PM	2:00 PM

Total Ins & Outs

North Leg

	Out	In
AM	100	190
NOON	0	0
PM	136	170

East Leg

	AM	NOON	PM
In	0	0	0
Out	0	0	0

West Leg

	AM	NOON	PM
Out	103	0	85
In	65	0	93

South Leg

	Out	In
AM	111	239
NOON	0	0
PM	154	180

Total Volume Per Leg

North Leg

AM	290
NOON	0
PM	306

East Leg

AM	NOON	PM
0	0	0

West Leg

AM	NOON	PM
168	0	178

South Leg

AM	350
NOON	0
PM	334

Prepared by NDS/ATD

VOLUME

SR-94 between Melody Rd & Otay Lakes Rd

Day: Wednesday
Date: 7/10/2013

City: Jamul
Project #: CA13_4261_005

DAILY TOTALS	NB	SB	EB	WB	Total
	3,887	3,406	0	0	7,293

AM Period	NB		SB		EB	WB	TOTAL	
00:00	1		12				13	
00:15	7		4				11	
00:30	3		8				11	
00:45	2	13	5	29			7	42
01:00	1		3				4	
01:15	5		9				14	
01:30	0		1				1	
01:45	4	10	4	17			8	27
02:00	2		3				5	
02:15	1		2				3	
02:30	0		3				3	
02:45	7	10	2	10			9	20
03:00	4		3				7	
03:15	6		5				11	
03:30	8		3				11	
03:45	8	26	3	14			11	40
04:00	8		1				9	
04:15	10		1				11	
04:30	17		2				19	
04:45	14	49	6	10			20	59
05:00	21		9				30	
05:15	37		11				48	
05:30	76		8				84	
05:45	87	221	15	43			102	264
06:00	86		14				100	
06:15	103		16				119	
06:30	115		16				131	
06:45	125	429	21	67			146	496
07:00	84		33				117	
07:15	82		25				107	
07:30	85		32				117	
07:45	119	370	14	104			133	474
08:00	79		27				106	
08:15	73		20				93	
08:30	68		20				88	
08:45	68	288	20	87			88	375
09:00	69		21				90	
09:15	68		27				95	
09:30	59		28				87	
09:45	57	253	31	107			88	360
10:00	71		30				101	
10:15	66		27				93	
10:30	42		34				76	
10:45	54	233	37	128			91	361
11:00	64		23				87	
11:15	54		28				82	
11:30	52		38				90	
11:45	58	228	41	130			99	358
TOTALS		2130		746				**2876**
SPLIT %		74.1%		25.9%				**39.4%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	39		22				61	
12:15	62		40				102	
12:30	52		39				91	
12:45	52	205	45	146			97	351
13:00	60		42				102	
13:15	47		37				84	
13:30	46		29				75	
13:45	59	212	46	154			105	366
14:00	52		63				115	
14:15	50		53				103	
14:30	48		45				93	
14:45	55	205	65	226			120	431
15:00	59		56				115	
15:15	58		73				131	
15:30	53		91				144	
15:45	49	219	107	327			156	546
16:00	40		113				153	
16:15	57		88				145	
16:30	48		105				153	
16:45	43	188	100	406			143	594
17:00	45		97				142	
17:15	44		119				163	
17:30	37		91				128	
17:45	39	165	84	391			123	556
18:00	34		93				127	
18:15	46		116				162	
18:30	43		75				118	
18:45	39	162	68	352			107	514
19:00	44		70				114	
19:15	23		53				76	
19:30	25		46				71	
19:45	21	113	51	220			72	333
20:00	25		30				55	
20:15	22		48				70	
20:30	33		32				65	
20:45	20	100	53	163			73	263
21:00	22		23				45	
21:15	20		40				60	
21:30	14		32				46	
21:45	25	81	34	129			59	210
22:00	31		30				61	
22:15	22		31				53	
22:30	16		24				40	
22:45	7	76	13	98			20	174
23:00	11		10				21	
23:15	10		12				22	
23:30	6		11				17	
23:45	4	31	15	48			19	79
TOTALS		1757		2660				**4417**
SPLIT %		39.8%		60.2%				**60.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,887	3,406	0	0	7,293

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	06:00	11:45			**06:15**	**PM Peak Hour**	12:15	16:30			**15:45**
AM Pk Volume	429	142			**513**	**PM Pk Volume**	226	421			**607**
Pk Hr Factor	0.858	0.866			**0.878**	**Pk Hr Factor**	0.911	0.884			**0.973**
7 - 9 Volume	658	191	0	0	**849**	**4 - 6 Volume**	353	797	0	0	**1150**
7 - 9 Peak Hour	07:00	07:00			**07:00**	**4 - 6 Peak Hour**	16:15	16:30			**16:30**
7 - 9 Pk Volume	370	104	0	0	**474**	**4 - 6 Pk Volume**	193	421	0	0	**601**
Pk Hr Factor	0.777	0.788	0.000	0.000	**0.891**	**Pk Hr Factor**	0.846	0.884	0.000	0.000	**0.922**

APPENDIX C

- Synchro Sheets for Construction Driveway

HCM Signalized Intersection Capacity Analysis
1: Construction Dwy & Campo Rd (SR-94)

7/23/2013

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	104	0	38	370	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	1863			1854		1611
Flt Permitted	1.00			0.97		1.00
Satd. Flow (perm)	1863			1801		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	0	41	402	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	113	0	0	443	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	12.1			12.1		10.1
Effective Green, g (s)	12.1			12.1		10.1
Actuated g/C Ratio	0.40			0.40		0.33
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	746			721		538
v/s Ratio Prot	0.06					
v/s Ratio Perm				c0.25		c0.03
v/c Ratio	0.15			0.61		0.08
Uniform Delay, d1	5.8			7.2		6.9
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.1			1.6		0.1
Delay (s)	5.9			8.8		6.9
Level of Service	A			A		A
Approach Delay (s)	5.9			8.8	6.9	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	30.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	87	0	38	288	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1852		1611
Flt Permitted	1.00			0.96		1.00
Satd. Flow (perm)	1863			1786		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	0	41	313	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	95	0	0	354	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	11.8			11.8		16.1
Effective Green, g (s)	11.8			11.8		16.1
Actuated g/C Ratio	0.33			0.33		0.45
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	612			587		722
v/s Ratio Prot	0.05					
v/s Ratio Perm				c0.20		c0.03
v/c Ratio	0.16			0.60		0.06
Uniform Delay, d1	8.5			10.1		5.6
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.1			1.8		0.2
Delay (s)	8.6			11.8		5.8
Level of Service	A			B		A
Approach Delay (s)	8.6			11.8	5.8	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	107	0	38	253	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1851		1611
Flt Permitted	1.00			0.95		1.00
Satd. Flow (perm)	1863			1770		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	0	41	275	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	116	0	0	316	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	11.2			11.2		16.1
Effective Green, g (s)	11.2			11.2		16.1
Actuated g/C Ratio	0.32			0.32		0.46
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	591			561		734
v/s Ratio Prot	0.06					
v/s Ratio Perm				c0.18		c0.03
v/c Ratio	0.20			0.56		0.06
Uniform Delay, d1	8.8			10.0		5.4
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.2			1.3		0.1
Delay (s)	8.9			11.3		5.5
Level of Service	A			B		A
Approach Delay (s)	8.9			11.3	5.5	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	128	0	38	233	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1850		1611
Flt Permitted	1.00			0.94		1.00
Satd. Flow (perm)	1863			1755		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	0	41	253	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	139	0	0	294	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	10.7			10.7		16.1
Effective Green, g (s)	10.7			10.7		16.1
Actuated g/C Ratio	0.31			0.31		0.46
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	572			539		745
v/s Ratio Prot	0.07					
v/s Ratio Perm				c0.17		c0.03
v/c Ratio	0.24			0.55		0.06
Uniform Delay, d1	9.0			10.0		5.2
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.2			1.1		0.1
Delay (s)	9.2			11.2		5.3
Level of Service	A			B		A
Approach Delay (s)	9.2			11.2	5.3	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	130	0	38	228	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1850		1611
Flt Permitted	1.00			0.94		1.00
Satd. Flow (perm)	1863			1752		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	0	41	248	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	141	0	0	289	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	10.6			10.6		16.1
Effective Green, g (s)	10.6			10.6		16.1
Actuated g/C Ratio	0.31			0.31		0.46
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	569			535		747
v/s Ratio Prot	0.08					
v/s Ratio Perm				c0.16		c0.03
v/c Ratio	0.25			0.54		0.05
Uniform Delay, d1	9.1			10.0		5.1
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.2			1.1		0.1
Delay (s)	9.3			11.1		5.3
Level of Service	A			B		A
Approach Delay (s)	9.3			11.1	5.3	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	146	0	38	205	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1848		1611
Flt Permitted	1.00			0.93		1.00
Satd. Flow (perm)	1863			1738		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	0	41	223	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	159	0	0	264	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	9.2			9.2		7.4
Effective Green, g (s)	9.2			9.2		7.4
Actuated g/C Ratio	0.37			0.37		0.30
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	696			649		484
v/s Ratio Prot	0.09					
v/s Ratio Perm				c0.15		c0.03
v/c Ratio	0.23			0.41		0.08
Uniform Delay, d1	5.3			5.7		6.2
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.2			0.4		0.1
Delay (s)	5.4			6.1		6.2
Level of Service	A			A		A
Approach Delay (s)	5.4			6.1	6.2	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	24.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	154	0	38	212	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1849		1611
Flt Permitted	1.00			0.93		1.00
Satd. Flow (perm)	1863			1736		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	0	41	230	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	167	0	0	271	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	10.3			10.3		16.1
Effective Green, g (s)	10.3			10.3		16.1
Actuated g/C Ratio	0.30			0.30		0.47
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	557			519		753
v/s Ratio Prot	0.09					
v/s Ratio Perm				c0.16		c0.03
v/c Ratio	0.30			0.52		0.05
Uniform Delay, d1	9.3			10.0		5.0
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.3			1.0		0.1
Delay (s)	9.6			11.0		5.1
Level of Service	A			B		A
Approach Delay (s)	9.6			11.0	5.1	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	34.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	226	0	38	205	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1848		1611
Flt Permitted	1.00			0.92		1.00
Satd. Flow (perm)	1863			1709		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	0	41	223	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	246	0	0	264	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	10.5			10.5		16.1
Effective Green, g (s)	10.5			10.5		16.1
Actuated g/C Ratio	0.30			0.30		0.47
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	565			518		749
v/s Ratio Prot	0.13					
v/s Ratio Perm				c0.15		c0.03
v/c Ratio	0.44			0.51		0.05
Uniform Delay, d1	9.7			9.9		5.1
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.5			0.8		0.1
Delay (s)	10.2			10.7		5.2
Level of Service	B			B		A
Approach Delay (s)	10.2			10.7	5.2	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	34.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	327	0	38	219	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1849		1611
Flt Permitted	1.00			0.91		1.00
Satd. Flow (perm)	1863			1696		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	355	0	41	238	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	355	0	0	279	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	12.8			12.8		16.1
Effective Green, g (s)	12.8			12.8		16.1
Actuated g/C Ratio	0.35			0.35		0.44
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	646			588		702
v/s Ratio Prot	c0.19					
v/s Ratio Perm				0.16		c0.03
v/c Ratio	0.55			0.47		0.06
Uniform Delay, d1	9.7			9.4		6.0
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	1.0			0.6		0.2
Delay (s)	10.7			10.0		6.2
Level of Service	B			B		A
Approach Delay (s)	10.7			10.0	6.2	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	406	0	38	188	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1847		1611
Flt Permitted	1.00			0.89		1.00
Satd. Flow (perm)	1863			1661		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	0	41	204	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	441	0	0	245	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	15.5			15.5		16.0
Effective Green, g (s)	15.5			15.5		16.0
Actuated g/C Ratio	0.39			0.39		0.41
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	731			651		652
v/s Ratio Prot	c0.24					
v/s Ratio Perm				0.15		c0.03
v/c Ratio	0.60			0.38		0.06
Uniform Delay, d1	9.6			8.6		7.2
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	1.4			0.4		0.2
Delay (s)	11.0			8.9		7.4
Level of Service	B			A		A
Approach Delay (s)	11.0			8.9	7.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	39.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	391	0	38	165	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1846		1611
Flt Permitted	1.00			0.88		1.00
Satd. Flow (perm)	1863			1645		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	425	0	41	179	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	425	0	0	220	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	15.0			15.0		16.0
Effective Green, g (s)	15.0			15.0		16.0
Actuated g/C Ratio	0.38			0.38		0.41
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	716			632		660
v/s Ratio Prot	c0.23					
v/s Ratio Perm				0.13		c0.03
v/c Ratio	0.59			0.35		0.06
Uniform Delay, d1	9.6			8.5		7.0
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	1.3			0.3		0.2
Delay (s)	10.9			8.9		7.1
Level of Service	B			A		A
Approach Delay (s)	10.9			8.9	7.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	352	0	38	162	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0
Lane Util. Factor	1.00			1.00		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			0.99		1.00
Satd. Flow (prot)	1863			1845		1611
Flt Permitted	1.00			0.89		1.00
Satd. Flow (perm)	1863			1660		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	383	0	41	176	0	41
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	383	0	0	217	0	41
Turn Type	NA		pm+pt	NA		custom
Protected Phases	8		1	8		
Permitted Phases			8			2
Actuated Green, G (s)	12.2			12.2		6.3
Effective Green, g (s)	12.2			12.2		6.3
Actuated g/C Ratio	0.46			0.46		0.24
Clearance Time (s)	4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	857			764		382
v/s Ratio Prot	c0.21					
v/s Ratio Perm				0.13		c0.03
v/c Ratio	0.45			0.28		0.11
Uniform Delay, d1	4.9			4.4		7.9
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	0.4			0.2		0.1
Delay (s)	5.2			4.6		8.0
Level of Service	A			A		A
Approach Delay (s)	5.2			4.6	8.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	26.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX D

- Synchro Sheets for Queuing Analysis

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	113	443	41
v/c Ratio	0.15	0.61	0.08
Control Delay	6.0	11.2	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	6.0	11.2	8.6
Queue Length 50th (ft)	10	49	4
Queue Length 95th (ft)	24	94	17
Internal Link Dist (ft)	440	632	
Turn Bay Length (ft)			
Base Capacity (vph)	992	959	858
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.11	0.46	0.05

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	95	354	41
v/c Ratio	0.16	0.61	0.06
Control Delay	8.9	14.8	7.0
Queue Delay	0.0	0.0	0.0
Total Delay	8.9	14.8	7.0
Queue Length 50th (ft)	13	55	4
Queue Length 95th (ft)	32	108	17
Internal Link Dist (ft)	650	660	
Turn Bay Length (ft)			
Base Capacity (vph)	834	800	722
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.11	0.44	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	116	316	41
v/c Ratio	0.20	0.57	0.06
Control Delay	9.3	14.2	6.8
Queue Delay	0.0	0.0	0.0
Total Delay	9.3	14.2	6.8
Queue Length 50th (ft)	15	48	4
Queue Length 95th (ft)	37	96	17
Internal Link Dist (ft)	635	620	
Turn Bay Length (ft)			
Base Capacity (vph)	849	807	734
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.14	0.39	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	139	294	41
v/c Ratio	0.24	0.55	0.06
Control Delay	9.9	14.1	6.6
Queue Delay	0.0	0.0	0.0
Total Delay	9.9	14.1	6.6
Queue Length 50th (ft)	19	44	4
Queue Length 95th (ft)	43	89	17
Internal Link Dist (ft)	705	675	
Turn Bay Length (ft)			
Base Capacity (vph)	860	810	743
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.36	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	141	289	41
v/c Ratio	0.25	0.54	0.06
Control Delay	9.9	14.0	6.5
Queue Delay	0.0	0.0	0.0
Total Delay	9.9	14.0	6.5
Queue Length 50th (ft)	19	43	4
Queue Length 95th (ft)	43	87	16
Internal Link Dist (ft)	635	655	
Turn Bay Length (ft)			
Base Capacity (vph)	862	811	745
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.36	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	159	264	41
v/c Ratio	0.23	0.41	0.09
Control Delay	5.6	7.3	7.9
Queue Delay	0.0	0.0	0.0
Total Delay	5.6	7.3	7.9
Queue Length 50th (ft)	10	17	3
Queue Length 95th (ft)	25	41	15
Internal Link Dist (ft)	660	650	
Turn Bay Length (ft)			
Base Capacity (vph)	1219	1137	1054
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.13	0.23	0.04

