



**TECHNICAL ADVISORY COMMITTEE  
AGENDA**

**DATE:** Thursday, December 17, 2020  
**TIME:** 10:00 a.m. – 12:00 p.m.  
**LOCATION :** Zoom Meeting at ICTC Offices

Chairperson: County of Imperial

Vice-Chair: City of Brawley

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Individuals wishing accessibility accommodations at this meeting, under the Americans with Disabilities Act (ADA), may request such accommodations to aid hearing, visual, or mobility impairment by contacting ICTC offices at (760) 592-4494. Please note that 48 hours advance notice will be necessary to honor your request.

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*Due to the COVID-19 and Executive Order N-25-20, teleconferencing is recommended for the public, however measures will be taken to have access for those who wish to participate in person while still abiding by local, state and federal mandates. Following is teleconference information.*

To join the Zoom Meeting by computer using video and audio, please click on the following link:  
<https://zoom.us/j/92496490293?pwd=Y2syaHBnNDNiOTV4bnRPRy9zQWgxQT09>

The meeting ID and Password are below in the event you may need them.

To join by phone please dial (669) 900-9128  
 Meeting ID: 924 9649 0293#  
 Password: 228902#

**PUBLIC COMMENTS**

Any member of the public may address the Committee for a period not to exceed three minutes on any item of interest not on the agenda within the jurisdiction of the Committee. The Committee will listen to all communication, but in compliance with the Brown Act, will not take any actions on items that are not on the agenda.

**DISCUSSION/ACTION ITEMS**

1. Introductions
2. Adoption of Minutes for November 19, 2020 *Action*
3. SR-78/Glamis Multiuse Grade Separated Crossing Feasibility Study Update 10 minutes  
*Presented by: Virginia Mendoza*
4. Congestion Mitigation Air Quality (CMAQ) & Surface Transportation Block Grant 20 minutes  
 (STBG) 2021 Call for Projects DRAFT Guidelines  
*Presented by: ICTC Staff*

**CITIES OF BRAWLEY, CALEXICO, CALIPATRIA, EL CENTRO, HOLTVILLE, IMPERIAL, WESTMORLAND,  
 IMPERIAL IRRIGATION DISTRICT AND COUNTY OF IMPERIAL**

5. Adjournment

The next meeting of the ICTC TAC meeting is tentatively scheduled for January 28, 2021. For questions you may call Marlene Flores at (760) 592-4494 or contact by email at [marleneflores@imperialctc.org](mailto:marleneflores@imperialctc.org)



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**TECHNICAL ADVISORY COMMITTEE**  
**DRAFT MINUTES**

**November 19, 2020**

**Present:**

|                 |                     |
|-----------------|---------------------|
| Gordon Gaste    | City of Brawley     |
| Abraham Campos  | City of El Centro   |
| Veronica Atondo | County of Imperial  |
| Isabel Garcia   | City of Imperial    |
| Lily Falomir    | City of Calexico    |
| George Galvan   | City of Calipatria  |
| Joel Hamby      | City of Westmorland |
| Frank Fiorenza  | IID                 |

**Others:**

|                     |                   |
|---------------------|-------------------|
| Virginia Mendoza    | ICTC              |
| Marlene Flores      | ICTC              |
| David Salgado       | SCAG              |
| Hannah Brunnell     | SCAG              |
| Tyler Salcido       | City of Brawley   |
| Manuel Cabrera      | City of Brawley   |
| Andres Miramontes   | City of Brawley   |
| Ana Gutierrez       | City of Brawley   |
| Francisco Barba     | City of Brawley   |
| Christian Rodriguez | City of El Centro |
| Felix DeLeon        | City of El Centro |
| Adriana Amezcua     | City of Holtville |
| Jesus Villegas      | City of Imperial  |
| Bryan Ott           | Caltrans          |
| Denise Marin        | The Holt Group    |
| Lexi Journey        | Consultant        |
| Poonam Boparai      | Consultant        |
| Andrew Beecher      | Consultant        |
| Brenda Hom          | Consultant        |
| Dan Krekelberg      | Consultant        |

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The meeting was called to order at 10:05 a.m. A quorum was present, and introductions were made. There were no public comments made.

1. Introductions

2. A *motion* was made to adopt the minutes for October 22, 2020 (**Falomir/Campos**) **Motion Carried.**

3. **Regional Climate Action Plan Presentation:** (*Presented by: Poonam Boparai from Ascent Environment and Team*)

A presentation was provided by Ascent in regards to the Regional Climate Action Plan. The consultant team provided an update on the GHG Reduction Strategies when it comes to transportation, energy, water and waste. How can we promote carbon sequestration and land conservation and how each local agency can develop and enforce landscape tree requirement for new developments and other strategies. TAC members had the opportunity to provide feedback and ask questions.

Next steps in the CAP:

November/December 2020: Select Final GHG Reduction Strategies

February 2021: Draft Climate Action Plan Community Presentation

March 2021: Public Review Period of the DRAFT CAP and Community Workshop

April-May 2021: Final Climate Action Plan Review/Completion

4. **ICTC Updates / Announcements**

(*Presented by ICTC Staff*)

a. **Transit Planning Updates-** No updates

b. **Transportation Planning Updates (by Virginia Mendoza):**

- **CMAQ and STBG Call for Projects-** Virginia provided a brief highlight on the upcoming Call for projects for the CMAQ and STBG programs. In the December TAC meeting ICTC will be sharing the DRAFT guidelines. It will be a three-year call for projects. These federal programs fund surface transportation projects that improve transit, traffic, bicycle facilities, freight, safety and alternative fuel vehicles and equipment. More information will be provided on the next TAC meeting.

c. **FFY 2019-20 Programmed Project Updates**

- Beginning October 1, 2020 agencies are allowed to move forward with request for authorization (RFA) for CMAQ, STBG and ATP programmed in FY2020/2021. A list of projects is part of the agenda. Agencies provided a quick update on their projects.

d. **LTA Bond Updates: 2012 and 2018**

- Brawley completed the process to submit.

5. **SCAG Updates / Announcements (by David Salgado & Hannah Brunell from SCAG)**

- **Information Item: 2020-2021 Sustainable Community Program:**

Active Transportation & Safety (ATS) Call for Applications, and Housing & Sustainable Development (HSD) Call open now.

**The application deadline is December 1, 2020**

The 2020 Sustainable Communities Program goals are:

Prioritize historically disinvested and communities of color, which comprise the majority of the Regional High Injury Network to strategically invest resources;

Increase the proportion of trips accomplished by biking, walking, and rolling;

Increase safety and mobility of people walking, biking, and rolling;

Continue to foster jurisdictional support and promote implementation of the goals, objectives, and strategies of Connect SoCal;

Seed active transportation concepts and produce plans that provide local agencies with the project prioritization, conceptual renderings, and cost estimates required for future ATP applications;

Prioritize alignment and integration of Key Connections outlined in Connect SoCal, including Shared Mobility and Mobility as a Service, Smart Cities and Job Centers, Accelerated Electrification, Go Zones, and Housing Supportive Infrastructure;

Integrate multiple funding streams to increase the overall budget for active transportation planning and capacity building projects.

- **SCAG Aerial Imagery Project 2020 Update:** The County of Imperial has agreed to facilitate a public procurement process. This will allow for more funds to be applied to the project to support the procurement. SCAG has set aside \$250,000 for the project and will increase the support by \$50,000 for a total of \$300,000. The County of Imperial has received proposals and will be moving forward with recommendations to the Board of Supervisors this month.

#### **6. Cities and County Planning / Public Works Updates:**

- Local agencies gave an update on their local projects in progress.

#### **7. Caltrans Updates / Announcements (By: Bryan Ott)**

**Local Assistance:** Bryan Ott provided updates on local assistance.

**Inactive Projects-** As of November 6, 2020, the INACTIVE and Future Inactive list was updated. Action is required by the Imperial County Transportation Commission, as well as these cities: Brawley and El Centro. November 20, 2020 is the deadline to submit Inactive invoices. District 11 must receive accurate and complete invoices to prevent de-obligation of federal funds! Verify on the “Inactive” link shown below for Inactive Project dates.

**November 2020 – New Federal Lands Access Program (FLAP) Call for Projects (due in April 2021)** An announcement calling for new Federal Lands Access Program (FLAP) projects is anticipated in November 2020. The deadline for “FLAP applications” is expected to be in April 2021. The outreach plan is to schedule webinars that assist tribal and local agencies, as well as Caltrans, with this process.

#### **At-Risk Preliminary Engineering (PE) – Office Bulletin (OB) 20-03**

Caltrans Division of Local Assistance released OB 20-03 on August 11, 2020, with these policy changes:

Except for projects with federal funds that require California Transportation Commission (CTC) allocation (Active Transportation Program, Trade Corridor Enhancement Program, State Transportation Improvement Program, etc.), local agencies may begin reimbursable Preliminary Engineering (PE) work prior to receiving federal authorization for such work, assuming the project and PE phase are included in a federally-approved Federal Statewide Transportation Improvement Program (FSTIP) document or an FSTIP amendment prior to incurring costs. Programming projects in the FSTIP or starting reimbursed work prior to

authorization does not necessarily ensure a project is eligible for federal aid reimbursement. National Environmental Protection Act (NEPA) approval will not occur until subsequent Right of Way and Construction phases are identified as fully funded and programmed in the FTIP.

**FHWA Virtual Tradeshow Resources-** The Tribal, Rural and Local Road Safety Virtual Tradeshow is available via this FHWA website.

This Virtual Booth links to many safety resources (reports, brochures, videos, etc.) on the FHWA Safety website.

**Local Roadway Safety Plan (LRSP) Requirement-** Highway Safety Improvement Program (HSIP) Cycle 11 (around April 2022) will require a mandatory Local Roadway Safety Plan (or the equivalent) from any agency applying for HSIP project funds.

**Quality Assurance Program (QAP) – Renewals for 2021-** An updated list of QAP was provided by Caltrans. The List will be updated to project changes and renewals for the 2021 Year.

**New Caltrans Architectural & Engineering (A&E) Oversight Videos Online-** Now available are short videos about key topics on the A&E Resources.

**Federal Aid Series Recordings Now Available for Project Contract Administration-** Recording of a recently delivered class is now available online. Training focuses on both State and federal aid highway projects.

**8. General Discussion / New Business**

- A brief update for next TAC meeting.

- TAC member Veronica Atondo proposed to go dark in the month of December. Virginia Mendoza mentioned the CMAQ and STBG DRAFT Guidelines need to be presented in December. The idea of having a short meeting was proposed to TAC members. TAC members decided on having a short TAC meeting to address two items:

- SR-78 Glamis Multiuse Grade Separated Crossing Feasibility Study
- CMAQ & STBG Draft Guidelines

The amended motion is to have a short TAC meeting in December only presenting the Glamis project and Guidelines. There will be no updates from SCAG and Caltrans. Virginia Mendoza did roll call to amend this motion. Motion was carried.

- Next TAC meeting will be on December 17, 2020 via Zoom.

**9. Meeting adjourned at 11:48 a.m.**



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December 14, 2020

ICTC Technical Advisory Committee  
 Imperial County Transportation Commission  
 1503 N. Imperial Ave., Suite 104  
 El Centro, CA 92243

**SUBJECT:** State Route 78/Glamis Multiuse Grade Separated Crossing Feasibility Study

Dear Committee Members:

The Imperial County Transportation Commission (ICTC) performed a feasibility study to identify and analyze design alternatives and locations for a safe multi-use grade separated crossing for off-highway vehicle (OHV) users across the Union Pacific Railroad (UPRR) rail line at SR 78 and the Imperial Sand Dunes Recreation Area (ISDRA), commonly known as Glamis. The Study was funded by a State Planning and Research Grant administered by Caltrans. The Study area is within the eastern portion of the ISDRA and is approximately 3 miles long and 2,000 feet wide. It is bisected by the UPRR from SR 78 in the north to approximately Wash 15 in the south, encompassing Ted Kipf road to the east.

ICTC in partnership with key project stakeholders, have undertaken a 12-month feasibility study of constructing a grade-separated crossing for Off-Highway Vehicle (OHV) users across the UPRR rail line at the ISDRA. The study was initiated in response to the need for a safe and legal crossing. No legal method of crossing the tracks currently exists for OHV users other than pushing the OHV by hand along the shoulder of SR 78. Additionally, a new at-grade crossing of the rail line is not feasible as it would not be approved by the regulatory body responsible for rail crossings or by UPRR.

This study evaluated the feasibility of a grade-separated crossing including developing and accessing alternatives, identifying impacts, and estimating costs and financial feasibility. The study began by defining crossing requirements and criteria against which the different alternatives would be compared.

The public and stakeholder outreach for the study included significant involvement by a Technical Working Group (TWG), public workshops held on site at the ISDRA and virtually, and an online survey. The TWG was comprised of key stakeholders. Through a series of meetings, this group provided input and reviewed all reports developed through the study. The concerns and preferences of the stakeholders were taken into consideration and discussed as part of the study process. A public workshop event was held at the ISDRA Glamis Sand Dunes to solicit input from users at the study location. Concurrently with the workshop, an online survey was offered with nearly 5,000 OHV users participating. The study results are also being presented through a pair of virtual public meetings.

The Draft Study was publicly available starting October 2020. During the public review period for Most Feasible Alternative for the SR 78/Glamis Multi-Use Grade Separated Crossing Feasibility Study, ICTC conducted a set of virtual meeting sessions and provided the public with an opportunity to comment through an online input portal. Virtual public meeting sessions occurred on October 21 and 24, 2020, and the input portal was available during the public comment period from October 8 to November 6, 2020.

**CITIES OF BRAWLEY, CALEXICO, CALIPATRIA, EL CENTRO, HOLTVILLE, IMPERIAL, WESTMORLAND,  
 IMPERIAL IRRIGATION DISTRICT AND COUNTY OF IMPERIAL**

A list of alternatives was considered based on the type of grade-separated crossing, overcrossing or underpass, and the location of the crossing within the study area. Four alternatives were selected to be developed in more detail and scored against the study criteria. These four alternatives represented the primary locations and included three overcrossings and one underpass. The detailed alternatives were in two general areas, adjacent to SR 78 and near Wash 10, approximately 2 miles to the south of SR 78. After considering the programming needs, the following six alternatives were identified:

**Alternative 78-Overcrossing** is an overcrossing at SR 78 with an estimated cost of \$34.5 million.

**Alternative 78 T-Overcrossing** is an overcrossing southeast of SR 78 with an estimated cost of \$12 million.

**Alternative 9.5-Underpass** is an underpass between Wash 9 and 10 at an estimated cost of \$10.5 million.

**Alternative 10-Overcrossing** is an overcrossing at Wash 10 with an estimated cost of \$11.5 million.

The key recommendations of the study are numbered below in order of priority:

1. Public agency ownership of the proposed crossing should be established as the next step for the project development. This ownership may be a joint ownership between multiple agencies.
2. Funding of the project is currently undefined. Several grant opportunities are available for this type of project, and steps to prepare applications for these opportunities should be explored. The funding resolution should be led by the public agency owner of the Alternative 78 T – Overcrossing (78T-O) is the most feasible alternative based on the results of this study. However, the other feasible alternatives, or variations of them, may also be considered or refined further into the planning process.
3. The development of the crossing should be coordinated with the proposed development of the private properties located around the intersection of SR 78 and the rail line.
4. Changing the use designation of a portion of Ted Kipf Road, which is an Imperial County-maintained road that is not currently legal for OHV travel, is key to achieving the access goals of the project once a crossing is constructed. This recommendation applies to all alternatives.

ICTC staff request that the Technical Advisory Committee recommend and submit the attached Draft Study Report to the ICTC Management Committee for review and recommendation to forward onto the Commission to:

1. Approve the State Route 78/Glamis Multiuse Grade Separated Crossing Feasibility Draft Study Report.

Sincerely,

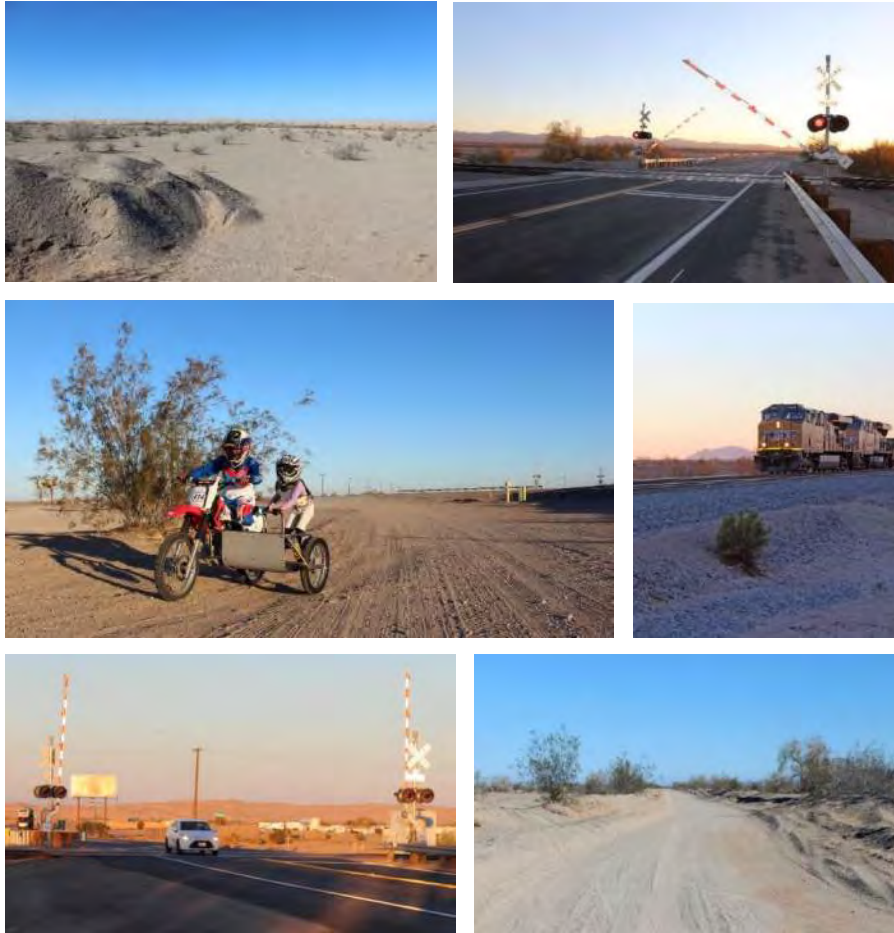


VIRGINIA MENDOZA  
Program Manager

Attachment



**SR 78 / Glamis Multiuse Grade Separated  
Crossing Feasibility Study  
Draft Study Report**



**Prepared for:**  
***Project Sponsor***  
**Imperial County Transportation Commission**  
***and***  
***Grant Administrator***  
**California Department of Transportation**  
**November 13, 2020**

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## Table of Contents

|     |                                                         |    |
|-----|---------------------------------------------------------|----|
| 1   | Executive Summary .....                                 | 1  |
| 2   | Problem Summary .....                                   | 2  |
| 2.1 | Study Purpose and Objectives .....                      | 2  |
| 2.2 | Study Area .....                                        | 3  |
| 2.3 | Project Background .....                                | 9  |
| 2.4 | Stakeholder Problem Statements .....                    | 9  |
| 3   | Public and Stakeholder Involvement .....                | 14 |
| 3.1 | Public Workshops .....                                  | 14 |
| 3.2 | Online Survey .....                                     | 15 |
| 3.3 | Survey Results Summary .....                            | 15 |
| 3.4 | Technical Working Group Process .....                   | 17 |
| 3.5 | Common Comment Responses .....                          | 18 |
| 4   | Alternative Analysis Process .....                      | 19 |
| 4.1 | Criteria Development .....                              | 19 |
| 4.2 | Preliminary Environmental Planning Considerations ..... | 21 |
| 4.3 | Preliminary Engineering Considerations .....            | 25 |
| 5   | Alternative Analysis Results .....                      | 29 |
| 5.1 | Initial Alternative Selection .....                     | 29 |
| 5.2 | Alternative 78-O .....                                  | 31 |
| 5.3 | Alternative 78T-O .....                                 | 35 |
| 5.4 | Alternative 9.5-U .....                                 | 37 |
| 5.5 | Alternative 10-O .....                                  | 40 |
| 5.6 | Additional Alternatives .....                           | 42 |
| 5.7 | Alternative Scoring .....                               | 43 |
| 5.8 | Alternative Cost Estimates .....                        | 46 |
| 5.9 | Identification of Preferred Alternative .....           | 48 |
| 6   | Implementation and Plan Recommendations .....           | 48 |
| 6.1 | Project Implementation .....                            | 48 |
| 6.2 | Policy Recommendations .....                            | 51 |
| 6.3 | Project Financing Options .....                         | 54 |
| 6.4 | Development Schedule .....                              | 59 |
| 6.5 | Project Risks .....                                     | 60 |

## Appendices

|                                                           |     |
|-----------------------------------------------------------|-----|
| Appendix A: Concept Alternative Plans .....               | A-1 |
| Appendix B: Existing Studies Memorandum .....             | B-1 |
| Appendix C: Public Involvement Workshop Information ..... | C-1 |
| Appendix D: Online Survey Results .....                   | D-1 |

Appendix E: Paired-Comparison Criteria Weighting Information ..... E-1  
 Appendix F: Environmental Constraints Memo ..... F-1  
 Appendix G: Cost Estimate Data Summary ..... G-1

**Tables**

Table 1 - Criteria Weighting ..... 21  
 Table 2 - Alternative Scoring Summary..... 43  
 Table 3 - Criteria Scoring Detail ..... 43  
 Table 4 - Alternative Cost Estimates ..... 46  
 Table 5 - Funding Program Summary..... 55  
 Table 6 - Alternative Implementation Schedules..... 59  
 Table 7 - Project Risk Matrix ..... 60

**Figures**

Figure 1 - Crossing Alternatives Summary ..... 2  
 Figure 2 - Study Area Map ..... 4  
 Figure 3 - Vicinity Map ..... 5  
 Figure 4 - OHV Management Area ..... 6  
 Figure 5 - Underpass Sample Structures ..... 30  
 Figure 6 - Overcrossing Sample Structures ..... 30  
 Figure 7 - Alternative 78-O..... 31  
 Figure 8 - Alternative 78-O Wash Road Realignment Options ..... 32  
 Figure 9 - Alternative 78-O Construction Staging ..... 34  
 Figure 10 - Alternative 78T-O..... 35  
 Figure 11 - Alternative 9.5U ..... 37  
 Figure 12 - Alternative 10-O..... 41

| <b>Revision</b> | <b>Date</b> | <b>Description</b> |
|-----------------|-------------|--------------------|
| Rev 0           | 10/08/2020  | Initial Submittal  |
| Rev 1           | 11/13/2020  | Revised Submittal  |

Prepared by: Kleinfelder Inc  
 in cooperation with  
 Kearns & West, RECON Environmental, Inc., Dynamic Consulting Engineers, Inc.

## **1 Executive Summary**

The Imperial County Transportation Commission (ICTC), in partnership with key project stakeholders, have undertaken a 12-month study of the feasibility of constructing a grade-separated crossing for Off-Highway Vehicle (OHV) users across the Union Pacific Railroad (UPRR) rail line at the Imperial Sand Dunes Recreation Area (ISDRA). The study was initiated in response to the need for a safe and legal crossing. No legal method of crossing the tracks currently exists for OHV users other than pushing the OHV by hand along the shoulder of SR 78. Additionally, a new at-grade crossing of the rail line is not feasible as it would not be approved by the regulatory body responsible for rail crossings or by UPRR.

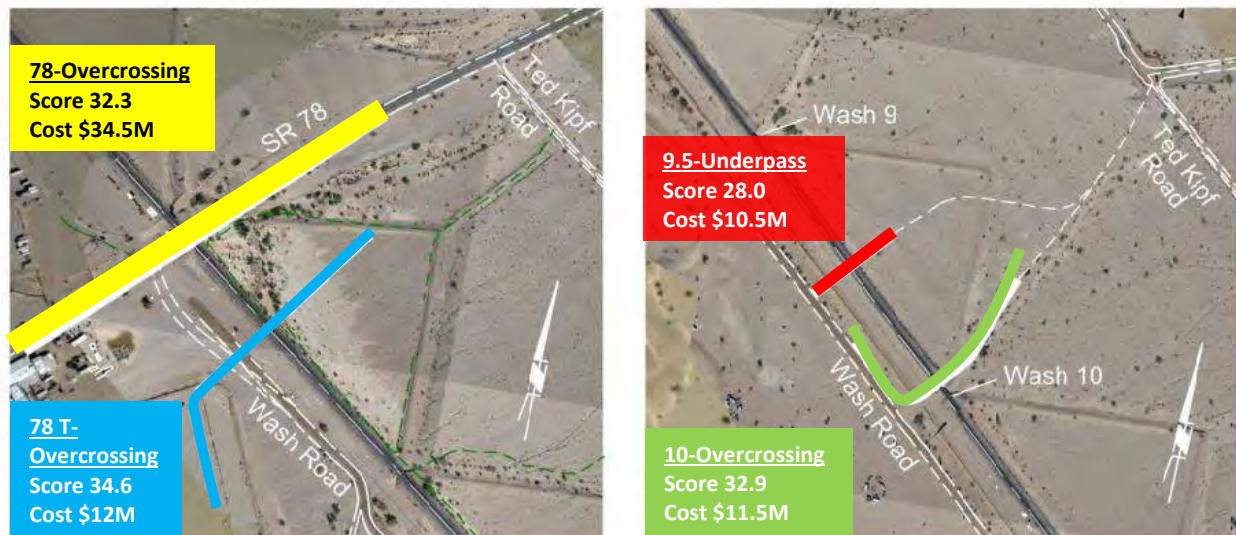
The public and stakeholder outreach for the study included significant involvement by a Technical Working Group (TWG), public workshops held on site at the ISDRA and virtually, and an online survey. The TWG was comprised of key stakeholders. Through a series of meetings, this group provided input and reviewed all reports developed through the study. The concerns and preferences of the stakeholders were taken into consideration and discussed as part of the study process. A public workshop event was held at the ISDRA Glamis Sand Dunes to solicit input from users at the study location. Concurrently with the workshop, an online survey was offered with nearly 5,000 OHV users participating. The study results are also being presented through a pair of virtual public meetings.

This study evaluated the feasibility of a grade-separated crossing including developing and assessing alternatives, identifying impacts, and estimating costs and financial feasibility. The study began by defining crossing requirements and criteria against which the different alternatives would be compared.

A list of alternatives was considered based on the type of grade-separated crossing, overcrossing or underpass, and the location of the crossing within the study area. Four alternatives were selected to be developed in more detail and scored against the study criteria. These four alternatives represented the primary locations and included three overcrossings and one underpass. The detailed alternatives were located in two general areas, adjacent to SR 78 and near Wash 10, approximately 2 miles to the south of SR 78.

Each alternative was developed to a conceptual level including layout, structure type, drainage improvements needed, and approach trail layout. The alternatives were scored against the study criteria and a conceptual level cost estimate was developed for each, including costs for planning and design, construction, and maintenance. The four primary alternatives, their scores and project costs are shown in Figure 1.

The most feasible alternative was determined to be alternative 78T-O, which is the alternative near SR 78 that would construct an OHV trail overcrossing the rail line. This alternative had the highest weighted score and a project cost of \$12 Million. The primary advantages of this alternative are that it would have minimal impact to the rail line, it is located in an area of heavy OHV use, and it would provide access to connecting trails without impacting traffic on existing roads such as Wash Road.



**Figure 1 - Crossing Alternatives Summary**

The key recommendations of the study are numbered below in order of priority:

1. Public agency ownership of the proposed crossing should be established as the next step for the project development. This ownership may be a joint ownership between multiple agencies.
2. Funding of the project is currently undefined. Several grant opportunities are available for this type of project, and steps to prepare applications for these opportunities should be explored. The funding resolution should be led by the public agency owner of the Alternative 78 T – Overcrossing (78T-O) is the most feasible alternative based on the results of this study. However, the other feasible alternatives, or variations of them, may also be considered or refined further into the planning process.
3. The development of the crossing should be coordinated with the proposed development of the private properties located around the intersection of SR 78 and the rail line.
4. Changing the use designation of a portion of Ted Kipf Road, which is an Imperial County-maintained road that is not currently legal for OHV travel, is key to achieving the access goals of the project once a crossing is constructed. This recommendation applies to all alternatives.

This Study Report integrates the summaries of all deliverable reports and their findings together with comments received from project partners, stakeholders, and the public.

## 2 Problem Summary

### 2.1 Study Purpose and Objectives

The purpose of the State Route 78 (SR 78)/Glamis Multiuse Grade Separated Crossing Feasibility Study (FS) is to lay the groundwork and map out a direction for providing a safe crossing for OHV users across

the UPRR rail line at the ISDRA. The Project objectives and outcomes of the FS include developing a summary of existing information, identifying feasible engineering alternatives for grade separated crossings and the constraints, costs, and risks of each alternative, and establishing a path forward for a preferred alternative including identification of agency responsibility, funding mechanisms, anticipated costs, and risks throughout the project life.

This report presents a Problem Statement to reflect the issues related to the crossing of the UPRR rail by OHV and other multimodal users. Based on initially available information and in coordination with the ICTC, the concerns or definitions of the problem from the view of the different stakeholders is summarized.

## **2.2 Study Area**

The Study Area is located in the unincorporated community of Glamis, in eastern Imperial County, California. Glamis is within the ISDRA Planning Area that is managed by the Bureau of Land Management (BLM) (BLM, 2013). The Imperial Sand Dunes are more than 40 miles long, with an average width of 5 miles, and lie on soft alluvial fan material emanating from the Cargo Muchacho and Chocolate Mountains to the north and east. The dunes are generally bounded to the west by the new Coachella Canal and to the east by the UPRR. The Chocolate Mountains to the northeast and two areas adjacent to the northwest portion of the ISDRA are designated as Military Lands, where active bombing activities occur and OHV access is prohibited.

The Study Area is within the eastern portion of the ISDRA Planning Area and is approximately 3 miles long and 2,000 feet wide (Figure 2). It is bisected by the UPRR from SR 78 in the north to approximately Wash 15 in the south, encompassing Ted Kipf Road to the east. Wash Road, which is a BLM-maintained dirt road used to access campsites and other Points of Interest (POI) within the ISDRA, bounds the Study Area to the west (Figure 3). High resolution aerial photography of the Study Area is provided in Appendix A. The ISDRA contains sensitive biological and cultural resources. Portions of the dunes have been closed or restricted to OHVs in order to protect cultural resources and habitat that supports several endemic and sensitive biological species. The western half of the Study Area is designated as an unrestricted open OHV use area, while the half east of the railroad tracks is designated as a limited OHV use area. Open use areas are areas where all types of vehicle use are permitted at all times, anywhere in the area. Limited OHV use areas that surround the dunes require vehicles to travel on designated routes (Figure 4). An extensive network of designated routes of travel originate from the ISDRA and extend east to the Chocolate, Black, and Cargo Muchacho Mountains, the Arizona border, and the Colorado River (Figure 3).

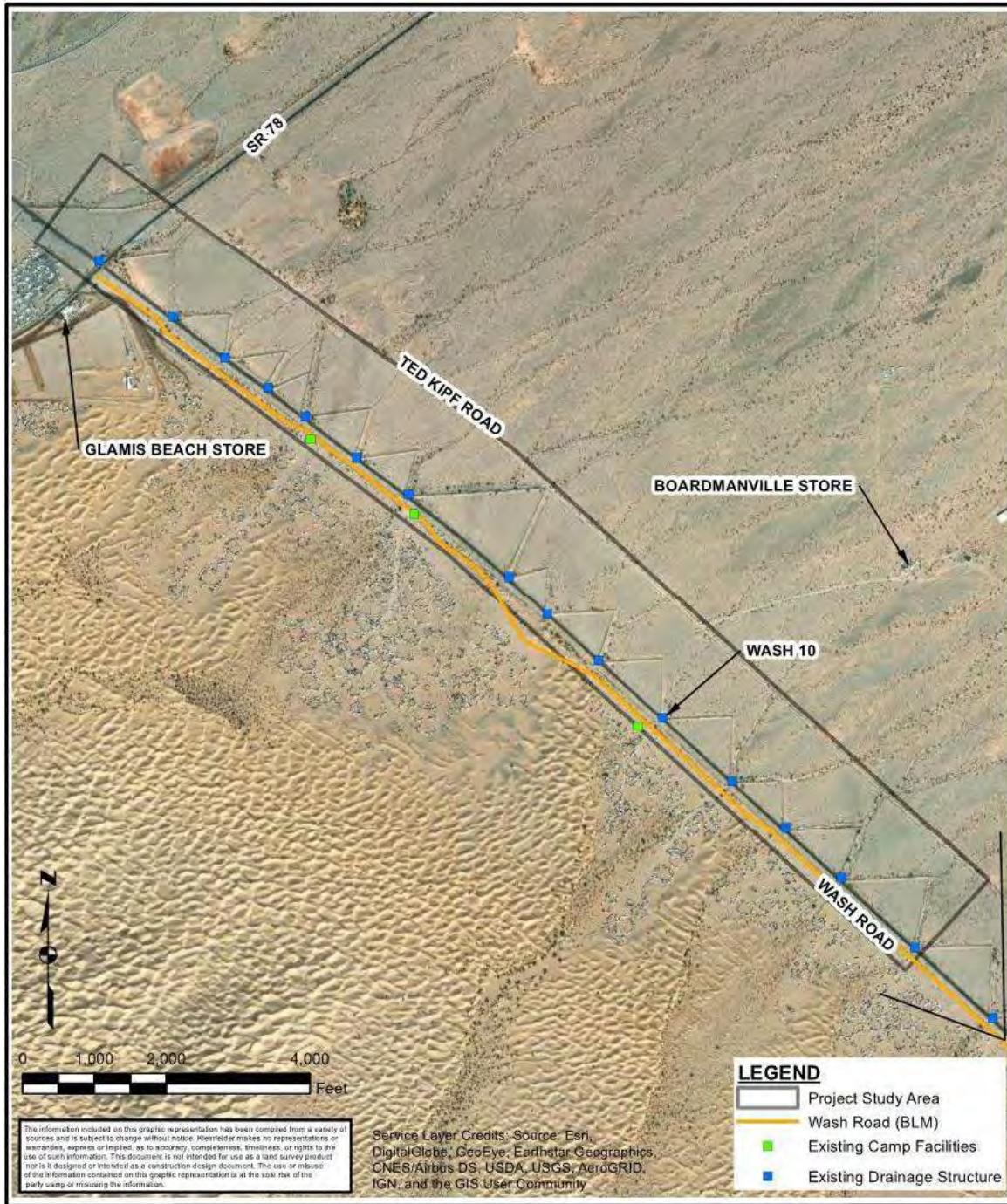
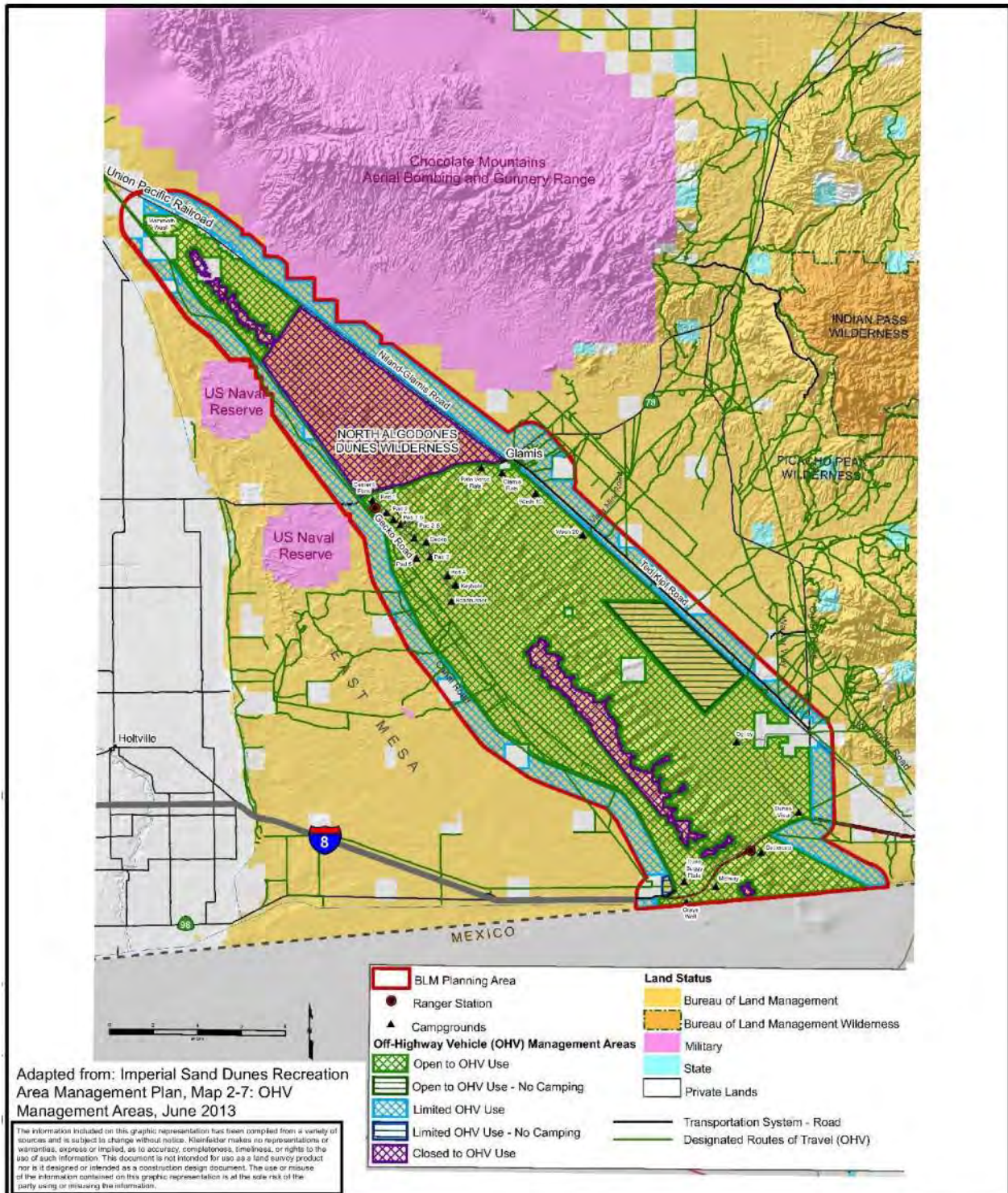


Figure 2 - Study Area Map



Figure 3 - Vicinity Map





**Figure 4 - OHV Management Area**

Near the Study Area, SR 78 is a two-lane highway located at approximate Milepost (MP) 41 within Imperial County (County). This route is also known as the Ben Hulse Highway and has a functional classification of Minor Arterial Highway according to current California Highway System maps. The 2017 Traffic Census data indicates an Average Annual Daily Traffic (AADT) of 1,550 vehicles westbound and 1,650 vehicles eastbound with peak monthly ADT of 1,800 and 1,850, respectively.

The UPRR route running through the Study Area is a portion of the UPRR Yuma Subdivision Mainline in the vicinity of Control Point (CP) Glamis. The route is single-track at the south end of the Study Area and switches to a double-track route within the Study Area at CP Glamis located at UPRR MP 698.78 approximately 0.5 miles southeast of the intersection with SR 78. The Study Area includes the UPRR line from approximately MP 698.12 to MP 701.20.