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	167	271	41
v/c Ratio	0.30	0.52	0.05
Control Delay	10.6	13.9	6.3
Queue Delay	0.0	0.0	0.0
Total Delay	10.6	13.9	6.3
Queue Length 50th (ft)	23	40	4
Queue Length 95th (ft)	51	82	16
Internal Link Dist (ft)	475	515	
Turn Bay Length (ft)			
Base Capacity (vph)	871	811	753
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.33	0.05

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	246	264	41
v/c Ratio	0.44	0.51	0.05
Control Delay	12.1	13.5	6.6
Queue Delay	0.0	0.0	0.0
Total Delay	12.1	13.5	6.6
Queue Length 50th (ft)	35	39	4
Queue Length 95th (ft)	73	80	17
Internal Link Dist (ft)	652	616	
Turn Bay Length (ft)			
Base Capacity (vph)	866	795	749
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.28	0.33	0.05

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	355	279	41
v/c Ratio	0.55	0.48	0.06
Control Delay	13.3	12.3	7.4
Queue Delay	0.0	0.0	0.0
Total Delay	13.3	12.3	7.4
Queue Length 50th (ft)	55	42	5
Queue Length 95th (ft)	106	85	17
Internal Link Dist (ft)	648	648	
Turn Bay Length (ft)			
Base Capacity (vph)	812	739	702
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.44	0.38	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	441	245	41
v/c Ratio	0.60	0.38	0.06
Control Delay	13.8	10.6	7.8
Queue Delay	0.0	0.0	0.0
Total Delay	13.8	10.6	7.8
Queue Length 50th (ft)	72	36	5
Queue Length 95th (ft)	138	75	17
Internal Link Dist (ft)	695	695	
Turn Bay Length (ft)			
Base Capacity (vph)	755	673	653
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.58	0.36	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	425	220	41
v/c Ratio	0.60	0.35	0.06
Control Delay	13.6	10.4	7.8
Queue Delay	0.0	0.0	0.0
Total Delay	13.6	10.4	7.8
Queue Length 50th (ft)	69	32	5
Queue Length 95th (ft)	132	68	17
Internal Link Dist (ft)	625	655	
Turn Bay Length (ft)			
Base Capacity (vph)	765	676	662
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.56	0.33	0.06

Intersection Summary

Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	383	217	41
v/c Ratio	0.45	0.29	0.11
Control Delay	6.7	5.5	9.8
Queue Delay	0.0	0.0	0.0
Total Delay	6.7	5.5	9.8
Queue Length 50th (ft)	27	14	4
Queue Length 95th (ft)	60	34	17
Internal Link Dist (ft)	700	780	
Turn Bay Length (ft)			
Base Capacity (vph)	1139	1015	985
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.34	0.21	0.04

Intersection Summary

APPENDIX E

- Synchro Sheets for Otay Lakes Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	31	64	305	79	53
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	34	70	332	86	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	585	115	143			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	585	115	143			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	95			
cM capacity (veh/h)	450	938	1439			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	30	34	70	332	143
Volume Left	30	0	70	0	0
Volume Right	0	34	0	0	58
cSH	450	938	1439	1700	1700
Volume to Capacity	0.07	0.04	0.05	0.20	0.08
Queue Length 95th (ft)	5	3	4	0	0
Control Delay (s)	13.6	9.0	7.6	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	11.2		1.3		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	43	69	203	108	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	47	75	221	117	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	505	135	152			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	505	135	152			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	95	95			
cM capacity (veh/h)	499	914	1429			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	33	47	75	221	152
Volume Left	33	0	75	0	0
Volume Right	0	47	0	0	35
cSH	499	914	1429	1700	1700
Volume to Capacity	0.07	0.05	0.05	0.13	0.09
Queue Length 95th (ft)	5	4	4	0	0
Control Delay (s)	12.7	9.2	7.7	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	10.6		1.9		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	41	73	166	70	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	45	79	180	76	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	432	92	109			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	432	92	109			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	95	95			
cM capacity (veh/h)	550	965	1482			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	26	45	79	180	109
Volume Left	26	0	79	0	0
Volume Right	0	45	0	0	33
cSH	550	965	1482	1700	1700
Volume to Capacity	0.05	0.05	0.05	0.11	0.06
Queue Length 95th (ft)	4	4	4	0	0
Control Delay (s)	11.9	8.9	7.6	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	10.0		2.3		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	60	26	110	321	41
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	65	28	120	349	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	547	371	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547	371	393			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	90	98			
cM capacity (veh/h)	486	675	1165			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	58	65	28	120	393
Volume Left	58	0	28	0	0
Volume Right	0	65	0	0	45
cSH	486	675	1165	1700	1700
Volume to Capacity	0.12	0.10	0.02	0.07	0.23
Queue Length 95th (ft)	10	8	2	0	0
Control Delay (s)	13.4	10.9	8.2	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	12.1		1.6		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	47	72	34	100	299	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	78	37	109	325	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	528	346	366			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	528	346	366			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	89	97			
cM capacity (veh/h)	495	697	1192			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	51	78	37	109	366
Volume Left	51	0	37	0	0
Volume Right	0	78	0	0	41
cSH	495	697	1192	1700	1700
Volume to Capacity	0.10	0.11	0.03	0.06	0.22
Queue Length 95th (ft)	9	9	2	0	0
Control Delay (s)	13.1	10.8	8.1	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	11.7		2.1		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	31	64	343	117	53
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	34	70	373	127	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	668	156	185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668	156	185			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	96	95			
cM capacity (veh/h)	402	890	1390			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	30	34	70	373	185
Volume Left	30	0	70	0	0
Volume Right	0	34	0	0	58
cSH	402	890	1390	1700	1700
Volume to Capacity	0.08	0.04	0.05	0.22	0.11
Queue Length 95th (ft)	6	3	4	0	0
Control Delay (s)	14.7	9.2	7.7	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	11.8		1.2		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	43	69	241	146	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	47	75	262	159	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	588	176	193			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	588	176	193			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	95	95			
cM capacity (veh/h)	446	867	1380			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	33	47	75	262	193
Volume Left	33	0	75	0	0
Volume Right	0	47	0	0	35
cSH	446	867	1380	1700	1700
Volume to Capacity	0.07	0.05	0.05	0.15	0.11
Queue Length 95th (ft)	6	4	4	0	0
Control Delay (s)	13.7	9.4	7.8	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	11.2		1.7		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	41	73	204	108	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	45	79	222	117	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	514	134	150			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	514	134	150			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	95	94			
cM capacity (veh/h)	492	915	1431			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	26	45	79	222	150
Volume Left	26	0	79	0	0
Volume Right	0	45	0	0	33
cSH	492	915	1431	1700	1700
Volume to Capacity	0.05	0.05	0.06	0.13	0.09
Queue Length 95th (ft)	4	4	4	0	0
Control Delay (s)	12.7	9.1	7.7	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	10.5		2.0		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	60	26	148	359	41
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	65	28	161	390	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	630	412	435			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	630	412	435			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	90	97			
cM capacity (veh/h)	434	640	1125			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	58	65	28	161	435
Volume Left	58	0	28	0	0
Volume Right	0	65	0	0	45
cSH	434	640	1125	1700	1700
Volume to Capacity	0.13	0.10	0.03	0.09	0.26
Queue Length 95th (ft)	11	8	2	0	0
Control Delay (s)	14.5	11.3	8.3	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	12.8		1.2		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	47	72	34	138	337	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	78	37	150	366	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	611	387	408			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	611	387	408			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	88	97			
cM capacity (veh/h)	443	661	1151			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	51	78	37	150	408
Volume Left	51	0	37	0	0
Volume Right	0	78	0	0	41
cSH	443	661	1151	1700	1700
Volume to Capacity	0.12	0.12	0.03	0.09	0.24
Queue Length 95th (ft)	10	10	2	0	0
Control Delay (s)	14.2	11.2	8.2	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	12.4		1.6		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX F

- HCS 2010 Sheets

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	7 AM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	8.0	ft	% Trucks and buses	5	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	10	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	370	veh/h
Opposing direction volume, Vo	104	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.930	
Grade adj. factor,(note-1) fg	0.91		0.68	
Directional flow rate,(note-2) vi	484	pc/h	185	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.7	mi/h
Percent Free Flow Speed, PFFS	86.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.971		0.962	
Grade adjustment factor,(note-1) fg	0.91		0.74	
Directional flow rate,(note-2) vi	471	pc/h	164	pc/h

Base percent time-spent-following,(note-4) BPTSFd	42.8	%
Adjustment for no-passing zones, fnp	38.0	
Percent time-spent-following, PTSFd	71.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.29	
Peak 15-min vehicle-miles of travel, VMT15	395	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1406	veh-mi
Peak 15-min total travel time, TT15	8.5	veh-h
Capacity from ATS, CdATS	1133	veh/h
Capacity from PTSF, CdPTSF	1259	veh/h
Directional Capacity	1133	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	46.7	mi/h
Percent time-spent-following, PTSFd (from above)	71.0	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	415.7
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	2.19
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	8 AM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	8.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	288	veh/h
Opposing direction volume, Vo	87	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.7*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.951		0.929	
Grade adj. factor,(note-1) fg	0.85		0.67	
Directional flow rate,(note-2) vi	405	pc/h	159	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.5	mi/h
Percent Free Flow Speed, PFFS	87.5	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.9*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.973		0.965	
Grade adjustment factor,(note-1) fg	0.86		0.73	
Directional flow rate,(note-2) vi	391	pc/h	140	pc/h

Base percent time-spent-following,(note-4) BPTSFd	37.2	%
Adjustment for no-passing zones, fnp	41.9	
Percent time-spent-following, PTSFd	68.1	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	311	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1094	veh-mi
Peak 15-min total travel time, TT15	6.5	veh-h
Capacity from ATS, CdATS	1114	veh/h
Capacity from PTSF, CdPTSF	1252	veh/h
Directional Capacity	1114	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.5	mi/h
Percent time-spent-following, PTSFd (from above)	68.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	327.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.78
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	9 AM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.95	
Shoulder width	8.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	10	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	253	veh/h
Opposing direction volume, Vo	107	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.949		0.942	
Grade adj. factor,(note-1) fg	0.80		0.68	
Directional flow rate,(note-2) vi	351	pc/h	176	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.8	mi/h
Percent Free Flow Speed, PFFS	88.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.973		0.969	
Grade adjustment factor,(note-1) fg	0.83		0.74	
Directional flow rate,(note-2) vi	330	pc/h	157	pc/h

Base percent time-spent-following,(note-4) BPTSFd	32.6	%
Adjustment for no-passing zones, fnp	46.0	
Percent time-spent-following, PTSFd	63.8	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.21	
Peak 15-min vehicle-miles of travel, VMT15	253	veh-mi
Peak-hour vehicle-miles of travel, VMT60	961	veh-mi
Peak 15-min total travel time, TT15	5.3	veh-h
Capacity from ATS, CdATS	1144	veh/h
Capacity from PTSF, CdPTSF	1268	veh/h
Directional Capacity	1144	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.8	mi/h
Percent time-spent-following, PTSFd (from above)	63.8	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	266.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.67
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS 2010: Two-Lane Highways Release 6.41

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	10 AM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	8.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	6	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	233	veh/h
Opposing direction volume, Vo	128	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.952		0.945	
Grade adj. factor,(note-1) fg	0.80		0.71	
Directional flow rate,(note-2) vi	344	pc/h	214	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.6	mi/h
Percent Free Flow Speed, PFFS	87.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.973		0.969	
Grade adjustment factor,(note-1) fg	0.83		0.76	
Directional flow rate,(note-2) vi	324	pc/h	195	pc/h

Base percent time-spent-following,(note-4) BPTSFd	32.2	%
Adjustment for no-passing zones, fnp	49.6	
Percent time-spent-following, PTSFd	63.2	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	249	veh-mi
Peak-hour vehicle-miles of travel, VMT60	885	veh-mi
Peak 15-min total travel time, TT15	5.2	veh-h
Capacity from ATS, CdATS	1205	veh/h
Capacity from PTSF, CdPTSF	1318	veh/h
Directional Capacity	1205	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.6	mi/h
Percent time-spent-following, PTSFd (from above)	63.2	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	261.8
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.66
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	11 AM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	9	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	228	veh/h
Opposing direction volume, Vo	130	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.950		0.943	
Grade adj. factor,(note-1) fg	0.79		0.71	
Directional flow rate,(note-2) vi	338	pc/h	216	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.6	mi/h
Percent Free Flow Speed, PFFS	87.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.973		0.969	
Grade adjustment factor,(note-1) fg	0.83		0.76	
Directional flow rate,(note-2) vi	314	pc/h	196	pc/h

Base percent time-spent-following,(note-4) BPTSFd	31.4	%
Adjustment for no-passing zones, fnp	50.3	
Percent time-spent-following, PTSFd	62.4	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	241	veh-mi
Peak-hour vehicle-miles of travel, VMT60	866	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h
Capacity from ATS, CdATS	1202	veh/h
Capacity from PTSF, CdPTSF	1318	veh/h
Directional Capacity	1202	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.6	mi/h
Percent time-spent-following, PTSFd (from above)	62.4	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	253.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.65
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	12 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.86	
Shoulder width	8.0	ft	% Trucks and buses	3	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	205	veh/h
Opposing direction volume, Vo	146	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.961		0.955	
Grade adj. factor,(note-1) fg	0.78		0.73	
Directional flow rate,(note-2) vi	318	pc/h	244	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.5	mi/h
Percent Free Flow Speed, PFFS	87.5	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.7*	1.8*
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.979	0.977
Grade adjustment factor,(note-1) fg	0.82	0.78
Directional flow rate,(note-2) vi	297 pc/h	223 pc/h

Base percent time-spent-following,(note-4) BPTSFd	30.9	%
Adjustment for no-passing zones, fnp	53.6	
Percent time-spent-following, PTSFd	61.5	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	226	veh-mi
Peak-hour vehicle-miles of travel, VMT60	779	veh-mi
Peak 15-min total travel time, TT15	4.8	veh-h
Capacity from ATS, CdATS	1250	veh/h
Capacity from PTSF, CdPTSF	1349	veh/h
Directional Capacity	1250	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.5	mi/h
Percent time-spent-following, PTSFd (from above)	61.5	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	238.4
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.34
Bicycle LOS	A

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	1 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.87	
Shoulder width	8.0	ft	% Trucks and buses	3	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	9	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	212	veh/h
Opposing direction volume, Vo	154	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.960		0.954	
Grade adj. factor,(note-1) fg	0.79		0.73	
Directional flow rate,(note-2) vi	321	pc/h	254	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.4	mi/h
Percent Free Flow Speed, PFFS	87.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.979		0.977	
Grade adjustment factor,(note-1) fg	0.82		0.78	
Directional flow rate,(note-2) vi	303	pc/h	232	pc/h