The existing crossing of SR 78 and the UPRR line is an open, gated, at-grade crossing of the double-track mainline and has the following identifications:

| <b>SR 78 Existing At-Grade Crossing</b> |               |
|-----------------------------------------|---------------|
| <b>RSSIMS Crossing ID</b>               | XING IMP-1009 |
| <b>DOT Crossing Number</b>              | 760 753C      |
| <b>CPUC Crossing Number</b>             | 001B-698.20   |

Ted Kipf Road, running parallel to the rail line right of way (ROW) along the eastern edge of the Study Area, is a County maintained two-lane unimproved road. The road is a prescriptive road indicating it is legal for OHVs to cross but not to drive along it. On the north side of SR 78, Ted Kipf Road switches over to the western side of the rail line ROW.

Wash Road, running parallel to the rail line along the western side of the Study Area, is a BLM developed and maintained unimproved road running from SR 78 southeast to Ogilby Road. Traffic data along the road is currently unavailable, but anecdotally it is recognized as a significant route for recreational users during the peak usage season in the area.

### **2.2.1 Description of Other Features in the Study Area Vicinity**

The majority of the ISDRA offers camping and expansive sand dune OHV recreation. The BLM provides trash facilities, law enforcement, emergency medical services, and toilet facilities. Well-known recreation sites within the ISDRA include, but are not limited to, Buttercup Valley, Gecko and Roadrunner campgrounds, Glamis Flats, Gordons Well, Dunebuggy Flats, Mammoth Wash, Ogilby, and Osborne Overlook. The North Algodones Dunes Wilderness is a resource protected zone closed to OHV recreation; however, it offers recreation in the form of horseback riding, hiking, camping, photography, and wildlife viewing. The Osborne Overlook provides opportunities for watching OHV activity. The Study Area also offers commercial vending and heritage tourism opportunities in the vicinity. Vendor row (alternatively known as the mall) is an area in Glamis Flats that has been historically used for vending of commercial

goods and services. The vendors set up their sites along the south side of SR 78 between the Glamis Flats off-ramp and the Glamis private property line. Rows of vendors often form, facing each other with OHV traffic flowing between them. Additional rows, similar in design, generally follow along the west private property boundary of Glamis. Other key POI for ISDRA users include Boardmanville Trading Post, the Glamis Beach Store, the Gold Rock Ranch OHV Park and Museum, Glamis Dunes Storage, Tumco Gold Mine, Hauser Geobeds, Walter's Camp and the Colorado River, Duner's Diner, and Wood Plank Road (Figure 3).

### **2.2.2 Bureau of Land Management Camping Facilities**

Vehicle camping at the ISDRA is permitted in all areas designated as open to all vehicle use, with sites available on a first-come, first-served basis. The main camping areas are Buttercup; Midway and Gray's Well campgrounds along Gray's Well Road south of I-8; and Gecko and Roadrunner campgrounds along Gecko Road south of SR 78. The main camping areas offer parking pads, toilets, and trash facilities. The camping areas can accommodate large, motorized camping units such as recreational vehicles, toy haulers, semi-truck/trailer combinations, and fifth wheel trailers. Camping on public lands away from developed recreation facilities is referred to as dispersed camping. Most of the remainder of public lands are open to dispersed camping, as long as they do not conflict with other authorized uses or in areas posted "closed to camping," or in some way adversely affects wildlife species or natural resources. Dispersed camping is allowed on public land for a period not to exceed 14 days within a consecutive 28-day period. Vehicle camping is also allowed within 300 feet of a designated OHV route except within sensitive areas where the limit is 100 feet.

### **2.2.3 Glamis Beach Store/Polaris Property**

The four corners adjacent to the intersection of SR 78 and the UPRR line are private property within the Study Area and are owned by Polaris Inc. The property currently includes the Glamis Beach Store and other associated buildings, RV storage, and a cell tower; all located on the western side the UPRR ROW; however, the built-up facilities currently sit outside of the Study Area. The Study Area includes portions of the following parcels identified by APN: 039-310-026 (northwest of intersection), 039-310-022 (northeast of intersection), 039-310-023 (southeast of intersection), 039-310-029 (southwest of intersection). As discussed below, Polaris is currently planning extensive development of the property.

### **2.2.4 Drainages**

Several decades ago, UPRR's predecessor, Southern Pacific Transportation Company, constructed a series of chevron dikes on the north side of the Yuma Subdivision tracks in the Study Area to channel desert stormwater toward culverts or "washes" under the tracks (Figure 1). Stormwater, when present, flows in the direction of lower topography, generally moving from east to west with ground elevations along Ted Kipf Road on the eastern side of the Study Area, typically 12 to 15 feet higher than the elevation immediately west of the UPRR ROW. A detailed topographic map is included in Appendix A. These improvements were added to help prevent track washouts after rainstorms. These drainages were not originally designed or intended to be used as pedestrian or vehicular crossings.

### **2.2.5 Utilities**

Liquid petroleum products are delivered to and are transported through the County via a buried 20-inch Santa Fe Pacific Pipeline owned and operated by Kinder Morgan. This line is generally located within the UPRR ROW to the west of the tracks through the Study Area. The utility easement follows the northwest to southeast trend of Imperial Valley.

Fiber optic lines also run underground through the UPRR ROW on the western side of the tracks within the Study Area.

### **2.3 Project Background**

Within the ISDRA Planning Area, a 17-mile section runs north to south, located between SR 78 and Ogilby Road. UPRR operates a rail line that travels through this section and bisects certain recreation and camping areas. To the west of the rail line, BLM has designated an open riding area for OHVs, as well as a camping area. The designated camping area is also located to the east of the rail line. Both camping areas are operated under the same system and have the same fees. ISDRA visitors must cross the UPRR rail line to travel between the two areas. The BLM only offers restrooms and waste facilities on the west side of the railroad tracks.

Historically, a below grade wash structure wide enough for OHVs, just south of SR 78 known as Wash 10, was maintained for travel between the western and eastern portions of the ISDRA on either side of the rail line tracks. The access was designated by a sign on the eastern side of the UPRR rail line that informed OHV riders to continue riding on designated routes of travel only. Wash 10 was maintained by the previous owner of the small store and bar called the Boardmanville Trading Post (Boardmanville) via an informal agreement. Three at-grade maintenance access points, known as Ruthven, Clyde, and Cactus, were used by OHV users as crossings. The maintenance accesses were designated by two tall, wooden posts located just far enough apart for an OHV to proceed through. Designated routes of travel for OHVs, established by BLM, on the eastern side of the rail tracks lead directly to these crossing points, suggesting that these points were at some point widely recognized.

In 2009, UPRR physically closed the informal crossings and indicated they were not authorized for public use. The Wash 10 structure does not meet minimum clearance standards and the at-grade crossings were constructed solely as private railroad maintenance crossings for the railroad's sole use.

Since the closure of Wash 10 and the other crossings, no designated crossings for OHVs are within the 17 miles between SR 78 and Ogilby Road. This has resulted in OHV users crossing over the actual rail line tracks at unprotected, unregulated, and uncontrolled crossing points. The current situation is considered to be a major safety issue that has resulted in several critical injuries and deaths.

### **2.4 Stakeholder Problem Statements**

Since 2009, discussions pertaining to the implementation of a solution for providing additional OHV access and/or an alternative crossing for SR 78 and UPRR at the ISDRA have been ongoing. A variety of

stakeholders have been involved in discussions and are currently involved in the TWG as part of this FS. Each stakeholder represents a different perspective and views different challenges with respect to the problem and the implementation of a potential solution.

To date, a solution has not yet been identified because the interests of the various stakeholders have not yet aligned, no public agency has been identified as an appropriate and willing road authority for a project, law and public policy limit the options for some stakeholders to participate or make concessions, and the lack of available funding for constructing and maintaining an appropriate structure.

The perspectives of the various stakeholders have been documented at several meetings including an April 16, 2010 meeting regarding the closure of Wash 10, expressed at several Imperial County Board of Supervisor's meetings, a November 17, 2016 meeting regarding the crossing and use of SR 78, the first TWG meeting held on October 24, 2019, and a meeting between ICTC and the BLM regarding its involvement in the FS. The following is a summary of issues and concerns from each stakeholder group perspective as presented in these meetings.

#### **2.4.1 The Bureau of Land Management**

The BLM oversees the ISDRA and the extensive OHV trail network that extends throughout eastern Imperial County to the Arizona border. BLM has a variety of concerns related to a potential new OHV crossing. BLM has identified a variety of environmental issues that should be considered in the design of a grade-separated crossing in the area including but not limited to sensitive resources, drainage, and air quality impacts. BLM has designated the areas on the east side of the UPRR tracks for limited use as they are concerned about impacts to natural and cultural resources in the area. Any proposed structure that is meant to aid in OHV crossing in the area adjacent to public land will need to consult with the BLM regarding resource protection, drainage considerations, and access to approved OHV routes. Additionally, air quality impacts would need to be addressed as the Study Area is part of a non-attainment basin. Previous studies by BLM suggest that increased use of crossings, such as Wash 14, has resulted in greater emissions. Should users be encouraged to use additional crossings, similar increases in emissions would be anticipated and would need to be mitigated.

The BLM has also chronicled a number of public safety concerns in the area, including OHV users driving under the influence and traveling with street vehicles. UPRR's closure of access to Wash 10 has aided in the reduction of the number of enforcement violations and related safety concerns in the area and has reduced such public safety concerns through diminished use. BLM has taken the position that a combination of the access closure, safety education, and the construction of the UPRR sand fence have contributed to safety improvements in the area. BLM does not want to take ownership for a legal crossing in the area. However, the lead on the project will need to coordinate with BLM with regards to the management of safety concerns as BLM rangers respond to a majority of emergency calls in the area. The BLM's first priority is the safety of its employees, followed by the safety of the public users of the ISDRA.

Safety considerations related to traffic flow of OHVs are of concern to the BLM. It is the BLM's stance that the introduction of a legal crossing would impact existing traffic patterns in the area. During the peak

season, traffic congestion along the Wash Road is a significant problem for the approximately 150,000 to 200,000 visitors. The project design should consider how changes to traffic flow might adversely impact the area. The BLM has also recommended that an evaluation of combined-use roadway classifications in combination with a crossing should be explored.

### **2.4.2 County of Imperial**

The County's mission is to provide extensive, high-quality public services to increase the quality of life for County residents. The ISDRA is considered to be a unique natural and recreational resource that is a significant contributor to the County's local economy. The County has emphasized the need for strong decision-making criteria for the project that takes into consideration the needs of the key public agencies involved. In order for the proposed project to be sustainable and successful, the County encourages significant discussion pertaining to the operation and maintenance of a grade-separated crossing. A potential revenue stream to support the project through design, implementation, and maintenance should be considered.

The County has indicated that proposed design solutions involving Ted Kipf Road should consider the complex history of road maintenance between the County and the BLM as well as the potential approvals required by California Highway Patrol. Prior discussions between the County and the BLM regarding the potential to redesignate Ted Kipf Road as a combined use road have resulted in changes to designation. Existing agreements regarding use and encroachment of Ted Kipf Road should be taken into account and any use adjacent to the road may require BLM approval. Ultimately, the County envisions the FS as a vehicle to support funding requests for a future project.

### **2.4.3 California Department of Transportation**

The California Department of Transportation (Caltrans) manages California's highway and freeway lanes and aims to provide a safe, sustainable, integrated, and efficient transportation system. Caltrans is primarily concerned with safety and the current practice of vehicles being pushed across the railroad. Per California Vehicle Code Section 38027, "a motor-driven cycle issued a plate or device pursuant to Section 38160 may be moved, by nonmechanical means only, adjacent to a roadway, in such a manner so as to not interfere with traffic upon the highway, only for the purpose of gaining access to, or returning from, areas designed for the operation of OHVs, when no other route is available. The Department of Transportation or local authority may designate access routes leading to off-highway parks as suitable for the operation of OHVs, if such access routes are available to the general public only for pedestrian and off-highway motor vehicle travel."

Caltrans has identified the need to better understand the ROW in the area in order to identify involvement of public agencies during project design.

### **2.4.4 Imperial County Transportation Commission**

The ICTC exercises basic initiative and leadership in the transportation planning and programming process within Imperial County. ICTC's role in the FS is as a neutral mediator with the purpose of facilitating the

process of project design and implementation. As such, the importance of identifying the public agency that will take the lead on the project is emphasized, as the ICTC has identified itself as a neutral party. The ICTC's interests include the design of a feasible solution. The ICTC underscores the importance of an inclusive process throughout design and implementation. The ICTC is in support of a smaller, simpler project concept.

#### **2.4.5 Union Pacific Railroad**

UPRR is North America's largest railroad franchise, covering 23 states across the western United States. UPRR operates a rail line that travels through the ISDRA and bisects certain recreation and camping areas. The primary objective of UPRR is to protect their property from any encroachment and to ensure the safety of their operations. As such, the certainty of UPRR boundaries should be maintained as part of project design and implementation.

UPRR notes that the use of Wash 10 as a crossing for OHVs had been ongoing since 1990 through an alleged informal permission granted by a railroad employee to representatives of Boardmanville to keep sand cleared out of the wash to provide a convenient route to Boardmanville. The informal permission to access Wash 10 had been revoked by UPRR in 2009. Wash 10 did not meet the CPUC's General Order 26-D minimum clearance requirements for a road that crosses under railroad tracks. Closures of such crossings have aided in the reported reduction in the number of enforcement violations and related safety concerns in the Study Area.

A major concern brought forth by UPRR is the potential that construction may adversely impact freight operations. UPRR's transit routes in the Study Area have been identified as critical freight rail routes in California. UPRR maintains that it will be crucial to minimize the impacts to train transit during construction. UPRR has identified a grade-separating crossing as the preferred crossing type in the Study Area. Construction of an underpass would require a shoofly, which would be costly for UPRR and would adversely impact freight operations. At-grade crossings would be unlikely to advance through the California Public Utilities Commission (CPUC) process and would be disputed by UPRR due to adverse impacts to freight operations. UPRR's position is that a public agency must take the lead on any access proposal such that the lead agency accepts responsibility for maintenance and liability following the completion of the project.

#### **2.4.6 California Public Utilities Commission**

The CPUC regulates services and utilities, protects consumers, safeguards the environment, and assures Californians' access to safe and reliable utility infrastructure and services. The CPUC also has authority to approve construction of new or modified rail crossings. The major concern articulated by CPUC is the current illegal use of OHVs crossing the UPRR tracks. The CPUC has also indicated that a new at-grade crossing would not be approved in the area. The CPUC requires that a public agency takes the lead on requesting a new public crossing and assumes responsibility of constructing and maintaining the crossing.

### **2.4.7 American Sand Association**

The American Sand Association (ASA) is a nonprofit organization consisting of dune-riding enthusiasts who are dedicated to protecting and monitoring the ISDRA. ASA's primary objective is to unite, inform, and mobilize the sand dune community to protect the right to ride on all public lands in a responsible, environmentally balanced manner. With respect to the proposed crossing, ASA's goal is to conceive of a project that will provide safe crossing for OHV users in the ISDRA. ASA has emphasized the importance of OHV access on public lands and noted that since the closure of Wash 10, no designated crossing for OHVs has existed within the 17 miles between SR 78 and Ogilby Road. The lack of a designated crossing has posed a major safety issue in the ISDRA.

ASA prefers to expend efforts on smaller, simpler projects rather than focusing on solutions that may be cost prohibitive. The FS should consider alternatives that avoid the further complication of existing issues at the railroad crossing and SR 78 intersection involving private property owners.

### **2.4.8 Polaris Properties**

Polaris is a large manufacturer of OHVs and organizes an annual event in the ISDRA called Camp RZR. Polaris is in the process of proposing a large-scale development project in the vicinity of the proposed crossing. The project description is underway and is currently scheduled to be brought to the Imperial County Board of Supervisors by December 2020. Polaris has voiced concerns with any impacts the FS may have on their proposed developments. Land use designations and boundaries for the proposed development can be adjusted prior to the start of the California Environmental Quality Act (CEQA) process. Polaris has indicated that the site diagnostics that have been performed in the area for the proposed development may change if a grade-separated crossing were to be introduced.

### **2.4.9 Boardmanville Property**

The Boardmanville Trading Post is located on the east side of the railroad on private property adjacent to the ISDRA. Boardmanville has offered services to OHV users in the area for over 30 years and is located on designated routes of travel identified on maps provided to users. A major concern brought by Boardmanville is the loss of access to the east side of the UPRR tracks despite the frequent use of the east side by campers and OHV users. A designated camping area exists to the east of the rail line and is indicated as such on OHV user maps. Restrooms and waste facilities are only located west of railroad, necessitating the access to a crossing in the area for campers on the east side of the tracks. The property owner is also concerned about OHV user safety associated with ongoing illegal crossings of SR 78 and the railroad tracks. Users on the east side of the tracks also periodically require emergency services access in the area. Currently, emergency access is confined to the major roads such as Ted Kipf Road, SR 78, and Ogilby Road. In order to increase accessibility and decrease delays in response times, a crossing should be designed to accommodate emergency vehicle access.



### 3 Public and Stakeholder Involvement

A public outreach plan was prepared in partnership with the TWG and key stakeholders. The plan served as a guide for the engagement process with the public and stakeholders and considered best practices utilized by all parties; addressed all outreach activities undertaken by our team, the ICTC, and stakeholder agencies; and outlined the best approach for synchronizing outreach efforts based on the technical work prepared. The following sections summarize the main components of the public outreach plan.

#### 3.1 Public Workshops

Two public workshops are part of the outreach effort to give the public an opportunity to provide input and comment on the potential OHV crossing in the ISDRA.

Workshop No. 1 was an on-site engagement held on January 18, 2020 in the Main Staging Area at the Glamis Flats campground, near the Glamis Beach Store. To maximize potential participation, the event was hosted in conjunction with the annual Sand Dunes Clean-Up event. The objective was for visitors to learn about the project, learn about the online survey, and learn how they could participate. They were also able to provide input on preferred areas for crossings, size of crossings, and other important considerations from a user perspective, and were encouraged to sign up for project updates and announcements about future involvement opportunities.



Key results from Workshop No. 1 activities included:

- Participants primarily identified Wash 10 as a preferred crossing location
- A small crossing would be sufficient
- Several destinations on the east side were identified as points of interest, including: Boardmanville, Vista Mine Wash, Colorado River, Walter’s Camp, Tumco Mine/Gold Rock Ranch Area, Imperial Gardens, Picacho Cemetery, Palo Verde, and camping and sightseeing in general

Key values identified by participants included: Safety, access, and a clean area to camp (which was likely influenced by the workshop being held in conjunction with a clean-up event).

Workshop No. 2 was two virtual public meetings held on October 21 and 24, 2020. The meetings presented Glamis users and the public with an overview of the most feasible project alternative, provided an opportunity for feedback on the most feasible alternative, and directed participants to the ICTC online input portal. The virtual format allowed participants to join from anywhere and provided tools for

submitting questions and comments. Along with an overview of the first outreach that included the user survey and the on-site input opportunity, participants were able to ask questions and offer comments through a moderated question and answer session. Participants were also instructed on the process of submitting input through the ICTC online input portal. A video recording of the presentation was made available via the ICTC website one week prior to virtual public meetings. The video covered the same topics as the virtual public meetings and participants were encouraged to view the video recording prior to submitting input through the ICTC input portal.

Additional information regarding the public workshops is included in Appendix C.

### **3.2 Online Survey**

An online OHV User Survey was administered as part of the FS to better understand OHV recreation and user preferences in the vicinity of the Study Area. The objectives of the survey were to obtain information from users to influence the location and design of potential crossing structures and to inform users of the overall purpose and need for the project. The survey examined visitation, the types of recreational vehicles used, key points of interest, patterns of recreation use, and willingness to pay for a new crossing structure.

The survey was administered through the online survey platform, Survey Gizmo, from January 1 through January 31, 2020. A unique Uniform Resource Locator (URL) address was created for online access. The online survey was secured using reCAPTCHA and restricted such that only one survey could be taken per IP address.

Public participation and outreach for the survey was coordinated with the TWG, ASA, LANDS Imperial County, and other stakeholder organizations. Survey notifications were posted online using websites, online forums, and social media. An advertisement was also included in the S&S Off Road Magazine's January 2020 issue and printed flyers were posted at local businesses. Cards with details on how to participate in the survey were distributed at Public Workshop No. 1.

Public outreach was performed, with the assistance of stakeholders who have ties to the full range of ISDRA Glamis users, to publicize the project and involvement opportunities; however, it is acknowledged that an online survey format has limitations. The intent of survey was to include as many ISDRA Glamis users as possible to provide public input for the FS rather than identifying and selecting a discrete sample of users to participate in the survey as would be required for a scientific research study.

### **3.3 Survey Results Summary**

The survey had a total of 9,938 views. Of those that viewed the survey, 4,021 respondents completed all questions of the survey, and 918 respondents partially completed the survey by answering at least one question. The majority of the surveys were completed on a mobile device.

It should be noted that this type of online survey is helpful in gathering input from users and those actively interested in the Project. It should not be considered comparable to a random study of a population,

including a population of OHV users of the ISDRA. Because outreach and advertisement of the survey was largely provided by stakeholders through social media, the participating population of the survey should be considered to be those most interested in the crossing. As an indication of this, in response to the question: 'On a scale of 0 to 5, how important is it to you that an OHV crossing of the tracks be constructed in the area of the existing crossing?' 87 percent of respondents indicated it was 'very important' or 'extremely important.'

Based on the origin of the IP addresses, more than half of the survey respondents were in California at the time the survey was taken. Because most of the surveys were taken on mobile devices, the location where the survey was taken does not necessarily correlate to the place of residence. The survey included several types of questions:

- Closed-ended questions: Questions that had a discrete answer set from which to choose.
- Scaled questions: Closed-ended questions presented in a scale or range, such as 0-5 rating of not important; a little or somewhat important; very important; and extremely important.
- Single or multiple response questions: Some questions allowed only a single response, while other questions allowed respondents to give more than one response or choose all that applied.
- Open-ended questions: Questions in which no answer is presented to respondents; rather, a fill-in response with anything that comes to mind from the question. Open ended responses were included for several of the multiple response questions.

Survey results suggest the following:

- More than 58 percent of users who participated in the survey visited the ISDRA 15 or more days in any given year. More than 26 percent visited ISDRA for 30 days or more. Similarly, more than 50 percent of respondents indicated that they visited 5 or more times each year.
- The OHV users bring a 4WD truck (51.5 percent), recreational vehicle for camping (69.8 percent), dune buggy/sand rail (44 percent), 2 or 4 seat side-by-side (71.6 percent), and/or all-terrain vehicles (43.5 percent).
- More than half of participants indicated 'Always' or 'Often' operating an OHV on the eastern side of the UPRR tracks.
- Approximately 2/3 of respondents reported 'Always' or 'Often' operating an OHV within the washes along Ted Kipf Road.
- Some support for a surcharge or user fee was noted. 39 percent 'Strongly' or 'Moderately' support a surcharge and 34 percent 'Strongly' or 'Moderately' oppose a surcharge, and the remainder were neutral or did not know.

A comprehensive online survey summary is included in Appendix D.

### 3.4 Technical Working Group Process

Conflicting interests between stakeholders was a key challenge for this project. Stakeholder concerns, particularly the inability to reach a consensus based on multiple obstacles, including lack of authority, legal and policy constraints, and funding, did not allow the project to move forward.

To help resolve conflicting interests, this study implemented a TWG comprised of key stakeholders to discuss concerns, provide input on the study, and build consensus on the study results. Several parties will be involved in the development and approval of the project and many of these parties participated in the TWG sessions to provide input on the FS development. The TWG participants included:

- Imperial County
- Caltrans
- Union Pacific Railroad
- California Public Utilities Commission
- Imperial County Transportation Commission
- Private Property Owners within the Project Study Area
- OHV User Groups

Professionally facilitated TWG meetings focused on clear expectations and solutions that were used to aid in decision making and consensus building. A series of five TWG meetings were held, each with a specific focus, clearly defined agenda, and goals. In between the scheduled TWG meetings, the project's key deliverables were being prepared, such as reports, memos, and surveys. These materials were submitted for review prior to the TWG meetings and followed by a discussion at the next TWG meeting. Participation in the TWG meetings was consistent from all parties. This was a significant benefit to the process.

The TWG meetings held for this project and key discussion points of each meeting are listed below:

- TWG Meeting No. 1 – Roles and responsibilities; decision making process
- TWG Meeting No. 2 – Evaluation criteria and weighting determination
- TWG Meeting No. 3 – Identify three to four alternatives to study in depth
- TWG Meeting No. 4 – Review alternatives with scoring; identify responsible agency, cost, and risks
- TWG Meeting No. 5 – Identify preferred alternative; identify policy needs

### 3.5 Common Comment Responses

Several comments were made, and questions asked by the public regarding the project. These came through the outreach efforts noted above as well as in discussions with stakeholders. This section summarizes many of the common comments and questions regarding the project.

*Why can't an existing wash be dug out and used as it was in the past?*

The washes are a part of UPRR's railroad infrastructure and property and are located within their property boundary. They were originally used under an informal agreement that has not continued. The study is examining feasible crossing concepts, however, reopening the washes for access was considered in the study. The development of a legal crossing would need to meet current railroad crossing guidelines, including those for crossing structures. The existing washes would not meet those requirements.

*Wouldn't an at-grade crossing be cheaper and easier to build?*

Yes, but the issue with an at-grade crossing is not the cost, but rather safety and the approvals needed for the crossing. At-grade crossings present a safety hazard to crossers and railroad operators. The CPUC is charged with approving all railroad crossings around the state. A concerted effort is being made throughout the state to eliminate at-grade crossings. The introduction of a new at-grade crossing would not be approved by the CPUC or supported by the UPRR within their ROW.

*What is the BLM's involvement in the project?*

Although the Project involves public lands within the ISDRA, the BLM is not involved in or a sponsor of the project. If a responsible entity decides to sponsor the project, the BLM will work with that entity on issues related to public lands. The BLM was consulted during the study and provided comments on the reports prepared as part of the study. However, they did not participate as members of the TWG.

*How long will it take to build a crossing?*

The preliminary Project schedule is presented in Section 6.4 of this report and additional details can be found in the appendices. Key decisions, including who will own the crossing, have not yet been made; therefore, the timeline of even the preliminary schedules will not start until that question is answered. The process of planning, designing, permitting, and constructing a significant infrastructure element such as a railroad crossing is a process of many years.

*Wouldn't a crossing under the railroad tracks be simpler to build than a big bridge?*

Not usually. Because railroad operations have the priority and obligation to maintain their operations, constructing a structure that passes underneath the railroad requires that railroad operations continue during construction. Unlike roadway construction, where a temporary detour is relatively straightforward to construct, a railroad detour (known as a shoofly) has strict standards and little flexibility. Additionally, along the railroad area in question, a large pipeline utility sits underground and may conflict with an

underpass structure. An underpass structure was considered as part of the study and is discussed in summary in Section 5.

## 4 Alternative Analysis Process

### 4.1 Criteria Development

As part of the evaluation process, a criterion and scoring method was used to compare different project alternatives. This comparison is intended to provide a simple method of comparing the alternatives against the often-conflicting objectives or impacts of the project. The evaluation process is a subjective assessment, however, using a criterion and scoring method allows for some comparison and measure of the performance of each alternative.

The evaluation process consists of two steps:

- Develop criteria – presented in this section, and
- Score the alternatives against the criteria – presented in Section 65 following the description of each alternative.

The weighted sum of the criteria scores is the performance score, a measure of how well the alternative meets the project goals and minimizes negative impacts. The criteria are selected with the project goals in mind and independently of the alternatives for consideration. The criteria and the weighting were developed with the input of the TWG and the consultant team.

The criteria are split into two groups: Pass/Fail Criteria and Weighted Criteria.

#### 4.1.1 Pass/Fail Criteria

Pass/Fail Criteria are benchmarks any alternative must pass to be considered valid. These can be considered the basic performance criteria of any alternative. Two Pass/Fail Criteria were considered:

- *Provide a Safe Crossing* – Does the crossing provide a safe and legal method for OHV users as well as pedestrians or other recreational users to cross the UPRR tracks? It must be grade separated and provide adequate safety features for users and stakeholders.
- *CPUC Clearance and Safety Approvals* – Is the alternative configured to meet the requirements of the relevant governing bodies? The alternative must be able to meet the grade separated crossing requirements of the CPUC, local building codes, and any BLM requirements.

#### 4.1.2 Weighted Criteria

Weighted criteria are those where the alternative may perform better or worse depending on the details of the alternative. For each of the weighted criteria, the alternatives are given a score from 1 to 5. The

scoring of each alternative against the weighted criteria is provided in Section 5.7 following the detailed description of each alternative.

*Connectivity* – How well does the alternative provide access to points of interest and improved connectivity to Designated Routes of Travel on the east side? Are the connections direct and easy to follow? A high scoring alternative would provide a clear, direct connection exactly where users want to go. A low scoring alternative would provide an indirect path, may force significant non-intuitive connections, and would require extra trail length.

*Traffic on Existing Roads* – What are the safety and functionality impacts to SR 78, Wash Road, and Ted Kipf Road during all seasons, including peak season? Does the alternative worsen traffic or create a crossing that negatively impacts the safety of users on all roads? A high scoring alternative would have no impact or may improve conditions on the existing roads.

*Rail Operations During Construction* – How will construction of the project impact railroad operations? How many slow orders, absolute work windows (track closures) will be needed? How long of a period of time will the construction impact operations? A high scoring alternative would have little to no impact on rail operations.

*Conflicts within Rail Right of Way* – Will any permanent structures, easements or additional requirements occur within the railroad ROW that will limit or burden future UPRR expansion? A high scoring alternative would have no permanent impacts within the ROW.

*Conflicts with Private Right of Way* – Will any permanent impacts, easements or conflicts occur within existing private property that may conflict with current or future development? The alternative may require easement onto or purchase of a piece of private property. A high scoring alternative would have no permanent impacts within the private ROW.

*Maintenance and Operation Efforts* – How significant will the future effort of maintenance and operations be for the final configuration? This includes drainage features, debris removal, and structure maintenance and inspection as well as additional maintenance of adjoining roads. A high scoring alternative will have minimal future maintenance requirements. A low scoring alternative will be expected to have regular and significant maintenance needs.

*Sensitive Resources* – How will the alternative impact sensitive resources in the area? This includes impacts during construction and impacts from increased OHV use on the east side. The resources may be cultural, biological, air quality, or other environmental resources. A high scoring alternative will have minimal impacts.

*Aesthetics* – Will the crossing detract from the user experience or adversely affect scenic vistas or viewsheds? A high scoring alternative will not affect either of these elements.

Because some performance objectives are considered more critical than others, the criteria were weighted against each other using a Paired-Comparison method of weighting. This weighting was

produced using the input of the TWG members and is shown in Table 1. A description of the Paired-Comparison method and the inputs received from the team are provided in Appendix E of this report. This method does allow for some criteria to be weighted at zero (as is the case for the Aesthetics criterium) if that criterium is seen as less important than all others considered.

**Table 1 – Criteria Weighting**

| <b>Criteria</b>                        | <b>Weighting %</b> |
|----------------------------------------|--------------------|
| 1. Connectivity                        | 11                 |
| 2. Traffic on Existing Roads           | 11                 |
| 3. Rail Operations During Construction | 21                 |
| 4. Conflicts within Rail ROW           | 24                 |
| 5. Conflicts with Private ROW          | 4                  |
| 6. Maintenance and Operations Efforts  | 18                 |
| 7. Sensitive Resources                 | 11                 |
| 8. Aesthetics                          | 0                  |
| <b>Total</b>                           | <b>100</b>         |

## 4.2 Preliminary Environmental Planning Considerations

An understanding of the expected impacts and considerations from an environmental planning and feasibility perspective is key to developing and evaluating crossing alternatives. These considerations will need to be addressed in order to move forward with permitting, design, construction, and operation of the project. To aid in comparing alternatives, the sections below highlight the resources where the project alternatives would be expected to perform with significant differences.

These sections were taken from the Project Environmental Constraints Memo which is included as Appendix F to this report. The full Constraints Memo is intended to identify the environmental documents that would be required under CEQA for actions by state and local agencies and the National Environmental Policy Act (NEPA) for actions by federal agencies.

These are preliminary assessments of potential impacts to various resources for the purposes of environmental planning and budgeting of the project. The topic areas discussed below will need a more detailed study once the preferred project alternative is identified and the full environmental studies phase of the project is initiated. Additional studies could also be identified during project scoping pursuant to CEQA and NEPA requirements or to support policies that would need to be established to facilitate funding or authorizations for the project.



#### **4.2.1 Agency Ownership**

The CPUC requires that a public agency takes the lead on requesting a new public crossing and assumes responsibility of constructing and maintaining the crossing. This agency would also take a lead role in subsequent phases of the project development including planning, permitting and project approval, ROW acquisition, design, construction, and maintenance.

For this FS, Caltrans and Imperial County are the agencies whose missions align with the project goals. The BLM has specifically stated they will not be the lead agency for this project but will coordinate with the lead in meeting federal requirements for this project.

#### **4.2.2 Community Impacts**

The study area is used extensively from October to May for camping and OHV recreation. Community impacts would likely be positive as safety would be improved for all forms of transportation crossing from one side of the UPRR to the other, including emergency service vehicles. The proposed project would facilitate cohesion by improving connectivity and access to additional BLM lands. The Glamis Beach Store, Boardmanville Store, and associated OHV serving facilities would benefit from the improved safety of the grade separation project.

For Alternatives 78-O and 78T-O, the ingress/egress to the Glamis Beach Store, or other potential future development within the property boundaries, could be adversely affected during project construction. The circulation of OHV traffic in the vicinity of the Glamis Beach Store, and other future developments proposed under the Draft Glamis Specific Plan, could adversely affect business access or operations. The alternatives near Wash 10 are not expected to have adverse effects on ingress/egress or circulation of existing or proposed commercial businesses.

#### **4.2.3 Visual and Aesthetic**

SR 78 has not been designated by Caltrans as part of the state scenic highway system. The ISDRA provides dramatic desert scenery with sand dunes, desert washes, and views of distant mountains. The BLM has adopted Visual Resource Management (VRM) classifications for the study area. For example, VRM Class I objective is to preserve the existing character through natural change or very limited management activity that does not attract attention while VRM Class IV provides for activities that require major modification to the existing character of the landscape.

The nearby North Algodones Dunes Wilderness Area, north of SR 78 and west of the UPRR ROW, is designated as VRM Class I. The project study area is VRM Class III on the east side of the UPRR ROW and Class IV on the west side of the UPRR ROW.

A Visual Impact Assessment (VIA) would not be warranted for a proposed undercrossing of the UPRR, as an undercrossing would not be highly visible and would be similar in appearance to the 14 existing undercrossing locations that are designed exclusively for flood control purposes. However, for alternatives that propose an overcrossing, the overcrossing would need to have a 23'-4" clearance over the UPRR

tracks, which would create a highly visible structure that could block or alter distant views. Therefore, a VIA would need to be prepared for these alternatives to determine the extent of the potential impact on the visual environment, including potential impacts to the existing views of the sand dunes and distant mountains. The VIA would need to address both BLM and Caltrans requirements for Alternatives 78-O and 78T-O. Only BLM VIA guidelines would apply to Alternative 10-O as it would not be highly visible from SR 78 or any other Caltrans properties.

#### **4.2.4 Hydrology and Floodplain**

The majority of the study area consists of an alluvial fan containing multiple washes that have been directed by earthen berms to flow beneath the UPRR at 14 locations identified as Washes 1–14. The terrain becomes nearly level on the west side of the UPRR and the washes continue to the west until ending within the Algodones Dune Complex. The depth to water within the study area is approximately 90 to 100 feet below ground surface. The study area is not within a sole-source aquifer. Groundwater is not anticipated to be encountered during project construction.

While the study area is dry much of the year, brief and intense rainfall can cause powerful floodwaters to turn what are typically dry washes into flash flood zones.

Because washes are typically the easiest routes of travel in the desert, and because any undercrossing of the UPRR would create a low point, hydrology and drainage issues will be one of the most important issues to address with the design of any project alternative moving forward. While an overcrossing would largely avoid hydrology and floodplain issues, an undercrossing would be subjected to periodic inundation and sedimentation.

#### **4.2.5 Water Quality and Stormwater**

The ISDRA Resource Area Management Plan (RAMP) states that BLM activities or authorized activities shall not degrade surface or groundwater by identifying and protecting surface waters, where possible, and preserving and enhancing natural conditions and hydrology of washes.

All project alternatives would be expected to prevent or reduce water quality degradation through implementation of applicable Best Management Practices (BMP) to protect water quality or other specific mitigation measures. Additionally, alternatives that maintain authorized vehicle routes in a manner that promotes natural hydrology and protect water quality would be preferable.

#### **4.2.6 Air Quality**

The BLM is currently working within an approved plan that sets forth control measures to help curb particulate matter with an aerodynamic diameter of 10 microns or less emissions.

An air quality technical study would be required for any of the selected project alternatives. Impacts would likely be significant and mitigation measures would be required including a dust control plan. None of the

alternatives has clear advantage over the others. The air quality study would be required for lands under the jurisdiction of the BLM, Caltrans, and the County.

#### **4.2.7 Cultural Resources**

RECON performed a records search at the California Historical Resources Information System, South Coastal Information Center at San Diego State University and a letter was sent to the Native American Heritage Commission (NAHC) requesting they search their files to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity.

The record search indicated that 27 cultural resources investigations have been conducted and 11 cultural resources identified within the one-mile search radius from the study area (see Table 1 in Appendix B). The study area itself has not been surveyed in the past. The historic sites previously identified within the one-mile search radius include historic trash scatters, a cemetery, and features associated with the railroad. The prehistoric sites are comprised of a lithic scatter and a ceramic scatter. Five sites are located within or immediately adjacent to the study area. Of these, only one, the Historic Southern Pacific Railroad site (now known as the UPRR), has been evaluated and recommended as eligible for listing as a historic site. This resource would be impacted by all four alternatives. The other four resources within the study area have not been evaluated.

Historic aerial photographs from 1961 and 1996 were examined for structures over 50 years of age. None were identified.

If either Alternative 78-O or 78T-O is chosen, several identified cultural resources would likely require formal evaluation to determine if impacts would be considered adverse. Additional resources are within the study area but not in the footprint of any of the alternatives.

Based upon a reconnaissance of aerial photographs and noting the existing disturbances such as the construction of the dikes for flood control, the construction of the railroad, a significant amount of off-road vehicle activity, and the scouring of washes and transport of sediment due to rain events, the disturbed condition of the study area presents a very low potential for intact cultural resources.

#### **4.2.8 Biological Environment**

The sensitivity of biological resources on the western side of the UPRR ROW is low as much of the area between the railroad and Wash Road has been disturbed by development and intensive use. However, much of the project study area east of the UPRR ROW exhibits limited recent disturbance and is considered sensitive. For all alternatives, likely biological impacts are a function of the size of the disturbed area east of the UPRR ROW.

Biological surveys for special status/rare plants and wildlife species, particularly Pierson's milk vetch and reptiles such as the desert tortoise, flat-tailed horned lizard, and fringed-toed lizard, are recommended and rare plant surveys would likely be required.

During subsequent project phases a Biological Assessment (BA) addressing the federally listed species should be prepared once the limits of the project alternatives have been defined. This would include protocol surveys for the desert tortoise. Informal consultation should be initiated with the US Fish and Wildlife Service to determine the scope of the BA.

For Alternatives 78-O and 78T-O, which would impact Caltrans and private property, informal consultation with the California Department of Fish and Wildlife should be initiated for potential impacts. Additionally, a Natural Environment Study (NES) would also be required for potential impacts to Caltrans properties. The biological resources studies would need to conform to the requirements of the BLM, Caltrans, and County, depending on the alternative selected and the underlying ownership and management responsibilities.

### **4.3 Preliminary Engineering Considerations**

The following sections outline the primary areas of consideration for design and engineering of the crossing. These include restrictions and guidelines that all alternatives must meet as well as areas that only affect certain alternatives.

#### **4.3.1 Railroad**

The UPRR is the central component of the crossing project. The UPRR route running through the study area is a portion of the UPRR Yuma Subdivision Mainline in the vicinity of CP Glamis. The route is single-track at the south end of the study area and switches to a double-track route within the study area at CP Glamis located at UPRR MP 698.78 approximately 0.5 miles southeast of the intersection with SR 78. UPRR currently plans to add an additional track through the study area. The study area includes the UPRR line from approximately MP 698.12 to MP 701.20.

Any structures or approaches built to cross the UPRR line are required to adhere to the Guidelines for Railroad Grade Separation Projects published by the UPRR and BNSF railroads. The guidelines include requirements for clearances including a minimum permanent vertical clearance of 23'-6" above top of rail for any overhead structures and a 21'-6" temporary vertical clearance during construction. Additional guidelines for clearances and depths of footings or other structure components within the UPRR ROW are included in the guidelines. For underpass structures that carry the rail itself, guidelines are in the document for design loading and requirements for all primary components of the bridge, including approach slabs and impact protection. Pursuant to its guidelines, UPRR discourages underpass structures.

Construction of an underpass structure would also require a shoofly (a rail line detour route, to be constructed so that rail operations are not unacceptably interrupted during construction). The proposed shoofly track is to be designed to the current authorized speeds along the line and any temporary structures needed for the shoofly must meet standard American Railway Engineering and Maintenance-of-Way Association (AREMA) design loading.

All temporary shoring systems that impact railroad operations and/or support the railroad embankment shall be designed and constructed per the Railroad Guidelines for Temporary Shoring (UPRR 2004). This

includes a requirement that shoring is not to be closer than 12 feet from the centerline of the nearest track unless special approval from the railroad is acquired.

#### 4.3.2 Utilities

The project is not expected to incorporate any new utilities as part of the project. No lighting or mechanical systems are proposed on the new grade separated crossing alternatives.

The project study area portion running along the UPRR line is identified as a Utility Corridor. A detailed utility search has not been completed as part of this phase of the project; however, a minimum of two utilities within the area have been identified that would potentially be impacted by the project.

**Kinder Morgan Fuel Line** - Running along the west side of the rail line approximately 35 feet from the westmost rail line is a buried 20-inch fuel products line owned by Kinder Morgan. The depth is uncertain but is likely in the range of 3 feet to 10 feet below ground surface (bgs). The utility is within the UPRR ROW. Any construction that limits access to this utility or imposes additional load onto this utility line may require mitigation measures such as casings or protective coverings.

The overhead alternatives that span the UPRR ROW, would not have permanent impacts on the utility as they would span it. Construction impacts such as falsework placement can be positioned to avoid the utility. The underpass option (9.5-U) would have a direct impact on the utility and likely require the utility to be repositioned to a greater depth. This impact would bring a significant cost and additional construction and planning schedule risk.

**Railroad Communication Lines** – Communication lines critical to the operation of the railroad run parallel to the rail lines on the west side of the tracks. Interruption of these lines is a paramount safety concern for the rail line. Any planned modifications that would require replacement or relocation of these utilities would add additional construction cost and schedule impacts to the project.

The overhead alternatives would not be expected to impact these utilities. The underpass option would require relocation of the utilities.

#### 4.3.3 Geotechnical

The geologic conditions at the site consist of loose, wind-blown sands of varying thickness, overlying denser sands and gravel at depth. The windblown sands could be near the surface to approximately 10 feet deep within the project study area. In areas of existing drainages and washes, loose sands and gravels may also be present. Soils consist of light brown to light orangish brown fine to medium grain sand and silty sand.

The underlying dense sands could provide suitable bearing capacity to support proposed bridge structures on spread footing foundations. However, depending on drainage and localized scouring and erosion, deep foundations such as cast-in-drilled-hole (CIDH) piles may be considered. For the alternatives in this

study, it is assumed that drainage and foundation locations would be placed such that spread footing foundations can be used. This is a significant construction cost and schedule savings.

This Glamis area has significant seismic shaking levels and seismic behavior of the structures would be an important aspect of the design. However, a low risk of liquefaction or lateral spreading hazards is expected to be within the area.

Lightly loaded structures such as cast-in-place (CIP) retaining walls or mechanically stabilized earth (MSE) walls could be supported on spread footing foundations provided loose sands are over-excavated and replaced with compacted, engineered fill. The on-site soils could be used as materials for engineered fill and wall backfill.

#### **4.3.4 Structure**

Both bridge and retaining wall structures will be a part of the alternative selected. The bridge structure will provide the grade separated crossing of the UPRR.

Overhead structures and retaining walls will be designed according to the AASHTO LRFD Bridge Design Specifications with appropriate Caltrans amendments and the AASHTO Guide Specification for the Design of Pedestrian Bridges. For the alternative that will carry SR 78 over the UPRR as well, standard Caltrans bridge design loading and procedures would be used. For the overhead structures carrying the trail only, the loading considered within the Specification for Pedestrian Bridges will be appropriate. This specification includes provisions for maintenance vehicles and for long spans such as this, and provides sufficient load carrying capacity for OHVs and emergency vehicles capable of operating on the trail system.

For the alternative utilizing an underpass structure, the design of the structure and adjacent retaining walls will be in accordance with the AREMA design guidelines.

Given the exceptionally hot and dry climate of the area, it is expected that standard bridge construction materials such as concrete and steel will perform well. Exposed steel will likely be weathering steel, also known as core-10 steel, to provide corrosion resistant steel without the need for painting. The riding surface on bridge would be a concrete deck surface. This is because the additional weight of adding a dirt or gravel path onto the bridge would be significant, particularly for the spans required for the overcrossing options. Additionally, maintenance and periodic inspection of the bridge would be greatly complicated if a dirt or gravel path is overlaid on the bridge.

For the purposes of this study, retaining walls are assumed for a majority of the approach sections. Where possible, the approaches may be graded with sloped embankments. However, in order to minimize impacts to the adjacent roads, UPRR ROW, and the surrounding environment, it is also assumed that extensive retaining walls would be used. It is assumed that during later design phases of the project, the extent of the walls may be minimized to balance the various impacts.

The riding surface atop the retaining walls may be a dirt surface to allow for a more natural off-road riding experience. This is not a typical design above retaining wall approaches; therefore, special detailing and

coordination would be required during the design phase of the project, as well as proper selection of a retaining wall type that would provide a low maintenance and durable performance with a pervious top surface.

Fall protection barriers and fencing would be required along the retaining walls and the bridge. Within the UPRR ROW, a minimum 8-foot high curved or 10-foot vertical fence is required in accordance with the Guidelines for Railroad Grade Separation Projects. Barrier ends would have appropriate crash-cushions appropriately sized for OHVs.

#### **4.3.5 Drainage**

The approach for all alternatives would be to maintain the historical drainage flow as much as possible. The area drains from the east to the west side of the tracks through existing washes running underneath the UPRR rail lines. Stormwater is diverted to these washes by a series of chevron dikes placed along the eastern side of the UPRR rail line. Alternatives placed within or adjacent to these existing washes would have the most significant impact on existing stormwater.

For newly introduced impervious surfaces such as bridge decks, stormwater catch basins would be used to convey stormwater from the deck surface to the surface where it would be properly dissipated. In areas where new walls or embankment would impede historic drainage flows, storm drainpipes would be placed through the walls or embankment.

#### **4.3.6 Roadway and Trail**

Existing trails and roads provide the connections to areas of interest on both sides of the tracks for OHV users. Each alternative will intersect with this existing network and must provide access to the network in a recognizable and safe manner.

The new approach routes for the crossing alternatives would consist of dirt trails. These trails are assumed to be similar to many of the existing routes currently open to OHV use on the eastern side. They should be minimally improved dirt trails with sufficient width of bidirectional OHV use. The trails would be configured to limit the changes to the existing drainage where possible.

At the north end of the study area, SR 78 is a two-lane highway approximately located at MP 41 within Imperial County. The route is also known as the Ben Hulse Highway. The route has a functional classification of Minor Arterial Highway according to current California Highway System maps. The posted speed limit is 55 miles per hour. The 2017 Traffic Census data indicates an Average ADT of 1,550 vehicles westbound and 1,650 vehicles eastbound with peak monthly ADT of 1,800 and 1,850, respectively. This road and its crossing of the rail does not legally allow OHVs to drive across the tracks. OHVs are allowed to cross perpendicular to the highway and they can be pushed (non-motorized) across the tracks at the crossing.

Ted Kipf Road, running parallel to the rail line ROW along the eastern edge of the study area, is a County maintained two-lane unimproved road. The road is a prescriptive road, indicating it is legal for OHVs to

cross the road but not drive on it. On the north side of SR 78, Ted Kipf Road switches over to the western side of the rail line ROW. Ted Kipf Road is currently not open to OHV use, however, many of the designated routes intersect the road. These intersections make this road a likely connecting route and would provide improved access to routes on the eastern side of the rail line.

Wash Road, running parallel to the rail line along the western side of the study area, is a BLM developed and maintained unimproved road running from SR 78 southeast to Ogilby Road. This road is a significant route for recreational users during peak usage season in the area for access with their street legal vehicles. Wash Road is not open to OHV traffic.

Each of the alternatives will intersect with Wash Road on the west side of the tracks. This intersection must provide a safe crossing that would not significantly impede traffic along Wash Road during times of high traffic. Good visibility and appropriate signage will be key to the safety of the intersection.

The overhead alternatives require modifications to the current alignment of Wash Road to make space for the approaches to the crossings.

#### **4.3.7 Construction**

Construction of each alternative will need to address areas specific to construction in the area. At this stage in the process, many of the construction details are not developed so construction productivity impacts are captured through increased costs for the project.

Productive work periods in the Glamis area are more constrained during the extremely hot summer climate. This will likely reduce overall productivity and extend the total construction duration of the project compared to work periods in more temperate areas.

Working adjacent to the railroad will require flagging at all times when construction is occurring within 25 feet of the nearest rail or if any equipment has the potential to foul anywhere within 25 feet of the nearest rail. This is an additional cost and reduction to productivity, particularly with the use of heavy machinery within the ROW.

## **5 Alternative Analysis Results**

The details and principal features for each alternative are presented in this section. These alternative layouts are conceptual and intended to confirm the overall feasibility of the alternative while providing sufficient detail to understand the general scope of impacts and costs. Considerations for additional alternatives that are not presented in detail are included at the end of this section.

### **5.1 Initial Alternative Selection**

The primary considerations for the alternatives examined were the location of the alternative and the type of crossing.

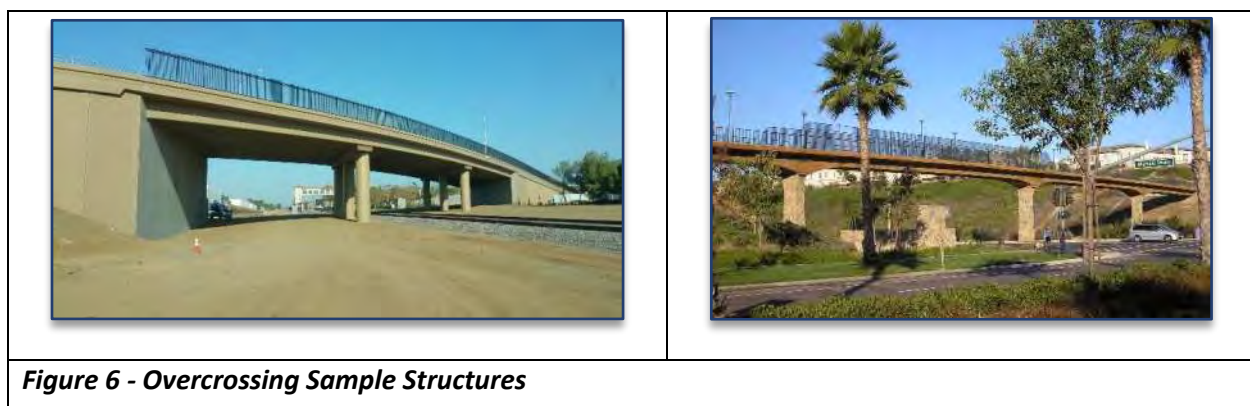


Based on discussions with the TWG and input received from the public, the most likely locations were around Wash 10 and near SR 78. Significant public support was received for a crossing near Wash 10. This was the historic location of the crossing and provides easy access to the Boardmanville Store. The area to the west of Wash 10 is also a heavily used camping area.

The areas around SR 78 are regularly visited and highly visible to all users. It also has the advantage of being near SR 78 for maintenance access.

The other consideration was if the crossing should be an underpass, where the trail goes underneath the rail line, or an overcrossing where the trail passes over the top of the railroad. In each case it was assumed that the railroad would remain at its current elevation. This is because changing the grade of a rail line requires modification for long distances in each direction due to the grade limitations of a heavy rail line.

Examples of sample undercrossings are shown in Figure 5. Examples of sample overcrossings are shown in Figure 6.



## 5.2 Alternative 78-O

Alternative 78-O would construct a new overhead structure in the current location of SR 78 and carry both SR 78 and a new protected OHV trail lane over the rail line. The layout of this alternative is shown in the figure below with additional figures provided in Appendix A.

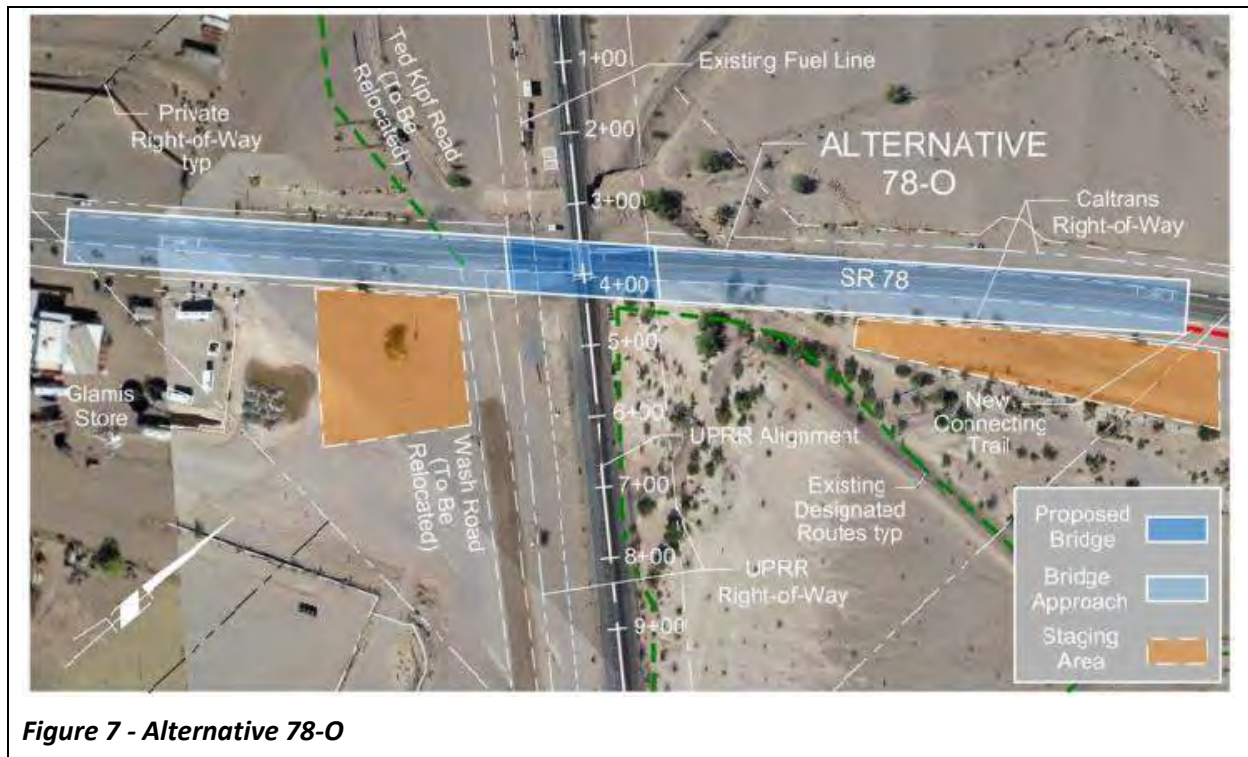


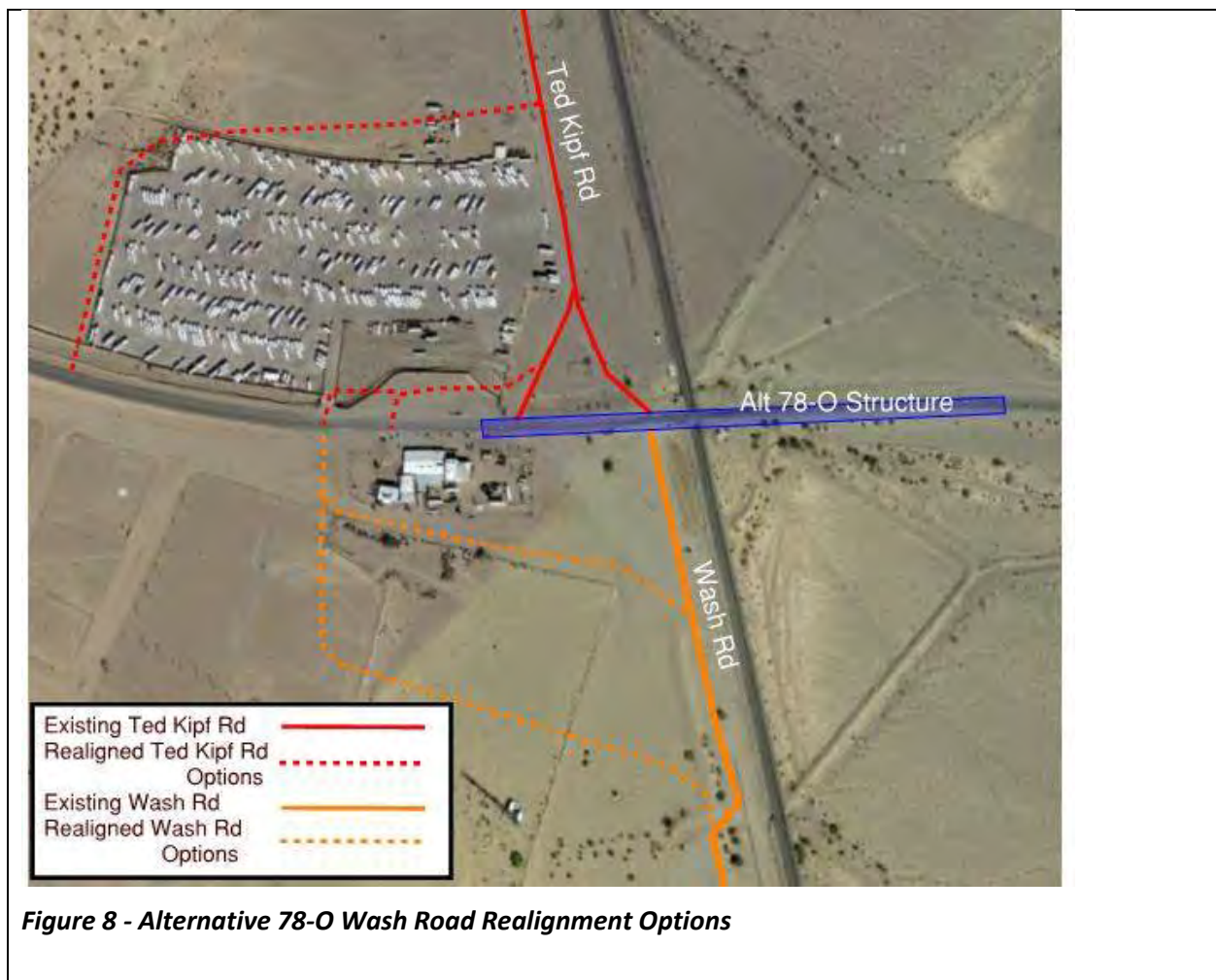
Figure 7 - Alternative 78-O

**Alignment** – This alternative follows the existing SR 78 alignment. The trail portion of the structure would be located on the south side of the highway. Beginning on the west end near the Glamis Beach Store, the approach would rise steeply to make the required clearance over the rail line and then descend less steeply on the eastern side. Once the approach rejoins the existing grade, a new connecting trail would branch off and intersect with Ted Kipf Road. Similar to other options being considered, in order to connect with many of the existing designated routes terminating at Ted Kipf Road, a modification to Ted Kipf Road or a parallel trail would be needed.

Once OHVs enter the wall-supported approach at either end of the SR 78 alternative, the only exit would be to the opposite side of the rail line. A barrier would separate the OHVs from traffic and cut off any access across SR 78. Bicycle traffic along SR 78 would continue to use the shoulder bike lanes.

The raised alignment of SR 78 would cut off the current access points for Wash Road and the continuation of Ted Kipf Road west of the existing rail crossing. This would require a significant relocation and reconstruction of these roads including placing Wash Road further into the dune area and through a separate part of the private property. A few feasible options for the realignment of Wash Road are shown in Figure 6 to indicate potential solutions. However, a thorough study of the alternatives and coordination

with the affected stakeholders would be needed to arrive at a realignment preference. This would be accomplished during subsequent phases of the project for this alternative.



**Structures** – The main structure span is assumed to be a 210-foot single span CIP concrete box girder bridge structure approximately 10 feet deep. This is the most common highway bridge construction type in the State of California, although this span length is at the long end of the range for typical bridge construction. The long span also makes the use of precast girders infeasible. Steel girders may be feasible at this span length, however, for the purposes of this study, the more conventional structure type for this span length is assumed. The substructure would be concrete abutments founded on spread footings.

The approaches to the bridge would be retained earth structures supporting the roadway and trail. The walls would range from approximately 3 feet tall at the ends to over 35 feet tall at the bridge abutments. The walls would likely be an MSE-style retaining wall as they are cost effective and flexible in their configurations.

Typical highway crash barriers with appropriate end treatments would be used along the length of the approaches and bridge structure, including an intermediate barrier to separate highway traffic from OHV traffic. Appropriate height fencing would be placed over the UPRR ROW.

**Railroad** – This alternative would have a minimal impact on the railroad operations. The above grade permanent structure would clear span the UPRR ROW. Abutment walls would be located just outside the ROW. The only potential permanent structure may be the foundation footings which may extend into the ROW. However, these would be located at the edges of the ROW and sufficiently deep to not impede rail operations.

Flagging would be required when working within the ROW or with equipment such as cranes that may foul within 25 feet of the nearest rail. Compared to the other alternatives, the duration of temporary impact to the UPRR would be significantly longer for this alternative due to the staged construction, the overall size of the new bridge, and the CIP concrete structure. A significant amount of falsework would be placed in the UPRR ROW but sufficiently clear of the operating rail line as to not impede regular operations. Cranes would also be operating within the ROW during construction.

The trail approach retaining walls would impede sight lines at the existing at-grade crossing. In coordination with the CPUC, the crossing safety features including signaling, lighting, and crossing arms will likely require safety upgrades and modifications to the existing crossing due to the reduced sight distance at the crossing.

At this location, the rail line is currently a double-track operation with proposed plans to add a third track on the north side of the existing lines.

This option will provide a significant safety improvement in eliminating the at-grade crossing for users of SR 78. This is a significant added benefit outside of the originally stated goals of this project.

**Private Right of Way Impacts** – While this alternative is within the Caltrans ROW, it would have significant operational impacts to the private property on either side. The construction of the western approach retaining wall would block cross traffic between the parcels on either side of SR 78 and extend partially in front of the existing Glamis Beach Store.

Additionally, current access to the parcels on all four corners of the SR 78 and UPRR intersection is directly from SR 78 along nearly the entire length of the parcels. This access would be eliminated along the east and west approach lengths. The property owner is currently working on plans and approvals for significant development of these parcels including additional commercial and hospitality facilities. This alternative could impact the proposed development and these concerns will be considered as they relate to the crossing alternative development.

The assumed construction staging areas are also likely to be located on the private property parcels.

**Utilities** – Although few utilities were identified along SR 78, the local connections for the Glamis Beach Store would be impacted by construction of this alternative. Relocation of these utilities is anticipated.

The primary utility corridor running within the UPRR ROW that carries the major fuel line would not be impacted by this alternative.

**Stormwater** - Historical drainage north and south of SR-78 would continue with minimal impacts. Drainage from bridge roadway and approach would be piped down to existing shoulders.

**Construction Staging** - Since this alternative reconstructs the existing SR 78 highway in its current alignment, the staging of construction would be the most complex of all alternatives. Both traffic along SR 78 and rail operations would need to be maintained during construction (see Figure 7 below).

Phase 1 – Traffic would need to be shifted to the north side of SR 78. Additional temporary roadway may be needed as well as modifications to the crossing signals. The southern half of the bridge would be constructed first. The southern approach walls would be constructed in this phase, and a temporary wall would be placed to support the northern edge of Phase 2 traffic.

Phase 2 – Traffic would be shifted to the newly completed southern half of the bridge and approaches. The crossing signals would then be taken out of service. The northern half of the bridge and approach walls would be constructed with the temporary wall buried or abandoned in place.

Phase 3 – Highway traffic would be shifted into the final configuration. The intermediate OHV trail lane barrier would then be placed and then the OHV lane would be opened.

Staging and stockpile areas would be needed on both sides of the UPRR ROW.

**Responsible Agency** – The lead agency for this alignment can only be Caltrans. The new facility lies entirely within Caltrans ROW and the new SR 78 structure would be a Caltrans facility.

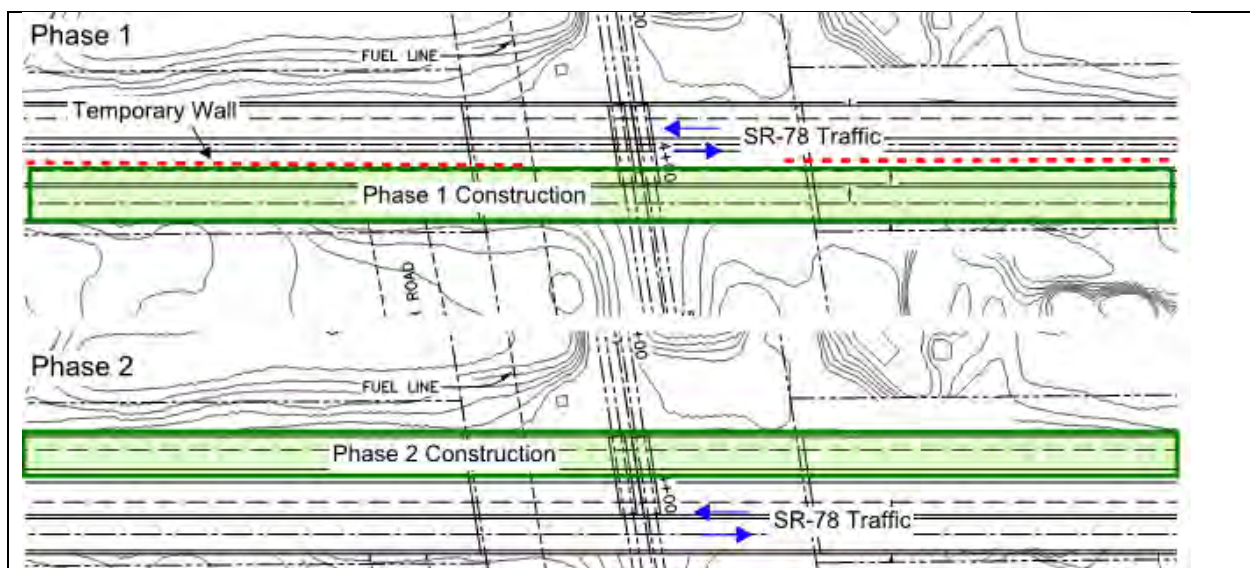


Figure 9 - Alternative 78-O Construction Staging

### 5.3 Alternative 78T-O

Alternative 78T-O would include a new overhead structure located just south of SR 78 and carrying a new OHV trail over the UPRR rail line and Wash Road. The layout of this alternative is shown in the figure below with additional figures provided in Appendix A.

**Alignment** – Beginning on the south side closest to the existing Glamis Store, the alignment would run northeast, elevate, and then turning to cross Wash Road and the UPRR ROW perpendicular to the rail alignment. On the east side of the rail line, the trail would descend to meet existing grade. Once the alignment reaches existing grade, a new connecting trail would branch off and intersect with Ted Kipf Road. Similar to other options, in order to then connect with many of the existing designated routes terminating at Ted Kipf Road, a modification to Ted Kipf Road or a paralleling trail is needed.

The new connecting trail may follow or parallel the existing wash. The new trail connection would include a 24-foot-wide Class II Base roadway transition of approximately 100 feet in length between the new bridge crossing and existing trails. In later stages of the project, some alignment refinements would likely occur for the curves and the eastern approach interaction with the existing drainage.



Figure 10 - Alternative 78T-O

**Structures** – The main structure span is assumed to be a 250-foot steel truss superstructure approximately 20 feet deep. The substructure would be concrete abutments founded on spread footings. The truss would be a highly visible focal point in the area given that the top would rise over 50 feet from the typical ground surface. Truss configurations vary, but options such as bow-string trusses or other arch truss variations may be explored during subsequent project phases.

The approaches to the bridge would be retained earth structures supporting the trail. The walls range from approximately 4 feet tall at the ends to over 30 feet tall at the bridge abutments. The walls would likely be an MSE-style retaining wall as they are cost effective and flexible in their configurations. Earthen fill would be placed at the approaches to a height of approximately 10 feet.

OHV appropriate crash barriers would be used on the outsides along the length of the approaches and bridge structure. Appropriate height fencing would be placed over the UPRR ROW.

**Railroad** – This alternative would have a minimal impact on railroad operations. The above grade permanent structure would clear span the UPRR ROW. Abutment walls would be located just outside the ROW. The only potential permanent structure may be the foundation footings, which may extend into the ROW. However, these would be located at the edges of the ROW and sufficiently deep to not impede rail operations.

Flagging would be required when working within the ROW or with equipment such as cranes that may foul within 25 feet of the nearest rail. Some temporary shoring is expected within the ROW that would be sufficiently clear of the operating rail line to not impede regular operations. During placement of the truss structure components, large cranes would be staged on both sides of the tracks and likely within the ROW. Once the truss framing is in place, work would continue above the tracks in a protected manner.

The trail approach retaining walls would impede sight lines at the existing at-grade crossing. In coordination with the CPUC, the crossing safety features including signaling, lighting, and crossing arms would likely require safety upgrades and modifications to the existing crossing due to the reduced sight distance at the crossing.

At this location, the rail line is currently a double-track operation with proposed plans to add a third track on the north side of the existing lines.

**Private ROW** – This alternative would place the new structures entirely within the existing private ROW. The impacted areas of the ROW are located at the edges of the properties and behind the existing Glamis Store, and the impacted parcel to the east of the rail line is currently undeveloped. On the western side, the location of the trail approach section is currently configured to minimize OHV traffic impacts in front of the store and along Wash Road.

Some refinement of the approach alignment will likely occur in future phases and will be facilitated by development plans for the property clarifying development intent in the area. This alternative could impact the proposed development and these concerns will be considered as they relate to the crossing alternative development.

The assumed construction staging areas are also likely to be located on the private property parcels.

**Utilities** - The primary utility corridor running within the UPRR ROW and carrying the major fuel line would not be impacted by this alternative.

**Stormwater** - Historical drainage flows and flow patterns would continue with minimal impacts. The proposed crossing location is located within an area of low storm runoff potential. The installation of storm drain pipeline crossings under the proposed bridge and approach would allow historical flows to continue their existing flow patterns.

**Construction Staging**– Staging of this alternative is relatively straight forward. Staging and stockpile areas would be needed on both sides of the UPRR ROW, minimizing crossing of the tracks by construction personnel. The main span truss would be delivered in pieces and erected using cranes and temporary shoring. Approach wall and drainage facility construction can occur without impacts to UPRR or OHV user operations.

Construction access would be directly from SR 78.

**Responsible Agency** - The likely lead agency for this alignment could be either Caltrans or Imperial County or as a co-owned facility between both entities. The alignment is adjacent to and potentially on the Caltrans ROW making it a feasible structure to fit into their maintenance and operations inventory. However, it does not tie directly to a Caltrans facility and could be configured to largely avoid the Caltrans ROW, making it feasible as a County-owned facility.

#### 5.4 Alternative 9.5-U

Alternative 9.5-U would include a new underpass structure located between Washes 9 and 10, allowing a new OHV trail to pass under the rail line. A new underpass bridge would be placed to carry the rail line. The layout of this alternative is shown in the figure below with additional figures provided in Appendix A.



Figure 11 - Alternative 9.5U



**Alignment** – Beginning on the west side of the UPRR rail line, the alignment would intersect Wash Road at a T-intersection and drop down passing under the existing rail line perpendicular to its alignment. The alternative would then rise on the east side and a new connecting trail would then descend from the elevated chevron berm and intersect with Ted Kipf Road near the current Boardmanville turnoff. The new trail connection would include a 24-foot-wide Class II Base roadway transition between the new under crossing and existing trails.

Some alignment refinements may be required in later stages of the project development for the new connecting trails due to interaction with the existing drainage.

This alternative would place the crossing in an area currently without a nearby crossing and may improve emergency response times to the camping areas located in this area.

**Structures** – The new underpass structure would be a standard railroad double-cell box girder ballasted deck bridge with a span of approximately 22 feet. The substructure would be spread footing stem wall abutments. It is likely that the abutments may be built overly wide to facilitate the future double tracking or shifting of the track within the area without requiring modifications to the substructure. The extra width of the abutments would also act as the retaining structures for the approaches.

Along the approaches and butting up to the abutments would be cast-in-place retaining walls. In the event of future triple tracking or shifts beyond the limits of the project abutments, the retaining walls could be removed and replaced with new structure abutments without compromising the adjacent underpass structure.

It is feasible that the structure used could be extended to place more of the alignment under grade and provide additional space within the UPRR ROW above. This would add cost to the structure of the project, particularly if the below grade length exceeds the minimum underground length for a bridge and is categorized as a tunnel. The National Fire Protection Association classifies a tunnel as any structure longer than 75 feet below ground. If the alternative is modified to a length greater than 75 feet, significant additional design measures will be required potentially including ventilation and egress path protections.

A culvert structure was also considered at this location. The culvert is a feasible option to install; however, because construction would be staged in order to maintain rail operations, the bridge structure would provide more space and flexibility for staging and avoid a tunnel effect on the trail. Additionally, the bridge is a typical option given the spans and size of the opening as well as providing flexibility for future changes.

**Railroad** – Unlike the other alternatives, the majority of the permanent improvements for alternative 9.5-U occur within the UPRR ROW. This includes the rail supporting underpass structure and retaining walls supporting the fill adjacent to the approaches. The retaining walls would also support lateral loading from active rail lines.

In order to construct the new underpass structure without closing down the rail line, a shoofly would be constructed. The phasing of this construction is discussed under the Construction Staging heading below.

The shoofly would need to be designed to meet the current operating speeds of the rail corridor. It is estimated that in order to make the necessary reversing curves into and out of the shoofly, that shoofly would extend approximately 450 feet in each direction from the undercrossing or 900 feet total. The shoofly would most likely be placed west of the existing rail. Additional fill would be needed to support the shoofly along this entire length. This length of shoofly would be short enough that it would fit between Washes 9 and 10; consequently, no temporary culverts or structures over the existing washes would be needed.

Two short-term rail closures would be required to place trains in service on the shoofly and return them to the mainline. This would require a short-term closure window when the track is taken out of service and the transition made connecting or disconnecting the track with the shoofly section. The timing of this closure window would impose a schedule constraint on the project and need to be requested from and coordinated with UPRR.

Flagging would be required when working within the ROW or with equipment such as cranes that may foul within 25 feet of the nearest rail. Additionally, during staged construction of the alternative, some shoring of the existing rail line would be expected.

**Private ROW** – This alternative would have no impact to Private ROW.

**Utilities** - The primary utility corridor running within the UPRR ROW and carrying the major fuel line would be impacted by this alternative. It is expected that in dropping the grade for the approach to the underpass structure, the existing protective cover of the 20-inch petroleum products line would be compromised. It is assumed that this utility line would need to be relocated to a greater depth. This would require a trench excavation for a significant length of pipe likely several hundred feet. It is assumed that the lowering would require a shut-down of the line with adjustments to the pipe itself. This work would likely add considerable schedule constraint to the project as pipeline shutdowns are not simple to maintain.

It is feasible that a protective cover slab over the line or other measure may be incorporated to avoid relocating the utility. At this stage in the study, it is conservatively assumed for cost and impact planning purposes that the utility owner would require relocation.

**Stormwater** – Historical drainage flows and flow patterns within the surrounding areas would continue with minimal impacts. The proposed crossing location is located within an area of low storm runoff potential. The proposed crossing area would be protected by existing berms currently used to prevent storm runoff to enter this area and control the direction of existing storm runoff flows.

This alternative would create stormwater runoff to be collected at the lowest point of the crossing. This would require underground storage system (perforated 42 inch pipe) to be installed under the trail. This collection system would require periodic maintenance to make sure sediment does not build up and diminish the storm volume capacity.

**Construction Staging**— Because this alternative requires construction of major components supporting the operating rail line, construction staging would be necessary.

Phase 1 – Construction of the shoofly alignment and rail traffic would be transitioned onto the shoofly.

Phase 2 – With rail traffic on the shoofly, the new undercrossing structure would be constructed in place under the mainline track section. Once the new underpass structure is completed, rail traffic would be transitioned back onto the mainline using the new undercrossing structure.

Phase 3 – Approaches would be constructed.

Staging and stockpile areas would be needed on both sides of the UPRR ROW

**Responsible Agency** - The likely lead agency for this alignment would be Imperial County. The location is far from the Caltrans ROW and the alignment would tie directly into Ted Kipf Road which is a County facility.

## **5.5 Alternative 10-O**

Alternative 10-O would include a new overhead structure located at Wash 10 and carrying a new OHV trail over the rail line. The layout of this alternative is shown in the figure below, with additional figures provided in Appendix A.

**Alignment** – Beginning on the west side, the alignment would intersect Wash Road at a T-intersection and then immediately turn south and ramp up steeply parallel to Wash Road. The approach would then make a 90 degree turn and cross the UPRR ROW perpendicular to the rail line. On the east side, the approach would descend generally following the wash. A new connecting trail would then intersect with Ted Kipf Road near the current Boardmanville turnoff.