Base percent time-spent-following,(note-4) BPTSFd	31.1	%
Adjustment for no-passing zones, fnp	53.6	
Percent time-spent-following, PTSFd	61.5	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	231	veh-mi
Peak-hour vehicle-miles of travel, VMT60	806	veh-mi
Peak 15-min total travel time, TT15	4.9	veh-h
Capacity from ATS, CdATS	1269	veh/h
Capacity from PTSF, CdPTSF	1365	veh/h
Directional Capacity	1269	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.4	mi/h
Percent time-spent-following, PTSFd (from above)	61.5	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	243.7
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.36
Bicycle LOS	A

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	2 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	5	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 205 veh/h
Opposing direction volume, Vo 226 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.1*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.941		0.941	
Grade adj. factor,(note-1) fg	0.77		0.79	
Directional flow rate,(note-2) vi	314	pc/h	338	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.8	mi/h
Percent Free Flow Speed, PFFS	86.3	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.7*	1.7*
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.966	0.966
Grade adjustment factor,(note-1) fg	0.81	0.83
Directional flow rate,(note-2) vi	291 pc/h	313 pc/h

Base percent time-spent-following,(note-4) BPTSFd	33.3	%
Adjustment for no-passing zones, fnp	53.4	
Percent time-spent-following, PTSFd	59.0	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.18	
Peak 15-min vehicle-miles of travel, VMT15	216	veh-mi
Peak-hour vehicle-miles of travel, VMT60	779	veh-mi
Peak 15-min total travel time, TT15	4.6	veh-h
Capacity from ATS, CdATS	1344	veh/h
Capacity from PTSF, CdPTSF	1419	veh/h
Directional Capacity	1344	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	46.8	mi/h
Percent time-spent-following, PTSFd (from above)	59.0	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	227.8
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.89
Bicycle LOS	B

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	3 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	8.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	11	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	219	veh/h
Opposing direction volume, Vo	327	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.0*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.948		0.951	
Grade adj. factor,(note-1) fg	0.79		0.88	
Directional flow rate,(note-2) vi	332	pc/h	444	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.9	mi/h
Percent Free Flow Speed, PFFS	84.5	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.6*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.973		0.977	
Grade adjustment factor,(note-1) fg	0.82		0.89	
Directional flow rate,(note-2) vi	312	pc/h	428	pc/h

Base percent time-spent-following,(note-4) BPTSFd	37.0	%
Adjustment for no-passing zones, fnp	43.1	
Percent time-spent-following, PTSFd	55.2	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	236	veh-mi
Peak-hour vehicle-miles of travel, VMT60	832	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h
Capacity from ATS, CdATS	1477	veh/h
Capacity from PTSF, CdPTSF	1539	veh/h
Directional Capacity	1477	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.9	mi/h
Percent time-spent-following, PTSFd (from above)	55.2	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	248.9
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.64
Bicycle LOS	B

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	4 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.97	
Shoulder width	8.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	11	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	188	veh/h
Opposing direction volume, Vo	406	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3*		1.8*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.918		0.944	
Grade adj. factor,(note-1) fg	0.75		0.91	
Directional flow rate,(note-2) vi	282	pc/h	487	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.9	mi/h
Percent Free Flow Speed, PFFS	84.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.8*		1.4*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.954		0.977	
Grade adjustment factor,(note-1) fg	0.80		0.91	
Directional flow rate,(note-2) vi	254	pc/h	471	pc/h
Base percent time-spent-following,(note-4) BPTSFd	32.2	%		
Adjustment for no-passing zones, fnp	38.9			
Percent time-spent-following, PTSFd	45.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	184	veh-mi
Peak-hour vehicle-miles of travel, VMT60	714	veh-mi
Peak 15-min total travel time, TT15	4.0	veh-h
Capacity from ATS, CdATS	1501	veh/h
Capacity from PTSF, CdPTSF	1561	veh/h
Directional Capacity	1501	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.9	mi/h
Percent time-spent-following, PTSFd (from above)	45.8	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	193.8
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	2.12
Bicycle LOS	B

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	5 PM
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.85	
Shoulder width	8.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	165	veh/h
Opposing direction volume, Vo	391	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3*		2.0*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.967		0.973	
Grade adj. factor,(note-1) fg	0.75		0.93	
Directional flow rate,(note-2) vi	268	pc/h	508	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.9	mi/h
Percent Free Flow Speed, PFFS	84.5	%

```
________________________Percent Time-Spent-Following________________________

Direction                                  Analysis(d)        Opposing (o)
PCE for trucks, ET                             1.8*               1.6*
PCE for RVs, ER                                1.0                1.0
Heavy-vehicle adjustment factor, fHV           0.984              0.988
Grade adjustment factor,(note-1) fg            0.80               0.94
Directional flow rate,(note-2) vi              247    pc/h        495     pc/h
Base percent time-spent-following,(note-4) BPTSFd  31.6   %
Adjustment for no-passing zones, fnp               36.8
Percent time-spent-following, PTSFd                43.9   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              C
Volume to capacity ratio, v/c                      0.16
Peak 15-min vehicle-miles of travel, VMT15         184     veh-mi
Peak-hour vehicle-miles of travel, VMT60           627     veh-mi
Peak 15-min total travel time, TT15                4.0     veh-h
Capacity from ATS, CdATS                           1578    veh/h
Capacity from PTSF, CdPTSF                         1619    veh/h
Directional Capacity                               1578    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                          3.8     mi
Length of two-lane highway upstream of the passing lane, Lu   -       mi
Length of passing lane including tapers, Lpl                  -       mi
Average travel speed, ATSd (from above)                       45.9    mi/h
Percent time-spent-following, PTSFd (from above)              43.9
Level of service, LOSd (from above)                           C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde      -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld   -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                     -
Average travel speed including passing lane, ATSpl            -
Percent free flow speed including passing lane, PFFSpl        0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde     -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld     -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                      -
Percent time-spent-following
    including passing lane, PTSFpl                            -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     E
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	194.1
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	0.99
Bicycle LOS	A

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

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_________________Directional Two-Lane Highway Segment Analysis________________

Analyst                  DP
Agency/Co.               KHA
Date Performed           7/22/2013
Analysis Time Period     6 PM
Highway                  SR-94
From/To                  Reservation Road / Otay Lakes
Jurisdiction             Caltrans District 11
Analysis Year            2013
Description

__________________________________Input Data__________________________________

Highway class  Class 1              Peak hour factor, PHF    0.79
Shoulder width       8.0     ft     % Trucks and buses       2       %
Lane width           12.0    ft     % Trucks crawling        0.0     %
Segment length       3.8     mi     Truck crawl speed        0.0     mi/hr
Terrain type         Rolling        % Recreational vehicles  7       %
Grade:  Length       -       mi     % No-passing zones       70      %
        Up/down      -       %      Access point density     2       /mi

Analysis direction volume, Vd  162     veh/h
Opposing direction volume, Vo  352     veh/h

____________________________Average Travel Speed______________________________

Direction                                 Analysis(d)        Opposing (o)
PCE for trucks, ET                            2.3*               2.0*
PCE for RVs, ER                               1.1                1.1
Heavy-vehicle adj. factor,(note-5) fHV        0.968              0.974
Grade adj. factor,(note-1) fg                 0.75               0.92
Directional flow rate,(note-2) vi             282     pc/h       497     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM                 -      mi/h
Observed total demand,(note-3) V                   -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS                55.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS     0.0     mi/h
Adj. for access point density,(note-3) fA         0.7*    mi/h

Free-flow speed, FFSd                             54.3    mi/h

Adjustment for no-passing zones, fnp              2.4*    mi/h
Average travel speed, ATSd                        45.9    mi/h
Percent Free Flow Speed, PFFS                     84.4    %
```

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.8*		1.6*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.984		0.988	
Grade adjustment factor,(note-1) fg	0.80		0.93	
Directional flow rate,(note-2) vi	260	pc/h	485	pc/h
Base percent time-spent-following,(note-4) BPTSFd	33.1	%		
Adjustment for no-passing zones, fnp	37.7			
Percent time-spent-following, PTSFd	46.3	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	195	veh-mi
Peak-hour vehicle-miles of travel, VMT60	616	veh-mi
Peak 15-min total travel time, TT15	4.3	veh-h
Capacity from ATS, CdATS	1563	veh/h
Capacity from PTSF, CdPTSF	1602	veh/h
Directional Capacity	1563	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.9	mi/h
Percent time-spent-following, PTSFd (from above)	46.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	205.1
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	1.02
Bicycle LOS	A

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	7 AM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	8.0	ft	% Trucks and buses	12	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	10	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 385 veh/h
Opposing direction volume, Vo 119 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.885		0.858	
Grade adj. factor,(note-1) fg	0.92		0.70	
Directional flow rate,(note-2) vi	531	pc/h	223	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.0	mi/h
Percent Free Flow Speed, PFFS	84.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6*		1.8*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.933		0.912	
Grade adjustment factor,(note-1) fg	0.92		0.75	
Directional flow rate,(note-2) vi	504	pc/h	195	pc/h
Base percent time-spent-following,(note-4) BPTSFd	44.9	%		
Adjustment for no-passing zones, fnp	35.7			
Percent time-spent-following, PTSFd	70.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.31	
Peak 15-min vehicle-miles of travel, VMT15	411	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1463	veh-mi
Peak 15-min total travel time, TT15	8.9	veh-h
Capacity from ATS, CdATS	1094	veh/h
Capacity from PTSF, CdPTSF	1241	veh/h
Directional Capacity	1094	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	46.0	mi/h
Percent time-spent-following, PTSFd (from above)	70.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	432.6
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	4.83
Bicycle LOS	E

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	8 AM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	8.0	ft	% Trucks and buses	10	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	303	veh/h
Opposing direction volume, Vo	102	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.903		0.879	
Grade adj. factor,(note-1) fg	0.86		0.68	
Directional flow rate,(note-2) vi	443	pc/h	194	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.0	mi/h
Percent Free Flow Speed, PFFS	86.5	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                  Analysis(d)        Opposing (o)
PCE for trucks, ET                             1.6*               1.8*
PCE for RVs, ER                                1.0                1.0
Heavy-vehicle adjustment factor, fHV           0.943              0.926
Grade adjustment factor,(note-1) fg            0.87               0.74
Directional flow rate,(note-2) vi              420    pc/h        169     pc/h
Base percent time-spent-following,(note-4) BPTSFd  39.3   %
Adjustment for no-passing zones, fnp               41.9
Percent time-spent-following, PTSFd                69.2   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              D
Volume to capacity ratio, v/c                      0.26
Peak 15-min vehicle-miles of travel, VMT15         327     veh-mi
Peak-hour vehicle-miles of travel, VMT60           1151    veh-mi
Peak 15-min total travel time, TT15                7.0     veh-h
Capacity from ATS, CdATS                           1081    veh/h
Capacity from PTSF, CdPTSF                         1228    veh/h
Directional Capacity                               1081    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                          3.8     mi
Length of two-lane highway upstream of the passing lane, Lu   -       mi
Length of passing lane including tapers, Lpl                  -       mi
Average travel speed, ATSd (from above)                       47.0    mi/h
Percent time-spent-following, PTSFd (from above)              69.2
Level of service, LOSd (from above)                           D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde      -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld   -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                     -
Average travel speed including passing lane, ATSpl            -
Percent free flow speed including passing lane, PFFSpl        0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde     -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld     -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                      -
Percent time-spent-following
    including passing lane, PTSFpl                            -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     E
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	344.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.86
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	9 AM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.95	
Shoulder width	8.0	ft	% Trucks and buses	10	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	10	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	268	veh/h
Opposing direction volume, Vo	122	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.893		0.877	
Grade adj. factor,(note-1) fg	0.82		0.69	
Directional flow rate,(note-2) vi	385	pc/h	212	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.3	mi/h
Percent Free Flow Speed, PFFS	87.0	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                              Analysis(d)        Opposing (o)
PCE for trucks, ET                         1.7*               1.8*
PCE for RVs, ER                            1.0                1.0
Heavy-vehicle adjustment factor, fHV       0.935              0.926
Grade adjustment factor,(note-1) fg        0.84               0.75
Directional flow rate,(note-2) vi          359    pc/h        185     pc/h
Base percent time-spent-following,(note-4) BPTSFd  34.9   %
Adjustment for no-passing zones, fnp               46.3
Percent time-spent-following, PTSFd                65.5   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              D
Volume to capacity ratio, v/c                      0.23
Peak 15-min vehicle-miles of travel, VMT15         268     veh-mi
Peak-hour vehicle-miles of travel, VMT60           1018    veh-mi
Peak 15-min total travel time, TT15                5.7     veh-h
Capacity from ATS, CdATS                           1094    veh/h
Capacity from PTSF, CdPTSF                         1244    veh/h
Directional Capacity                               1094    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                         3.8      mi
Length of two-lane highway upstream of the passing lane, Lu  -        mi
Length of passing lane including tapers, Lpl                 -        mi
Average travel speed, ATSd (from above)                      47.3     mi/h
Percent time-spent-following, PTSFd (from above)             65.5
Level of service, LOSd (from above)                          D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde     -        mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld  -        mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                    -
Average travel speed including passing lane, ATSpl           -
Percent free flow speed including passing lane, PFFSpl       0.0      %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde    -        mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld    -        mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                     -
Percent time-spent-following
    including passing lane, PTSFpl                           -        %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     E
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	282.1
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.76
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	10 AM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	8.0	ft	% Trucks and buses	11	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	6	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	248	veh/h
Opposing direction volume, Vo	143	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.887		0.870	
Grade adj. factor,(note-1) fg	0.81		0.72	
Directional flow rate,(note-2) vi	388	pc/h	257	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.9	mi/h
Percent Free Flow Speed, PFFS	86.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.7*	1.8*
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.929	0.919
Grade adjustment factor,(note-1) fg	0.84	0.77
Directional flow rate,(note-2) vi	357 pc/h	227 pc/h