The new connecting trail may follow or parallel the existing wash. The new connecting trail would include a 24-foot-wide Class II Base roadway transition between the new bridge crossing and existing trails. In later stages of the project, some alignment refinements would likely occur for the curves and the eastern approach interaction between the existing drainage.

This alternative would place the crossing in an area currently without a nearby crossing and may improve emergency response times to the camping areas located in this area.

**Structures** – The main structure span is assumed to be a 210-foot steel truss superstructure approximately 20 feet deep. The substructure would be concrete abutments founded on spread footings. The truss would be a highly visible focal point in the area given the top of it would rise over 50 feet from the typical ground surface. Truss configurations vary, but options such as bow-string trusses or other arch truss variations may be explored during subsequent project phases.

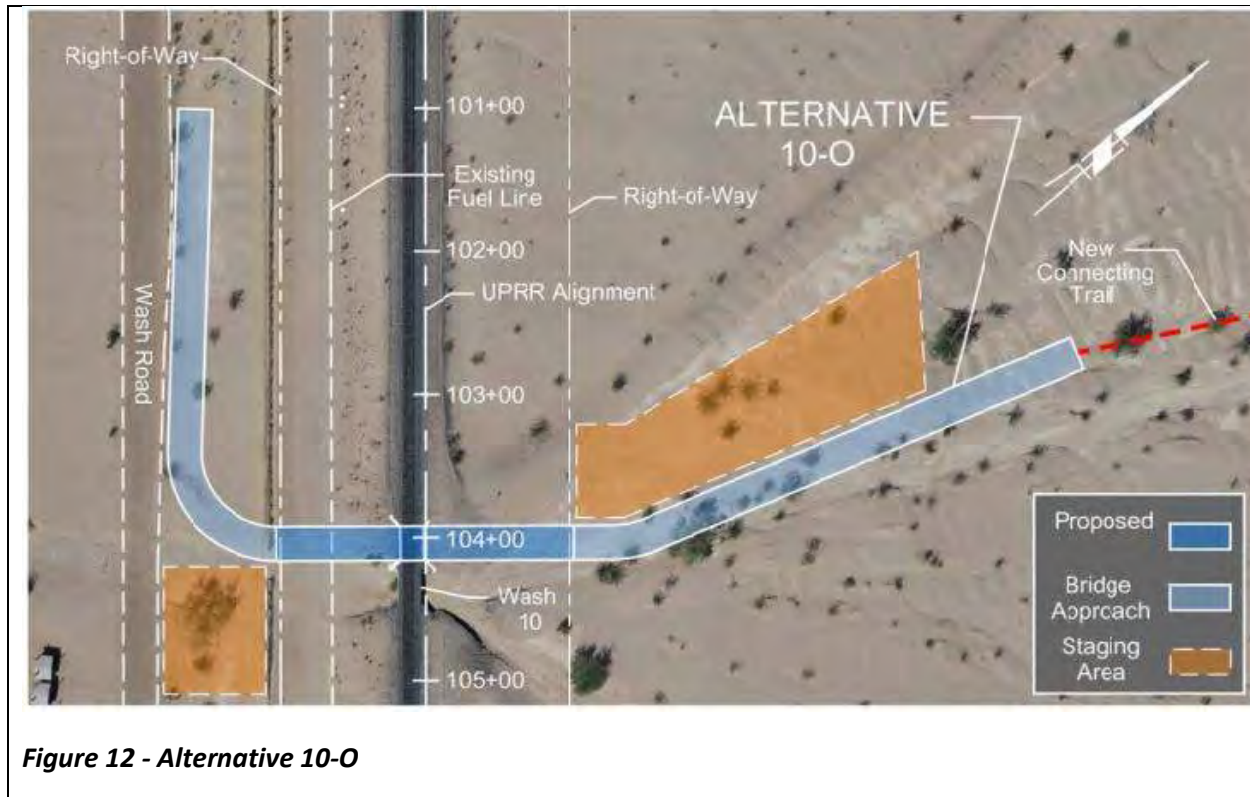


Figure 12 - Alternative 10-O

The approaches to the bridge would be retained earth structures supporting the trail. The walls would range from approximately 4 feet tall at the ends to over 30 feet tall at the bridge abutments. The walls would likely be an MSE-style retaining wall as they are cost effective and flexible in their configurations. This alternative includes earthen fill to be placed at the approaches to a height of approximately 10 feet.

OHV appropriate crash barriers would be used along the length of the approaches and bridge structure. Appropriate height fencing would be placed over the UPRR ROW.

**Railroad** – This alternative would have a minimal impact on railroad operations. The above grade permanent structure would clear span the UPRR ROW. Abutment walls would be located just outside the ROW. The only potential permanent structure may be the foundation footings, which may extend into the ROW. However, these would be located at the edges of the ROW and sufficiently deep to not impede rail operations.

Flagging would be required when working within the ROW, or with equipment such as cranes that may foul within 25 feet of the nearest rail. Some temporary shoring is expected within the ROW but sufficiently clear of the operating rail line to not impede regular operations. During placement of the truss structure components, large cranes would be staged on both sides of the tracks and likely within the ROW. However, once the truss framing is in place, work would continue above the tracks in a protected manner.

At this location, the rail line is currently a single-track operation with proposed plans to add a second track on the north side of the existing lines.

**Private ROW** – This alternative has no impact to Private ROW.

**Utilities** - The primary utility corridor running within the UPRR ROW and carrying the major fuel line would not be impacted by this alternative.

**Stormwater** – This alternative has the most significant drainage impact. The proposed crossing location is located within an area of high storm runoff potential. To mitigate historical drainage flows and flow patterns, the project would require the installation of a storm drainage collection and discharge system under the proposed bridge crossing and under the railroad.

The proposed trail bridge crossing is located within an existing storm drain crossing under the railroad. The existing storm drain crossing has a watershed tributary area of approximately 426 acres. This watershed area has the potential to produce approximately 378 CFS (cubic feet per second) of stormwater runoff. This alternative would require the installation of two 48-inch diameter concrete inlet pipes, a storm drain concrete junction box, and approximately 200 feet of 72-inch diameter concrete pipe.

**Construction Staging** – Staging of this alternative would be relatively straight forward. Staging and stockpile areas would be needed on both sides of the UPRR ROW, minimizing crossing of the tracks by construction personnel. The main span truss would be delivered in pieces and erected using cranes and temporary shoring. Approach wall and drainage facility construction could occur without impacts to UPRR or OHV user operations.

Construction access would be along Wash Road on the west and from Ted Kipf Road and along the connecting trail alignment.

**Responsible Agency** – The likely lead agency for this alignment would be Imperial County. The location is far from Caltrans ROW and the alignment would tie directly into Ted Kipf Road which is a County facility.

## 5.6 Additional Alternatives

The four alternatives presented above are the Grade Separated Crossings options that capture the areas and crossing types considered most feasible for the project. Other alternatives were proposed but are not included in the detailed study.

**At-Grade Crossing** – The intention of the feasibility study is to consider grade separated crossing alternatives. However, an at-grade crossing alternative was considered and discussed with the TWG as well. An at-grade crossing (either a new crossing or a modification to the existing SR 78 crossing) was considered to not be viable for several reasons. Primarily that CPUC policy opposes the expansion of at-grade crossings due to safety concerns and history of traffic incidents and fatalities at the location. Additionally, the UPRR would not support a new or expanded at-grade crossing of their ROW.

**Undercrossing of SR 78** – An alternative similar to 78-O but with an underpass structure in place of an overpass structure was also considered. This alternative would have less of an impact to the Glamis Beach Store property and shorter approaches. However, the complications with rerouting Wash Road and the

northern portion of Ted Kipf Road discussed with alternative 78-O would persist. Additionally, the rail impacts and maintenance impacts of a major underpass structure would be very significant and difficult to justify the need for an underpass structure in place of an overhead structure. For these reasons it was discussed but not advanced.

## 5.7 Alternative Scoring

### 5.7.1 Weighted Criteria

Table 2 presents a summary of the scoring results for each alternative as well as the weighted and unweighted total performance scores. Scores may range from 1 to 5, with 5 being the best feasible performance score for each criteria. The weighted score is normalized so that a perfect score would be 40. A summary of input for each score is provided for all criteria in Table 3.

**Table 2 - Alternative Scoring Summary**

|                                        | 78-O        | 78T-O       | 9.5-U       | 10-O        |
|----------------------------------------|-------------|-------------|-------------|-------------|
| 1. Connectivity                        | 2           | 3           | 5           | 4           |
| 2. Traffic on Existing Roads           | 3           | 4           | 5           | 4           |
| 3. Rail Operations During Construction | 4           | 5           | 3           | 5           |
| 4. Conflicts within Rail ROW           | 5           | 5           | 3           | 5           |
| 5. Conflicts with Private ROW          | 2           | 3           | 5           | 5           |
| 6. Maintenance and Operations Efforts  | 5           | 4           | 3           | 3           |
| 7. Sensitive Resources                 | 4           | 4           | 3           | 2           |
| 8. Aesthetics                          | 1           | 2           | 5           | 2           |
| <b>Weighted Performance Score</b>      | <b>32.3</b> | <b>34.6</b> | <b>28.0</b> | <b>32.9</b> |
| <i>Unweighted Score</i>                | 26          | 30          | 32          | 30          |

**Table 3 - Criteria Scoring Detail**

| Alternative                                                                                                                                                     | Score (1 to 5) | Notes                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Connectivity – How well does the alternative provide access to points of interest and improved connectivity to Designated Routes of Travel on the east side? |                |                                                                                                                                                                                                                                                                                                               |
| 78-O                                                                                                                                                            | 2              | <ul style="list-style-type: none"> <li>Provides very long approaches beginning far from the railroad</li> <li>Places OHV users adjacent to SR 78</li> <li>Reduces access across SR 78 and to Glamis Beach Store</li> </ul>                                                                                    |
| 78T-O                                                                                                                                                           | 3              | <ul style="list-style-type: none"> <li>Places OHV users near to SR 78</li> <li>Located near highly visible areas at SR 78</li> </ul>                                                                                                                                                                          |
| 9.5-U                                                                                                                                                           | 5              | <ul style="list-style-type: none"> <li>Provides direct and straight access across tracks</li> <li>Located near Boardmanville area of interest</li> <li>Provides access near historic access point</li> <li>Improved emergency response times with crossing located closer to central camping areas</li> </ul> |

| Alternative                                                                                                                                                                            | Score<br>(1 to 5) | Notes                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10-O                                                                                                                                                                                   | 4                 | <ul style="list-style-type: none"> <li>Provides access at historic access point</li> <li>Located near Boardmanville area of interest</li> <li>Requires indirect switchback on western approach</li> <li>Improved emergency response times with crossing located closer to central camping areas</li> </ul> |
| 2. <i>Traffic on Existing Roads – What are the safety and functionality impacts to SR 78, Wash Road, and Ted Kipf Road including during peak season?</i>                               |                   |                                                                                                                                                                                                                                                                                                            |
| 78-O                                                                                                                                                                                   | 3                 | <ul style="list-style-type: none"> <li>Cuts off access to current entry points onto Wash Road and Ted Kipf Road north of SR 78, rerouting traffic around Glamis Beach Store</li> <li>Provides significant safety improvement for SR 78 by eliminating at-grade crossing</li> </ul>                         |
| 78T-O                                                                                                                                                                                  | 4                 | <ul style="list-style-type: none"> <li>Reduces sight distance at existing SR 78 crossing of UPRR</li> <li>Introduces typical trail intersection to Ted Kipf Road</li> </ul>                                                                                                                                |
| 9.5-U                                                                                                                                                                                  | 5                 | <ul style="list-style-type: none"> <li>Provides straight T-intersection with good sight lines</li> <li>No change to SR 78</li> <li>Introduces typical trail intersection to Ted Kipf Road</li> </ul>                                                                                                       |
| 10-O                                                                                                                                                                                   | 4                 | <ul style="list-style-type: none"> <li>T-intersection with adjacent curve at intersection with Wash Road in area of Wash Road traffic during peak times</li> <li>No change to SR 78</li> <li>Introduces typical trail intersection to Ted Kipf Road</li> </ul>                                             |
| 3. <i>Rail Operations During Construction – How will construction of the project impact railroad operations?</i>                                                                       |                   |                                                                                                                                                                                                                                                                                                            |
| 78-O                                                                                                                                                                                   | 4                 | <ul style="list-style-type: none"> <li>Minimal direct rail impacts</li> <li>Long duration of construction over tracks</li> <li>Temporary modifications to at-grade signals required</li> </ul>                                                                                                             |
| 78T-O                                                                                                                                                                                  | 5                 | <ul style="list-style-type: none"> <li>Minimal rail impacts</li> </ul>                                                                                                                                                                                                                                     |
| 9.5-U                                                                                                                                                                                  | 3                 | <ul style="list-style-type: none"> <li>Will require short track closures for cut-in of shoofly track</li> <li>Will require two phases of shoring placed directly adjacent to rail lines</li> </ul>                                                                                                         |
| 10-O                                                                                                                                                                                   | 5                 | <ul style="list-style-type: none"> <li>Minimal rail impacts</li> </ul>                                                                                                                                                                                                                                     |
| 4. <i>Conflicts within Rail ROW—Will any permanent structures, easements or additional requirements occur within the UPRR ROW that will limit or burden future UPRR expansion?</i>     |                   |                                                                                                                                                                                                                                                                                                            |
| 78-O                                                                                                                                                                                   | 5                 | <ul style="list-style-type: none"> <li>No permanent structures</li> <li>Aerial easement only</li> </ul>                                                                                                                                                                                                    |
| 78T-O                                                                                                                                                                                  | 5                 | <ul style="list-style-type: none"> <li>No permanent structures</li> <li>Aerial easement only</li> </ul>                                                                                                                                                                                                    |
| 9.5-U                                                                                                                                                                                  | 3                 | <ul style="list-style-type: none"> <li>Future lines will require additional superstructure to be placed</li> <li>Does not eliminate space for future rail lines</li> <li>Can provide pre-built substructure for double-track</li> </ul>                                                                    |
| 10-O                                                                                                                                                                                   | 5                 | <ul style="list-style-type: none"> <li>No permanent structures</li> <li>Aerial easement only</li> </ul>                                                                                                                                                                                                    |
| 5. <i>Conflicts with Private ROW – Will any permanent impacts, easements or conflicts occur within existing private property that may conflict with current or future development?</i> |                   |                                                                                                                                                                                                                                                                                                            |
| 78-O                                                                                                                                                                                   | 2                 | <ul style="list-style-type: none"> <li>Significantly impacts access to all four private parcels within Study Area</li> <li>Requires Wash Road and northern run of Ted Kipf Road to undergo significant rerouting</li> </ul>                                                                                |
| 78T-O                                                                                                                                                                                  | 4                 | <ul style="list-style-type: none"> <li>Will require ROW acquisition or easement on two parcels</li> </ul>                                                                                                                                                                                                  |

| Alternative                                                                                                                                        | Score<br>(1 to 5) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9.5-U                                                                                                                                              | 5                 | <ul style="list-style-type: none"> <li>No impacts to Private ROW</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |
| 10-O                                                                                                                                               | 5                 | <ul style="list-style-type: none"> <li>No impacts to Private ROW</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |
| 6. <i>Maintenance and Operation Efforts – How significant will the future effort of maintenance and operations be for the final configuration?</i> |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 78-O                                                                                                                                               | 5                 | <ul style="list-style-type: none"> <li>Minimal maintenance for concrete structure</li> <li>Area has little impact on area stormwater drainage</li> <li>Concrete riding surfaces for approaches and bridge</li> </ul>                                                                                                                                                                                                            |
| 78T-O                                                                                                                                              | 4                 | <ul style="list-style-type: none"> <li>More involved inspections required for steel truss system</li> <li>Area has little impact on area stormwater drainage</li> <li>Concrete riding surface on bridge and optionally on approaches</li> </ul>                                                                                                                                                                                 |
| 9.5-U                                                                                                                                              | 3                 | <ul style="list-style-type: none"> <li>Minimal structures maintenance</li> <li>Introduced low point will require periodic sediment clearing</li> <li>Additional stormwater features will require maintenance</li> </ul>                                                                                                                                                                                                         |
| 10-O                                                                                                                                               | 3                 | <ul style="list-style-type: none"> <li>More involved inspections required for steel truss system</li> <li>Area collects significant stormwater drainage</li> <li>Additional stormwater conveyance features will require maintenance</li> <li>Concrete riding surface on bridge and optionally on approaches</li> </ul>                                                                                                          |
| 7. <i>Sensitive Resources – How will the alternative impact sensitive resources in the area?</i>                                                   |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 78-O                                                                                                                                               | 4                 | <ul style="list-style-type: none"> <li>Minimal sensitive resources in the Caltrans ROW and adjacent areas</li> <li>Long duration of construction will increase community impacts</li> <li>Some cultural resources identified near this area</li> <li>Minimal stormwater flow in this area</li> <li>Minimal impacts from connecting trail to Ted Kipf Road in SR 78 ROW</li> </ul>                                               |
| 78T-O                                                                                                                                              | 4                 | <ul style="list-style-type: none"> <li>Minimal sensitive resources in the Caltrans ROW and adjacent areas</li> <li>Some cultural resources identified near this area</li> <li>Minimal stormwater flow in this area</li> <li>Minimal impacts from connecting trail to Ted Kipf Road through desert scrub vegetation in a relatively disturbed area just south of SR 78 ROW</li> </ul>                                            |
| 9.5-U                                                                                                                                              | 3                 | <ul style="list-style-type: none"> <li>Minimal overall footprint</li> <li>Minimal stormwater flow in this area</li> <li>Sensitive biological resources on east side of UPRR ROW in relatively undisturbed area including potential desert tortoise habitat</li> <li>Requires trail to existing wash and Kipf Road through desert scrub vegetation</li> </ul>                                                                    |
| 10-O                                                                                                                                               | 2                 | <ul style="list-style-type: none"> <li>Footprint is primarily within previously disturbed areas</li> <li>Most significant impact to existing wash hydrology</li> <li>Significant stormwater flow in this area</li> <li>Sensitive biological resources on east side of UPRR ROW in relatively undisturbed area including potential desert tortoise habitat</li> <li>Utilizes existing wash route for connecting trail</li> </ul> |
| 8. <i>Aesthetics – Will the crossing detract from the user experience or adversely affect scenic vistas or viewsheds?</i>                          |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 78-O                                                                                                                                               | 1                 | <ul style="list-style-type: none"> <li>Structure will rise high above the surrounding area</li> <li>Tall walls will block ground level views around</li> </ul>                                                                                                                                                                                                                                                                  |
| 78T-O                                                                                                                                              | 2                 | <ul style="list-style-type: none"> <li>Structure will rise high above the surrounding area</li> </ul>                                                                                                                                                                                                                                                                                                                           |



| Alternative | Score<br>(1 to 5) | Notes                                                                                                                                                                                      |
|-------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                   | <ul style="list-style-type: none"> <li>Tall walls will block ground level views around</li> </ul>                                                                                          |
| 9.5-U       | 5                 | <ul style="list-style-type: none"> <li>Insignificant effect</li> <li>Structure will be below existing grade</li> <li>Structure is consistent in appearance with existing washes</li> </ul> |
| 10-O        | 2                 | <ul style="list-style-type: none"> <li>Structure will rise high above the surrounding area</li> <li>Tall walls will block ground level views around</li> </ul>                             |

## 5.8 Alternative Cost Estimates

This section summarizes cost estimate development for the Alternatives.

**Table 4 - Alternative Cost Estimates**

|                                                                          |       | 78-O                | 78T-O               | 9.5-U               | 10-O                |
|--------------------------------------------------------------------------|-------|---------------------|---------------------|---------------------|---------------------|
| <b>Capital Cost<br/>(Construction / ROW /<br/>Contingency)</b>           |       | \$28,000,000        | \$9,700,000         | \$8,100,000         | \$9,300,000         |
| <b>Support Cost<br/>(PAED/PSE/ Construction<br/>Support)</b>             |       | \$6,500,000         | \$2,300,000         | \$2,400,000         | \$2,200,000         |
| <b>Project Cost</b>                                                      |       | <b>\$34,500,000</b> | <b>\$12,000,000</b> | <b>\$10,500,000</b> | <b>\$11,500,000</b> |
| <b>Post-Construction<br/>Maintenance Cost<br/>(in year of const. \$)</b> |       |                     |                     |                     |                     |
|                                                                          | 20 yr | \$100,000           | \$170,000           | \$230,000           | \$250,000           |
|                                                                          | 30 yr | \$150,000           | \$255,000           | \$345,000           | \$375,000           |

The cost estimates were escalated based on the assumed layout of each alternative and project estimating assumptions typical to bridge construction in California.

Attachment G to this memorandum includes the Cost Summary, Cost Detail, and Operations and Maintenance Cost Detail for each alternative. The cost items methods and general assumptions are outlined below.

**Construction Cost** – For each alternative, the construction cost was estimated using planning level quantities from the alternative layout. The cost items were broken out between Civil Items and Structure Items. Civil Items include roadway, trail, drainage, environmental mitigation and monitoring, traffic control for roadway traffic, railroad flagging or shoo-fly items, and any necessary detours. Structure items included bridge and retaining wall. These items were quantified, and an assumed unit cost applied to the quantity. The unit costs were based on Caltrans unit price data as well as Caltrans Construction cost

guides. The unit costs used and assumptions for the different cost items are evident in the cost detail breakdown for each alternative.

**Right of Way Cost** – A cost for the ROW effort was assumed for each alternative as well. This cost estimates the acquisition, including fees and mitigation of temporary and permanent easements or permanent property acquisitions required for each alternative. It also includes the cost of utility relocations. ROW cost does not include access or development impacts to adjacent private property such as the Polaris property.

**Contingency** – The assumed contingency was 40 percent of the combined Construction and ROW cost. Based on the conceptual-only level of detail included as part of this study, the 40 percent contingency typical of planning level estimates was used.

**Project Approval/Environmental Documentation Support** – The PAED cost for each alternative was assumed based on the complexity and effort expected for each alternative. For the overhead crossing alternatives (78-O, 78T-O, and 10-O) a PAED cost of 10 percent of the Capital Cost was used. This is a typical value for standard bridge projects. For the undercrossing alternative (9.5-U) a PAED cost of 15 percent was used because of the additional effort and coordination expected to process an undercrossing structure.

**Plans, Specifications, and Estimate Support** – The PS&E portion of the project, which includes preparation of construction documents, was estimated based on the expected complexity of the final configuration as well as a function of the overall size of the project. For Alternative 78-O, which is a much larger but not more complex structure, the estimate was 7 percent of the Capital Cost. For the other alternatives, a slightly higher 8 percent of Capital Cost was used.

**Construction Support** – The Construction Support portion of the project includes construction management, engineering support during construction, and construction inspection. This portion was estimated based on the complexity of the project as well as the diversity of services and stakeholders involved in the final inspection and approval efforts. For the overhead crossing alternatives, a Construction Support cost of 10 percent of the Capital Cost was used. For the undercrossing alignment, a cost of 15 percent was used due to the additional complexity of the UPRR involvement and significant utility relocation.

**Maintenance and Operations** – The assumed maintenance and operations activities for each alternative were estimated for the first 20 and 30 years of operation for the crossing. Activities included in the estimate are comprised of routine bridge inspections, regrading of unpaved approaches which includes removal of drift sand, maintenance of drainage facilities, and assumed repairs to barriers or fencing due to minor OHV collisions. Major repairs due to a major collision, earthquake, or other extreme event are not included. Costs and frequency assumptions for each maintenance activity vary per alternative based on the effort and complexity of the alternative. For example, drainage maintenance for the SR78-O alternative is minimal and assumed to occur every five years while drainage maintenance for the 10-O

alternative which sits within a significant drainage way and includes more storm drain features is more expensive and assumed to occur each year.

## 5.9 Identification of Preferred Alternative

The alternative scoring indicates that 78T-O is the preferred alternative. It scores well in the areas with the highest weighting and has the highest overall score. It also benefits from being constructed in an area with minimal sensitive resource areas and minimal long-term drainage concerns. As an overcrossing structure it also minimizes the impacts to the railroad both during and after construction.

Alternative 78T-O does have impacts to the private property parcels owned by Polaris Inc. These properties are in plans for development and how the crossing may interact with the planned development should be a key consideration moving forward.

The cost of this alternative is comparable to the alternatives 9.5U and 10-O. All three trail only crossings have approximate costs of \$10.5 Million to \$12 Million. At the level of detail developed in this study, those costs differences should be considered negligible or within similar range of each other.

## 6 Implementation and Plan Recommendations

### 6.1 Project Implementation

This section summarizes the recommended actions needed to bring the project through the initial phases of planning to design, construction, and ultimately operation.

#### 6.1.1 Initial Actions

Several activities can be initiated or continue immediately as part of the project development. These activities will be important to setting the stage for the funding and development portions of the project.

##### Interparty Ownership Agreement

One of the key decisions to be made regarding a future OHV crossing is the ownership of the crossing. As the crossing is intended to be a public crossing, the CPUC and UPRR require that the owner be a public agency. It was recommended during the TWG meetings that a potential ownership structure for crossing alternative 78T-O could be joint or co-ownership of the facility between the public agencies. It is recommended that discussions regarding the structure and details of a co-ownership agreement proceed as early as possible following the completion of the FS as this agreement will be key to the decision-making process of the project planning and design.

The following are key items to determine and document in the co-ownership agreement:

- Development and Construction Funding Obligations
- Planning and Construction Oversight

- ROW Acquisition Ownership
- Maintenance Responsibility
- Major Event Damage
- Liability
- Enforcement

#### Grant Funding Applications

Several grant funding opportunities may be applicable to the project. The application cycles and deadlines for these grants vary by year. However, the documents prepared as part of this FS include typical elements for project grant funding applications such as project descriptions, stakeholder input, public outreach, conceptual design, and cost estimates. It is recommended that one of the stakeholder public agencies (Caltrans or Imperial County) take the lead on funding application preparation.

#### Coordination with Polaris Property

The most feasible crossing alternative currently lies within private property owned by the Polaris company on both sides of the railroad tracks. Polaris is currently working on plans to develop that property through the County. The project development team should continue to review and discuss with Polaris how the projects can interact to avoid conflicts and provide an all-around improved experience for OHV users in the area.

### **6.1.2 Project Development**

Following the identification of funding sources, the project will enter the development phases. A summary of the activities that will occur during these phases is provided below with an assumed duration and listing of activities provided in the development schedule.

#### Project Approval and Environmental Document Phase

The PAED phase is estimated at 24 months. This initial phase of the project will focus on finalizing the project concept and preliminary layout, identifying environmental considerations and the appropriate environmental documents required under CEQA and NEPA, coordinating agency and stakeholder concerns, and beginning the engineering process.

The environmental document phase is critical to approval of the project and identifying any required mitigations or other actions the project must address to gain environmental approval. For this FS, an Environmental Constraints Memo was prepared to provide a preliminary assessment of the environmental topics that will need to be addressed.

Coordination with the BLM will also occur during this initial phase. Any overcrossing or undercrossing will connect and provide additional access to BLM administered lands. The project may require BLM ROW

permits or other BLM lands and realty-related permits. Additional coordination with the proposed owner agencies will be required to coordinate items such as trail connections, usage, and enforcement.

The initial step in positioning for the CPUC clearance of the new crossing will be the Field Diagnostic meeting. This site walk will involve officials from CPUC, UPRR, and the owner agencies, and serve to discuss the safety and regulatory items the crossing design will need to address. Ultimately, a formal application to the CPUC will need to be submitted and this meeting will set the process in motion for that critical step.

During this phase, any other interagency agreements related to ownership should be finalized. Memoranda of understanding between other parties, including UPRR, will also be initiated as the total time for these agreements can be at least 36 months.

#### Plans, Specifications, and Estimate and Right of Way

During the next phase of the project, the detailed design and preparation of plans, construction specifications, and final construction cost estimates (PSE&E) will be prepared. This process will include several iterations of review of the design by the ownership agencies as well as UPRR. These reviews will provide comments to ensure the design is meeting the requirements of current codes and other required provisions. This phase is estimated to take 18 months to complete.

All ROW impacts, both permanent and temporary, will need to be finalized during this phase. This will include easements or acquisitions of private property, any federal land easements or agreements, and aerial easements within the UPRR ROW.

Coordination for utility relocation or other utility impact requirements will also be completed during this phase. The current most feasible alternative is not anticipated to have significant impacts to utilities as it will pass over the major petroleum line within the project area.

Agreements will be finalized and the formal crossing application will need to be approved by the CPUC prior to construction bid documents being finalized.

#### Construction Phase

Construction of the project is expected to last 12 months. The construction period will overlap the busy season since that is when the weather is most favorable for construction activities. Limitations on some construction activities will be necessary due to wildlife species or weather concerns. These will be determined during the environmental phase and documented in the project specifications.

### **6.1.3 Operation**

Maintenance and operation of the crossing will continue throughout the life of the facility. Annual or bi-annual maintenance activities will include routine bridge inspections, regrading of unpaved approaches including removal of drift sand, maintenance of drainage facilities, and assumed repairs to barriers or fencing due to minor OHV collisions. Major collisions or damage to the structure is not typical for a

concrete bridge structure as they are very durable compared to OHVs or even highway vehicles. However, if major damage were to occur, repairs would be required to provide a safe structure. Temporary closures of the crossing could be used if the damage resulted in an unsafe facility.

If a user fee collection system is initiated to fund part of the project, then the operation of that enterprise will be a significant operational effort for the other parties involved in the fee collection.

The typical design lifespan for infrastructure such as a concrete bridge and retaining wall system is 75 years minimum. However, if the structure is successful in providing a much-used access crossing, the owners should anticipate the need to maintain a crossing for the foreseeable future.

## **6.2 Policy Recommendations**

This section summarizes the recommendations for agreements and policy issues related to the potential project. It is not intended as an exhaustive checklist of agreements, approvals, permits, and other agency or entity coordination efforts that will be required as part of the project development. Rather it is a summary of the significant items that are uncommon or outside of the typical project development process.

Several parties will be involved in the development and approval of the project. As part of this project study, many of these parties participated in a series of TWG sessions to provide input on the feasibility study development.

The primary parties include:

- Imperial County
- California Department of Transportation
- Union Pacific Railroad
- California Public Utilities Commission
- Federal Bureau of Land Management
- Imperial County Transportation Commission
- California Highway Patrol
- Private property owners within the project study area
- OHV user groups

### **6.2.1 Interparty Agreements**

One of the key decisions to be made regarding a future OHV crossing is the ownership of the crossing. As the crossing is intended to be a public crossing, the CPUC and UPRR require that the owner be a public

agency or agencies. This owner will need several agreements with the adjacent entities, including UPRR and BLM. These agreements are common for facilities where multiple agencies or organizations intersect and include provisions for issues such as easements, access, liability, maintenance, etc. Close coordination between entities during development of the crossing project will be required to facilitate the resolution of these agreements.

It was recommended during the TWG meetings that one potential ownership structure for crossing alternative 78T-O could be a joint, or co-ownership of the facility between two public agencies. It is recommended that discussions regarding the structure and details of a co-ownership agreement proceed as early as possible in the project development, as this agreement will be key to the decision-making process of the project planning and design.

Following are key items and questions to resolve and document through the co-ownership agreement:

- a) Development and Construction Funding Obligations – Who will oversee the procurement of development and construction funds? Depending on what funding sources are used as part of the project, different agencies may be preferable. Federal funding through grants or other programs are typically administered through Caltrans but applied for by local agencies. If private donations or other locally procured funds are used, additional agreements may be necessary.
- b) Planning and Construction Oversight – Which agency will lead the planning, design, and construction of the project? This includes coordination with UPRR, BLM, and CPUC during project development as well as design and construction. How will responsibilities for reviews, approvals, inspections, and acceptance be shared? This agency will also be responsible for contracting with consultants, contractors, and other service providers that may be needed for the project.
- c) Maintenance Funding and Responsibility – The crossing is expected to require regular maintenance to meet its functional goals. The responsibility to perform and pay for this maintenance is a key concern. Expected maintenance activities are detailed in the Financial Feasibility Memo prepared as part of this study. One option for maintenance funds is a use fee of some type. The potential implementation, collection, and distribution of such a fee should be considered within the agreement.
- d) Major Event Damage – If a major event such as an earthquake, exceptional storm, major collision, or other event which causes major damage to the facility occurs, how will repair or replacement be handled?
- e) Right of Way Acquisition – If ROW is acquired as part of the project, which entity will acquire and maintain it? Will the property ownership be shared? This item should be considered closely with liability considerations.
- f) Liability – In the event of an incident on the crossing structure or within the limits of the crossing easement, how will liability, defense, and indemnification be shared between the agencies?

- g) Enforcement – How will rules and regulations for use of the facility be enforced? How will coordination with the other entities with enforcement responsibility (BLM, UPRR, CHP) occur within and around the proposed crossing area? Who will make the decision as to whether the facility will be shut down due to damage, enforcement concerns, or other concerns?

## 6.2.2 Policy Recommendations

It is anticipated that the crossing project will comply with current standards and regulations for a facility of this type. However, some use and design policy modifications are recommended.

### Use Recommendations

The primary policy change recommendation made by the TWG to help the project meet the intended goal of improving access, is a change to the use regulations of Ted Kipf Road to facilitate connections with other trails on the eastern side of the UPRR line.

The western portion of the study area is designated as an unrestricted open OHV use area, while the portion east of the railroad tracks is designated as a limited OHV use area (see Figure 3). Open OHV use areas typically allow all types of vehicle use anywhere in the area. Limited OHV use areas require vehicles to travel on only designated routes. Existing designated routes are shown in green in Figure 3.

Ted Kipf Road, running parallel to the rail line ROW along the eastern edge of the study area, is an Imperial County maintained two-lane unimproved road. The road is a prescriptive road, indicating it is legal for OHVs to cross the road but not drive on it. Ted Kipf Road is currently not open to OHV use; however, many of the designated routes terminate at the road. These intersections make this road a likely connecting route without which the trail access options are very limited once an OHV has crossed the rail tracks. Without the connecting route along Ted Kipf Road, the rail crossing facility will terminate OHV users with very few continuing options. This will likely lead to additional unauthorized trail cutting and enforcement concerns.

The recommended change to address this missing link is to modify the use designation of a portion of Ted Kipf Road to a dual-use road (also known as a combined-use facility). A dual-use road allows OHV vehicles to legally travel along the road with standard vehicle traffic. These have been implemented in other areas of Imperial County as well as around the state on a limited basis. Dual-use roads are intended to provide links to existing OHV trails and trailheads on federal BLM or US Forest Service lands to provide a unified linkage of trail systems.

The process for implementation of dual-use roads includes identification of the need and limits of a proposed dual-use section. Once the need and limits are proposed, several studies in cooperation with CHP, county, state and BLM officials are needed to verify and approve the need and limits. Key questions to be answered as part of the studies are: Are improvements needed to the road? How are the limits of the dual-use section communicated to users? How is enforcement performed?



Dual-use designation may include limitations on OHV in order to provide a safe environment for all users. Limitations may include provisions such as:

- Drivers must have in possession a valid driver's license for the vehicle operated
- Riding must be during daylight hours only
- Vehicles must have an operational stop light
- Owners must have vehicle insurance
- Posted speed limits must be obeyed
- Existing designated routes must be used when exiting or entering a dual-use route

#### Design Recommendations

Railroad crossing regulations as set forth by the CPUC will be a requirement of the project. Standards and practices for design of railroad grade separation structures as defined in the UPRR's Guidelines for Railroad Grade Separation Projects.

The structural design for the bridge, retaining walls, and paths shall also comply with the American Association of State Highway Transportation Officials (AASHTO) design standards as adopted within the State of California and the American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. However, because the facility will be OHV use only and not open to typical highway traffic, some additional provisions are needed.

These include:

- Barrier and fencing guidelines must be appropriate for OHV ranging from mountain bikes and motorcycles to sand rails and trophy trucks
- Live loads on the bridge must be considered; options could range from using pedestrian bridge guidelines with some multi-axle vehicles to assuming the bridge may handle a full weight truck

These provisions should be clarified and documented prior to the commencement of preliminary design.

### **6.3 Project Financing Options**

This section summarizes the most likely funding sources available for the project. However, applicable additional sources may exist or be identified during the development of the project.

#### **6.3.1 Design and Construction Funding**

The initial capital cost of project planning, design, and construction is the most significant hurdle to project completion. The conceptual cost for the most feasible alternative is estimated at \$12 Million in current year dollars. Given the unique nature of the project in providing primarily OHV access within federal

lands, many of the typical infrastructure funding programs used for roads and bridges are not applicable. Also note that BLM fees and funding are not intended as possible funding sources for the project. However, the unique nature of the project does present certain opportunities within programs targeted at improving access to federal lands or improved rail safety. A combination of the following sources should be considered for funding the project.

The table below presents a summary of the likely major funding sources with a discussion on each.

**Table 5 - Funding Program Summary**

| <i>Funding Program</i>                                            | <i>Description</i>                                                                                                                                                                                                                                       | <i>Application Information</i>                                                                                                                                                                                                                                                                                        | <i>Suitability to SR 78/Glamis Crossing</i> |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Federal Lands Access Program</b>                               | <ul style="list-style-type: none"> <li>Intended to improve transportation facilities that provide access to, are adjacent to, or within federal lands</li> <li>Emphasis on recreation sites and economic generators</li> </ul>                           | <ul style="list-style-type: none"> <li>Upcoming application anticipated October 2020; subsequent application deadline not yet published</li> <li>Selection criteria integrates well with the SR 78/Glamis project</li> <li>Match of 11.47% required</li> </ul>                                                        | High                                        |
| <b>Consolidated Rail Infrastructure &amp; Safety improvements</b> | <ul style="list-style-type: none"> <li>National program targeting rail corridor improvements to efficiency and safety</li> </ul>                                                                                                                         | <ul style="list-style-type: none"> <li>Applications typically occur each year</li> <li>Most recent application deadline was June 2020; 2021 application deadline not yet published</li> <li>Roadway grade separations are frequently funded</li> <li>History of safety concerns is important consideration</li> </ul> | Medium                                      |
| <b>CPUC Section 130 and Section 190 Programs</b>                  | <ul style="list-style-type: none"> <li>Statewide programs for rail crossing improvements</li> <li>Safety enhancement focused</li> <li>Section 130 focused on grade separations</li> <li>Section 190 based on applications from local agencies</li> </ul> | <ul style="list-style-type: none"> <li>Program is based on CPUC determined list of most critical roadway grade crossings statewide</li> <li>Section 190 funds a small number of projects through application process</li> <li>Priority list developed by CPUC by July 1 each year</li> </ul>                          | Low                                         |
| <b>Land and Water Conservation Fund</b>                           | <ul style="list-style-type: none"> <li>Provides matching grants to local governments aimed at creating, expanding, and developing park and recreation facilities</li> </ul>                                                                              | <ul style="list-style-type: none"> <li>Program established in 1964</li> <li>Additional funding committed in July 2020</li> <li>Next application cycle anticipated February 2022</li> <li>Requires non-federal matching funds</li> </ul>                                                                               | Medium                                      |

### Federal Lands Access Program

The program most relevant and applicable to the Glamis Multiuse Grade Separation Crossing project is the Federal Lands Access Program (FLAP). This program is intended to improve transportation facilities that provide access to, are adjacent to, or are located within federal lands, with an emphasis on high-use recreation sites and economic generators, all of which apply to the Glamis Crossing project.

The funds for the FLAP program are apportioned to states, and projects are selected by committees within each state. California receives one of the largest apportionments of approximately \$30 Million per fiscal year. The frequency of calls for projects is determined by the state committee. The previous call for projects in California was in October 2017 with the next scheduled for October 2020. The program does have a local match requirement. For the most recent cycle in California the match amount was 11.47 percent. Other federal funds are not allowed to be used as part of the local match. ROW acquisition and utility relocation can be used as matching funds.

Previous projects have included roadway improvements, box culvert replacements, bridge construction, and bike and pedestrian improvements. Given the high use of the ISDRA and the lack of current access for OHV users, the Glamis Crossing project should be very competitive in this program.

The evaluation criteria for the program are:

- Safety
- Preservation
- Natural Resource Protection
- Funding
- Program Risk

### Railroad Safety Improvement Funds

Many opportunities exist for railroad crossing safety improvement project grants. These are typically targeted at improving vehicle crossing safety at existing at-grade crossings with grade separations, improving warning devices, and track improvements. The Multiuse Grade Separation project should be eligible to apply for these funds, particularly since accidents have occurred at this crossing location in the past.

The primary federal grant program is known as the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program. The program funding can be used for planning, environmental studies, and design as well as construction of the infrastructure. In March 2020, the program announced 32 project recipients receiving \$248.5 Million in funds. The projects included pedestrian bridges, roadway grade separation structures, and passenger platform improvements among other items. The Multiuse

Grade Separation is a unique project; however, it shares the same overall mission of improving rail corridor safety as this program.

The CPUC administers several funding programs for railroad crossing improvements. The most applicable of these are the Section 130 and Section 190 Grade Crossing Hazard Elimination Program which provides federal funds to local agencies to eliminate hazards at at-grade crossings. The Section 130 program is based on a prioritized list of potential projects statewide developed by the CPUC. The Section 190 program typically funds only three to four projects each year and local agencies are responsible for submitting applications. Because the Glamis Crossing is not expected to grade separate the highway, it may not fare well in either the Section 130 or 190 programs.

It should be noted that if Alternative 78-O, the full grade separation of SR 78 with a combined OHV lane, is pursued, it would integrate much better into the rail safety improvements grant programs and could be very competitive within the Section 190 program.

#### Land and Water Conservation Fund

In July 2020, the federal government passed the Great American Outdoors Act, a significant legislative effort for funding national public lands. The initial impact of the law is a \$9 Billion fund to be used over the next five years to fix deferred maintenance at national parks, wildlife refuges, forests, and other federal lands. Over two-thirds of this is specifically targeted to the national park system.

In addition to the initial outlay, the bill provides \$900 million per year into the existing Land and Water Conservation Fund (LWCF) which provides funds for federal land programs. The LWCF also provides grants to local governments. The State and Local Assistance program within the LWCF provides matching grants to local governments and states with a target of creating, expanding, and developing park and recreation facilities. The crossing project would fall within the description of this mission. These grants are matching grants, so additional funding would be needed.

According to the recently published information on the LWCF stateside program website, the program has provided over 40,000 grants to state and local governments over the past 40 years totaling \$4.1 Billion. These grants have been used for land acquisition, development, improved access, and planning. The next anticipated funding application cycle is scheduled for February 2022. The Glamis Crossing project includes all these components and should compete well in the LWCF program.

#### Agency Capital Improvement Programs

In most cases, even if outside funds or grants are available, some local funding matches may be required. Some use of local funds, as a match for grants and grant applications, should be explored. Setting aside local funding early in the process will often improve grant success rates. These funds can also be used in the early phases of the project to move development forward prior to complete funding being identified.

In the worst-case scenario, in which no outside funds are secured, then the cost may rely wholly on the capital improvement budgets of the owner agencies. For a small county such as Imperial County, the scale

of the crossing project cost would make it prohibitive for their budget. Caltrans' overall budget is much larger although they are not likely to have discretionary funds of this order of magnitude. If only the general funding from the owner agencies is relied upon, it is unlikely that the project will be feasible.

#### User Fee Programs

The concept of a user fee to fund a part of or the whole project should be considered. As part of the FS, an online survey was conducted to solicit feedback on the project including questions regarding vehicle use, areas of interest, likelihood of crossing use, and a pair of questions regarding a user fee. One question was 'How supportive would you be to paying a surcharge (such as a crossing toll fee) in order to construct, operate and maintain a new safe OHV crossing?' Of the over 4,000 respondents, 39 percent selected they strongly or moderately support a surcharge, 34 percent strongly or moderately oppose it, and 27 percent were either neutral or did not know. These numbers should be looked at considering the limitations of an online, self-selecting polling population; despite this, they do show that a user fee related to the project received some support.

The implementation of such a program would require careful consideration of the logistics of collecting, monitoring, and accounting for the funds. For example, the BLM utilizes a permit fee system for use of the ISDRA during the busy season, although this program is not intended to be a funding source for the project.

### **6.3.2 Maintenance Funding**

The maintenance and operational costs of the project are much less significant than the initial design and construction costs. However, the available funding sources are limited as well. Very few established grant programs provide ongoing maintenance funds for infrastructure projects such as this project.

#### Agency Maintenance Budgets

The most likely source for maintenance funds is for the owner agencies to contribute resources from their existing maintenance funds and resources. Both Caltrans and Imperial County currently have road maintenance staff and programs capable of performing maintenance on a grade separated crossing structure. Caltrans currently performs the majority of the bridge inspections throughout the state for both local and state-owned bridge structures. Particularly if the structure is near to SR 78, then including it in the Caltrans inventory for inspection is feasible. The details of how this responsibility may be shared should be clarified as part of the shared ownership agreement for the project.

It should be noted that neither agency currently has an excess of maintenance funds and would prefer that additional funding sources be found to supplement or replace the financial burden on either Imperial County or Caltrans.

The crossing will also create additional usage of the ISDRA on the east side of the tracks which will require additional enforcement and effort from the BLM, the Imperial County Sheriff, and the CHP in an area that

was lightly visited previously. This additional effort and cost should be considered, and if possible, be included in efforts to secure additional funding.

*User Fee Programs*

If a crossing-specific user fee program is introduced to provide capital funds for the initiation of the project, the fee could continue after construction and provide maintenance funds. Also as indicated above, a set time frame for the fee program could be established to provide capital funds as well as maintenance funds for a set length of time, such as 30 years. This is not uncommon in Public-Private Partnership or P3 projects. After the time frame ends, the responsibility for providing maintenance funds would transfer to the owner agency. As noted above, the initial survey performed as part of the FS did show slightly higher support for a user fee rather than against.

*Land and Water Conservation Fund*

The provisions of the Great American Outdoors Act discussed above includes funding in perpetuity to be directed to federal land programs for items including maintenance of facilities. The details of how this funding will be apportioned are not yet known, but it may present an opportunity in the future through the Land and Water Conservation Fund grant program. Developments within these programs should be monitored.

**6.4 Development Schedule**

The draft project implementation schedule outline for the alternatives shows the same major project phases for each alternative accompanied by a summary of primary activities within those phases.

**Table 6 – Alternative Implementation Schedules**

| Phase                     | Activities                                                                                                                                                                                                                                                                                                                                                                  | Phase Duration for Each Alternative (Months) |       |       |      |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------|-------|------|
|                           |                                                                                                                                                                                                                                                                                                                                                                             | 78-O                                         | 78T-O | 9.5-U | 10-O |
| <b>PAED</b>               | <ul style="list-style-type: none"> <li>• Funding Procurement</li> <li>• Environmental Technical Studies</li> <li>• Environmental Document Approval</li> <li>• Field Diagnostic with CPUC</li> <li>• Permitting and Resource Agency Coordination</li> <li>• BLM Agreement Coordination</li> <li>• Preliminary Engineering</li> <li>• Initiate Agreements and MOUs</li> </ul> | 36                                           | 24    | 30    | 24   |
| <b>PS&amp;E &amp; ROW</b> | <ul style="list-style-type: none"> <li>• Design Completion</li> <li>• Plans, Specifications, and Estimate</li> <li>• Utility Coordination and Relocation Finalized</li> <li>• ROW Acquisition</li> <li>• Formal Crossing Application</li> <li>• Finalize Agreements and MOUs</li> <li>• Prepare Bid Documents</li> </ul>                                                    | 24                                           | 24    | 24    | 24   |

|                     |                                                                                                                                |    |    |    |    |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|
| <b>Construction</b> | <ul style="list-style-type: none"> <li>• Construction</li> <li>• Construction Management</li> <li>• Project Opening</li> </ul> | 24 | 12 | 12 | 12 |
|                     | <b>Total Duration (Months)</b>                                                                                                 |    | 84 | 60 | 66 |

## 6.5 Project Risks

An initial risk matrix for the Study is provided as Table 7. The risk matrix includes the following items:

- Risk – Is there an event that may happen in the future and affect the project?
- Risk Category – What phases of the Project will be impacted? Options include Planning, Design, ROW, Construction, Operation
- Risk Likelihood – Does the risk have a high, medium, or low probability of occurrence?
- Risk Impact – What part of the project will change if the risk occurs? Options include scope, schedule, cost, quality. It is understood that many impacts are related (i.e., schedule change leads to cost change) but the primary impact is identified
- Mitigation – What could be done to mitigate the severity or likelihood of the risk?

Given the preliminary nature of the project details, the risks matrix is preliminary to the project and will be refined in future phases of the project. The majority of the risks apply to all alternatives, however there are potentially significant differences in the Risk Likelihood and Impact severity between the Alternatives. As a preferred alternative is identified, the matrix will be refined to reflect that alternative.

In compiling the Project Risks, the Technical Working Group (TWG) was consulted and was given an opportunity to provide risk input.

**Table 7 - Project Risk Matrix**

| ID | Risk                                                                                                                | Risk Category | Risk Likelihood | Mitigation Strategy                                  |
|----|---------------------------------------------------------------------------------------------------------------------|---------------|-----------------|------------------------------------------------------|
| 1  | Major weather events during construction lead to Rail impacts                                                       | Construction  | Low             | Clear specifications on rail protection requirements |
| 2  | Construction methods or mistakes lead to track closures                                                             | Construction  | Medium          | Clear specifications on rail protection requirements |
| 3  | Construction productivity is reduced due to reliance on track windows                                               | Construction  | Medium          | Clear construction specifications                    |
| 4  | Utility conflicts uncovered during construction                                                                     | Construction  | Low             | Additional utility search during planning            |
| 5  | Interference during construction between adjacent projects such as Polaris development and UP maintenance/expansion | Construction  | Low             | Coordination with adjoining stakeholders             |

| ID | Risk                                                                                         | Risk Category | Risk Likelihood | Mitigation Strategy                                                                                          |
|----|----------------------------------------------------------------------------------------------|---------------|-----------------|--------------------------------------------------------------------------------------------------------------|
| 6  | Unforeseen geotechnical hazards                                                              | Construction  | Low             | Additional borings during planning/design                                                                    |
| 7  | Construction costs escalate above current funding estimates by the time funding is allocated | Construction  | Medium          | Additional contingency in cost estimates                                                                     |
| 8  | Seismic structure requirements significantly change design                                   | Design        | Low             | Finalize agreements prior to completion of planning phase                                                    |
| 9  | Changes in Design code or CPUC crossing requirements during project development              | Design        | Medium          | Include additional float in design schedule                                                                  |
| 10 | Inability to find or loss of maintenance funding                                             | Operation     | Medium          | Finalize agreements prior to completion of planning                                                          |
| 11 | Excessive use of the structure by non-OHVs leads to maintenance problems                     | Operation     | Low             | Clarify and clarify enforcement responsibilities                                                             |
| 12 | Major weather events during operation lead to Rail impacts                                   | Operation     | Medium          | Clear design requirements                                                                                    |
| 13 | Changes in ISDRA usage areas or guidelines limit areas of OHV use                            | Operation     | Low             | Clarify and clarify enforcement responsibilities                                                             |
| 14 | OHV vehicle size and type changes over time limit use of crossing                            | Operation     | Low             | Clear signing on structure/paths                                                                             |
| 15 | Changes in environmental document requirements                                               | Planning      | Low             | Include additional float in environmental schedule                                                           |
| 16 | Ownership liability remains unresolved between stake holders                                 | Planning      | Medium          | Coordination with adjoining stakeholders                                                                     |
| 17 | Cultural resources identified in conflict with project area                                  | Planning      | Low             | Coordination with agencies to mitigate                                                                       |
| 18 | Biological resources identified in conflict with project area                                | Planning      | Low             | Coordination with agencies to mitigate                                                                       |
| 19 | Inability to procure construction funding                                                    | Planning      | High            | Develop clear stopping points along the development process for future use when funding may become available |
| 20 | Project approvals and permits are not procured within timeframe of funding sources           | Planning      | Medium          | Develop clear stopping points along the development process for future use when funding may become available |
| 21 | Unable to reach maintenance agreement                                                        | Planning      | Low             | Finalize agreements prior to completion of planning                                                          |
| 22 | Private property ownership change results in an uncooperative owner                          | ROW           | Low             | Finalize agreements prior to completion of planning                                                          |
| 23 | Litigation due to an accident on the facility                                                | Operation     | Medium          | Clear liability agreements                                                                                   |
| 24 | Litigation by outside party because of environmental impacts                                 | Planning      | Medium          | Adherence to environmental process and document required                                                     |
| 25 | ROW procurement of BLM land is not approved                                                  | Planning      | Low             | Clear communication and involvement of BLM in early stages of planning process                               |

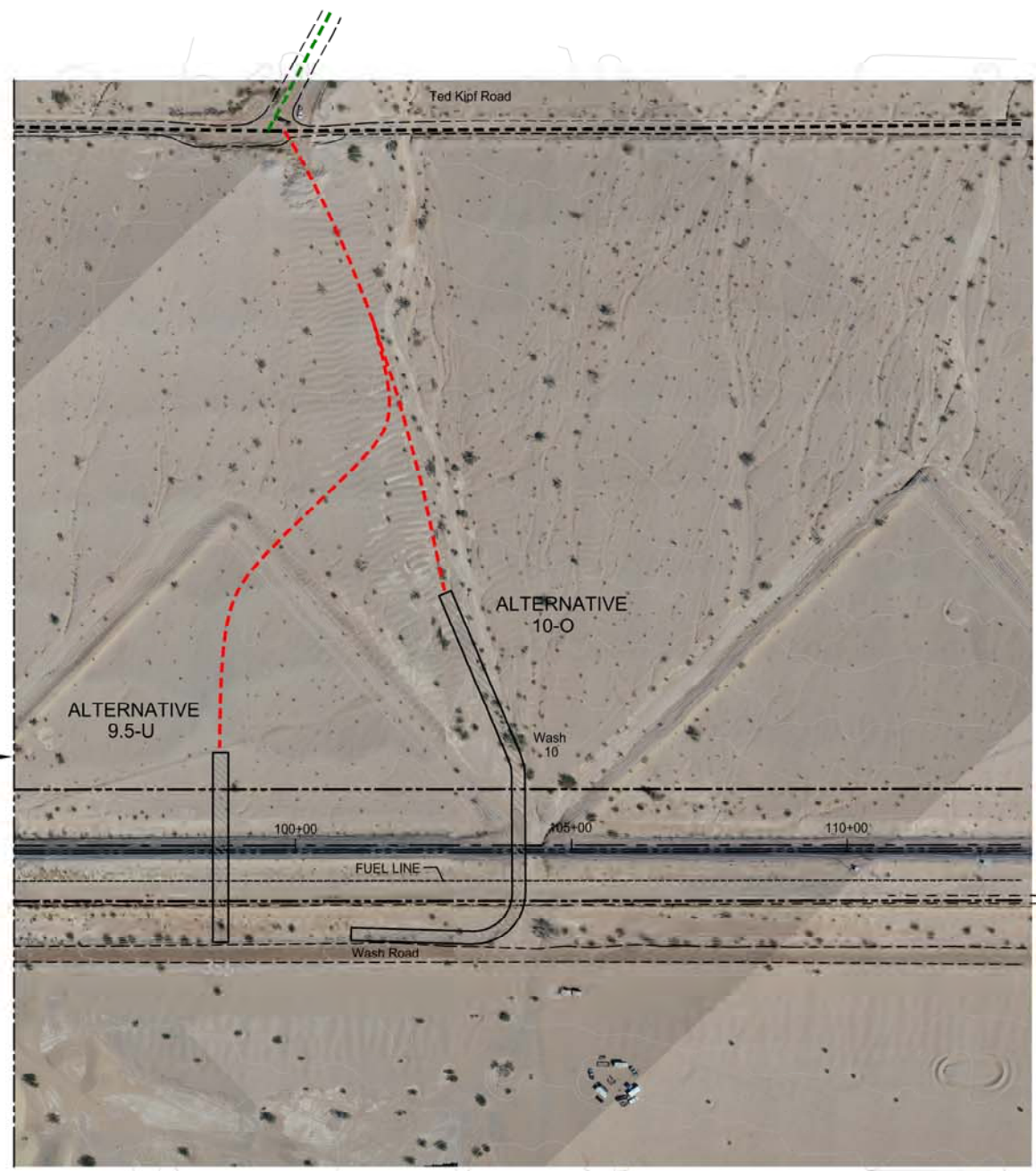


## **APPENDIX A**






### **CONCEPT ALTERNATIVE PLANS**

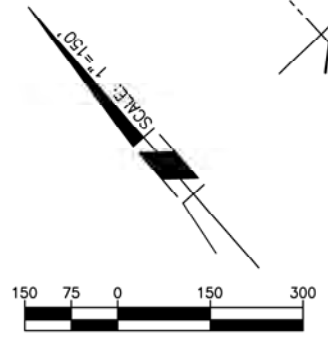


8,000± FEET



**PLAN**  
1" = 150'-0"

- LEGEND:**
-  - INDICATES ALTERNATIVE LOCATION
  -  - INDICATES DESIGNATED ROUTES OF TRAVEL (OHV)
  -  - INDICATES NEW CONNECTING TRAIL
  -  - INDICATES UPRR RAILROAD AND CALTRANS (SR 78) RIGHT-OF-WAY
  -  - INDICATES PRIVATE PROPERTY RIGHT-OF-WAY



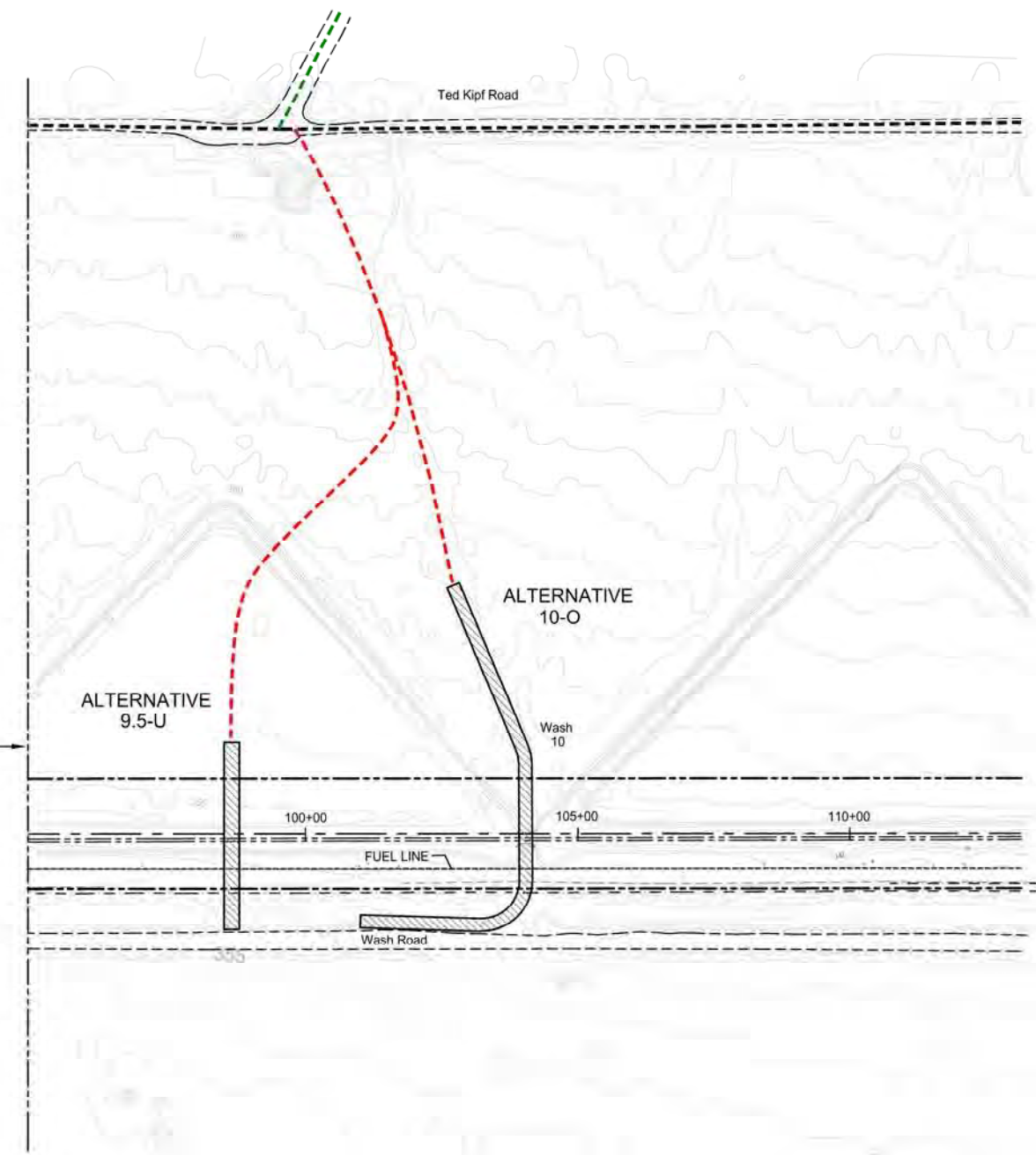
**SR 78 / GLAMIS MULTIUSE  
GRADE SEPARATED CROSSING  
FEASIBILITY STUDY  
ALTERNATIVE LOCATIONS**

STUDY REPORT  
APPENDIX A






A1

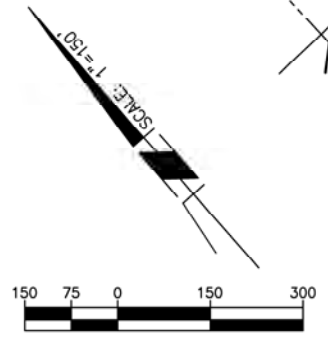


8,000± FEET



**PLAN**  
1" = 150'-0"

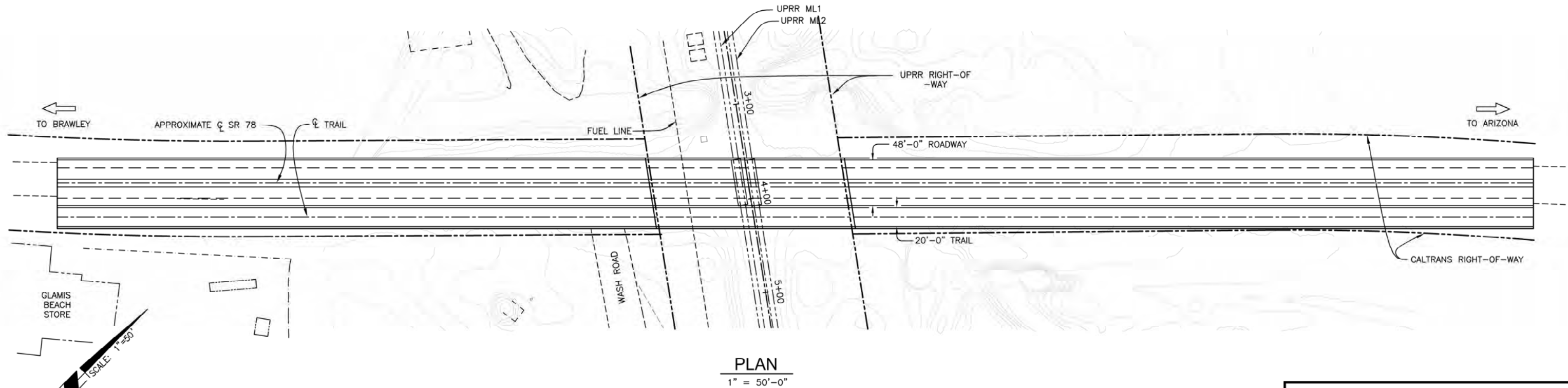
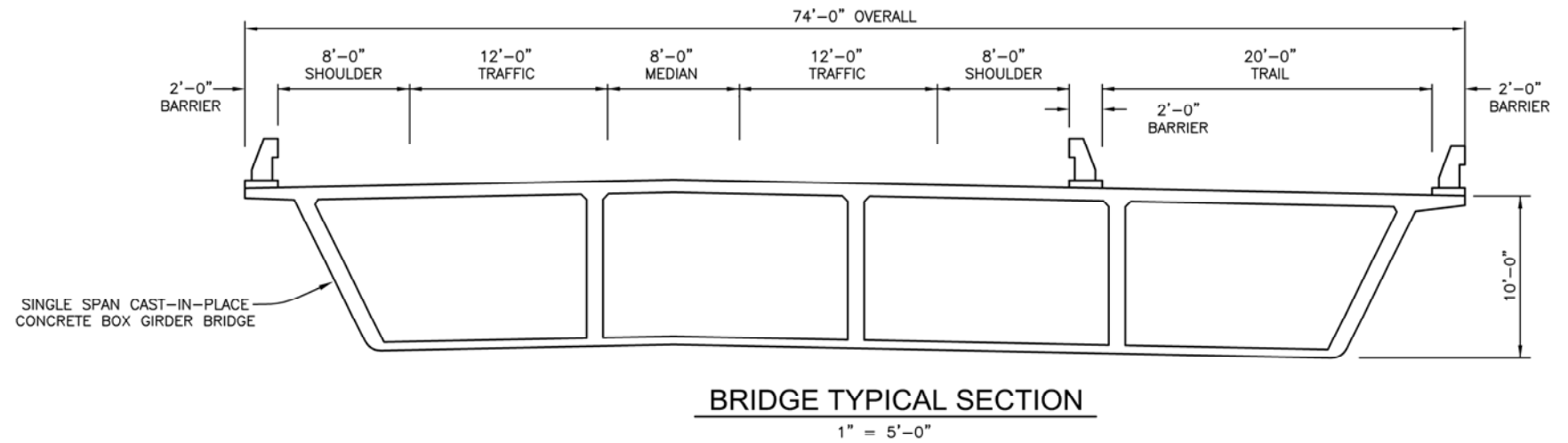
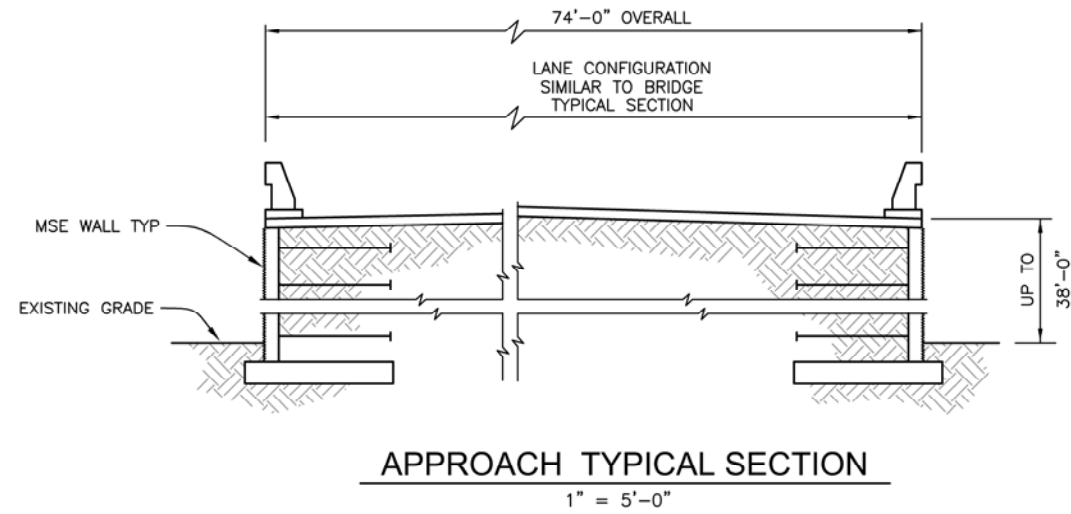
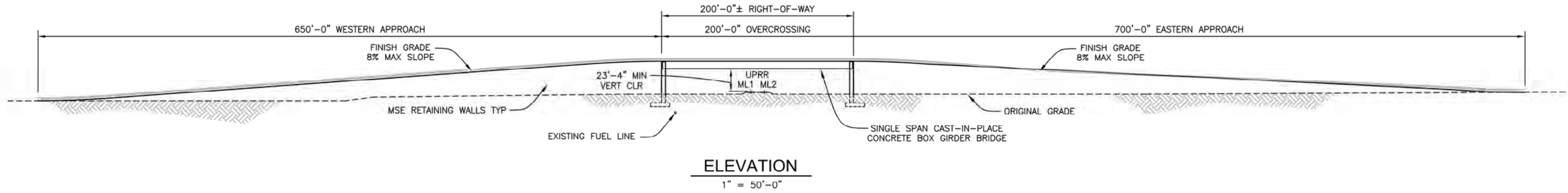
- LEGEND:**
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  -  - INDICATES DESIGNATED ROUTES OF TRAVEL (OHV)
  -  - INDICATES NEW CONNECTING TRAIL
  -  - INDICATES UPRR RAILROAD AND CALTRANS (SR 78) RIGHT-OF-WAY
  -  - INDICATES PRIVATE PROPERTY RIGHT-OF-WAY



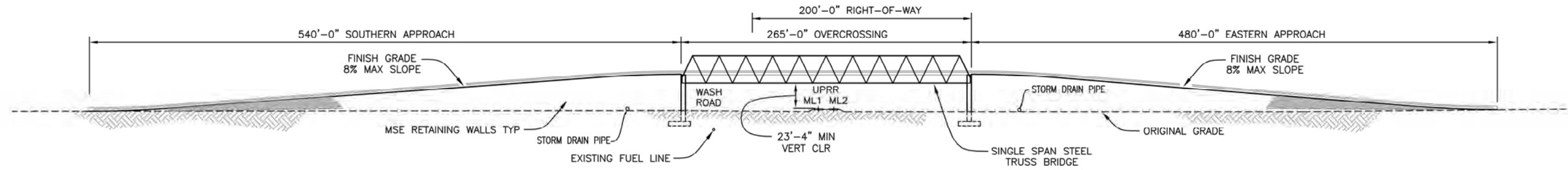
**SR 78 / GLAMIS MULTIUSE  
GRADE SEPARATED CROSSING  
FEASIBILITY STUDY  
ALTERNATIVE LOCATIONS**

**STUDY REPORT  
APPENDIX A**

**A2**

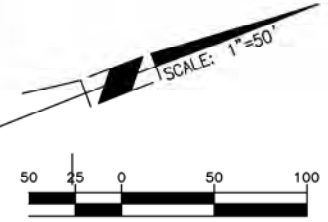
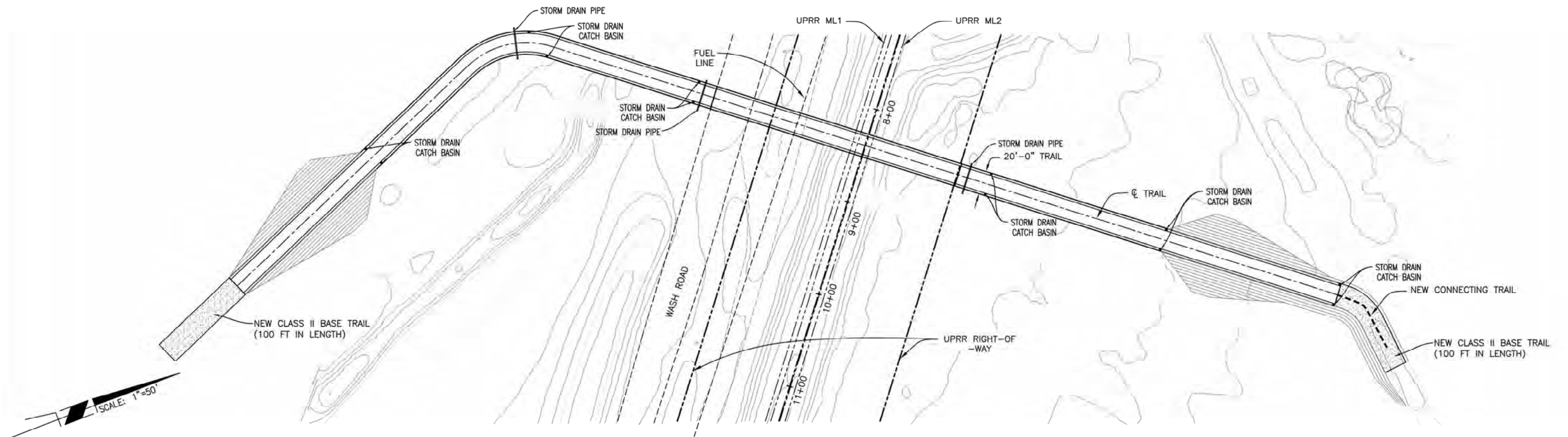


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| STUDY REPORT<br>APPENDIX A                                                                             | A3 |



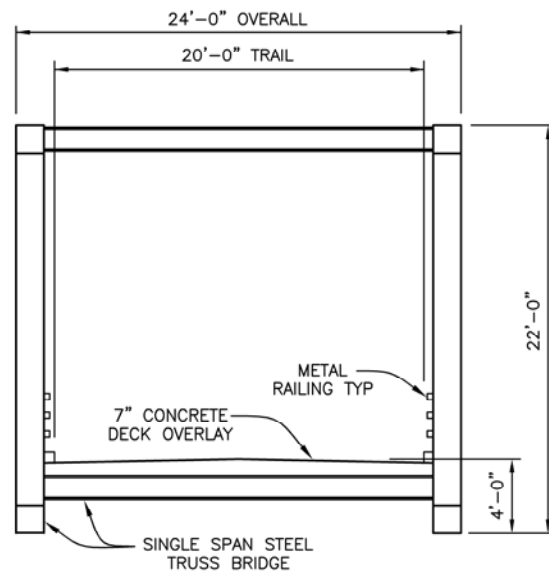
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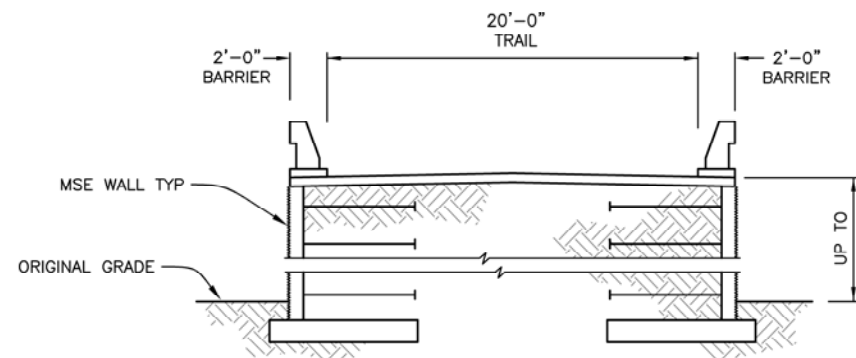
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1" = 50'-0"



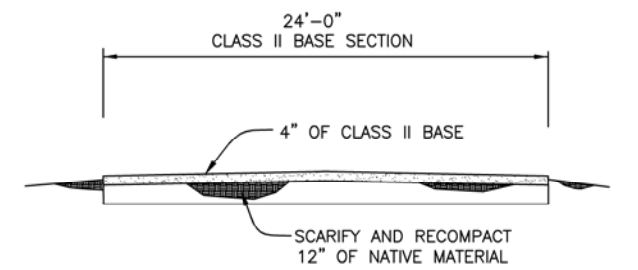
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1" = 5'-0"



**APPROACH TYPICAL SECTION**

1" = 5'-0"