Base percent time-spent-following,(note-4) BPTSFd	35.5	%
Adjustment for no-passing zones, fnp	49.6	
Percent time-spent-following, PTSFd	65.8	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	265	veh-mi
Peak-hour vehicle-miles of travel, VMT60	942	veh-mi
Peak 15-min total travel time, TT15	5.7	veh-h
Capacity from ATS, CdATS	1151	veh/h
Capacity from PTSF, CdPTSF	1279	veh/h
Directional Capacity	1151	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	46.9	mi/h
Percent time-spent-following, PTSFd (from above)	65.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	278.7
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	4.17
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	11 AM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	11	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	9	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	243	veh/h
Opposing direction volume, Vo	145	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.885		0.868	
Grade adj. factor,(note-1) fg	0.81		0.72	
Directional flow rate,(note-2) vi	377	pc/h	258	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	47.0	mi/h
Percent Free Flow Speed, PFFS	86.5	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                    Analysis(d)        Opposing (o)
PCE for trucks, ET                               1.7*               1.8*
PCE for RVs, ER                                  1.0                1.0
Heavy-vehicle adjustment factor, fHV             0.929              0.919
Grade adjustment factor,(note-1) fg              0.84               0.77
Directional flow rate,(note-2) vi                346    pc/h        228     pc/h
Base percent time-spent-following,(note-4) BPTSFd  34.7   %
Adjustment for no-passing zones, fnp                      50.3
Percent time-spent-following, PTSFd                       65.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                     C
Volume to capacity ratio, v/c                             0.22
Peak 15-min vehicle-miles of travel, VMT15                257     veh-mi
Peak-hour vehicle-miles of travel, VMT60                  923     veh-mi
Peak 15-min total travel time, TT15                       5.5     veh-h
Capacity from ATS, CdATS                                  1147    veh/h
Capacity from PTSF, CdPTSF                                1279    veh/h
Directional Capacity                                      1147    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                3.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             47.0    mi/h
Percent time-spent-following, PTSFd (from above)                    65.0
Level of service, LOSd (from above)                                 C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl      E
Peak 15-min total travel time, TT15                       -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	270.0
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	4.15
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	12 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.86	
Shoulder width	8.0	ft	% Trucks and buses	10	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	220	veh/h
Opposing direction volume, Vo	161	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.894		0.879	
Grade adj. factor,(note-1) fg	0.79		0.74	
Directional flow rate,(note-2) vi	362	pc/h	288	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.9	mi/h
Percent Free Flow Speed, PFFS	86.3	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                                1.7*                1.8*
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.935               0.926
Grade adjustment factor,(note-1) fg               0.83                0.79
Directional flow rate,(note-2) vi                 330    pc/h         256     pc/h
Base percent time-spent-following,(note-4) BPTSFd  34.0   %
Adjustment for no-passing zones, fnp                       52.7
Percent time-spent-following, PTSFd                        63.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      C
Volume to capacity ratio, v/c                              0.21
Peak 15-min vehicle-miles of travel, VMT15                 243     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   836     veh-mi
Peak 15-min total travel time, TT15                        5.2     veh-h
Capacity from ATS, CdATS                                   1191    veh/h
Capacity from PTSF, CdPTSF                                 1319    veh/h
Directional Capacity                                       1191    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                  3.8     mi
Length of two-lane highway upstream of the passing lane, Lu           -       mi
Length of passing lane including tapers, Lpl                          -       mi
Average travel speed, ATSd (from above)                               46.9    mi/h
Percent time-spent-following, PTSFd (from above)                      63.7
Level of service, LOSd (from above)                                   C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde              -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld           -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                             -
Average travel speed including passing lane, ATSpl                    -
Percent free flow speed including passing lane, PFFSpl                0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde             -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld             -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                              -
Percent time-spent-following
    including passing lane, PTSFpl                                    -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             E
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	255.8
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.71
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	1 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.87	
Shoulder width	8.0	ft	% Trucks and buses	10	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	9	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	227	veh/h
Opposing direction volume, Vo	169	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.3*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.894		0.878	
Grade adj. factor,(note-1) fg	0.80		0.75	
Directional flow rate,(note-2) vi	365	pc/h	295	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.8	mi/h
Percent Free Flow Speed, PFFS	86.1	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                                1.7*               1.8*
PCE for RVs, ER                                   1.0                1.0
Heavy-vehicle adjustment factor, fHV              0.935              0.926
Grade adjustment factor,(note-1) fg               0.83               0.80
Directional flow rate,(note-2) vi                 336    pc/h        262     pc/h
Base percent time-spent-following,(note-4) BPTSFd  34.2   %
Adjustment for no-passing zones, fnp                   52.6
Percent time-spent-following, PTSFd                    63.8   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                  C
Volume to capacity ratio, v/c                          0.21
Peak 15-min vehicle-miles of travel, VMT15             248     veh-mi
Peak-hour vehicle-miles of travel, VMT60               863     veh-mi
Peak 15-min total travel time, TT15                    5.3     veh-h
Capacity from ATS, CdATS                               1205    veh/h
Capacity from PTSF, CdPTSF                             1319    veh/h
Directional Capacity                                   1205    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                              3.8     mi
Length of two-lane highway upstream of the passing lane, Lu       -       mi
Length of passing lane including tapers, Lpl                      -       mi
Average travel speed, ATSd (from above)                           46.8    mi/h
Percent time-spent-following, PTSFd (from above)                  63.8
Level of service, LOSd (from above)                               C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde          -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld       -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                         -
Average travel speed including passing lane, ATSpl                -
Percent free flow speed including passing lane, PFFSpl            0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde         -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld         -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                          -
Percent time-spent-following
    including passing lane, PTSFpl                                -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl         E
Peak 15-min total travel time, TT15                    -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	260.9
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.72
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	2 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	12	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	220	veh/h
Opposing direction volume, Vo	241	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.1*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.877		0.877	
Grade adj. factor,(note-1) fg	0.79		0.80	
Directional flow rate,(note-2) vi	353	pc/h	382	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	46.2	mi/h
Percent Free Flow Speed, PFFS	85.1	%

```
________________________Percent Time-Spent-Following________________________

Direction                                    Analysis(d)        Opposing (o)
PCE for trucks, ET                               1.7*               1.7*
PCE for RVs, ER                                  1.0                1.0
Heavy-vehicle adjustment factor, fHV             0.923              0.923
Grade adjustment factor,(note-1) fg              0.82               0.83
Directional flow rate,(note-2) vi                323    pc/h        350     pc/h
Base percent time-spent-following,(note-4) BPTSFd  35.8   %
Adjustment for no-passing zones, fnp                  49.9
Percent time-spent-following, PTSFd                   59.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                 C
Volume to capacity ratio, v/c                         0.21
Peak 15-min vehicle-miles of travel, VMT15            232     veh-mi
Peak-hour vehicle-miles of travel, VMT60              836     veh-mi
Peak 15-min total travel time, TT15                   5.0     veh-h
Capacity from ATS, CdATS                              1312    veh/h
Capacity from PTSF, CdPTSF                            1396    veh/h
Directional Capacity                                  1312    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                            3.8     mi
Length of two-lane highway upstream of the passing lane, Lu     -       mi
Length of passing lane including tapers, Lpl                    -       mi
Average travel speed, ATSd (from above)                         46.2    mi/h
Percent time-spent-following, PTSFd (from above)                59.7
Level of service, LOSd (from above)                             C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde        -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld     -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                       -
Average travel speed including passing lane, ATSpl              -
Percent free flow speed including passing lane, PFFSpl          0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde       -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld       -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                        -
Percent time-spent-following
    including passing lane, PTSFpl                              -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl        E
Peak 15-min total travel time, TT15                   -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	244.4
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	4.54
Bicycle LOS	E

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	3 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	8.0	ft	% Trucks and buses	10	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	11	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	234	veh/h
Opposing direction volume, Vo	342	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		2.0*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.892		0.900	
Grade adj. factor,(note-1) fg	0.80		0.89	
Directional flow rate,(note-2) vi	373	pc/h	485	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.2	mi/h
Percent Free Flow Speed, PFFS	83.3	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.6*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.935		0.943	
Grade adjustment factor,(note-1) fg	0.83		0.89	
Directional flow rate,(note-2) vi	343	pc/h	463	pc/h
Base percent time-spent-following,(note-4) BPTSFd	39.1	%		
Adjustment for no-passing zones, fnp	39.4			
Percent time-spent-following, PTSFd	55.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.22	
Peak 15-min vehicle-miles of travel, VMT15	253	veh-mi
Peak-hour vehicle-miles of travel, VMT60	889	veh-mi
Peak 15-min total travel time, TT15	5.6	veh-h
Capacity from ATS, CdATS	1436	veh/h
Capacity from PTSF, CdPTSF	1537	veh/h
Directional Capacity	1436	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.2	mi/h
Percent time-spent-following, PTSFd (from above)	55.9	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	265.9
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.73
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS 2010: Two-Lane Highways Release 6.41

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	4 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.97	
Shoulder width	8.0	ft	% Trucks and buses	12	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	11	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	203	veh/h
Opposing direction volume, Vo	421	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1*		1.8*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.875		0.903	
Grade adj. factor,(note-1) fg	0.76		0.92	
Directional flow rate,(note-2) vi	315	pc/h	522	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.4	mi/h
Percent Free Flow Speed, PFFS	83.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7*		1.4*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.923		0.954	
Grade adjustment factor,(note-1) fg	0.80		0.92	
Directional flow rate,(note-2) vi	284	pc/h	494	pc/h
Base percent time-spent-following,(note-4) BPTSFd	35.0	%		
Adjustment for no-passing zones, fnp	36.5			
Percent time-spent-following, PTSFd	48.3	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	199	veh-mi
Peak-hour vehicle-miles of travel, VMT60	771	veh-mi
Peak 15-min total travel time, TT15	4.4	veh-h
Capacity from ATS, CdATS	1458	veh/h
Capacity from PTSF, CdPTSF	1557	veh/h
Directional Capacity	1458	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.4	mi/h
Percent time-spent-following, PTSFd (from above)	48.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	209.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	4.46
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	5 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.85	
Shoulder width	8.0	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	8	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	180	veh/h
Opposing direction volume, Vo	406	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3*		1.8*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.899		0.933	
Grade adj. factor,(note-1) fg	0.76		0.94	
Directional flow rate,(note-2) vi	310	pc/h	545	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.3	mi/h
Percent Free Flow Speed, PFFS	83.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.8*	1.4*
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.940	0.969
Grade adjustment factor,(note-1) fg	0.81	0.95
Directional flow rate,(note-2) vi	278 pc/h	519 pc/h

Base percent time-spent-following,(note-4) BPTSFd	35.4	%
Adjustment for no-passing zones, fnp	34.4	
Percent time-spent-following, PTSFd	47.4	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.18	
Peak 15-min vehicle-miles of travel, VMT15	201	veh-mi
Peak-hour vehicle-miles of travel, VMT60	684	veh-mi
Peak 15-min total travel time, TT15	4.4	veh-h
Capacity from ATS, CdATS	1507	veh/h
Capacity from PTSF, CdPTSF	1606	veh/h
Directional Capacity	1507	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	3.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.3	mi/h
Percent time-spent-following, PTSFd (from above)	47.4	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	211.8
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	2.85
Bicycle LOS	C

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	DP
Agency/Co.	KHA
Date Performed	7/22/2013
Analysis Time Period	6 PM wp
Highway	SR-94
From/To	Reservation Road / Otay Lakes
Jurisdiction	Caltrans District 11
Analysis Year	2013
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.79	
Shoulder width	8.0	ft	% Trucks and buses	9	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	3.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	7	%
Grade: Length	-	mi	% No-passing zones	70	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	177	veh/h
Opposing direction volume, Vo	367	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3*		2.0*	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.890		0.912	
Grade adj. factor,(note-1) fg	0.77		0.93	
Directional flow rate,(note-2) vi	327	pc/h	548	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	55.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.7*	mi/h
Free-flow speed, FFSd	54.3	mi/h
Adjustment for no-passing zones, fnp	2.4*	mi/h
Average travel speed, ATSd	45.1	mi/h
Percent Free Flow Speed, PFFS	83.1	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                                1.8*                1.6*
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.933               0.949
Grade adjustment factor,(note-1) fg               0.81                0.94
Directional flow rate,(note-2) vi                 297    pc/h         521     pc/h
Base percent time-spent-following,(note-4) BPTSFd  37.1   %
Adjustment for no-passing zones, fnp                       34.9
Percent time-spent-following, PTSFd                        49.8   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      C
Volume to capacity ratio, v/c                              0.19
Peak 15-min vehicle-miles of travel, VMT15                 213     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   673     veh-mi
Peak 15-min total travel time, TT15                        4.7     veh-h
Capacity from ATS, CdATS                                   1497    veh/h
Capacity from PTSF, CdPTSF                                 1603    veh/h
Directional Capacity                                       1497    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                3.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             45.1    mi/h
Percent time-spent-following, PTSFd (from above)                    49.8
Level of service, LOSd (from above)                                 C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             E
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	224.1
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.25
Bicycle LOS	C

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

JAMUL INDIAN VILLAGE KUMEYAAY NATION

Resolution 2014-01

A RESOLUTION TO APPROVE AN ADDENDUM TO THE CERTIFIED FINAL TRIBAL ENVIRONMENTAL EVALUATION

WHEREAS, the Jamul Indian Village ("Tribe") is a federally recognized Indian tribe possessing inherent powers of self-government, governing itself according to its Constitution duly approved May 9, 1981, and amended on August 31, 1996, and

WHEREAS, the Jamul Indian Village is a federally recognized Indian Tribe possessing inherent power of self-government, governing itself according to its Constitution duly approved May 9, 1981, and amended on August 31, 1996; and

WHEREAS, pursuant to its Tribal-State Compact ("Compact"), the Jamul Indian Village enacted the Tribal Gaming Project Environmental Review Ordinance ("Ordinance") that establishes a policy for the preparation, circulation, and consideration by the Tribe of an environmental document to evaluate potential off-Reservation environmental effects associated with development of a proposed gaming facility (the "Project"); and