**CLASS II BASE TRAIL ROAD SECTION**

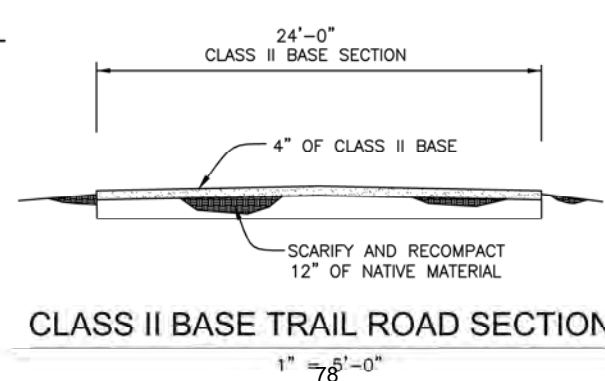
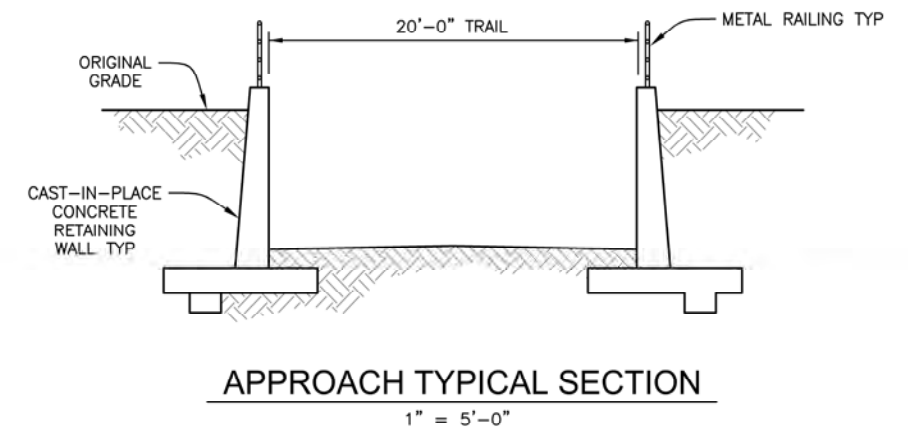
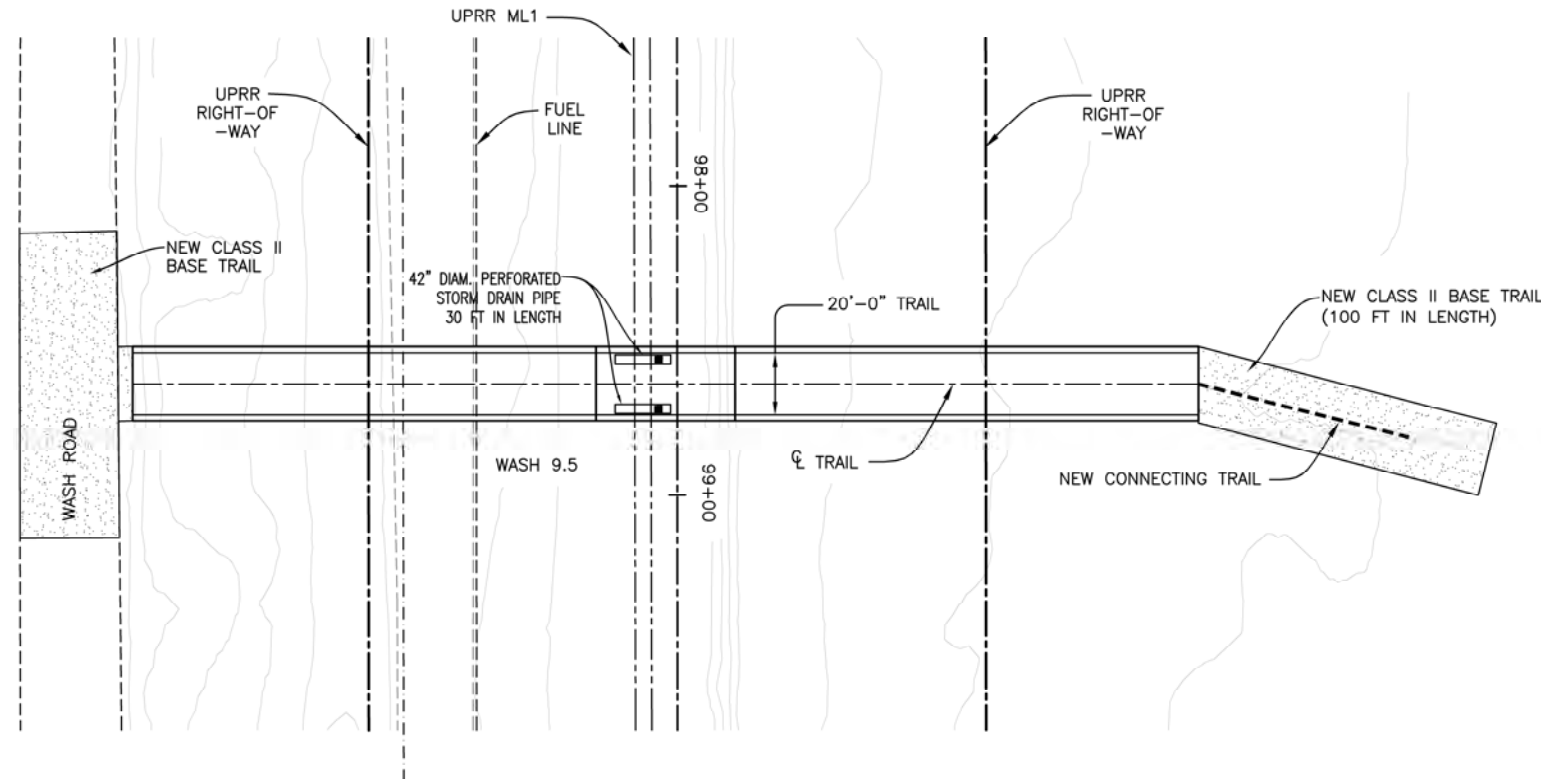
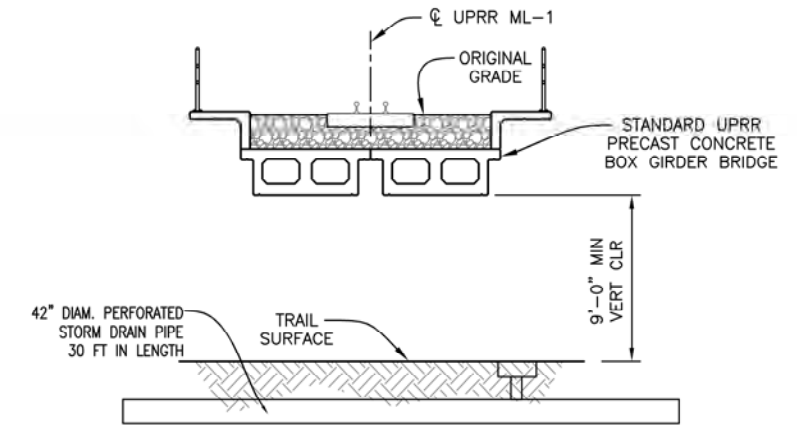
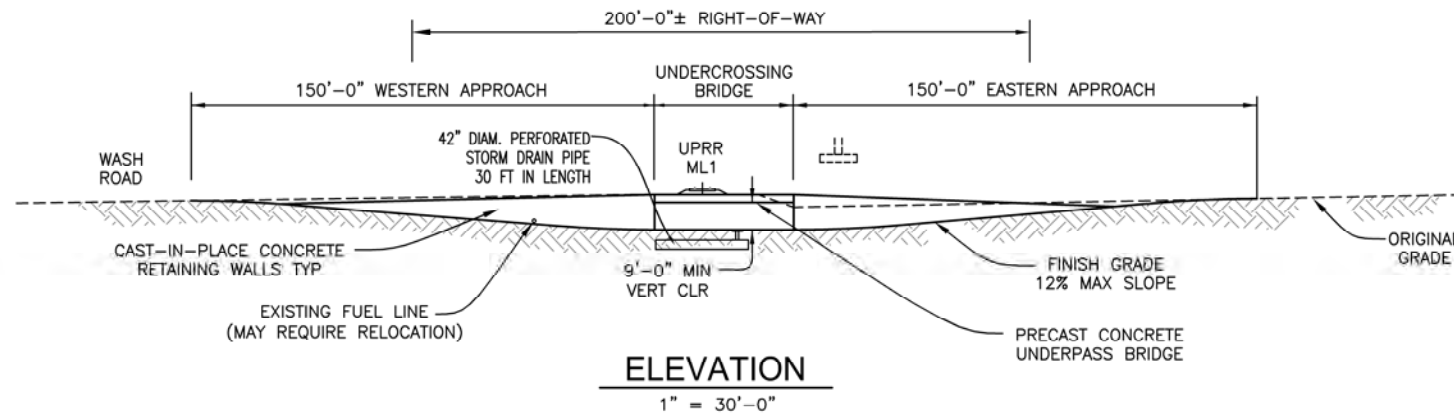
1" = 5'-0"



**SR 78 / GLAMIS MULTIUSE  
GRADE SEPARATED CROSSING  
FEASIBILITY STUDY  
ALTERNATIVE 78T-O**

**STUDY REPORT  
APPENDIX A**

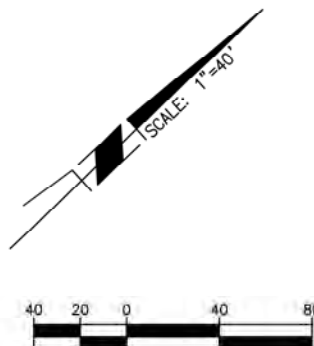
**A4**



**HYDROLOGY ANALYSIS:**

REQUIRED STORM DRAINAGE STORAGE: 1,725 CF  
(PER ICPWD REQUIREMENT)

UNDERGROUND STORAGE CAPACITY: 2,309 CF

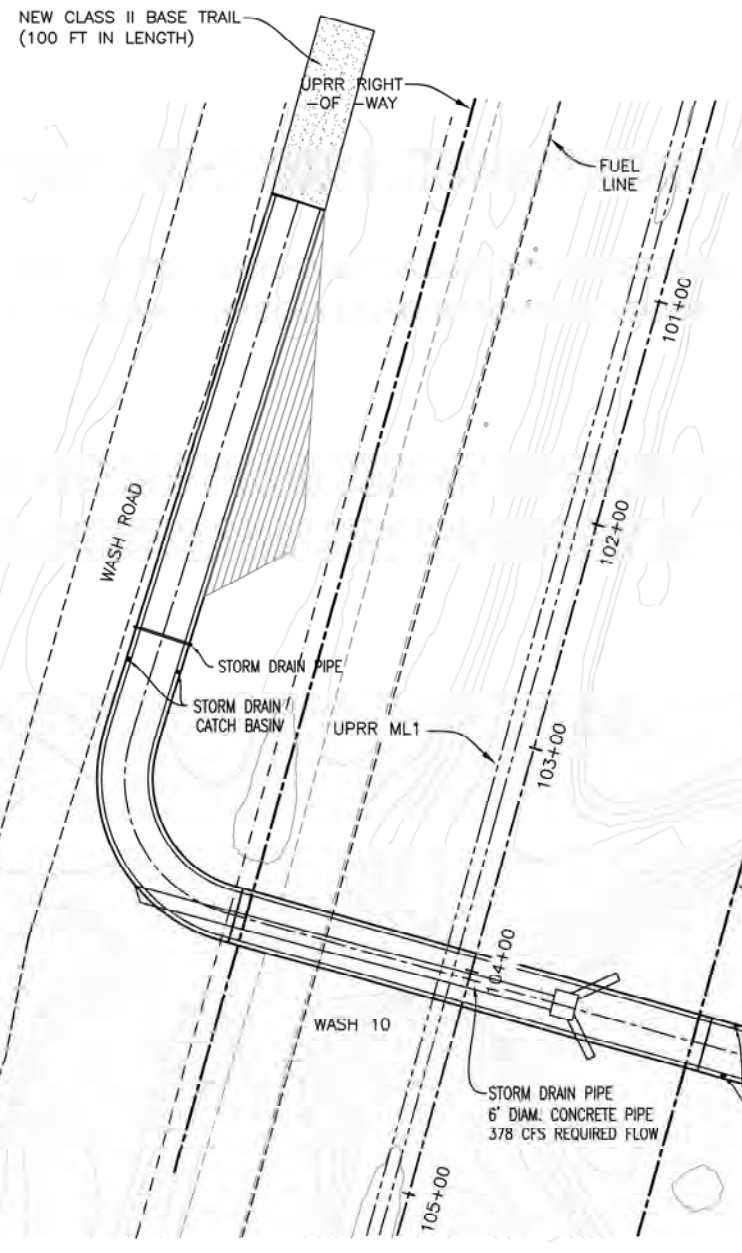
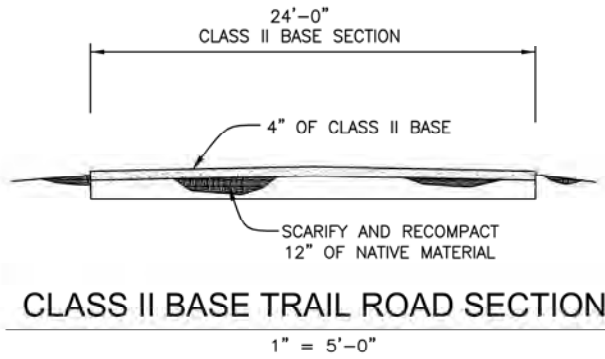
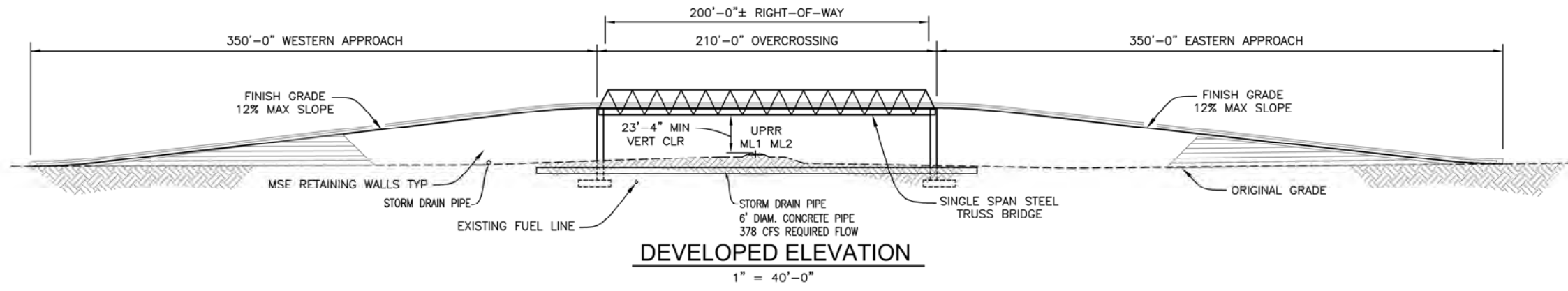


**SR 78 / GLAMIS MULTIUSE  
GRADE SEPARATED CROSSING  
FEASIBILITY STUDY**

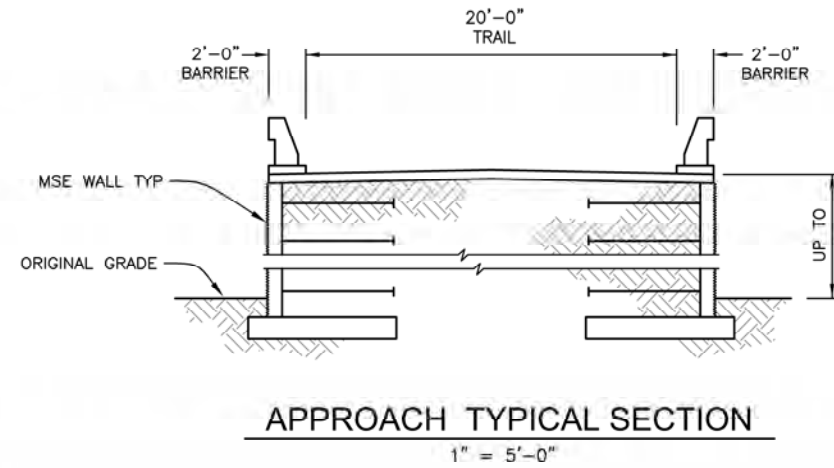
**ALTERNATIVE 9.5-U**

**STUDY REPORT  
APPENDIX A**

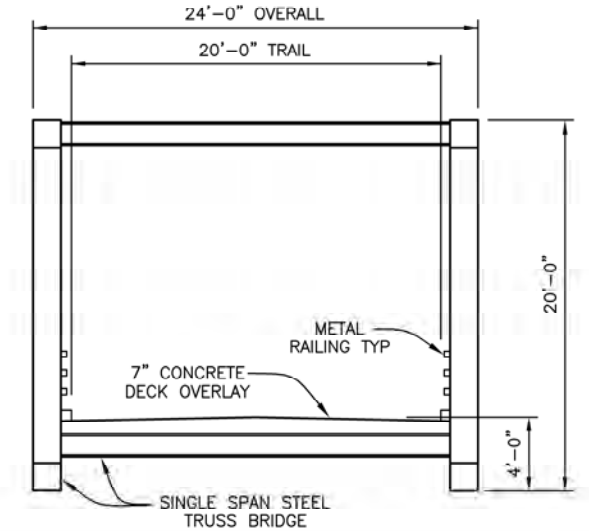
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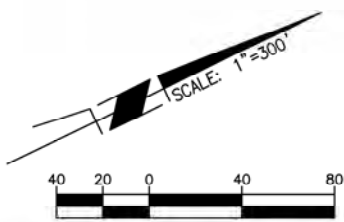
PLAN  
1" = 40'-0"



APPROACH TYPICAL SECTION  
1" = 5'-0"



BRIDGE TYPICAL SECTION  
1" = 5'-0"



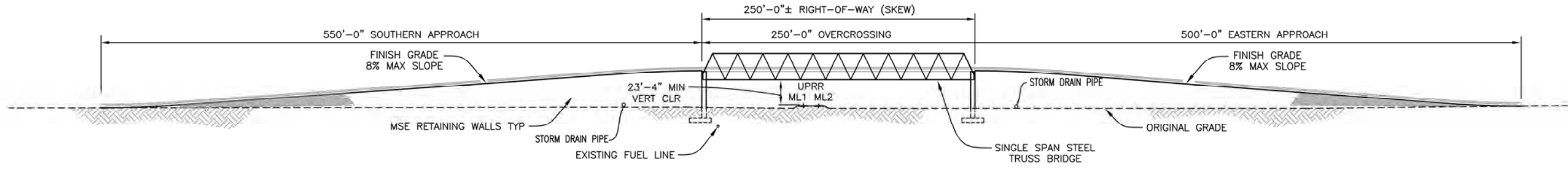
HYDROLOGY ANALYSIS:  
UPSTREAM WATERSHED TRIBUTARY AREA: 426 ACRES  
100 YR MAXIMUM STORM DRAIN FLOW Q: 378 CFS



**SR 78 / GLAMIS MULTIUSE  
GRADE SEPARATED CROSSING  
FEASIBILITY STUDY  
ALTERNATIVE 10-0**

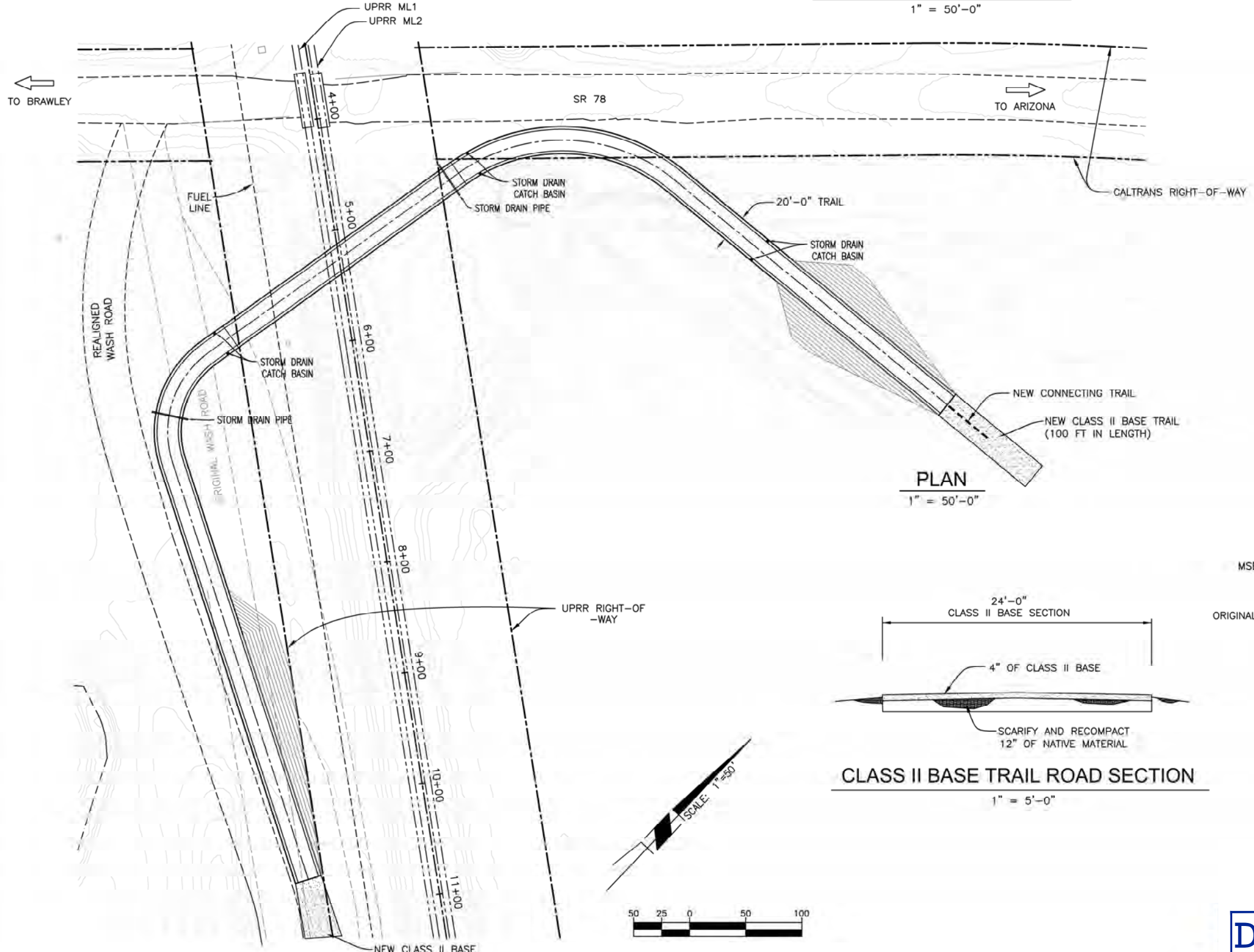
STUDY REPORT  
APPENDIX A

A6



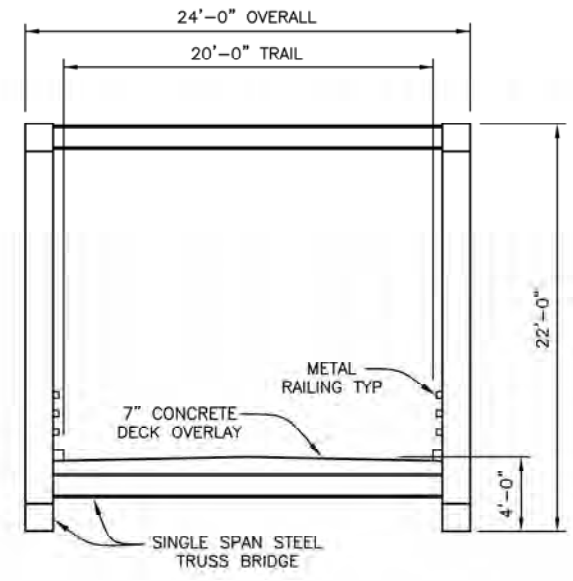
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1" = 50'-0"



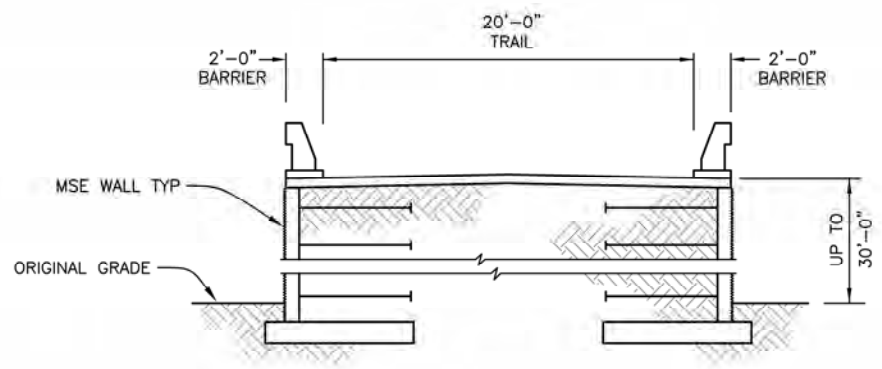
**PLAN**

1" = 50'-0"



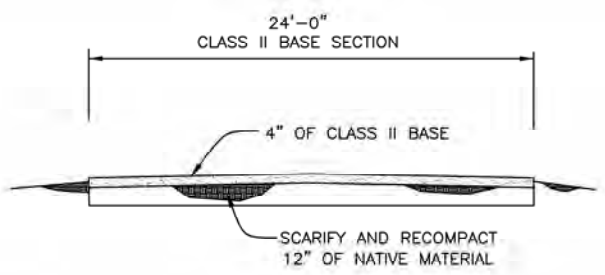
**BRIDGE TYPICAL SECTION**

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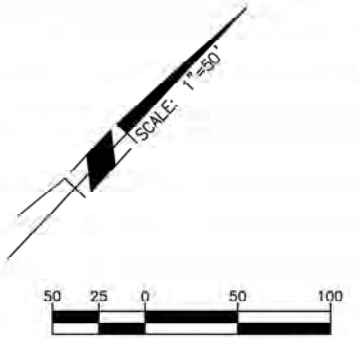
**APPROACH TYPICAL SECTION**

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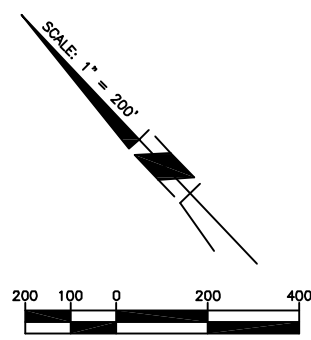
**CLASS II BASE TRAIL ROAD SECTION**

1" = 5'-0"

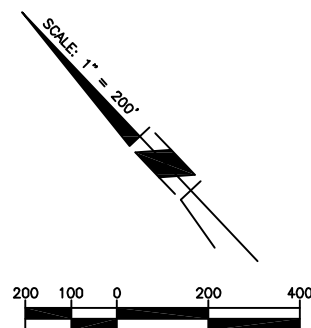
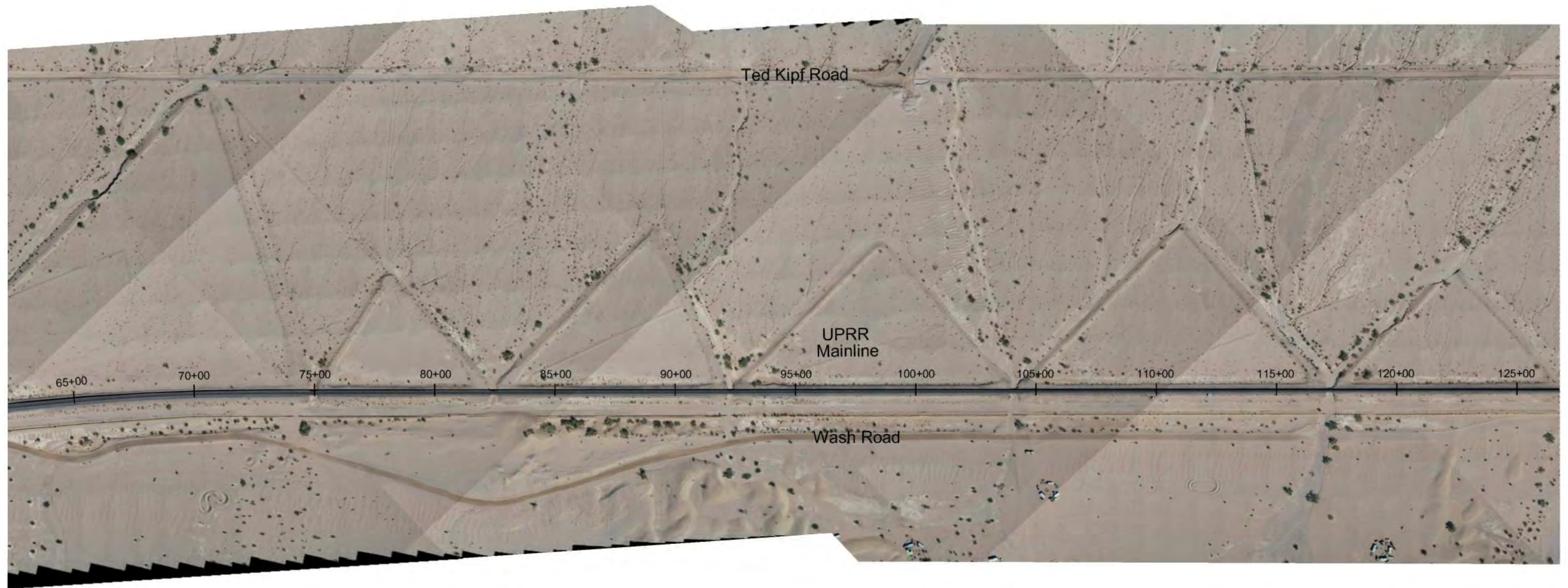


|                                                                                                         |           |
|---------------------------------------------------------------------------------------------------------|-----------|
| <b>SR 78 / GLAMIS MULTIUSE<br/>GRADE SEPARATED CROSSING<br/>FEASIBILITY STUDY<br/>ALTERNATIVE 78T-O</b> |           |
| <b>STUDY REPORT<br/>APPENDIX A</b>                                                                      | <b>A7</b> |

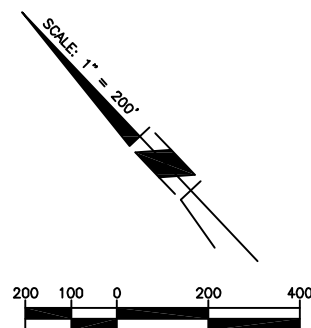




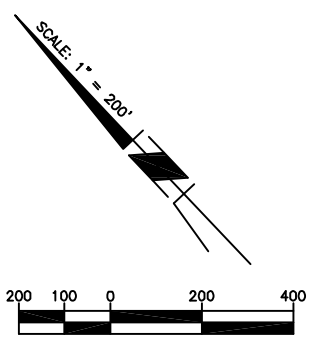
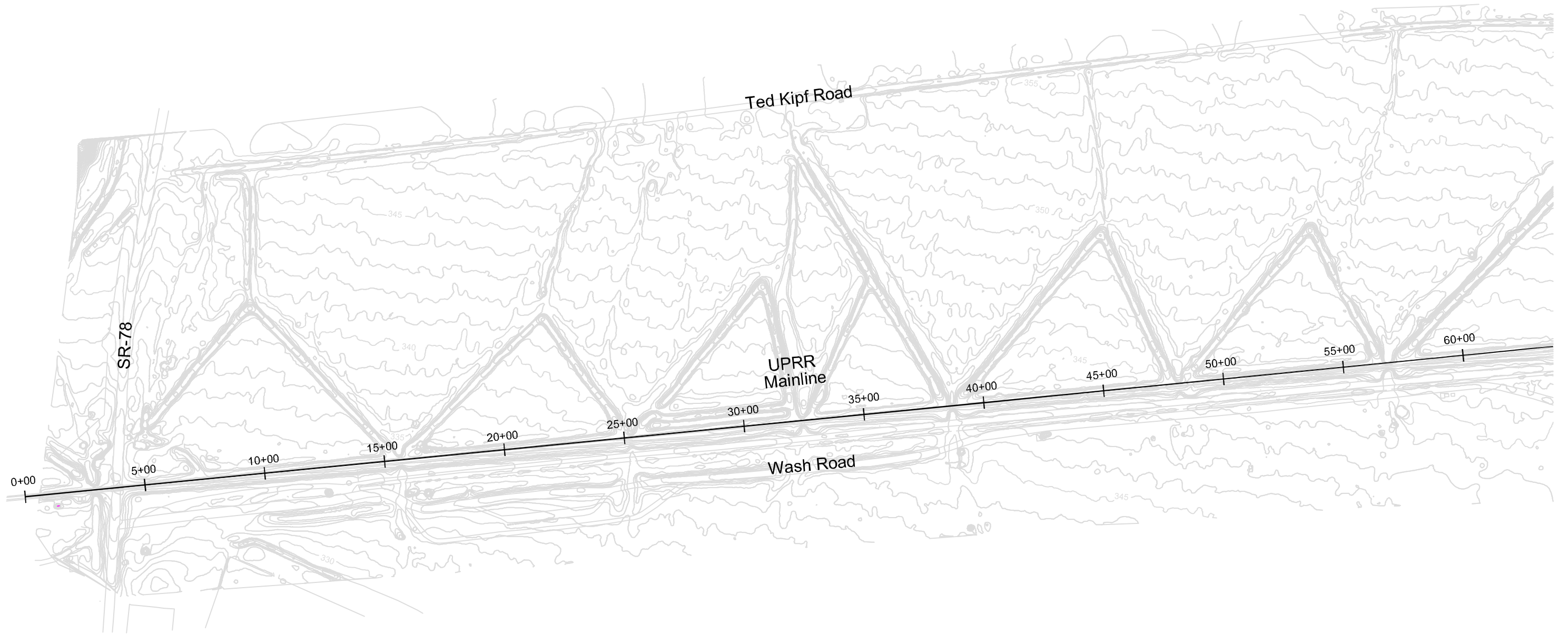
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|-------------------|-------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| DATE<br>12/2/19   | <b>GLAMIS STUDY AREA<br/>AERIAL PHOTO</b> |           | <b>Dynamic</b> CONSULTING<br>ENGINEERS                                                                                        |
| DRAWN<br>TB       |                                           |           |                                                                                                                               |
| SCALE<br>AS SHOWN | <b>STUDY REPORT<br/>APPENDIX A</b>        | <b>A8</b> | CML ENGINEERING-LAND SURVEYING-CONSTRUCTION MANAGEMENT<br>2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,<br>IMPERIAL, CA. 92251 |
| CHECKED<br>DB     |                                           |           | TEL: (760) 545-0162                                                                                                           |



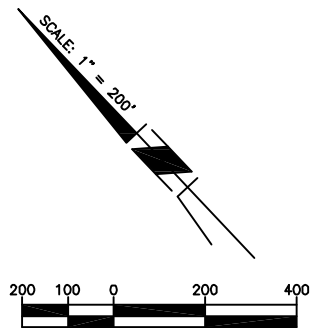
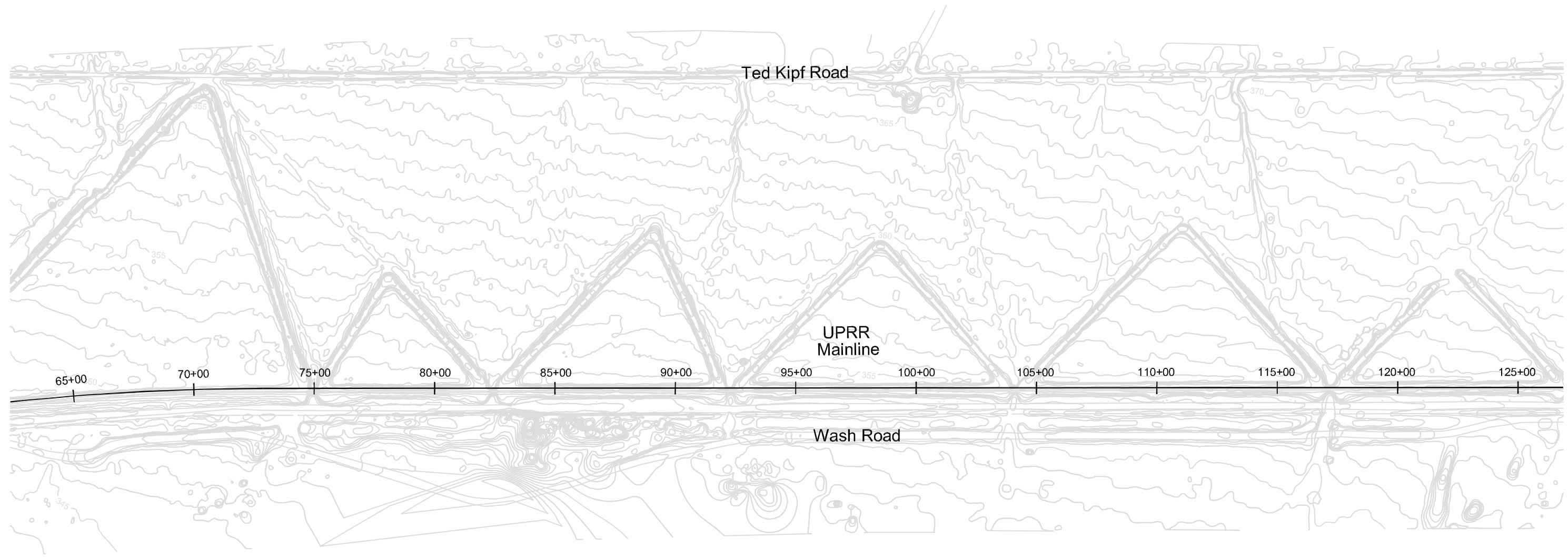
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| DRAWN<br>TB                                                                                                                        |                                           |                                        |
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| CHECKED<br>DB                                                                                                                      |                                           |                                        |
| CIVIL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT<br>2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,<br>IMPERIAL CA. 92251 |                                           | TEL. (760) 545-0162 FAX (760) 545-0163 |



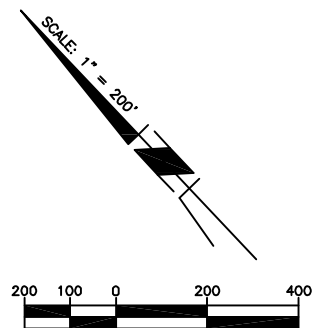
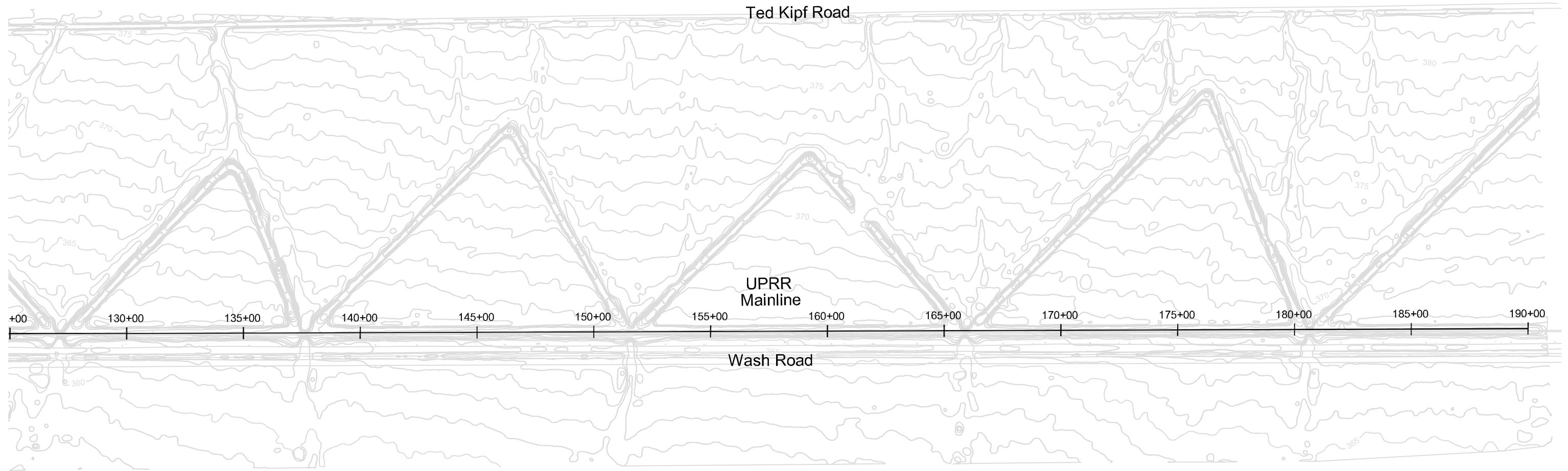
|                   |                                           |                                                                                                                                                                                                |
|-------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DATE<br>12/2/19   | <b>GLAMIS STUDY AREA<br/>AERIAL PHOTO</b> | <b>Dynamic</b> CONSULTING<br>ENGINEERS                                                                                                                                                         |
| DRAWN<br>TB       |                                           |                                                                                                                                                                                                |
| SCALE<br>AS SHOWN |                                           |                                                                                                                                                                                                |
| CHECKED<br>DB     | <b>STUDY REPORT<br/>APPENDIX A</b>        | <b>A10</b>                                                                                                                                                                                     |
|                   |                                           | <small>CIVIL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT<br/>2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,<br/>IMPERIAL CA. 92251<br/>TEL. (760) 545-0162 FAX (760) 545-0163</small> |



|                                                                                                                                    |                                                 |                                        |
|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------|
| DATE<br>12/2/19                                                                                                                    | <b>GLAMIS STUDY AREA<br/>TOPOGRAPHIC SURVEY</b> | <b>Dynamic</b> CONSULTING<br>ENGINEERS |
| DRAWN<br>TB                                                                                                                        |                                                 |                                        |
| SCALE<br>AS SHOWN                                                                                                                  |                                                 |                                        |
| CHECKED<br>DB                                                                                                                      | <b>STUDY REPORT<br/>APPENDIX A</b>              | <b>A11</b>                             |
| CIVIL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT<br>2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,<br>IMPERIAL CA. 92251 |                                                 | TEL. (760) 545-0162 FAX (760) 545-0163 |



|                   |                                                 |            |                                                                                                                                    |
|-------------------|-------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------|
| DATE<br>12/2/19   | <b>GLAMIS STUDY AREA<br/>TOPOGRAPHIC SURVEY</b> |            | <b>Dynamic</b> CONSULTING<br>ENGINEERS                                                                                             |
| DRAWN<br>TB       |                                                 |            |                                                                                                                                    |
| SCALE<br>AS SHOWN | <b>STUDY REPORT<br/>APPENDIX A</b>              | <b>A12</b> | CIVIL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT<br>2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B.,<br>IMPERIAL CA. 92251 |
| CHECKED<br>DB     |                                                 |            | TEL. (760) 545-0162                                                                                                                |



|                   |                                                 |            |                                                                                                                                    |
|-------------------|-------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------|
| DATE<br>12/2/19   | <b>GLAMIS STUDY AREA<br/>TOPOGRAPHIC SURVEY</b> |            | <b>Dynamic</b> CONSULTING<br>ENGINEERS                                                                                             |
| DRAWN<br>TB       |                                                 |            |                                                                                                                                    |
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| CHECKED<br>DB     |                                                 |            | TEL. (760) 545-0162                                                                                                                |

## **APPENDIX B**

### **EXISTING STUDIES MEMORANDUM**

# SR 78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

## Existing Studies Memorandum



Prepared for:  
Imperial County Transportation Commission

December 3, 2019



## Table of Contents

|                                                                                                |    |
|------------------------------------------------------------------------------------------------|----|
| 1 Introduction .....                                                                           | 1  |
| 1.1 Project Background .....                                                                   | 1  |
| 1.3 Previous Efforts and Proceedings .....                                                     | 4  |
| 2 Existing Plans and Studies .....                                                             | 5  |
| 2.1 Imperial County General Plan and Policies .....                                            | 5  |
| 2.2 ISDRA Management Plan and Amendments to the California Desert Conservation Area Plan ..... | 6  |
| 2.3 Off-Highway Rules and Regulations .....                                                    | 7  |
| 2.4 SR 78 Transportation Concept Report .....                                                  | 9  |
| 2.5 Accident Data .....                                                                        | 10 |
| 2.6 Stakeholder Provided Documentation .....                                                   | 11 |
| 2.7 Inyo County Local Transportation Commission Combined Use Pilot Project – Case Study .....  | 12 |
| 3 References .....                                                                             | 12 |

| Revision | Date       | Description                            |
|----------|------------|----------------------------------------|
| Rev 0    | 12/3/2019  | Initial Submittal                      |
| Rev 1    | 11/13/2020 | Resubmitted as Study Report Appendix B |
|          |            |                                        |
|          |            |                                        |

Prepared by: Kleinfelder Inc

in cooperation with Kearns & West, RECON Environmental, Inc., Dynamic Consulting Engineers, Inc.