WHEREAS, after preparation of a draft Tribal Environmental Evaluation and extensive public review and a public hearing, the General Council of the Jamul Indian Village, on January 23, 2013, accepted and certified the Final Tribal Environmental Evaluation (January 2013) ("Final Tribal EE") and elected to proceed with the Project pursuant to Resolution No. 2013-03 and in accordance with the Compact and the Ordinance; and

WHEREAS, after further study and review by the Jamul Environmental Agency and its consultants, the General Council of the Jamul Indian Village has determined that it is necessary to prepare an Addendum to the Final Tribal EE (attached at Exhibit "A") to address modifications made to the previously approved Project (hereinafter, the "Addendum"); and

WHEREAS, the modifications analyzed in the Addendum are the result of further details concerning Project construction and operational activities based upon more refined site and building plans and consultation with Project contractors. None of the changes proposed would increase the square footage, height or massing of the gaming facility and no increase in operational use would result from the changes proposed in the Addendum; and

WHEREAS, the square footages, building heights and design features, previously analyzed in the Final Tribal EE would not be modified by the proposed changes analyzed in the Addendum. Further, no increased operational traffic would result, nor would the proposed modifications affect the access and intersection improvements currently being considered by Caltrans under a separate environmental process; and

WHEREAS, the Addendum concludes that no new or substantially more severe environmental impacts would result from the proposed modifications; and

WHEREAS, the Jamul Tribal Council is satisfied that it is fully informed as to all relevant information contained in the Addendum and incorporated herein by reference, and has conducted its own analysis of all relevant facts; and

NOW THEREFORE BE IT RESOLVED, that the General Council of the Jamul Indian Village hereby adopts the Addendum attached hereto as Exhibit "A" and incorporated herein by reference.

.

CERTIFICATION OF SECRETARY-TREASURER

I, Julia Lotta, serve as Secretary-Treasurer of the Jamul Indian Village and, pursuant to Article 12, Section 3 of the Constitution, I am charged with certifying all resolutions of the General Council and the Executive Committee. I hereby certify that the foregoing document entitled Resolution No. 2014- 01 and the certification following is an exact copy of the documents as it exists in the records of the Tribe.

Signed this 8 day of FEBRUARY, 2014

Julia Lotta

Secretary-Treasurer of the Jamul Indian Village.

CERTIFICATION BY THE EXECUTIVE COMMITTEE

This is to certify that this Resolution No. 2014 – 01 was adopted by the Jamul Executive Committee at a duly called meeting with a quorum present on February 8, 2014 by a vote of 5 FOR, 0 OPPOSED, and 0 ABSTAINING.

Raymond Hunter, Chairman
Jamul Executive Committee

Richard Tellow, Council Member
Jamul Executive Committee

Erica M. Pinto, Vice-Chairman
Jamul Executive Committee

Robert Mesa, Council Member
Jamul Executive Committee

Carlene A. Chamberlain
Carlene A. Chamberlain
Jamul Executive Committee

EXHIBIT "A"

ADDENDUM

(See Attached)

ADDENDUM
Tribal Environmental Evaluation
Jamul Indian Village
Gaming Development Project

February 2014

ADDENDUM
Tribal Environmental Evaluation
Jamul Indian Village
Gaming Development Project

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ADDENDUM
JAMUL TRIBAL ENVIRONMENTAL EVALUATION

1.0 SUMMARY

The Jamul Indian Village (hereafter, "Tribe") has prepared this Addendum to their Final Tribal Environmental Evaluation (January 2013) (hereafter, "Final Tribal EE") to address modifications made to their previously approved Jamul Gaming Facility, located in unincorporated San Diego County (**Figure 1**). The modifications are intended to provide a more efficient layout from both construction and operational standpoints. No increase in operational use would result from the changes proposed. The square footages, building heights and design features, previously analyzed in the Final Tribal EE would not be modified by these proposed changes. No increased operational traffic would result, nor would the proposed modification affect the current access and intersection improvements currently being considered by Caltrans under a separate process.

The attached Environmental Checklist concludes that no new significant environmental impacts would result from the proposed modifications.

Temporary construction-related modifications include:

1. Extension of the temporary construction haul route from the Reservation onto the adjacent 4-acre parcel,
2. Temporary staging of construction activities on the 4-acre parcel, and
3. Revised quantity and schedule of excavated material.

Permanent operational modifications include:

1. Relocation of the fire station from the Reservation to the adjacent 4-acre parcel,
2. Relocation of the Wastewater Treatment Plant from the west side to the east side of the Reservation,
3. Modification of surface parking on the west side of the Reservation,
4. Construction of bridge pilings within the 100-year floodplain, and
5. Construction of a second Willow Creek crossing on the south side of the Reservation.

All of the proposed modifications are directed at site related efficiencies during construction/operation of the Jamul Gaming Facility. None of the changes proposed would increase the square footage, height or massing of the Jamul Gaming Facility. As stated above, no increases to off-site operational traffic would result from these changes. On-site circulation patterns would be modified; however, footprints of the proposed modifications have previously been evaluated for impacts in the Final Tribal EE. As described in detail below, the on-site haul route would be extended from the Reservation to the 4-acre parcel. The

4-acre parcel was identified as being within the development footprint for the proposed access road, so this site had previously been evaluated for development related impacts.

2.0 ADDENDUM PROJECT DESCRIPTION

Features of the Addendum include the construction of temporary and permanent features on certain areas of the Reservation and adjacent 4-acre parcel (**Figure 2**). The changes proposed are broken down below based on location of activity:

Activities on the Reservation include:

1. Relocation of the Wastewater Treatment Plant from the east to west side,
2. Reconfiguration of surface parking spaces on the west surface lot,
3. Construction of a new Willow Creek crossing on the south side,
4. Relocation of bridge pilings within the 100-year floodplain, and
5. Revised quantity and schedule of excavated material.

Activity on the adjacent 4-acre parcel includes:

1. Temporary construction staging,
2. Construction of a fire station, and
3. Construction of a temporary haul route.

The certification of the Final Tribal EE and approval of the Jamul Gaming Facility project in January, 2013 resulted in the adoption of various mitigation measures designed to mitigate construction and operational impacts. The adopted mitigation measures for the gaming project are hereby incorporated into this Addendum by reference and made part of this Addendum Project Description (**Attachment 1**). Additionally, applicable development standards identified in Section 3.2A.9 *The Gaming Complex Development and Operation Standards* of the Final EE apply to these revised features. These applicable standards include:

- Development would comply with the Federal Americans with Disabilities Act, P.L. 101-336, as amended, 42 U.S.C. Section 12101 *et seq.*

- Consistent with the Tribal-State Compact, the proposed development would also comply with the following provisions:

    - Development would be issued a certificate of occupancy by the Tribal Gaming Agency prior to occupancy;

    - Tribal Government would adopt and comply with standards no less stringent than the State of California public health standards for food and beverage handling;

- Tribal Government would adopt and comply with standards no less stringent than federal air quality, water quality, and safe drinking water standards applicable in the surrounding area;

- Tribal Government would adopt and comply with standards no less stringent than federal workplace and occupational health and safety standards;

- The 2013 Editions of the California Building Code; 2012 International Building Code; 2013 California Fire Code; 2011 County of San Diego Consolidated Fire Code; 2013 California Plumbing Code; 2012 Uniform Plumbing Code; 2013 California Mechanical Code; 2012 Uniform Mechanical Code; 2013 California Electrical Code; 2011 National Electrical Code; 2010 California Building Energy Efficiency Standards; 2013 California Green Building Standards Code; 2010 ADA Standards for Accessible Design;

- Tribal Government would adopt and comply with standards no less stringent than State Standards for tertiary treated effluent from onsite wastewater treatment facilities;

- Tribal Government would comply with Tribal codes and other applicable federal law regarding public health and safety; and,

- Tribal Government would make reasonable provisions for adequate emergency, fire, medical, and related relief and disaster services for patrons and employees of the Jamul Gaming Facility.

The Tribal Government would also meet standards identical to those established by the following State and County Codes/Ordinances when constructing and operating the proposed facility:

- Sections 67.801 through 67.811 of San Diego County Code of Regulatory Ordinances (Storm Water Ordinance);
- Sections 87.101 through 87.717 of San Diego County Code of Regulatory Ordinances (Grading Ordinance);
- Caltrans Storm Water Quality Handbook; and,
- California Storm Water BMP Handbook of Construction.

The design and construction of the Jamul Gaming Facility would be consistent with the following project studies, which are hereby incorporated into this project description:

- Fire Protection Plan Report: Jamul Indian Village. National Code Consultants, Updated February 2014. (**Attachment 2**);
- Jamul Indian Village Subarea Master Plan for Potable Water Service[1]. Martin and Ziemniak, August, 2006 (Final Tribal EE, Appendix 5);
- Geotechnical Evaluation: Jamul Indian Village. Prepared by Construction Testing and Engineering, Inc. September 15, 2011, and subsequent addenda (Final Tribal EE, Appendix 6);
- Preliminary Detention and Stormwater Analysis. October 10, 2011 (Final Tribal EE, Appendix 7), and
- Jamul Gaming Facility Wastewater Treatment and Re-use Analysis (Final Tribal EE, Appendix 2).

In addition to the features stated above, the construction plan has been modified to increase site watering from two to three times per day. Additionally, the construction site will be posted with a 15 miles per hour maximum speed limit during construction activities. Both of these measures serve to reduce the amount of particulate matter coming off the project site during construction activities.

Lastly, select setting discussions (where noted in the attached checklist) are hereby incorporated by reference into this Addendum from the *Final Tribal Environmental Evaluation: Jamul Indian Village Gaming Development Project* (January 2013).

Detailed features of the Addendum are provided below:

2.1 TEMPORARY FEATURES– CONSTRUCTION RELATED

2.1.1 RESERVATION:

Revised Quantity and Schedule of Excavated Material

The Final Tribal EE assumed that up to 200,000 cubic yards of excavated material over a 9-month period would be transported from the Reservation to a disposal facility. When the Final Tribal EE was prepared, information regarding dirt import sites for grading was not known, so a worst case assumption was used that routed trucks to/from the north and west using SR-94. Restrictions on the hours trucks could haul material were prescribed to avoid peak travel times for the route and school start and end times. The Tribe has now identified a fully permitted site south of the Reservation that will be used for

[1] / The project has been reduced in size compared to the project description presented in Appendix 5; however, water design criteria and service facilities described would apply to the Jamul Gaming Facility.

disposal of excavated materials. Truck routing to/from this site will use SR 94 south of the Project, avoiding travel through Jamul or adjacent to the high school. Exported materials will use routes to the south of the Reservation. With this rerouting of the haul route, the restriction on the hours of hauling is no longer necessary. The Tribe has also revised the duration for export of materials from an estimated 9 month period to a 7-10[2] month period.

The original estimate of 200,000 cubic yards of exported material has been refined during the plan development process. The estimate now is for transport of approximately 250,000 cubic yards of material from the Reservation over the revised 7-10 month period. This modification increases the number of trucks per day from what the Final Tribal EE assumed (60) to a revised 144. This revision will increase the number of trucks per hour from what the Final Tribal EE assumed (7) to a revised 12-15.

2.1.2 4-ACRE PARCEL:

Staging

Staging will be located on the foundation of the former fire station at the northwest corner of the 4-acre parcel. The staging facilities will include office and storage trailers, which will be used to temporarily store construction materials, equipment, and to provide construction offices. Use of the 4-acre site for staging is identified as a secondary option to locating it on the western portion of the Reservation. The location of the 4-acre site is advantageous for several reasons including:

- the site contains an existing concrete foundation,
- it is a level site,
- it is removed from existing waterways,
- the site has low ecological value,
- access back and forth to the Reservation during construction would be via Daisy Drive with no need to use SR-94, and
- regional access to the staging site would be via SR-94/Daisy Drive.

The construction work force will start/finish their shifts and take breaks within the staging facilities. On-site meetings will be held at the staging offices. Other activities within the staging area would include construction vehicle movements, as well as overnight storage of construction equipment. Deliveries to the site would occur during standard construction hours and access would occur via SR-94/Daisy Drive.

[2] / After discussions with the development team, it was determined that the nature of grading is highly variable. It was deemed reasonable, given site characteristics, that excavation could be completed in eight months using fifteen trucks per hour. Therefore, these numbers were used for purposes of the air quality analysis.

The perimeter of the site will be secured with a cyclone fence and 24-hour on-site security. General erosion control practices used will include (1) locating staging away from drainage courses and storm drain inlets/outlets, (2) using perimeter sediment barriers such as silt fences, fiber roles, straw bales, silt dikes, sand/gravel/biofilter bags, etc., and (3) using water or other soil stabilization measures to prevent excessive mobilization of material. All runoff from the staging will be directed through an onsite sediment basin prior to release to area drainage ways. Inspections will occur prior to and following each storm and at 24-hour intervals during extended storms. Built up materials adjacent to barriers will be removed to ensure integrity of the barriers.

Temporary Roads and Associated Facilities

Material excavated from the Reservation would be removed via a temporary haul road, which was originally planned to be located entirely within the limits of the existing Reservation. To facilitate a more efficient flow of traffic during construction, the Tribe proposes to extend the haul route from the Reservation onto the 4-acre parcel. Phase 1 begins excavation and export with the use of existing Daisy Drive to and from SR-94. As excavation and export proceeds, Tribal and construction truck access is separated and shifted over to the southwest side of the 4-acre parcel. As construction matures, a concrete truck route is established with concrete washouts in the area of existing Daisy Drive. A parking and lay down area will be established immediately east of the concrete truck route. This area will be used for construction parking and the lay down of construction material brought in via the concrete truck route. In all phases of construction, all traffic would enter/exit SR-94 via existing Daisy Drive. Following construction, the material would be replaced, compacted and the area revegetated as detailed in the 4-Acre Habitat Restoration Plan (**Attachment 3**).

2.2 PERMANENT FEATURES

2.2.1 RESERVATION:

Relocated Wastewater Treatment Plant

The membrane bioreactor (MBR) wastewater treatment plant and mechanical vapor compression (MVC) unit would be relocated from the parking structure to the east side of the Reservation (**Figure 3**). The location on the west side of the Reservation is within an area previously identified for surface parking. The surface parking lot has been redesigned to accommodate the relocated MBR facility. The MBR facility would be designed to operate as previously identified in the Final Tribal EE, which satisfies U.S. Environmental Protection Agency standards. The sizing of the facility is as previously identified in the Final Tribal EE. No expansion of capacity is proposed.

Modified Surface Parking

The Final Tribal EE identified a 94-space employee parking lot to be located on the west side of the Reservation (**Figure 3**). However, the Jamul Gaming Facility site plan has been modified to accommodate relocation of the MBR wastewater facility to the west side of the Reservation. To accommodate this change, the surface parking plan has been revised to include a 53-space surface parking facility (reduced from the previously proposed 94-space facility) on the east side of the Reservation within the same disturbed area as previously identified.

Construction of Bridge Pillars

The Tribal EE had assumed that all bridge abutments/pilings would be constructed outside the 100-year floodplain for Willow Creek, which flows through the Reservation. The refinement of construction plans now show cast-in-drilled-hole (CIDH) pilings located within the 100-year floodplain. There will be two CIDH pilings within the 100-year floodplain for each creek crossing).

South Bridge

The original site plan for the Jamul Gaming Facility contained one bridge on the north side of the Reservation connecting the east and west sides of the Reservation without impacting Willow Creek. The original circulation plan confined entrance and exit of emergency/ service vehicles on the east side of the Reservation via the proposed crossing on the north side of the Reservation. A more efficient circulation system has since been designed to allow emergency and wastewater vehicles to loop around to the west side of the Reservation using a proposed south crossing before exiting on the proposed north crossing. As was the case with the north crossing of Willow Creek, the proposed south crossing was designed to avoid federal and State designated waters, as well as Riparian habitat within Willow Creek. Both bridges are designed to ensure connectivity between land north and south of the Reservation for area wildlife.

2.2.2 4-ACRE PARCEL:

Fire Protection Facility: Option 2

The Final Tribal EE analyzed the construction/operation of a new fire station within the on-Reservation Jamul Gaming Facility. In addition to its site location, the Final Tribal EE includes a Fire Protection Plan that specified staffing and building specifications for fire safety. The Fire Protection Plan has been updated based on detailed design plans for the project site. Please see **Attachment 2** for the updated Fire Protection Plan.