## 1 Introduction

The purpose of the State Route 78 (SR 78)/Glamis Multiuse Grade Separated Crossing Feasibility Study (FS) is to lay the groundwork and map out a direction for providing a safe crossing for off-highway vehicle (OHV) users across the Union Pacific Railroad (UPRR) rail line at the Imperial Sand Dunes Recreation Area (ISDRA). The FS objectives and outcomes include developing a problem statement, identifying feasible engineering alternatives for grade separated crossings, and the constraints, costs, and risks of each alternative, and establishing a path forward for a preferred alternative including identification of agency responsibility, funding mechanisms, anticipated costs, and risks throughout the project life. This technical memorandum summarizes background information, previous studies and ongoing planning efforts for projects within the vicinity of the Study Area (Figure 1).

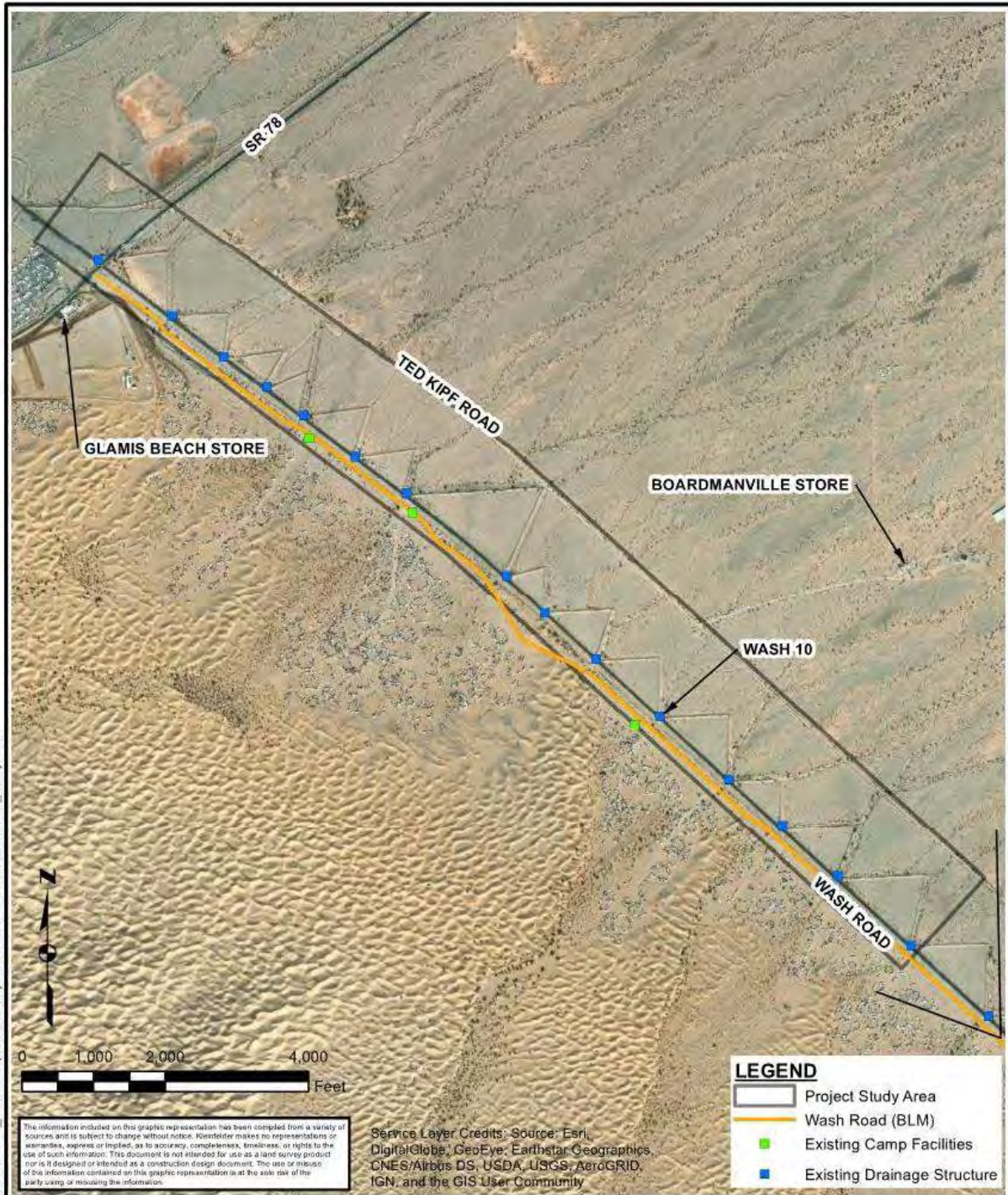
### 1.1 Project Background

The ISDRA in eastern Imperial County, California is considered a world-class OHV recreation area and well-known recreation resource for local residents and visitors from the southwestern United States and beyond.

The Bureau of Land Management (BLM) has established a Planning Area of approximately 227,000 acres (214,930 BLM-administered acres) that encompasses the ISDRA, including the North Algodones Dunes Wilderness and an additional approximately one-mile-wide zone surrounding the ISDRA (Figure 2). This Planning Area, also known as the “Glamis Area”, is the most intensively used OHV recreation area that the BLM manages nationwide, with over one million visitors per year. As many as 150,000 recreational users come to the ISDRA on winter weekends.

Within the ISDRA Planning Area, there is a 17-mile section, running north to south, located between SR 78 and Ogilby Road. UPRR operates a rail line that travels through this section and bisects certain recreation and camping areas. To the west of the rail line, BLM has designated an open riding area for OHVs, as well as a camping area. The designated camping area also exists to the east of the rail line. Both camping areas are operated under the same system and have the same fees. ISDRA visitors must cross the UPRR rail line to travel between the two areas. BLM only offers restrooms and waste facilities on the west side of the railroad tracks.

Historically, a below-grade wash structure wide enough for OHVs just south of SR 78, known as Wash 10, was maintained for travel between the western and eastern portions of the ISDRA on either side of the rail line tracks. The access was designated by a sign on the eastern side of the UPRR rail line that informed OHV riders to continue riding on designated routes of travel only. Wash 10 was maintained clear for OHV use by the previous owner of small store and bar called the Boardmanville Trading Post (Boardmanville) via an informal agreement. There were also three at-grade maintenance access points known as Ruthven, Clyde, and Cactus that were used by OHV users as crossings. The maintenance accesses were designated by two tall, wooden posts located just far enough apart for an OHV to proceed through. Designated routes of travel for OHVs, established by BLM, on the eastern side of the rail tracks lead directly to these crossing points.



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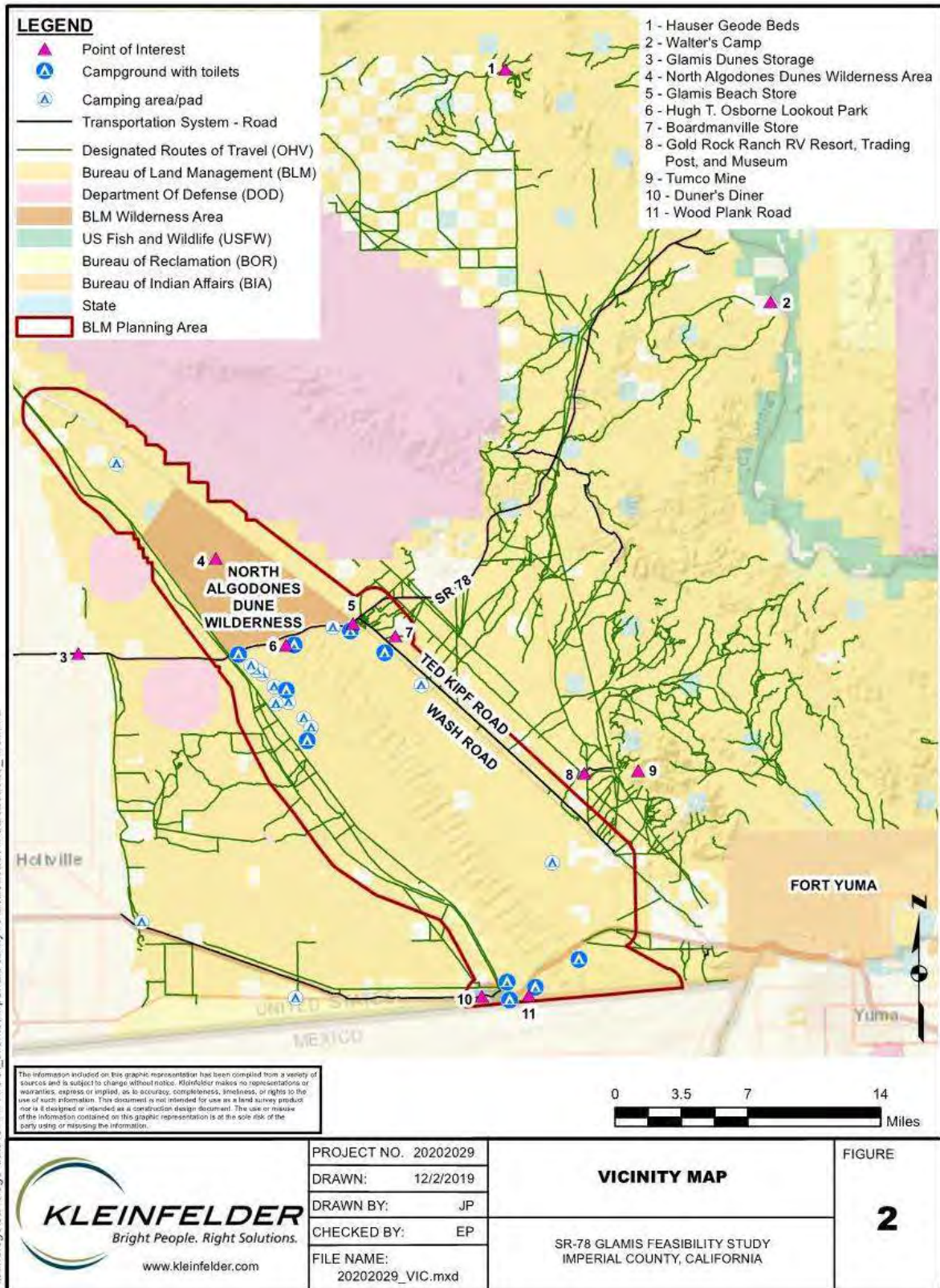
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| DRAWN:      | 12/2/2019          |
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**STUDY AREA MAP**

SR-78 GLAMIS FEASIBILITY STUDY  
IMPERIAL COUNTY, CALIFORNIA

FIGURE  
**1**



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In 2009, UPRR physically closed the informal crossings and indicated they were not authorized for public use. The Wash 10 structure does not meet minimum clearance standards and the at-grade crossings were constructed solely as private railroad maintenance crossings for the railroad's use.

Since the closure of Wash 10 and the other crossings, no designated crossings for OHVs are within the 17 miles between SR 78 and Ogilby Road. This has resulted in OHV users crossing over the actual rail line tracks at unprotected, unregulated, and uncontrolled crossing points. The current illegal crossing situation is considered by all parties to be a major safety issue.

### **1.3 Previous Efforts and Proceedings**

Multiple stakeholders have been examining issues related to access and safety in the ISDRA for several years. Since 2009, multiple discussions have been held about whether and how to improve access and safety for OHV riders in relation to the UPRR right-of-way (ROW). County Supervisor Wally Leimgruber hosted the first all-party meeting in April 2010. Representatives from UPRR, the American Sand Association, Imperial County, the Bureau of Land Management (BLM), the California Highway Patrol (CHP), the Boardmanville Store, and others attended.

In 2013, ownership of the Boardmanville Store changed. Since that time, the new property owner has participated in conversations with UPRR and others about the feasibility of improving OHV access across the UPRR ROW.

On October 4, 2016, the City of Brawley submitted a letter to UPRR requesting that a safe crossing solution across the UPRR ROW at the ISDRA be evaluated.

At an Imperial County Board of Supervisor's Meeting on October 18, 2016, the owner of the Boardmanville Store expressed concerns that OHV users are continuing to cross the railroad tracks illegally and that a solution for the unsafe situation has not been identified. It was requested that a letter requesting safe access be sent by the Board to UPRR and the Board agreed.

On November 17, 2016, Imperial County, UPRR, the California Department of Transportation (Caltrans), and the BLM held a meeting to discuss options for the rail crossing. Supervisor Ray Castillo gave opening comments at the meeting. Ultimately, the meeting concluded that no public fund sources were available to approve the crossing. On May 31, 2017, the California Public Utilities Commission (CPUC) responded to a letter from Senator Joel Anderson regarding OHV crossings in the ISDRA. The letter explained CPUC's authority to approve construction of new or modified rail crossings. On June 9, 2017, the CPUC responded to a letter from Senator Ben Hueso and Assembly member Eduardo Garcia concerning the hazardous rail crossing in the ISDRA. The CPUC explained that it has looked into and held discussions about the issue.

On March 28, 2017 the Imperial County Board of Supervisors discussed a request to participate in a new ISDRA/Glamis Wash 10 Access Project. The County was asked to provide staff resources and financial support for the design, permitting, construction, maintenance, and indemnification of the project under the UPRR. It was discussed that if the County took the lead on the project, then UPRR may allow for

Wash 10 to be reopened. Because costs associated with the project were estimated to be well over one million dollars, the County indicated that it was not in a position to provide the requested support.

On September 26, 2018, the American Sand Association and EcoLogic Partners, Inc. filed a Complaint with the CPUC requesting that they investigate a rail crossing, reopen the structure at Wash 10 and redesignate the at-grade maintenance access crossings. Proceedings on the complaint continued until November 16, 2018 when a notice was filed assigning the matter for Alternative Dispute Resolution. Mediation efforts are ongoing. Following the completion of mediation, evidentiary hearings will be held.

## **2 Existing Plans and Studies**

This section summarizes pertinent plans in the areas and studies related to the proposed project.

### **2.1 Imperial County General Plan and Policies**

The Land Use Element of the General Plan (adopted October 6, 2015) largely defines the Study Area as Open Space/Recreation. Open space is considered for any parcel or area of land or water that is essentially unimproved and devoted to conservation of natural resources, outdoor recreation, and protection of the public health and safety. The study area is bisected by the UPRR line, which serves the Los Angeles area, and northward in California, and the balance of the U.S. eastward as a major freight line. Several objectives are contained in the Circulation and Scenic Highways Element (approved January 29, 2008), including encouraging existing railroad corridor ROWs to be preserved for future transportation needs.

A portion of the Study Area is located within the Glamis Specific Plan area. The Glamis Specific Plan area encompasses approximately 160 acres bisected by SR 78 approximately 27 miles east of the City of Brawley. The UPRR crosses the specific planning area on the east. Glamis is centered around OHV activity at the Algodones Sand Dunes and Osborne Scenic Overlook. The Glamis Specific Plan area is intended to accommodate recreation supporting land uses including retail and service commercial, motel accommodations, recreational vehicle and mobile home parks, and community facilities.

This Glamis Specific Plan is currently being developed and specific land use within that area will be defined therein. The initial draft of the proposed modification and development includes significant upgrades to the area and changes in zoning for a majority of the privately-owned property to designation CR-3 which would allow the maximum range of recreational, commercial, resort, retail, or other infrastructure uses. The development of the property is proposed to occur over several phases spanning 20 to 50 years and includes installation of utility service as well as amenities, housing, additional infrastructure and retail. Development is noted in all four quadrants of the private property around the intersection of SR 78 and the UPRR line.

In 2017, the County of Imperial prepared a Policy Statement regarding safe OHV recreation, which clarifies the County's support of OHV use assuming compliance with local, state, and federal regulations. The County also established that when it participates in projects to develop new safe access points and methods of travel in the area, the cost and benefits need to be weighed by the Board of Supervisors and the project should have maximum benefit to the residents of Imperial County.

## 2.2 ISDRA Management Plan and Amendments to the California Desert Conservation Area Plan

The 2013 ISDRA Management Plan (RAMP) and Amendments to the California Desert Conservation Area (CDCA) Plan provide guidance for the management of lands within the Planning Area (as defined previously; see Figure 2).

Goals of the RAMP include providing a variety of sustainable OHV and other recreational activities, maintaining or improving conditions of the special status species and other unique natural and cultural resources, and creating an environment to promote the health and safety of visitors, employees, and nearby residents by working with local, state, and federal agencies and interest groups.

The RAMP establishes multiple use classes (MUCs); visual resource management classes; areas of critical environmental concern; recreation area management zones; exclusion or avoidance areas for camping and land use authorizations; adjusts land tenure; designates all BLM-administered lands within the Planning Area as open, closed, or limited to OHV and other motorized use; and maintains the existing Northern and Eastern Colorado Desert Management Plan and Western Colorado Desert Routes of Travel Designation Plan decisions in the Planning Area.

MUCs include Class C (Controlled Use), Class L (Limited Use), Class M (Moderate Use) and Class I (Intensive Use). Class C lands are the most restricted MUC and access is generally limited to non-motorized, non-mechanized means; the North Algodones Dunes Wilderness is a Class C MUC. Areas within the ISDRA that are currently restricted to OHVs due to sensitive biological or cultural resources are categorized as Class L. The area between Old Coachella Canal and New Coachella Canal is classified as Class M, which allows for activities such as mining, livestock grazing, recreation, and energy and utility development. Class I lands comprise the remainder of the ISDRA and allow for the most concentrated use.

The RAMP also designates five types of OHV Management Areas (see Figure 3). Open areas are areas where any type of vehicle use is permitted without restriction, provided vehicles are adhering to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342. Limited OHV Management Areas restrict the use of certain types of vehicles, the locations in which OHV use is permitted, and/or the time that OHVs may be used. Restrictions can include numbers of vehicles, types and sizes of vehicles, time or season of vehicle use, permitted or licensed use only, use on existing roads and trails, use on designated roads and trails, limited to administrative use only, and other restrictions. Within open and limited areas, portions of the OHV Management Areas are open to camping and portions where camping is not permitted. OHV use is prohibited in closed areas, with the rare exception of OHV use for emergency or administrative purposes.

Recreation programs within the ISDRA include developed and dispersed camping, as well as interpretive, informational, and educational services. Though recreation in the ISDRA is largely driven by users seeking opportunities for motorized camping and OHV recreation, other recreational activities such as hunting, hiking, horseback riding, wildflower and wildlife viewing, bird watching, photography, and commercial uses also occur to a lesser degree. Facilities available to visitors include campgrounds, vendor areas,

toilets, trash facilities, and kiosks. BLM ranger stations provide interpretive services, information, and emergency medical services to visitors.

Visitation primarily occurs from October through May, with high levels of visitation occurring on Halloween, Thanksgiving, New Year's Eve/Day, Martin Luther King Jr. Day, Presidents' Day, and Easter holiday weekends. Average annual visitation for fiscal years 2004 through 2009 was estimated at 1.4 million visitors and visitation estimates for the major holiday weekends often exceed 150,000. Visitors historically congregate in camping areas along major access roads, such as Glamis Flats and Wash Road; however, historical gathering areas also exist farther into the dunes, such as Competition Hill, Oldsmobile Hill, Patton Valley, Test Hill, and Buttercup Valley. In 2013, BLM visitor use statistics documented that although annual visitation had historically steadily increased, it had begun to level off since about 2011. (BLM, 2013)

In addition to OHV registration stickers, an ISDRA permit is also required for all primary street legal vehicles used for transportation to access to the Planning Area. Weekly permits currently cost \$35 and seasonal permits cost \$150. The California Desert District Advisory Committee (DAC) provides recommendations to the Secretary of the Interior on resource and land management issues within the BLM's California Desert District. The DAC is also responsible for acting as the advisory entity for the recreation fee program at the ISDRA under the Federal Lands Recreation Enhancement Act. Within the DAC, the ISDRA Subgroup has been developed to provide recommendations specific to the ISDRA on how fees are spent.

### **2.3 Off-Highway Rules and Regulations**

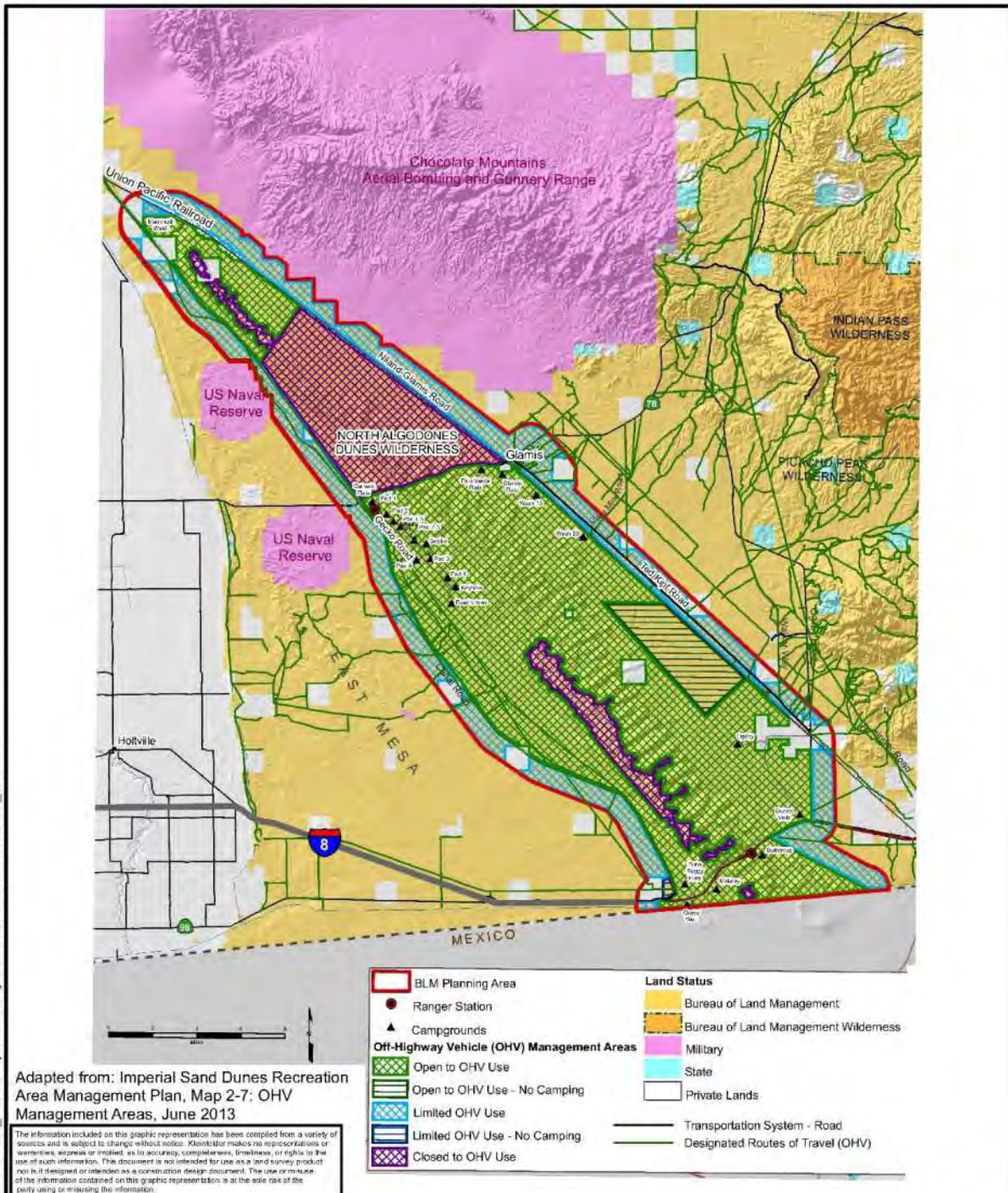
Off-Highway rules and regulations are codified in the California vehicle code and established within the ISDRA RAMP. The rules are enforced by CHP, the Imperial County Sheriff's Department, and BLM peace officers.

Section 38025 of the California Vehicle Code addresses OHV travel in relation to highways. It states that a motor vehicle issued a plate or device pursuant to Section 38160 may be operated or driven upon a highway but only as follows:

(a) On a two-lane highway, only to cross the highway at an angle of approximately 90 degrees to the direction of the roadway and at a place where a quick and safe crossing may be made, or only when the roadway is not maintained by snow removal equipment and is closed to motor vehicles that are subject to registration pursuant to Division 3 (commencing with Section 4000), or only to cross a highway in the manner specified in subdivision (b).

(b) With respect to the crossing of a highway having more than two lanes, or a highway having limited access, a motor vehicle may cross a highway but only at a place designated by the Department of Transportation or local authorities with respect to a highway under their respective jurisdictions as a place where a motor vehicle, or specified types of motor vehicle, may cross a highway, and a vehicle shall cross the highway only at that designated place and only in a quick and safe manner.





Adapted from: Imperial Sand Dunes Recreation Area Management Plan, Map 2-7; OHV Management Areas, June 2013

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|-----------------------------|---------------------------------------------------------------|----------------------------|-----------------|
|                             | PROJECT NO. 20202029                                          | <b>OHV MANAGEMENT AREA</b> | <b>FIGURE 3</b> |
|                             | DRAWN: 12/3/2019                                              |                            |                 |
|                             | DRAWN BY: JP                                                  |                            |                 |
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(c) The Department of Transportation and local authorities with respect to a highway under their respective jurisdictions may designate, by the erection of an appropriate sign of a type approved by the Department of Transportation, a place where a motor vehicle, or specified type of motor vehicle, may cross a highway having more than two lanes or having limited access.

(d) A motor vehicle identified pursuant to Section 38010 may be towed upon a highway, but not driven, if the vehicle displays a plate or device issued pursuant to Section 38160.

(e) A motorcycle identified pursuant to Section 38010 may be pushed upon a highway, but not ridden, if the motorcycle has displayed upon it a plate or device issued pursuant to Section 38160.

(f) A peace officer, as defined in Chapter 4.5 (commencing with Section 830) of Title 3 of Part 2 of the Penal Code, may operate or drive an off-highway vehicle identified pursuant to Section 38010 upon a highway in an emergency response situation. (Amended by Stats. 2003, Ch. 135, Sec. 1. Effective January 1, 2004.)

Section 38027 of the California Vehicle Code indicated that motor-driven cycles issued a plate or device pursuant to Section 38160 may be moved, by nonmechanical means only, adjacent to a roadway, in such a manner so as to not interfere with traffic upon the highway, only for the purpose of gaining access to, or returning from, areas designed for the operation of off-highway vehicles, when no other route is available. The Department of Transportation or local authority may designate access routes leading to off-highway parks as suitable for the operation of off-highway vehicles, if such access routes are available to the general public only for pedestrian and off-highway motor vehicle travel.

The BLM has also established ISDRA specific rules and regulations for OHVs. A 15-mph speed rule exists on the sand highways and on public lands within 500 feet of SR 78.

## **2.4 SR 78 Transportation Concept Report**

In 2015, Caltrans prepared a Transportation Concept Report (TCR) for the Imperial County portion of SR 78, which is a long-term plan that assists Caltrans with managing future projects along the corridor. SR 78 is a two-lane highway that runs east and west, serving as an interregional, local, goods movement, and recreational route. SR 78 within the Study Area is classified as a two-lane undivided conventional roadway and designated as a minor arterial roadway. It provides access to the ISDRA as well as provides goods movement for agricultural activities in the Imperial Valley. The terrain in the area is flat and is characterized by arid desert landscapes. The speed limit along SR 78 within the Study Area is 55 miles per hour. It is also designated as a shared Class III bicycle route. As with many rural highway routes, pedestrian facilities in the SR 78 corridor exist only as the highway shoulder. The outside paved shoulder width is greater than 8 feet. Roadway crossings along SR 78 in the vicinity of the Study Area are at-grade and unsignalized.

SR 78 is a major goods movement corridor that is part of the interregional Calexico-Coachella Cargo Corridor and the North American Free Trade Agreement Network (NAFTA-NET), which were both created to facilitate the movement of goods, services, and information between California and Mexico.

These systems are also intended to improve intercity and international travel and to provide an improved facility for the movement of goods throughout the region. Freight rail is also used to accommodate goods movement through Imperial County. The UPRR moves bulk commodity, bulk, and mixed cargo along the former Southern Pacific *Sunset Route*, which is still a primary California freight rail corridor. The UPRR is defined by the Surface Transportation Board (STB) as a Class I railroad.

No public transit is available within the Study Area. The segment of SR 78 within the study area is not designated as a scenic highway.

## **2.5 Accident Data**

The Statewide Integrated Traffic Records System (SWITRS) traffic collision data for the area nearby the Project Location were compiled for an 11-year period from January 1, 2008 to October 20, 2019.

Considered in the analysis of accident data were collisions occurring on SR 78, the ISDRA, Ted Kipf Road, Ogilby Road, and various intersections with these thoroughfares.

### **Imperial Sand Dunes Recreation Area**

A total of 50 collisions were reported within the ISDRA between 2008 and 2019, including 38 fatalities and 48 injuries. During the 11-year period, the types of accidents that occurred within the ISDRA were reported as follows:

- 29 overturned
- 1 sideswipe
- 5 hit objects
- 6 head-on
- 5 broadsides
- 1 auto-pedestrian
- 3 unknown or other factors

The majority of collisions reported within the ISDRA were attributed to unsafe speeds (62 percent), with 18 percent of collisions caused by improper turns. Other collision factors were reported as drivers under the influence of alcohol or drugs (6 percent), other improper driving (4 percent), exterior factors (4 percent), and unknown or not stated (6 percent).

### **State Route 78**

A total of 12 collisions were reported along SR 78 between Ted Kipf Road and Vista Mine Road, including 10 injuries and no fatalities. During the 11-year period, the types of accidents that occurred along SR 78 were reported as follows:

- 2 overturned
- 1 sideswipe
- 2 hit objects
- 5 rear ends
- 2 broadsides

Half of the collisions that occurred along SR 78 were attributed to unsafe speeds. Approximately 33 percent of the reported collisions were caused by improper turns, while 8 percent were caused by driving on the wrong side of the highway, and 8 percent were caused by external factors.

### **Ogilby Road**

A total of 42 collisions were reported along Ogilby Road between Ted Kipf Road and SR 78, including 2 fatalities and 34 injuries. During the 11-year period, the types of accidents that occurred along Ogilby Road were reported as follows:

- 14 overturned
- 1 sideswipe
- 13 hit objects
- 1 rear end
- 1 head-on
- 2 broadsides
- 3 unknown or other factors

The majority of collisions reported along Ogilby Road were attributed to improper turns (66 percent), while 14 percent were caused by unsafe speeds and 11 percent by external factors. Other collision factors included improper stopping and/or signaling (3 percent), drivers under the influence of alcohol or drugs (3 percent), and failure to yield to the ROW (3 percent).

### **Ted Kipf Road**

A total of two collisions resulting in two injuries and no fatalities were reported along Ted Kipf Road between Vista Mine Road and SR 78. One of the collisions occurred in which the driver hit an object while the other involved a collision between the driver and another motor vehicle. Both collisions reported along Ted Kipf Road were attributed to unsafe speeds.

## **2.6 Stakeholder Provided Documentation**

The owner of the Boardmanville store provided maps and photographs representing the study area, and video recordings of illegal crossing of the UPRR ROW and SR 78. In several maps, Wash 10 is identified as an unimproved dirt road, and is indicated on both east and west sides of the UPRR line as well as passing beneath the rail line. BLM maps of the ISDRA presented in the Recreation Area Management Plan show the area to the east of the UPRR line as open to OHV use. Also provided was information from various webpages that provide information to users such as camping areas and points of interest. These sources reference Wash 10 as a shortcut to Boardmanville. Information related to citations given to OHV users on both roadways and within OHV closure areas were also provided.

It is anticipated that additional information on previous studies or surveys performed by BLM may be provided as the FS progresses. Any relevant additional information will be included in the Final Project Report.

## 2.7 Inyo County Local Transportation Commission Combined Use Pilot Project – Case Study

The Inyo County Local Transportation Commission Combined Use Pilot Project was initiated in 2011 and serves as a case study if combined use designations are considered as part of the FS. AB 628, creating Vehicle Code section 38026.1, was passed by the State Legislature and signed into law in 2011 and then extended by SB 1345 in 2016. The law will sunset on January 1, 2020 unless enacted or extended by the Legislature. AB 628 allowed Inyo County to establish a pilot project to designate combined-use highway segments up to 10 miles long on unincorporated County roads to link existing OHV trails and trailheads on federal BLM or United States Forest Service lands, and to link OHV recreational-use areas with necessary service and lodging facilities, in order to provide a unified system of OHV trails in the Owens Valley. Other goals for the project are to preserve traffic safety, improve natural resource protection, reduce OHV trespass on private land, and minimize impacts on County residents. The County of Inyo adopted Implementing Procedures for AB 628 (Implementing Procedures) consistent with the requirements of Vehicle Code sections 38026.1(b)(1) & (2) in 2012. The Implementing Procedures include rules and regulations for OHV travel, environmental review of new routes, and monitoring and reporting requirements. Since 2011, a total of seven combined-use routes have been approved by the Board of Supervisors.

## 3 References

- Bureau of Land Management (BLM). 2002. *Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement*. October.
- Bureau of Land Management (BLM). 2013. *Imperial Sand Dunes Recreation Area Management Plan*. El Centro Field Office. Publication Number BLM/CA/ES-2013/013+1793
- California Department of Transportation (Caltrans). *Transportation Concept Report State Route 78 Imperial County*. District 11. September.
- County of Imperial. 2015. *County of Imperial General Plan; Land Use Element*. Planning & Development Services Department. October 6.

## **APPENDIX C**

### **PUBLIC INVOLVEMENT WORKSHOP INFORMATION**

SR 78/Glamis Multi-Use Grade Separated Crossing Feasibility Study

# Public Workshop #1 - On-Site

## Engagement

### Public Workshop Summary

January 18, 2020

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#### Introduction

This summary provides information about on-site engagement activities for SR 78/Glamis Multi-Use Grade Separated Crossing Feasibility Study. On January 18, 2020, The Imperial County Transportation Commission (ICTC) and the project team conducted an on-site public outreach event. The public outreach event was both informative and interactive and was designed to maximize participation by Glamis visitors and users. The following summary provides an overview of the outreach event and each activity conducted, as well as a discussion of major themes and input received from attendees. Attachments to this summary contain visualizations of the raw data from the mapping activities.

#### Project Overview

The Imperial County Transportation Commission (ICTC) is performing a feasibility study (Study) to identify and analyze design alternatives and locations for a safe Multi-use Grade Separated Crossing for off-highway vehicle (OHV) users across the Union Pacific Railroad (UPRR) rail line at State Route 78 (SR 78) and the Imperial Sand Dunes Recreation Area (ISDRA). The Study is funded by a Sustainable Communities Grant administered by Caltrans. The Study area is near Glamis, California, in the eastern portion of Imperial County. The Study area is within the eastern portion of the ISDRA and is approximately 3 miles long and 2,000 feet wide. It is bisected by the UPRR from SR 78 in the north to approximately Wash 15 in the south, encompassing Ted Kipf road to the east.

#### Public Outreach Overview

As part of this project, ICTC is conducting outreach to users and other stakeholders in the Glamis area to hear their perspectives and preferences for crossing the tracks, and to understand points of interest in the project site and surrounding area.

## On-Site Engagement Event



*Public Workshop Set-up*

## Objectives

The community outreach event objectives were to provide visitors and users of the Glamis area the opportunity to:

- Learn about the project,
- Learn about the online survey and how they can participate,
- Provide input on preferred areas for crossings, destinations east of the crossing, size of crossings, and other important considerations from a user perspective,
- Sign up for project updates and announcements about future involvement opportunities.



*LANDS Imperial County Annual Imperial Sand Dunes Clean-Up participants*



## Date, Time, and Location

The outreach event was held on Saturday, January 18, 2020, 8:00 a.m. to 3:00 p.m. in the Main Stage Area at the Glamis Flats campground, near the Glamis Beach Store. In order to maximize potential participation, the event was hosted in conjunction with the LANDS Imperial County Annual Imperial Sand Dunes Clean-Up event.



*Public Workshop participants*

## Getting the Word Out

ICTC and the project team worked closely with project Technical Working Group members, the American Sand Association (ASA), LANDS Imperial County, and other stakeholder organizations with ties to the full range of Glamis users to publicize the project and involvement opportunities. A flyer was prepared and distributed, **an example of which can be found in Attachment A**. The flyer and information about the event were posted on the ICTC, ISDRA, ASA, LANDS Imperial County, Glamis Dunes, and Boardmanville Trading Post websites and/or social media accounts. Physical copies were also provided for posting at the Glamis Beach Store and at Boardmanville Trading Post.