Within this Addendum, the Tribe is including a second option (Option 2) for the location of the new fire station on the adjacent four-acre parcel to allow for greater on-Reservation site design flexibility. Options 1 and 2 would provide the Tribe with two fully-staffed/equipped, fire protection options for the Reservation and surrounding community.

The future fire station would occupy the location of the former fire station that was operated by the Rural Fire Protection District. Access to/from the SR-94 would be provided either by the existing driveway used for the previous station, or the new access road[3].

The updated Fire Protection Plan serves as the guiding document for staffing and building construction. Features of the updated Fire Protection Plan include the following:

- The Fire Command Center would be provided with equipment to conform to Section 911, 2013 edition, California Building Code, and Section 914, 2013 edition, California Fire Code.

- Staffing would consist of a Director of Public Safety, responsible for management of the Department and a minimum of two full time equivalent (FTE) Fire-Fighters/Emergency Response members per shift.

- At the discretion of the Fire Chief, separate company shifts (either three or four shifts) would be implemented throughout the life-cycles of the project during construction and after Occupancy Clearances, on a continuous full time basis.

- The Jamul Gaming Facility would necessitate a Ladder Truck (74'-105'), two engines, and a "Mini-Pumper" Fire Truck for incident responses in the parking garage. Staffing allocation would be 24-26 personnel.

- In order to participate in the Mutual Aid Program, the Jamul Fire Department will maintain one Fire Response unit with a Fire Fighter/Paramedic at all times. The Fire Department Personnel would be required to be trained on the following areas: inclusive of, under the Direction of the Tribal Fire Chief, will prepare a "Shelter-in-Place" Training Program to accommodate area residents whom may be displaced during natural or man-made disasters:

Although capable of meeting its own fire protection demands, the Jamul Fire Department intends to enter into a Mutual Aid Agreement with San Miguel Consolidated Fire Protection District, the US Fish and Wildlife Fire, area Tribal Fire Agencies, the U.S. Department of Forestry, Cal-Fire, and shared resources from the contracted Emergency Dispatch Center, or a contracted Regional Tribal Emergency Dispatch Center. The Jamul Tribe would contract directly with American Medical Services

[3] / It is not known at this time because Caltrans is currently considering access options for the gaming facility. There is a possibility that the new access road would be located at a site other than the 4-acre parcel.

(AMR) for Advanced Life Support (ALS) ambulance services. Subject to the Director of Public Safety review, the fire station facility would be staffed with an on-site paramedic and Emergency Medical Technician. Detailed fire protection and life safety features of the proposed on-site facilities are included in **Attachment 2**.

3.0 ENVIRONMENTAL CHECKLIST

I. Aesthetics

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a.) Have a substantial adverse effect on a scenic vista?		√	
b.) Substantially damage off-reservation scenic resources, including, but not limited to, tress, rock outcroppings, and historic buildings within a state scenic highway?		√	
c.) Substantially degrade the existing visual character or quality of the site and its surroundings?		√	
d.) Create a new source of substantial light or glare, which would adversely affect day or nighttime views of historic buildings or views in the area?		√	

Discussion:

The aesthetics setting for the project area is fully described in Section 4.3 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the project area view shed and regulatory setting. The aesthetics setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The new, visible feature addressed within this Addendum is the second Willow Creek crossing on the south side of the Reservation. Other visible permanent features; such as the relocated fire station (from the Reservation to the 4-acre parcel), relocated Wastewater Treatment Plant (from the parking facility on the east side of the Reservation to the parking facility on the west side of the Reservation), and the relocated bridge pillars are all facilities previously proposed that are being adjusted within the site plan. As previously stated in the Final Tribal EE (page 4.3-9), the facilities (relocated and new) would be visible to residents in a manner that is subordinate to the distant landscape and does not occlude the skyline. As such, the features of the Addendum are not expected to substantially degrade the existing visual character or quality of the site and its surroundings. Except for the relocated fire station, the extent of urbanization of the site would remain as previously analyzed. The fire station would be relocated to a site on the 4-acres that previously housed a fire station for years, so a similar built feature at this location would not be out of place. Additionally, the fire station would be subordinate to the distant landscape, would not occlude the skyline, and is not expected to substantially degrade the existing visual character or quality of the site and its surroundings. The features of the Addendum would not adversely affect a recognized scenic vista, nor would it damage recognized off-Reservation scenic resources, including trees, rock outcroppings, and historic buildings within a state scenic highway.

The exterior of the Wastewater Treatment Plant, fire station and new Willow Creek Crossing would all include downcast lighting to maintain consistency with the surrounding area. Providing lighting consistent with local County codes and ordinances would ensure that the features of the Addendum would not create a new source of substantial light or glare. Therefore, lighting associated with the features of the Addendum would not adversely affect day or nighttime views of listed historic buildings or recognized views in the area. Given the distance to the Palomar and Mount Laguna observatories and the commitment by the Tribe to use downcast lighting, the impact to the observatories from the features of the Addendum is considered less than significant. The Tribe's restriction of outdoor light and glare via use of downcast lighting consistent with County regulations would also ensure that the impact to local

night skies would be less than significant.

II. Agriculture and Forest Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			√
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			√
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			√
d) Result in the loss of forest land or conversion of forest land to non-forest use?			√
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			√
Discussion:			
The features of the Addendum would not result in the conversion of off-Reservation lands from farmland to non-agricultural uses. The only non-Reservation lands affected by the proposed modifications include the 4-acre parcel. The 4-acre parcel is currently vacant and contains ruderal/grassland habitat. This parcel previously was used for the fire station operated by Rural Fire Protection District. No temporary or permanent impact to prime farmland, unique farmland, or farmland of statewide importance would occur from the features of the Addendum. The features of the Addendum would not result in the loss of forest land or convert forest land to non-forest use. The features of the Addendum would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). Lastly, the Addendum would not conflict with existing zoning for agricultural use or Williamson Act contract lands.			

III. Air Quality

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

Discussion:

The air quality setting for the project area is fully described in Section 4.11 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the existing air quality setting, air pollutants and regulatory setting. The air quality setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The features of the Addendum would not substantially increase construction/operational mobile source emissions beyond those considered in the Final Tribal EE. Within the Final Tribal EE, mass grading and site grading estimates were made based on general assumptions about construction activities on the project site. As such, construction related emissions associated with the south bridge (which is a project feature not previously proposed) capture construction related emissions of this additional feature. Construction related emissions were addressed in Impact 4.11(1-3) of the Final Tribal EE. Any minor temporary PM_{10} emissions resulting from placement of the proposed features (e.g., Willow Creek crossing, construction of fire station, etc.) would have also been accounted for in those calculations, which were found to be less than significant (including ozone precursors). Operational related emissions were addressed in Impact 4.11(4-8) of the Final Tribal EE.

The Wastewater Treatment Plant would be relocated to the west side of the Reservation rather than be located within the underground parking structure. Compliance with EPA standards, which is required, results in an "odor free" operation of the facility; therefore, this modified feature of the project would not result in an odor impact.

The following analysis addresses the changes proposed for export hauling (**Attachment 4**):

The change in grading schedules and quantities would not affect the analysis of consistency with the regional plan included in the Final Tribal EE Air Quality Report (Appendix 11).

Construction activities for the project would generate minor pollutant emissions. Air quality emissions were calculated using the URBEMIS2007 Version 9.2.4 computer model (URBEMIS 2007), and data from the URBEMIS2007 Version 9.2.4 Users Guide (SCAQMD 2007).

CONSTRUCTION EMISSIONS

Scenario	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Originally Jamul Gaming Facility						
1st Year Maximum Daily Emissions	6.4	60.1	31.1	0.0	77.411	18.181
2nd Year Maximum Daily Emissions	13.2	112.0	31.1	0.0	94.21	23.61
3rd Year Maximum Daily Emissions	37.9	41.18	64.3	0.0	3.1	2.8
Jamul Gaming Facility - Revised Grading						
1st Year Maximum Daily Emissions	8.0	94.3	39.9	0.1	79.4	19.4
2nd Year Maximum Daily Emissions	27.3	119.6	82.1	0.1	94.8	23.5
3rd Year Maximum Daily Emissions	49.7	36.6	77.4	0.1	2.9	2.5
Thresholds	75	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = oxides of sulfur; PM_{10} = suspended particulate matter; $PM_{2.5}$ = fine particulate matter
Refer to Appendix for detailed assumptions and modeling output files.
Modeling includes watering site 3 times per day and reduced speeds on unpaved roads.

The increased grading quantities would result in increased emissions of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ above those assessed for the Jamul Gaming Facility in the Final Tribal EE. However, the increased emissions of VOC, NO_X, CO, SO_X, PM_{10} and $PM_{2.5}$ would not exceed the thresholds and not result in any new or substantially more severe air quality impacts.

The change in grading schedules and quantities would not change the findings in analysis of operational emissions included in the JIV Air Quality Report.

Sensitive populations (i.e., children, senior citizens and acutely or chronically ill people) are more susceptible to the effects of air pollution than are the general population. Land uses typically associated with sensitive receptors include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. Land uses associated with sensitive receptors in proximity (<0.25 mile) to the project site include the residential uses along SR-94 and Melody Road. As previously discussed, the construction emissions would not exceed the adopted thresholds and thus would not result in substantial local concentrations of criteria air pollutants. Operational emissions would not change from that analyzed in the Final Tribal EE.

The revised construction schedule and grading quantities would result in a slight increase in short-term diesel exhaust emissions from onsite heavy-duty equipment from what was assessed in the Final Tribal EE. The revised schedule would shorten the duration diesel PM from construction would be generated. As the dose to which the receptors are exposed is the primary factor used to determine health risk, which is a function of the concentration of a substance or substances in the environment and the duration of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, as the duration of proposed

construction activities is being shortened, the exposure would be less than the total exposure period assessed in the Final Tribal EE as well as the minimum period recommended for health risk calculation. Therefore, diesel PM generated by project construction is not expected to create conditions where the probability is greater than one in one million of contracting cancer at any sensitive receptor or to generate ground-level concentrations of noncarcinogenic TACs that exceed applicable standards.

IV. Biological Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		√	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		√	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		√	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		√	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		√	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		√	
Discussion:			
The biological resources setting for the project area is fully described in Section 4.7 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of the regional setting, vegetation communities and wildlife habitat types, protected water resources, special status species and regulatory setting. The biological resources setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. There are three sensitive habitats within the project site for the Addendum: (1) Riparian, (2) Coastal Sage Scrub, and (3) Southern Coast Live Oak Riparian			

habitat. General Riparian and Southern Coast Live Oak Riparian habitat occurs within the Willow Creek corridor, which extends in a band through the Reservation. Although the pillars of the bridge crossing have been moved into the 100-year flood plain, no significant impacts to Riparian habitat would occur. The bridges would be high enough to allow for continued growth of Riparian vegetation within the Willow Creek corridor.

As disclosed in the Final Tribal EE, numerous special-status species occur in the Jamul region. The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database does not report any special status species within the project site, and numerous surveys conducted have not detected any special-status species within the site affected by the features of the Addendum. A protocol survey in 2001 did detect coastal California gnatcather on the Rancho Jamul Ecological Reserve (RJER) south of the project site. Above ground temporary use of this area for purposes described in the Addendum would not result in take of the California gnatcatcher. To ensure that no special-status plant or animal species are impacted throughout the project site, pre-construction surveys for special-status species will be performed by a qualified biologist. A preconstruction survey for the Reservation and adjacent 4-acre parcel has resulted in no significant findings (**Attachment 5**). A net-benefit to special status species would occur because this Addendum proposes a Habitat Restoration Plan for the 4-acre parcel **(Attachment 3)**. Impacts to special-status species would be less than significant.

The project site was formally assessed for wetlands and other jurisdictional water resources during a comprehensive delineation in 2007 and 2011, which was verified by USACE. Work related to the features of the Addendum on the Reservation and 4-acre parcel would not result in an impact to federal or state waters. Additionally, no impacts to wetlands would occur.

Within the vicinity of the project site, several wildlife corridors exist: the Willow Creek riparian corridor; the Jamul Creek riparian corridor; and the CDFW preserve areas (RJER and Hollenbeck Canyon Wildlife Area). No fishery resources exist in the project site because all drainages flow only ephemerally or intermittently and spawning substrate are absent. The bridge structure over Willow Creek with relocated abutments would result in a feature that is high enough to allow the continued passage of wildlife from north to south along the Willow Creek Corridor. The features of the Addendum would not significantly interfere with wildlife movement.

The 4-acre site is covered under the MSCP South County Subarea Plan, which protects natural habitats within the project site (annual grassland and coastal sage scrub). The Habitat Restoration Plan would ensure that ground disturbance, vegetation removal and other construction activities would not conflict with the natural community conservation goals of the South County Subarea Plan. This Habitat Restoration Plan would include aeration of the soil where compacted, and the planting/irrigation of native plants to re-establish habitats following construction activities. The fire station would be located on an existing disturbed site that was previously used as a fire station. With the implementation of these project features, conflicts with habitat conservation plans would be less than significant.

V. Cultural Resources

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?		√	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		√	

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		√	
d) Disturb any human remains, including those interred outside of formal cemeteries?		√	

Discussion:

The cultural resources setting for the project area is fully described in Section 4.8 of the Final Tribal EE (January 2013). The setting description of the Final Tribal EE includes a discussion of cultural history, cultural/paleontological resources and regulatory framework. The cultural/paleontological setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

No built resources have been recorded within the project area and no cultural resources were identified within the Reservation during the pedestrian surveys in 2010 and 2011. Six archaeological sites (CA-SDI-7683, CA-SDI-7684, CA-SDI-7685, CA-SDI-7686, CA-SDI-7687, and CA-SDI -7688) previously recorded within the Reservation are not considered eligible for National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) inclusion and have no potential to be impacted by the project since each has been disturbed, removed or destroyed by natural or human agencies during the three decades since initial recordation in 1979. On the 4-acre parcel, a series of 17 shovel test pits and one 1x1 meter test unit were placed within a 91x61 meter area. The testing revealed a light, subsurface lithic deposit. Based on the lack of integrity, the subsurface testing, and the narrow range of artifacts recovered from the site, CA-SDI-14954 was recommended as being ineligible for NHRP listing. The project description for this Addendum includes implementation of all Final Tribal EE Mitigation Measures (**Attachment 1**), which includes a worker education course, construction monitoring by a qualified archaeologist, procedures to be followed in case of discovery of artifacts, etc. Given the site on the 4-acre parcel is considered ineligible for NRHP listing and that all cultural resource mitigation measures from the Final EE would apply to this Addendum, the features of the Addendum identified for the 4-acre parcel would not result in impacts to buried cultural or paleontological resources. A less than significant impact would occur.

VI. Geology and Soils

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Expose off-reservation people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:			
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.		√	
ii) Strong seismic ground shaking?		√	
iii) Seismic-related ground failure, including liquefaction?		√	
iv) Landslides?		√	
b) Result in substantial soil erosion or the loss of topsoil?		√	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide,		√	

lateral spreading, subsidence, liquefaction or collapse?			
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		√	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?		√	

Discussion:

The geology and soils setting for the project area is fully described in Section 4.4 of the Final Tribal EE (January 2013). The setting description in the Final Tribal EE includes a discussion of regional and local geologic setting, topography and soils, mineral resources, fault rupture and earthquake hazards, and regulatory setting. The geology and soils setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The incorporation of appropriate seismic design and construction measures, as well as the adherence to the 2013 California Building Code (CBC), ensures that risks to the health or safety of workers or members of the public would be less than significant. Use of these standards would ensure that seismic hazard risks are less than significant. Given that the site is underlain by solid bedrock, liquefaction is not an issue for the project site.

The affected project area does not contain any rare, high quality, or scientifically significant geologic or topographic resources, and does not encompass any areas designated as National Natural Landmarks. The features of the Addendum would not adversely affect any known or recorded mineral resources. Construction of these features would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. Because there are no known or mapped mineral resources within the project area, development and use of the land would not be affected by such resources. Thus, implementation of the features of the Addendum would have no significant adverse effect upon mineral resources.

While cut slopes from the temporary haul route would be noticeable during construction, this cut would be filled and compacted to original grade once construction is complete. Very minor earthwork would be needed for the temporary staging on the 4-acre parcel as the staging compound would be located on the existing paved foundation of the prior fire station. These lands would be restored to existing conditions with implementation of the Habitat Restoration Plan. Construction of the fire station would include minor grading needed to remove the old fire station foundation and install a new one. Grading needed for the relocated Wastewater Treatment Plant and modified surface parking is conducted in an area previously assumed to be graded within the Final Tribal EE. Impacts to topographical features of the project site are considered minimal and would not be significantly impacted under the Addendum.

Under Clean Water Act Section 402, any construction project that disturbs at least one acre of land requires enrollment in the construction general permitting program under the National Pollutant Discharge Elimination System (NPDES). For construction on Indian reservations and federal lands, the landowner and contractor must enroll for coverage under USEPA's General Storm Water Discharge Permit for Construction Activities (NPDES No. CAR10000IF). For construction on non-federal lands in California, the landowner and contractor must enroll for coverage under the State Water Resources Control Board's General Storm Water Discharge Permit for Construction Activities (Order No. 2009-0009, NPDES No. CAS000002) prior to the initiation of construction. Coverage under either permit requires creation and implementation of an effective storm water pollution prevention plan, erosion control plan, hazardous materials management and spill response plan, and construction best management practices, all of which are designed to minimize or eliminate erosion issues and eliminate sediment discharges. With proper implementation, these plans reduce or eliminate the potential for accidental release of sediment and other pollutants during construction, as well as reduce the potential for erosion. The erosion control plan would be prepared before construction commences, and would identify the location of erosion control features necessary to protect and filter stormwater runoff. Features used during construction may include but are not limited to silt fences, fiber rolls, and gravel bag check dams. The location of permanent erosion control features such as drop inlet sediment traps, vegetated drainage swales, and energy dissipaters would also be identified. Furthermore, the project's grading plan would meet or exceed standards established by Sections 87.101 through 87.717 of San Diego County Code of Regulatory Ordinances (Grading, Clearing, and Watercourses Ordinance), which requires effective erosion control and compensatory mitigation for natural habitat loss, if applicable. As a result, erosion impacts would be less than significant.

The construction of the temporary haul route would not result in an increase of blasting beyond that assumed in the Final EE because the haul route would be relocated from an on-Reservation location, which off-sets the amount of blasting needed. The relocation of the haul route under this Addendum would not place blasting in close proximity to sensitive receptors. Therefore, implementation of the changed features analyzed under the Addendum would not result in a significant impact.

VII. Greenhouse Gas Emissions

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

Discussion:

The greenhouse gas emissions setting for the project area is described in Section 4.11 of the Final Tribal EE (January 2013). The greenhouse gas setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. The only new permanent facility constructed under this Addendum is the second crossing of Willow Creek on the south side of the Reservation. All other features are either temporary or relocated facilities. None of the features of the Addendum would increase operational emissions beyond those already evaluated in the Final Tribal EE. No additional GHG impacts beyond those evaluated in the Final Tribal EE would be generated by the features of the Addendum. A less than significant GHG impact would occur.

The analysis below addresses the proposed changes associated with export hauling:

<u>Construction Related GHG Emissions</u>

Construction-related emissions are based on the previous assumptions and include GHG sources such as construction equipment, material delivery trucks, and construction worker vehicles. Estimated GHG emissions are presented in the table below. As shown, total construction-related GHG emissions would be 2,748.3metric tons of carbon dioxide equivalent (MT CO_2e). Given the fact that the total emissions will ultimately contribute to the 2020 cumulative emission levels, it is acceptable to average the total construction emissions over a 30 year period (SCAQMD 2008). The annual and total level of GHG emissions expected to occur from construction of the Jamul Gaming Facility is well below the level recommended by CEQ for further analysis.

CONSTRUCTION GHG EMISSIONS SUMMARY (CO2 EMISSIONS METRIC TONS)

SOURCE	JAMUL GAMING FACILITY	JAMUL GAMING FACILITY – REVISED GRADING
1st Year GHG Emissions	387.3	797.1
2nd GHG Daily Emissions	859.4	1,357.7
3rd GHG Daily Emissions	603.1	593.6
Total	1,849.8	2,748.3
Yearly Average (2020)	61.7	91.6

As stated in the project description, the project would not alter the Jamul Gaming Facility assessed in the Final Tribal EE. Therefore, the emissions reported in that analysis are summarized in the table below for use in determining the overall GHG emissions associated with the project.

GHG EMISSIONS SUMMARY (CO2 EMISSIONS METRIC TONS)

SOURCE	ORIGINALLY JAMUL GAMING FACILITY	JAMUL GAMING FACILITY – REVISED GRADING
Transportation	8,509.30	8,509.30
Natural Gas	954	954
Electricity	1,019.0	1,019.0
Water Usage	53	53
Wastewater Treatment	118.1	118.1
Solid Waste	68.8	68.8
Construction	61.7	91.6
Total	10,784	10,806

Total operational GHG emissions resulting from the Jamul Gaming Facility would be approximately 10,806 MT CO_2e per year. To reduce GHG emissions the project includes several mitigation measures.

Reduction Strategies

Combining all regulatory measures identified in the JIV Air Quality Report, such as Pavley, Low Carbon Fuel Standards, utility reduction goals required by the State and recycling requirements under AB 341 along with design features and the following previously identified mitigation measures, would be expected to reduce GHGs, from the Business as Usual levels, and represents the project's effort to meet it fair share of the goals under AB 32.

- The project is installing green roof technologies and will capture treated water for use in the landscaped areas and on the roof.
- The project will provide solar panels on the roof, where possible, in areas not being utilized for the green roof technologies.
- The project will provide shuttle and bus services to and from the project to reduce vehicle trips and miles traveled.
- The project will flare off and burn CH4 produced at the Wastewater Treatment Plant to reduce CH4 emissions up to 95%.
- The project will utilize low flow water devices High Efficiency Toilets (HET) and with specifications meeting or exceeding standards set forth by the EPA
- The project will install low energy lighting and appliances to increase building efficiency and reduce power consumption.
- The project will promote employee and patron ridesharing to help reduce vehicle trips traveled.
- The project will install dedicated parking stalls and charging stations for electric vehicles.

The project may also incorporate other emission reduction strategies that are available at the time the facilities are being built that may also achieve additional reductions in greenhouse gases.

The change in grading schedules and quantities would not affect the analysis of consistency with the GHG reduction plans or alter the findings discussed in the Final Tribal EE.

VIII. Hazards and Hazardous Materials

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		√	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		√	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			√
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			√
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			√
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			√

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			√
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			√

Discussion:

The hazards and hazardous materials setting for the project area are fully described in Section 4.6 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of current conditions and land use, previous environmental assessments, environmental database queries, site reconnaissance and regulatory setting. The hazardous and hazardous materials setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The issue of accidental release of hazardous materials during construction was addressed within Impact 4.6(1) of the Final Tribal EE. As stated in that discussion, various petroleum products and hazardous materials would be stored and used in the project area; however the NPDES requirements implemented by the project would reduce the potential impacts of accidental release of hazardous materials during construction to a less-than-significant level.

No evidence of buried storage tanks or soil or groundwater contamination or other recognized environmental conditions were found during environmental site assessments performed in the last decade. However, construction of certain features of the Addendum (e.g., haul route) would involve excavation, trenching and grading, and such earth-moving activities may uncover a previously unknown underground fuel storage tank, contaminated soil, or other hazardous material issue. This issue is considered less than significant with implementation of the Health and Safety Plan required in Mitigation 4.6(2) of the Final EE and incorporated into the project – including features of this Addendum.

Accidental release of hazardous materials during operation of the facilities (e.g., Fire Station) is less than significant because of existing regulatory and monitoring mechanisms in place as noted in the Final Tribal EE Impact 4.6(3) discussion. The same regulatory and monitoring mechanisms apply to the features of this Addendum. Therefore, potential hazards are less than significant.

Portions of the project area are covered in fuel-rich vegetation, such as grasses, leaf litter, resinous shrubs, and trees. The project area is located within an area of moderate to high fire hazard. However, potential impacts related to wildfires during project construction of the features of the Addendum are considered less than significant with implementation of Final Tribal EE Mitigation 4.6(4), which have been incorporated into the Addendum project description (**Attachment 1**).

IX. Hydrology and Water Quality

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a.) Violate any water quality standards or waste discharge requirements?			√

b.) Substantially deplete off-reservation groundwater supplies or interfere substantially with groundwater recharge such that there should 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 drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			√
c.) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation off-site?			√
d.) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?			√
e.) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run off-reservation			√
f) Otherwise substantially degrade water quality?			√
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			√
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			√
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			√
j) Inundation by seiche, tsunami, or mudflow?			√

Discussion:

The hydrology and water quality setting for the project area are fully described in Section 4.5 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of current conditions related to surface water, drainage and flooding, ground water, water quality and the regulatory setting related to these topics. The hydrology and water quality setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

Construction of the Addendum features would result in the disturbance of soils that could be subject to erosion and transported to area waterways. However, as noted in the Final Tribal EE, an erosion control plan would be created and implemented for the construction phase to address this issue. Clean Water Act Section 402 requirements would ensure a less than significant operational impact concerning petroleum hydrocarbons, heavy metals, and other pollutants

generated by vehicles. Design considerations from the County of San Diego Standard Urban Stormwater Mitigation Plan for storm water treatment and Low Impact Development will control storm water pollution and protect water quality. The Jamul Gaming Facility would utilize a combination of site planning, structural treatment devices, and best management practices. Runoff from impervious areas of project components analyzed in this Addendum would be conveyed through a series of gutters, drop inlets, and subterranean storm drain system, into a gravel detention facility identified for the gaming facility. In addition to the structural controls designed into the project, reduction of stormwater pollutant levels would be ensured through the use of source controls described in the San Diego County Stormwater Standards Manual. The Standards Manual requires commercial facilities to implement best management practices in the following areas: employee training; stormwater pollution prevention plans; storm drain tileage and signing; annual review of facilities and activities; pollution prevention; materials and waste management; vehicles and equipment; and outdoor areas. The combination of structural devices and best management practices would reduce pollutants in stormwater to the maximum extent practicable. The residual pollutant concentration of the stormwater runoff would not significantly affect water quality downstream. To verify control and appropriate reduction of contaminants in surface runoff, the Tribe would implement a water quality monitoring program that would include testing for contaminants of concern. The combination of structural devices, best management practices, and monitoring would ensure that water quality is not degraded by project implementation. Therefore, a less than significant impact would result from implementation of the features analyzed in the Addendum. As described in the Final Tribal EE, the project has engineered a stormwater detention facility to detain stormwater collected from the impervious surfaces and discharge it at a rate that matches pre-project flow conditions. The permanent features of the Addendum are not expected to significantly increase impervious surfaces given that they are being developed within areas currently assumed to contain impervious surfaces. The fire station would be constructed on a site that is currently paved; therefore, increased flows post project from this site is expected to be minimal. The additional Willow Creek crossing would generate marginal increases in runoff and the on-site detention facilities are size to accommodate these additional flows. Therefore, no significant flooding impacts would result from the features of the Addendum. As noted in the Final Tribal EE, the channel cross-sections for this floodplain varies in width from 26 to 68 feet within, or immediately adjacent to, the project area. The modified crossing of Willow Creek includes placement of bridge pillars within the 100-year floodplain. A Preliminary Hydraulic Analysis (**Attachment 6**) concluded that upstream effects from the bridge abutment would be minimal. Additionally, the placement of bridge pillars within the 100-year floodplain would not result in downstream impacts within the RJER.

X. Land Use and Planning

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Physically divide an established community?		√	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan,		√	

specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?		√	

Discussion:

The land use and planning setting for the project area are fully described in Section 4.2 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of the regional setting, Jamul/Dulzura Subregion setting, project area setting, project site setting and a discussion of the land use guidance documents applicable to the site. The land use setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The temporary and permanent features of the Addendum are focused on the Reservation and 4-acre parcel. The features are designed to create efficiencies during construction and operation of the approved Jamul Gaming Facility. None of the proposed features would physically divide an established community.

Locating the fire station on the 4-acre parcel rather than the Reservation, would be allowed by right by the County and is considered an Essential Service under County Zoning for the Agricultural (A72) zone. Section 6905 of the County Zoning Ordinance does require staff level site plan review of a fire station located in the A72 zone. County site plan review conditions would be fully implemented by the Tribe as part of the County approval process.

. Assuming compliance with County land use requirements for the fire station, the proposed uses for the 4-acre parcel would be considered consistent with the County General Plan and Zoning Ordinance.

The entire 4-acre parcel is located within the County's Multiple Species Conservation Program (MSCP), County Subarea Plan, South County Segment, and is designated as a Pre-Approved Mitigation Area (PAMA). The County defines this as, "*A PAMA is an area identified with high biological value in which conservation will be encouraged. This will be done by providing mitigation ratios that favor developing outside of the PAMA and mitigating inside the PAMA.*" Development of the 4-acre parcel would be focused on the ruderal/developed portion of the site where the prior fire facility was located and on which concrete pads now stand. Through the discretionary site plan review process for the fire station, the MSCP Subarea Plan will be followed and conditions implemented as dictated by the County.

XI. Mineral Resources

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

Discussion:
The California Geological Survey classifies land in western San Diego County according to the presence or absence of construction aggregate resources. However, the project area itself does not offer a suitable combination of soils and minerals types to warrant extraction of aggregates. There are no known mapped mines within the area or visual evidence of any mining activity. The field survey did not indicate past or present mines or quarries. The proposed grading and landform alteration associated with the site would not adversely affect known or recorded mineral resources. Alteration in the land use will not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. Because there are no known or mapped mineral resources within the project area, development and use of the land will not be affected by such resources. There are no abandoned mines, shafts or tailings that would affect development. Therefore impacts associated with mineral resources would be less than significant.

XII. Noise

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		√	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		√	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		√	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		√	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			√
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			√

Discussion:
The noise setting for the project area is fully described in Section 4.10 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of sensitive noise receptors in the project area and existing noise levels. The noise setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. Construction associated with features of the Addendum would occur on the 4-acre parcel (fire station, haul route, and staging) and Reservation (relocated Wastewater Treatment Plant, reconfigured surface parking, and Willow Creek Crossing). All construction activities are located within the construction areas evaluated in the Final Tribal EE. No uniquely different construction activities associated with features of the Addendum would be employed. Additionally, features of the Addendum would not increase operational traffic to-and-from the project site. As such, the existing Final EE analysis with mitigation measures (which are incorporated into this Addendum) would result in less than significant noise impact.

The analysis presented below addresses proposed changes associated with export hauling (**Attachment 7**):

Construction noise in the Final Tribal EE was estimated to be approximately 76 to 78 dBA L_{eq} at 50 feet from construction activities. With the exception of grading activity, construction activities would not change from those analyzed in the Final Tribal EE. The increased grading activity would not necessitate an increase in the number of pieces of heavy construction equipment. As with the original project, construction activities would be limited to daytime hours (7:00 am to 7:00 pm) for the duration of construction. Also, all vehicles and equipment will use available noise suppression devices and be equipped with mufflers during construction activities. Therefore, hourly equivalent noise levels from construction are not anticipated to increase over what was assessed in the Final Tribal EE and increased grading activities therefore would not result in additional noise impacts.

As no additional on-site equipment would be required, the vibrations associated with construction equipment would not increase beyond those assessed in the Final Tribal EE. As a result, vibration impacts associated with construction would be less than significant. The project does not include any groundborne vibration sources associated with operation. Therefore, impacts due to vibrations are less than significant.

The proposed changes would not affect long-term noise levels. Therefore, long-term, or permanent, noise impacts would be the same as assessed under the Final Tribal EE and no new impacts on long-term noise levels would occur.

Based on engineering estimates, the revised grading quantities and shorter schedule would require 144 round-trip truck-trips per day over an 8 month period. The Final Tribal EE assumed an average of 60 round-trip truck trips per day. The increase in traffic volumes and shift in vehicle classification, i.e. the increased ratio of heavy trucks relative to other vehicles, along this segment of SR-94 would result in short-term increased noise levels along SR-94 of approximately 1 dBA as can be seen in the table below. This would be the same increase as predicted along SR-94 from the JIV to Melody Road and a 1 dBA increase along SR-94 between Melody Road and Jamacha Road. This temporary condition would cease upon project construction completion and would not represent a substantial increase in temporary noise levels.

CONSTRUCTION TRAFFIC NOISE LEVELS (dBA Leq)

Existing	Jamul Gaming Facility	Revised Project	Proposed vs. Existing	Revised vs. Existing	Delta
70.3	70.9	71.6	0.6	1.3	0.7
70.3	70.9	71.6	0.6	1.3	0.7
71.8	72.2	72.8	0.4	1.0	0.6
73.8	74.1	74.5	0.3	0.6	0.3
73.3	73.6	74.0	0.3	0.7	0.4
73.7	74.0	74.3	0.3	0.7	0.4

Based on the results of the preceding assessment, the proposed changes in project construction traffic would result in an increase in noise along SR-94 between Melody Road and Jamacha Road slightly greater than predicted in the Final Tribal EE. However, the increases would not result in any new impacts or substantially more severe impacts. Therefore, the proposed revised grading plan would result in less than significant noise impacts.

XIII. Population and Housing

Would the project	Potentially Significant Impact	Less than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			√
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			√
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			√
Discussion:			
The population and housing setting for the project area is fully described in Section 4.16 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of population and housing within San Diego County and Jamul. The population and housing setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference. The temporary and permanent features of the Addendum would not result in new or substantially more severe population and/or housing impacts.			

XIV. Public Services

	Potentially Significant Impact	Less than Significant	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:			
Fire Protection?			√
Police Protection?			√
Schools?			√
Parks?			√
Other public facilities?			√
Discussion:			
The public services setting for the project area is fully described in Section 4.12 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of water supply, wastewater service, solid waste service, electricity, natural gas and telecommunications, law enforcement, and fire protection and emergency services. The setting description within the Final Tribal EE is hereby incorporated into this Addendum			

checklist by reference.

The relocated fire station would be placed in a location that was previously used for a fire station by the Rural Fire Protection District until a new facility was constructed across the highway. The new facility would be staffed and equipped the same as the facility described in the Final Tribal EE, which was to be located on the Reservation. The relocation of the fire station to the 4-acre parcel would not result in any new or substantially more severe impacts related to fire protection services. The new Willow Creek crossing would be sized to allow for use by emergency vehicles. The features of the Addendum would result in a less than significant impact related to fire protection services.

None of the features of the Addendum are expected to result in additional law enforcement issues beyond those identified in the Final Tribal EE. The majority of the features of the Addendum are either temporary or a relocation of previously evaluated project features. The only permanent feature not previously evaluated is the Willow Creek crossing on the south side of the Reservation. The crossing will be sized to ensure access by emergency vehicles. A less than significant impact related to police protection would result.

No schools, parks, or other public facility impacts would result from the project features.

XV. Recreation

	Potentially Significant Impact	Less than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?		√	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		√	

Discussion:

The project area is home to a unique mix of preserves and reserves, which afford limited recreational opportunities. The Hollenbeck Canyon Wildlife Area offers hiking opportunities and is located approximately 4 miles south of the Reservation. The area is also home to a number of reserves, preserves and reservoirs, which provide recreational opportunities to area residents and visitors - Rancho Jamul Ecological Reserve, Otay Mountain Ecological Reserve, Sycuan Peak Ecological Reserve, McGintry Mountain Ecological Reserve, Otay Reservoir, Sweetwater Reservoir, as well as others. Other recreational opportunities identified by the public include school fields and stables/equestrian training centers. The features analyzed in this Addendum would not result in any significant impacts related to recreational resources.

XVI. Transportation and Traffic

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

Discussion:

The transportation/circulation setting for the project area is fully described in Section 4.9 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of the road network, roadway segments, existing conditions, near term conditions, and horizon year conditions. The transportation/circulation setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

Changes to duration of excavation and the amount of material exported will alter the number of trucks entering and leaving the Reservation each day as compared to the analysis presented in the Final Tribal EE. The route taken to and from the Reservation will also be modified. The Final Tribal EE assumed trucks would travel to and from the north through Jamul; however, the revised plan has trucks traveling south away from Jamul to a fully permitted disposal facility south of the Reservation. The trucks are anticipated to use SR-94 to access the Reservation and would not add any trips to the side streets within the area. The inbound trips will now travel northwest on SR-94 and make a left into the site while outbound trips will make a right turn onto SR-94 from the site.

The traffic analysis undertaken for these changed operations (**Attachment 8**), shows that the project entrance/SR-94 intersection is expected to operate at LOS B or better during all analyzed hours. The Otay Lakes Road/State Route 94 intersection would operate at LOS B or better with and without the addition of the proposed construction traffic. A SR-94 delay analysis was also undertaken for the proposed haul route changes. The analysis presented in

Attachment 8 show that the maximum anticipated delay between 7:00 am and 6:00 pm is equal to approximately 5 seconds, which is not significant for the corridor. A queuing analysis was also undertaken and shows that queues along SR-94 are not projected to affect operations at adjacent intersections since the closest intersection is approximately 1,200 feet away (Attachment 8). The supplemental traffic analysis concluded that the proposed haul route changes would not have significant traffic related impacts along SR-94.

The features of the Addendum would not increase operational traffic beyond that evaluated in the Final Tribal EE. Features capable of generating operational traffic such as the fire station and Wastewater Treatment Plant were assumed to be part of the approved gaming facility and were previously analyzed in the Final Tribal EE. This Addendum shifts the location of these facilities but does not affect the amount of traffic that would leave/arrive at the project site, or the point of departure/arrival. The construction related traffic analysis of the Final Tribal EE captured on-site construction features such as staging, extended haul route, etc. Basic construction assumptions used previously to factor construction related traffic would have captured items such as the use of a staging area, and haul routes – all basic construction related functions that would have been factored into the gross calculations. Construction related traffic for items such as construction of the second Willow Creek crossing would likewise be captured by the gross construction traffic calculations generated for the Final Tribal EE. The new crossing of Willow Creek was included to create a more efficient on-site circulation system, which includes emergency vehicle access. This addition creates no traffic related impacts on, or off-site. The relocated haul-route/staging creates on-site circulation efficiencies and would continue to use the legally available entry/departure point to/from SR-94 as allowed by Caltrans. The shift from being located entirely on-Reservation to on-Reservation/4-acre parcel would not result in off-site traffic impacts. No changes to construction or operational related traffic would result from the features of the Addendum.

XVII. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		√	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		√	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		√	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?		√	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			√
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?		√	

g) Comply with federal, state, and local statutes and regulations related to solid waste?		√	

Discussion:

The utilities and service system setting for the project area is fully described in Public Works Section 4.12 of the Final Tribal EE (January 2013). The setting description within the Final Tribal EE includes a discussion of water supply, wastewater service, solid waste service, electricity, natural gas and telecommunications, law enforcement, and fire protection and emergency services. The Public Works setting description within the Final Tribal EE is hereby incorporated into this Addendum checklist by reference.

The relocated Wastewater Treatment Plant would contain the same features as previously described in the Final Tribal EE; however, the facility would now be located within the parking facility on the west side of the Reservation rather than within the parking facility on the east side. Piping to the relocated facility would be secured to underside of the bridge to allow for transport from the gaming facility. The fire station is the only Addendum feature capable of generating additional wastewater; however, the capacity of the facility would not increase if relocated to the 4-acre site. Therefore, no additional wastewater generation would result from the features of the Addendum.

The fire station is the only feature that would result in an on-going potable water demand. The amount of water needed to maintain the temporary staging compound would be considered negligible. Water supply would be via the same Otay Water District connection as would be used for construction and operation of the Jamul Gaming Facility, which is consistent with the previous analysis. Locating the temporary and permanent facilities of the Addendum on the 4-acre parcel, rather than the Reservation as currently assumed, would not result in an increase of water supply effects beyond those described previously.

Solid waste generation assumed in the Final Tribal EE would not be significantly impacted by the features of the Addendum. Construction of the fire station on the previous fire station pad on the 4-acre parcel would necessitate removal and disposal of the existing concrete. This additional concrete disposal requirement is not considered a significant contribution to the waste stream. The other feature that could add a marginal amount of solid waste is the Willow Creek bridge. As stated in the Final EE, construction waste would be recycled to the fullest extent practicable by diverting green waste and recyclable building materials from the solid waste stream. Waste that cannot be recycled would be disposed of at the Otay Landfill, which accepts construction/demolition materials, and has sufficient excess capacity to handle this small, temporary, additional waste stream. Construction impacts upon solid waste service are less than significant. No increase in operational solid waste would result from the Addendum.

Locating temporary features on the 4-acre parcel such as haul route/staging is considered in the Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMP) will be implemented to ensure that such features result in no adverse impacts. All of the features associated with BMP would be removed once construction is complete. Runoff associated with the new on-Reservation bridge would be conveyed through a storm drainage system that ensures the runoff is transported to the gravel detention facility identified for the gaming facility. All of these features would be contained within the bridge structure. Likewise, runoff from the new fire station on the 4-acre parcel would be conveyed through a series of piping and sheet flow via inlets, spillways, back bone storm drain systems, and curbs and gutter into the project's underground Stormtech™ detention facility underneath the paved roads and cantilevered ramps to detain the increase in runoff. Treatment for runoff shall flow via curb and gutter inlets to a back bone storm drain line to another Stormtech™ detention facility prior to entering the bioretention facility adjacent to the creek. The bioretention facility is a planter area with 18 inches or more of engineered soil. Bioretention facilities work by percolating runoff through the soil which removes most pollutants before the runoff is allowed to seep into native soils below or a sub drain that carries treated runoff to a detention device or storm water conveyance system. The construction of these facilities to accommodate the new bridge and relocated fire station would not cause new significant impacts.

XVIII. Mandatory Findings of Significance

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

Discussion:

The Addendum Project Description includes features that ***would not have*** the potential to: (1) degrade the quality of the environment – all impacts evaluated are less than significant, (2) substantially reduce the habitat of a fish or wildlife species – no fisheries exist and wildlife corridors would be maintained, (3) cause a fish or wildlife population to drop below self-sustaining levels – see #2 above, (4) threaten to eliminate a plant or animal community – no threatened or endangered plant or animal community would be impacted by the features of the Addendum, (5) reduce the number or restrict the range of a rare or endangered plant or animal – see #4 above, or (6) eliminate important examples of the major periods of California history or prehistory – activity on the Reservation/4-acre parcel would not result in significant impacts to cultural/historical resources. Additionally, the Addendum features ***do not have impacts*** that are individually limited, but cumulatively considerable – the analysis concluded that there were no significant impacts associated with this project. The features of the Addendum would not result in the additional permanent loss of sensitive habitat/plants/animals and the air and noise emissions and traffic associated with features of the Addendum would not substantially exceed that previously evaluated in the Final Tribal EE. Lastly, the Addendum features ***would not*** cause a substantial adverse effect on human beings, either directly or indirectly. The Wastewater Treatment Plant would be constructed and operated to meet applicable standards, and other facilities such as the fire station and bridge would be constructed to meet applicable codes.

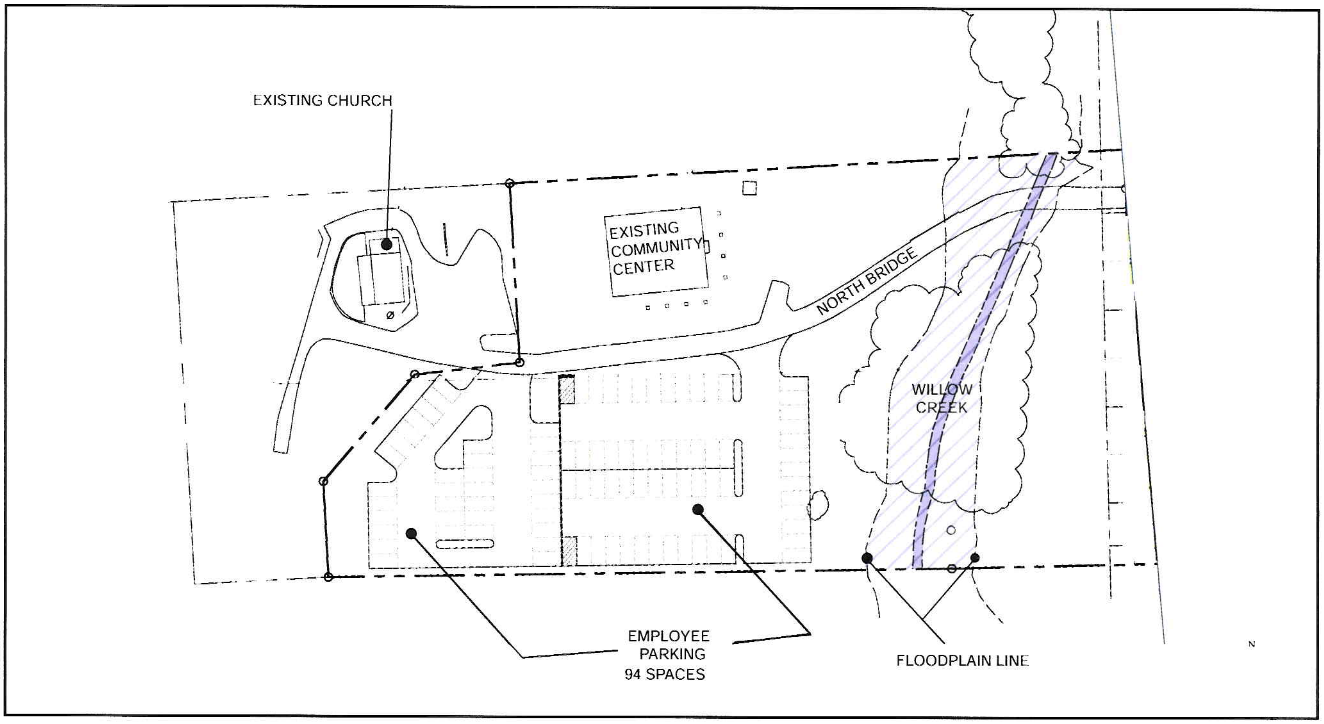
SOURCE: Microsoft Streets and Trips, 2014; EDS, 2014

Jamul Indian Village Tribal EE Addendum

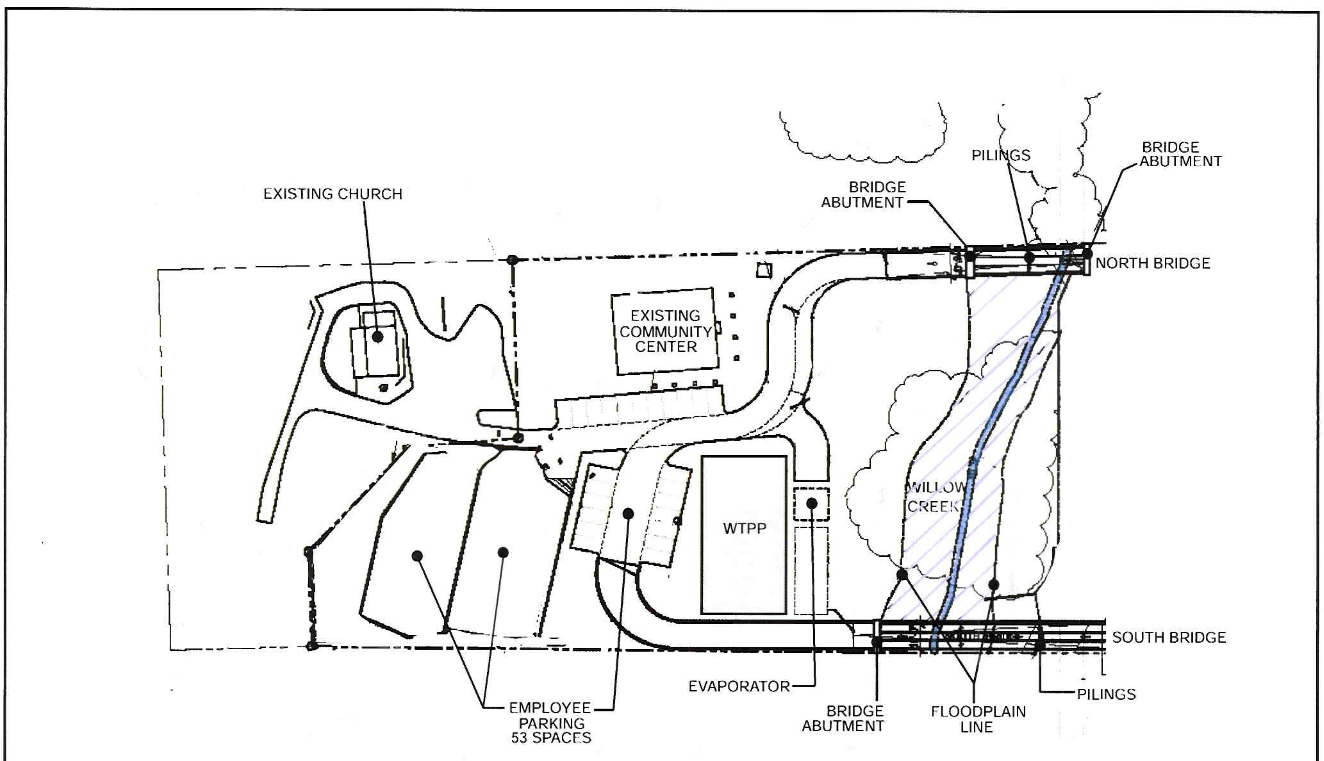
Figure 1
Regional Location Map

SOURCE: Digital Globe, 2014; EDS, 2014

Figure 2
Site Map



Original Site Plan



Revised Site Plan

SOURCE: Marnell Architecture, 2013; EDS, 2014

Figure 3
Revised On-Reservation Site Plan