## Outreach Event Activities and Input

Participants were invited to visit the project booth and learn about the project, participate in hands-on input activities, share what they value about Glamis, and talk with the project team about their preferences. Participants could also provide their contact information for future project updates and, importantly, receive information about how to participate in the project online survey.

## Project Informational Resources

Informational boards were posted at the project booth and were meant to provide participants with a quick overview of the project's purpose, the project process, public involvement opportunities, and illustrations of different crossing types that might be used. A Project Fact Sheet was available for participants to take and share, **an example of which can be found in Attachment B**. Participants were also encouraged to participate in the project online survey and were provided with small cards that displayed the project website.



*Participants reviewing informational boards*

## Crossing the Tracks: Mapping Activity

Using a base map of the project area, participants were asked to respond to three questions by placing pins related to their experiences and preferences when using Glamis. This activity provided a visual representation showing where participants are currently crossing and the areas where crossings may be advantageous. Each question was assigned a different color pin.

**Graphic representation of the data collected, for this activity can be found in Attachment C.**

The three questions asked were:

**Red Pin:** If you currently cross the railroad tracks on your OHV, where do you cross?

**Blue Pin:** What would be an ideal place to cross?

**White Pin:** What are points of interest/destinations you frequent?

### Activity Themes

- Participants primarily identified Wash 10 as a preferred crossing location. Participants placed 13 red pins on the map indicating that they currently cross at Wash 10, and 38 blue pins indicating that this would be an ideal place to cross.
- Some participants noted that a crossing at Wash 10 would be beneficial given its proximity to Boardmanville, as well as its central location within the heavily used areas of Glamis.
- The primary destination that participants indicated as a reason for crossing the tracks was Boardmanville; 19 white pins were placed.
- Participants also cited that the need for crossing is related to access for OHV use and access to camping sites and other recreational opportunities.



*Participants mapping their preferred crossing locations*

## Regional Point of Interest Mapping Activity

Using a base map of the broader Glamis region and surrounding areas, participants were asked to indicate areas that they travel to or that they believe are points of interest for users.

Participants indicated their locating using a yellow pin. **Graphic representation of the data collected for this activity can be found in Attachment D.**

### Points of Interest

#### East side of UPRR train tracks

- Boardmanville
- Vista Mine Wash/RD
- Tunnels
- Imperial Gardens (Date Shakes)
- Picacho Cemetery
- Walter's Camp
- Palo Verde (First Place for gas)
- Camping
- Sightseeing

#### West side of UPRR train tracks

- Swing Set
- Tiki Hut
- Natural Hot Springs "Six Palms"
- Drag Strip
- Flag Pole
- Old Campground (Glamis Flats)
- Oldsmobile Hill
- Plane/Great Wall
- Sidewinder Road

### Activity Themes

- The points of interest indicated by the majority of participants were located on the west side of the UPRR train tracks. Many citing the reason as there being no current access for OHV users that allows for travel between the two areas.
- Some participants did note points of interested and destinations on the east side of the tracks. 24 pins were placed identifying areas beyond Boardmanville including nine pins near the Colorado River and ten in the Tumco Mine / Gold Rock Ranch area.
- The three most-pinned locations by participants were the "Flag Pole," "Swing Set," and Glamis Flats located within the ISDRA.



*Participants mapping and reviewing locations mapped by other participants*

## Values

Participants were asked to identify what was important to them as they used Glamis and write their response on a community values board. Below are the summarized results of the activity.

**Graphic representation of data collected for this activity can be found in Appendix E.**

### Activity Themes

- Participants frequently identified "access" as an important value; many participants shared that they hope to be able to use all different areas in Glamis with minimal closures.
- Participants shared that there was a desire to maintain "clean dunes" for all users.
- "Safety" was a value consistently shared, and there was a desire to keep the dunes safe for users of all ages. Participants highlighted the importance of Glamis for many who have made visiting the dunes a part of their family traditions.

## Major Themes

The following major themes represent recurring input gathered from the various activities at the on-site engagement event. Understanding the full range and depth of the input requires reviewing the documentation in the appendices, which contain a summary of raw input provided by participants.

### There is a desire to cross the tracks for various reasons.

While some participants did not have a preference or did not express a desire to cross the tracks, many commented that they would take advantage of the opportunity. It was also noted that vehicle uses on either side of the tracks are different, with the Glamis side more appropriate

for vehicles equipped to handle sand, and the Boardmanville side more appropriate for trucks and other street-legal vehicles better equipped for hard-packed surfaces.

### A Small Crossing is Sufficient.

When discussing crossing types and photos of other crossings, most respondents noted that a small crossing similar to a culvert is sufficient. Concerns about safety if the crossing is single lane were noted, however they were balanced by a recognition that a wide open thoroughfare would encourage higher speed and less caution. It was also noted that damage to flags will occur if the crossing height is too short.

### Participants thought Wash 10 would be a good place to cross.

A majority of participants who participated in the mapping activity indicated that Wash 10 would be a good place for a crossing. Reasons included its location central to heavily used areas at the northeast parts of Glamis, location relative to the road connecting the area to Boardmanville, and the width and available space for a crossing at Wash 10. Some participants also noted that this wash has been historically used to cross. It was also suggested that a crossing did not necessarily need to be placed at a wash but could be effective if placed between two washes.

### Safety is important.

The value of safety was connected many times to access. Many participants shared that by creating access to more areas, there would be lower concentrations of people, contributing to safer dune activities for everyone.

SR 78/Glamis Multi-Use Grade Separated Crossing Feasibility Study

# Public Workshop #2 – Virtual Public Meetings

## Virtual Public Meetings Summary

October 21<sup>st</sup> and 24<sup>th</sup>, 2020

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### Summary

This summary provides information about virtual public engagement activities for SR 78/Glamis Multi-Use Grade Separated Crossing Feasibility Study. On October 21<sup>st</sup> and 24<sup>th</sup> of 2020, the Imperial County Transportation Commission and the project team conducted virtual public meeting events which included a set presentation followed by a question and answer session. The public outreach event was both informative and interactive and was designed to provide the public with a summary of the study process and results.

The questions and comments received during the virtual meeting were logged in the recorded chat and will be included with other public comments received as part of the study. The comments were moderated during the session so that a variety of topics brought up were addressed.

Approximately 60 people attended the session on October 21<sup>st</sup>, a Wednesday night. Approximately 15 people attended the session on October 24<sup>th</sup>, a Saturday morning.

**Attachment F** includes the flyer that was distributed virtually through stakeholders including the American Sands Association, Boardmanville Trading Post, and Glamis Beach Store.

**Attachment G** includes a copy of the presentation slides used during the virtual meeting.

SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study  
**Public Engagement**

Attachment A  
**On-Site Event Flyer**

# 112 SR 78 Glamis Off-Highway Vehicle Crossing Feasibility Study

**Get Involved:** The Imperial County Transportation Commission is holding a public workshop and conducting an online survey to collect feedback for a potential Grade Separated OHV Crossing in the Glamis area.

## We want to hear from you!

- Locations for crossings
- Design preferences
- Types of vehicles
- Access needs
- Key points of interest
- Safety concerns
- General input

*For more information, visit the project website:*

<http://www.imperialctc.org/sr-78-glamis-crossing/>



## Public Workshop at the Dunes Cleanup Event:

### **North Dunes Main Stage Area – Glamis Flats**

Saturday, January 18, 2020  
9:00 am to 3:00 pm

### **Online OHV User Survey:**

To take the survey, visit:

<http://sgiz.mobi/s3/SR-78-Glamis-Crossing>

*The online survey will be available from January 1, 2020 through January 31, 2020*





SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study  
**Public Engagement**

Attachment B  
**Project Fact Sheet**

# State Route 78/Glamis Multiuse Grade Separated Crossing Feasibility Study

## Project Description

The Imperial County Transportation Commission (ICTC) is performing a Feasibility Study to analyze and develop design alternatives and locations for providing a safe Multi-use Grade Separated Crossing for off-highway vehicle (OHV) users across the Union Pacific Railroad (UPRR) rail line at State Route 78 (SR 78) and the Imperial Sand Dunes Recreation Area (ISDRA). The study is being funded by a Sustainable Communities Grant administered by Caltrans.

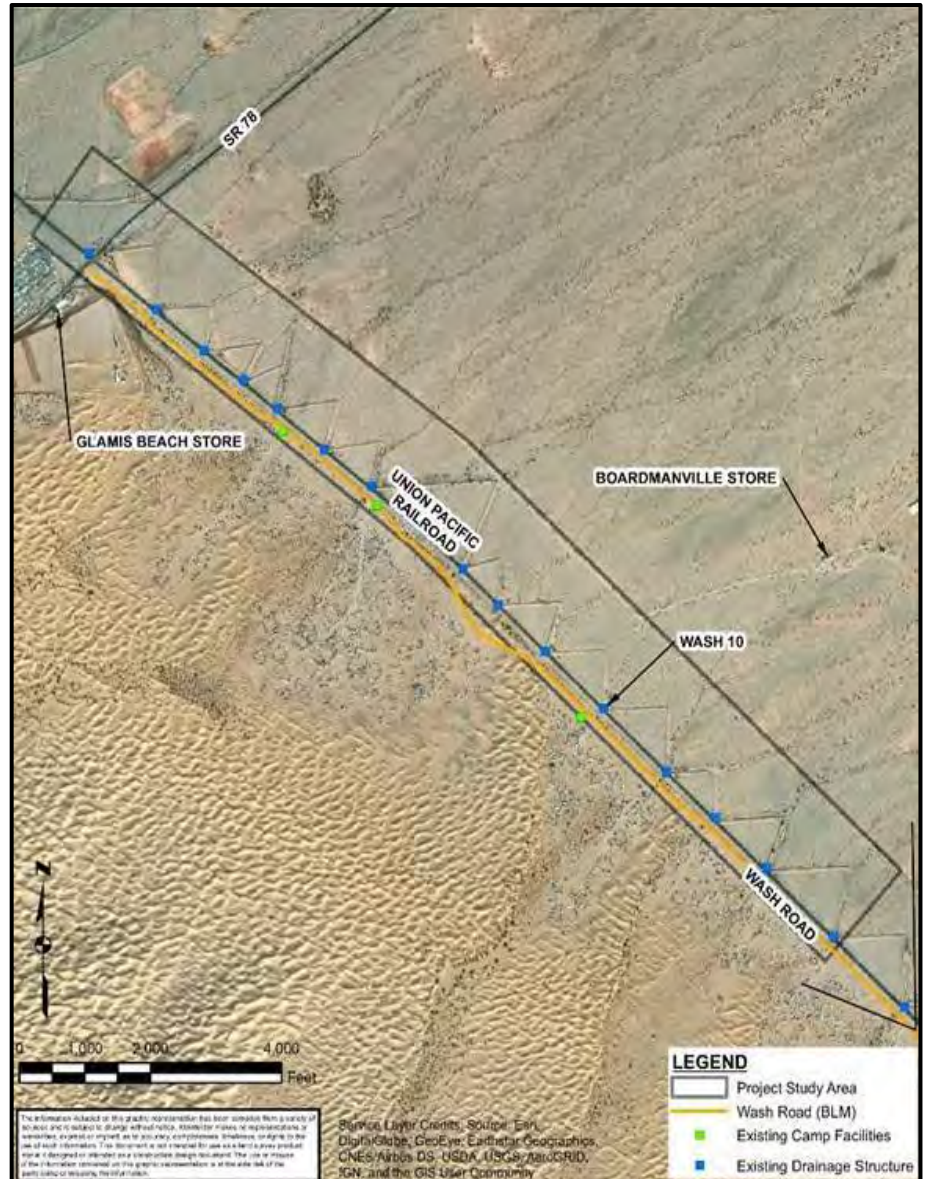
The Study Area is located in Glamis California in the eastern portion of Imperial County. It is within the eastern portion of the ISDRA and is approximately 3 miles long and 2,000 feet wide. It is bisected by the UPRR from SR 78 in the north to approximately Wash 15 in the south, encompassing Ted Kipf road to the east.

## Project Background

Historically, a below-grade wash structure, wide enough for OHVs, south of SR 78, was informally used and privately maintained for travel between the western and eastern portions of the ISDRA on either side of the rail line tracks.

In 2009, UPRR physically closed the informal crossings and indicated they were not authorized for public use. The structure does not meet minimum clearance standards and the at-grade crossings were constructed solely as private railroad maintenance crossings for the railroad's sole use.

Since the closure of these informal crossings, there are no designated legal crossings for OHVs within the 17 miles between SR 78 and Ogilby Road. This has resulted in OHV users crossing over the actual rail line tracks at unprotected, unregulated, and uncontrolled crossing points. The current situation is considered to be a significant safety issue.



## Project Outcomes

The outcomes of the Feasibility Study include developing a problem statement, identifying feasible engineering alternatives for grade separated crossings and the constraints, costs, and risks of each alternative, and establishing a path forward for a preferred alternative. The path forward will include identification of agency responsibility, funding mechanisms, anticipated costs and risks throughout the project life.

## Project Timeline



## Opportunities for Public Input

As shown in the project timeline, ICTC will provide several opportunities to provide public input, as part of the Feasibility Study. Public Workshop #1 will be held at the ISDRA during the Sand Dunes Cleanup in January 2020 to collect public input on access needs, locations for crossings, design preferences, types of

vehicles, key points of interest, safety concerns, and any additional general input.

During the month of January, ICTC will also conduct an online OHV User Survey to better understand OHV recreation and user preferences in the vicinity of the Study Area .

To take the survey, please visit

<http://sgiz.mobi/s3/SR-78-Glamis-Crossing>

Public Workshop #2 will be held online and in person in El Centro, Ca to present the proposed alternatives for the crossing, including the preliminary engineering design for each alternative, evaluation criteria and the preferred alternatives.

## Technical Working Group Partners

A Technical Working Group (TWG), comprised of ICTC, Caltrans, Imperial County, UPRR, the California Public Utilities Commission, American Sands Association, Polaris, and the owner of the Boardmanville Trading Post has been formed to serve in an advisory capacity as part of the Feasibility Study. The TWG’s role is to provide input and feedback to the Consultant Team during the



Feasibility Study in order to achieve the anticipated project outcomes.

## Additional Information

For more information about the project, please visit the project website:

<http://www.imperialctc.org/sr-78-glamis-crossing/>

SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study

## **Public Engagement**

Attachment C

**On-Site Workshop**

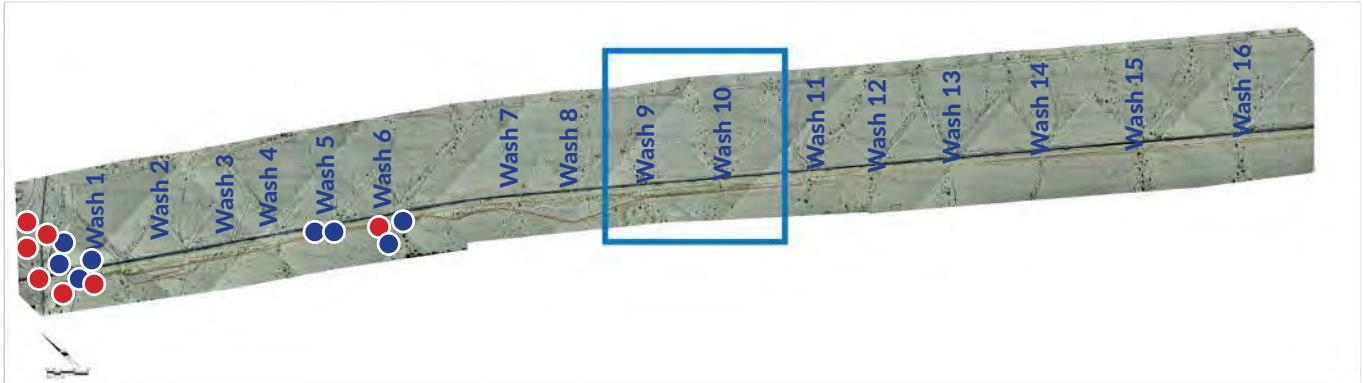
**Crossing the Tracks: Mapping Activity Data**

# Appendix C Crossing the Tracks Mapping Activity Data

## Legend

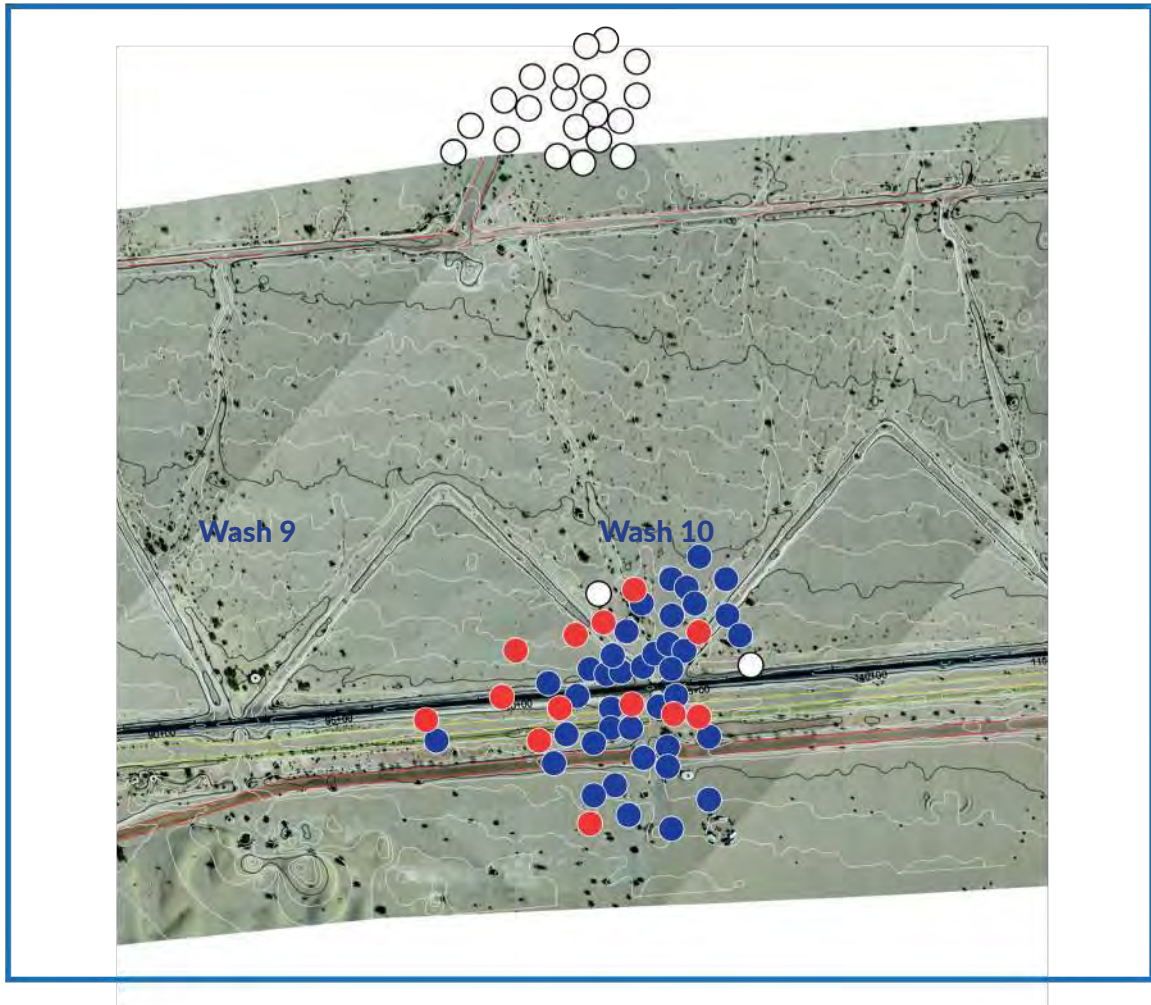
- Red Pin = Place where you currently cross
- Blue Pin = Ideal place to cross
- White Pin = Point of interest

## Activity Results

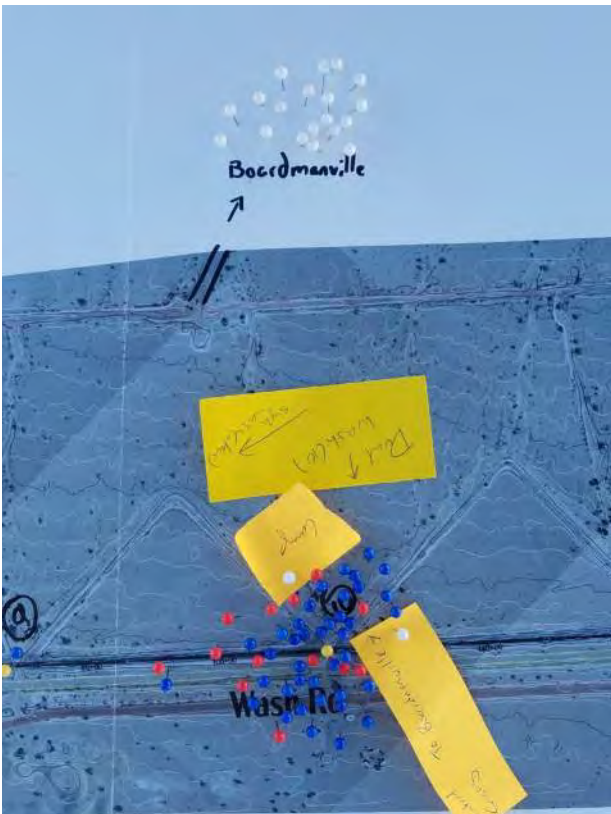


## Input received in Wash 10 Area

Due to the high number of pins placed on wash 10, a detailed view of input related to the area can be found below.



# Appendix C Crossing the Tracks Mapping Activity Data



SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study

## **Public Engagement**

Attachment D

**On-Site Workshop**

**Regional Points of Interest Mapping**

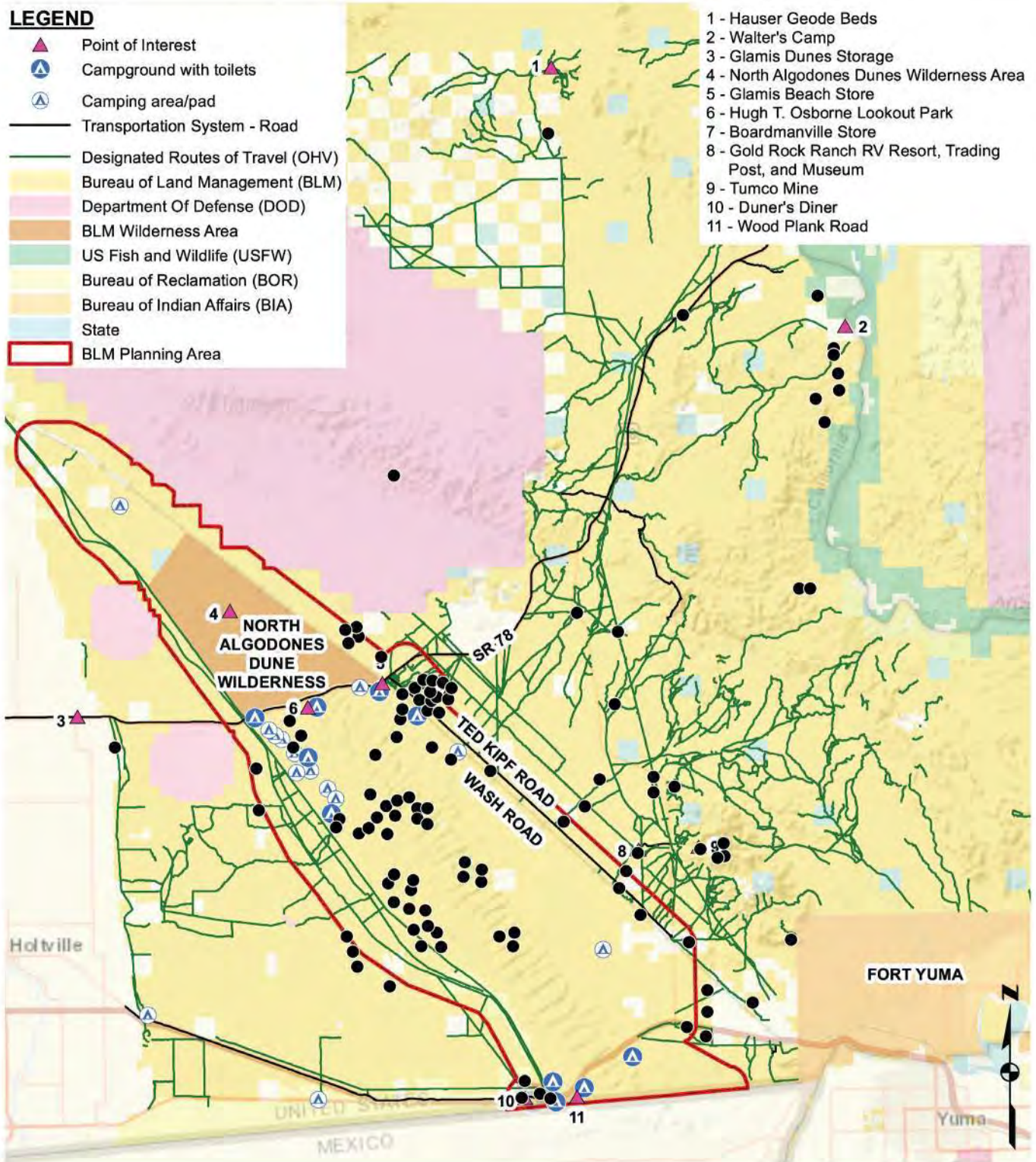
**Activity Data**

# Appendix D Regional Point of Interest Mapping Activity Data

## LEGEND

- ▲ Point of Interest
- ⓘ Campground with toilets
- Ⓜ Camping area/pad
- Transportation System - Road
- Designated Routes of Travel (OHV)
- Bureau of Land Management (BLM)
- Department Of Defense (DOD)
- BLM Wilderness Area
- US Fish and Wildlife (USFW)
- Bureau of Reclamation (BOR)
- Bureau of Indian Affairs (BIA)
- State
- BLM Planning Area

- 1 - Hauser Geode Beds
- 2 - Walter's Camp
- 3 - Glamis Dunes Storage
- 4 - North Algodones Dunes Wilderness Area
- 5 - Glamis Beach Store
- 6 - Hugh T. Osborne Lookout Park
- 7 - Boardmanville Store
- 8 - Gold Rock Ranch RV Resort, Trading Post, and Museum
- 9 - Tumco Mine
- 10 - Duner's Diner
- 11 - Wood Plank Road

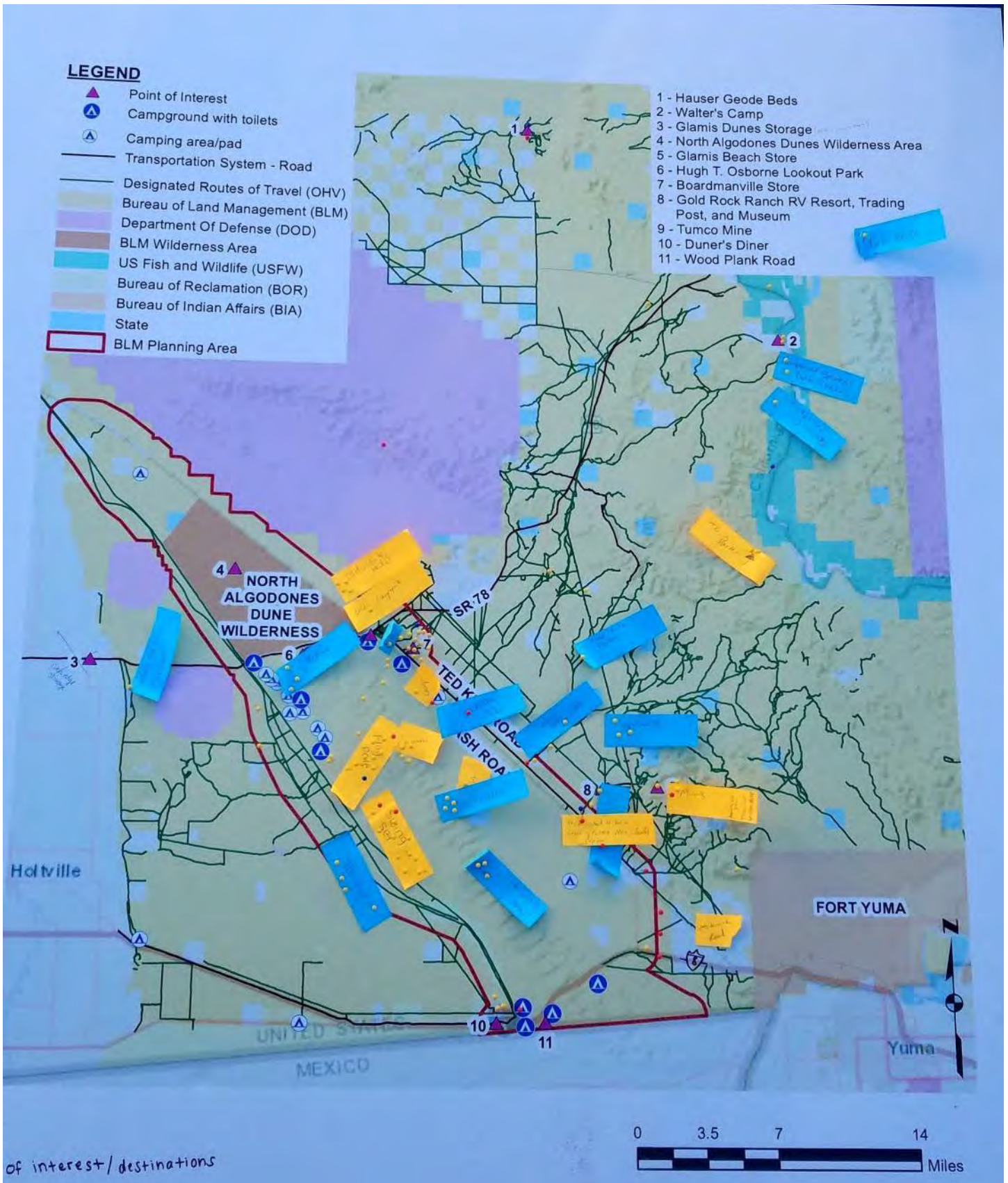


Legend ● Black Pin = Point of interest

Map shows black pins instead of yellow pins to aid visibility



# Appendix D Regional Point of Interest Mapping Activity Data



SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study  
**Public Engagement**

Attachment E  
**On-Site Workshop  
Participant Values Data**

## Appendix E Participant Values Data

### What is important to you as you use Glamis?

- Clean Dunes, spending time with family friends
- Safety
- Fire
- Pick up your trash, No glass. Stop ranger harassment
- Access to plenty of dunning real estate, safe dunning practices and priceless memories
- Only take pics, only leave footprints!
- Safe family environment, clean camping, trash can access
- Fun safe & clean
- Clean safe & fun environment for my family and friends!
- Hanging out with family and friends
- Clean & Safe
- Great times with friends! Pack it in, pack it out.
- Have a great time and be safe!!
- Riding
- Ice Cream Allys
- Clean Campus, safe for everyone and family fun!
- Clean, Safe, Fun for my family
- Having safe, clean fun and respect of people camping with you and around you! Keeping it open.
- Family & Friends
- Family time in a clean, safe place.
- Clean Dunes, Access to North & East Area
- Stays Clean
- I want clean Dunes and to ride quads and play with my dogs and to be safe!
- More Dunes = Safe Dunes
- Safe R.R. X-ings
- Having fun and making sure others have a good time and don't have to deal with others trash deposits.
- Glamis family, keep it clean!!
- Having fun with the family & enjoying life!
- Family time together. Being able to enjoy the outdoors.
- Go on a long ride.
- Clean Dunes
- Access to North & East Dunes or area
- Have fun Be Safe!
- Friends & family fun
- Dunes family 5yrs and going
- Fun
- To be safe & keep our Dunes clean!
- I want all of us to be safe and ride quads
- Good times at Glamis
- No Dunes closures
- No all night parties. Save riding
- Milkweed Plant
- Clean & Safety
- Safe family fun
- Family fun
- No more closures
- Community events
- Crossing into Boardmanville



SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study

## **Public Engagement**

Attachment F

## **Virtual Meeting Flyer**

# <sup>12</sup> SR 78 Glamis OHV Crossing Feasibility Study

Join the Imperial County Transportation Commission (ICTC) for an opportunity to provide input on a potential Off Highway Vehicle (OHV) crossing in the Glamis area!

You shared your vision with us during the first round of outreach, now tell us what you think about the most feasible alternative. We invite you to participate in one of the public meetings scheduled in October. Also, an online input portal will be available between October 8 and November 6, 2020.



**Project Contact:**  
Virginia Mendoza  
Senior Transportation Planner  
Imperial County  
Transportation Commission  
1.760.592.4494



## **Virtual Public Meeting Opportunities:**

### **Meeting Opportunity 1:**

Wednesday, October 21, 2020  
7:00 PM to 8:00 PM

### **Meeting Opportunity 2:**

Saturday, October 24, 2020  
9:00 AM to 10:00 AM

### **To register visit:**

[glamiscrossing.eventbrite.com](http://glamiscrossing.eventbrite.com) or  
[http://www.imperialctc.org/  
sr-78-glamis-crossing](http://www.imperialctc.org/sr-78-glamis-crossing)

Registration will be open from  
**August 21 to October 23, 2020**

## **We want to hear from you about:**

- Design
- Access and usability
- Safety
- General Input
- General questions

## **Online Resources and Input Portal:**

We invite you to visit the project website to learn more and to provide direct input through the online input portal:  
**<http://www.imperialctc.org/sr-78-glamis-crossing>**

SR 78 / Glamis Multi-Use Grade Separated Crossing Feasibility Study

## **Public Engagement**

Attachment G

## **Virtual Meeting Presentation Slides**

# SR 78 / Glamis Multiuse Grade Separation Crossing Feasibility Study

Welcome!

Thank you for joining this virtual public meeting hosted by the Imperial County Transportation Commission. We'll start shortly.

The purpose of this study is to assess alternatives to safely cross the railroad in the Glamis area and to select the most feasible alternative. You can access the draft document and provide comment at [Imperialctc.org/sr-78-glamis-crossing/](https://Imperialctc.org/sr-78-glamis-crossing/).

During today's meeting, we'll share information about the study and the preferred alternative, answer your questions, and collect input.



## Thank you for participating in today's Virtual Public Meeting

- Share an overview of the study process, the alternatives evaluated, the most feasible alternative
- Provide an opportunity for feedback and answer questions
- Guide participants to the online input portal

## How to Participate

- Use Chat Box to type in questions and comments during the meeting
- Go to [Imperialctc.org/sr-78-glamis-crossing/](https://Imperialctc.org/sr-78-glamis-crossing/) to read the full study and provide additional comments
- Send the link to your friends and family and tell them about the study

# Today's Agenda

- Presentation – who, what, why, how
- Q & A
- Fun Polling Questions

# Meeting Team

- Virginia Mendoza – ICTC Project Manager – Presenter
- Kelly Burnell – Consultant Project Manager – Presenter
- Joan Isaacson – Facilitator
- Christian Mendez – Meeting Tech
- Siri Champion – Meeting Records



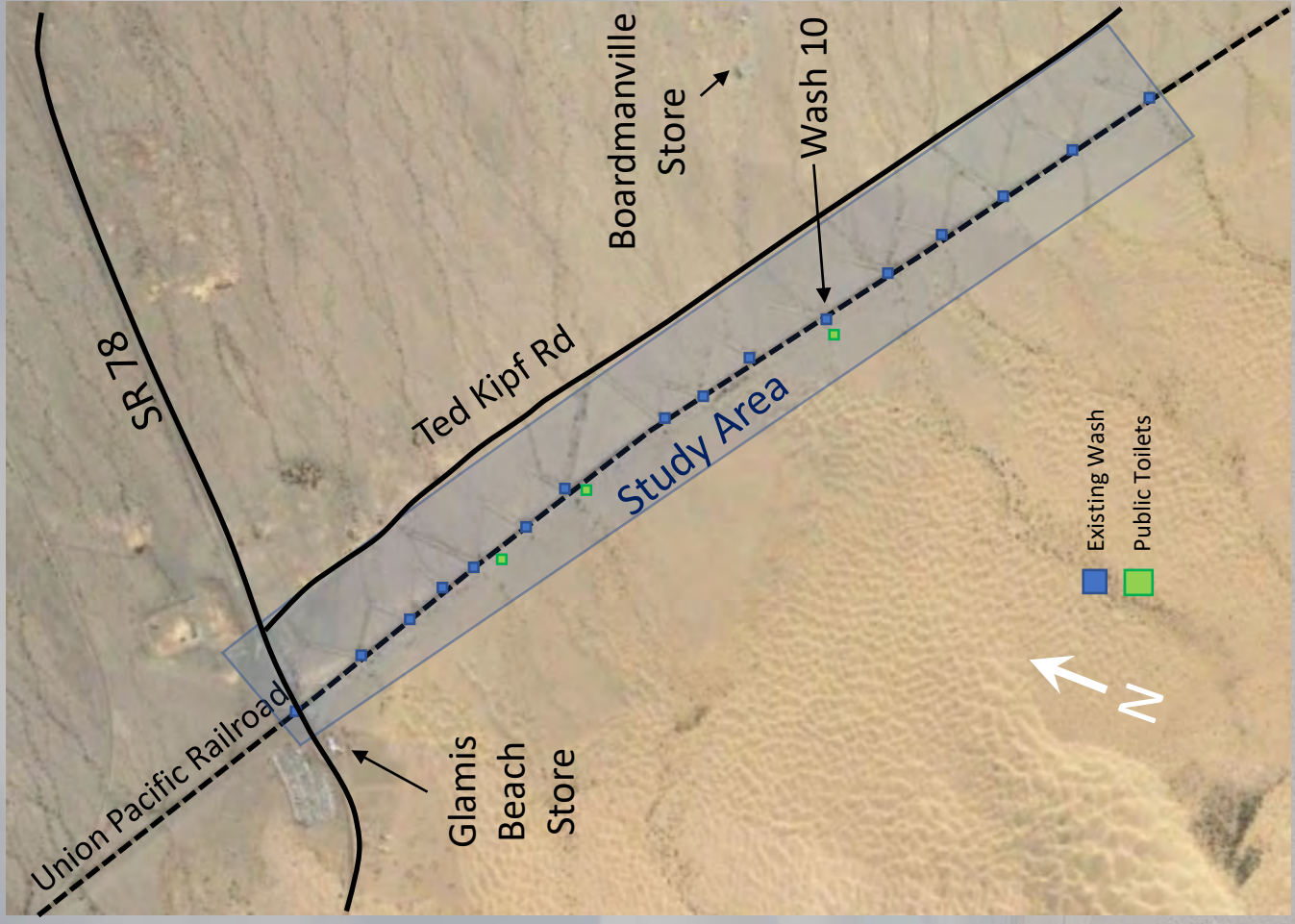
# SR 78 / Glamis Multiuse Grade Separation Crossing Feasibility Study

# What are we trying to solve?

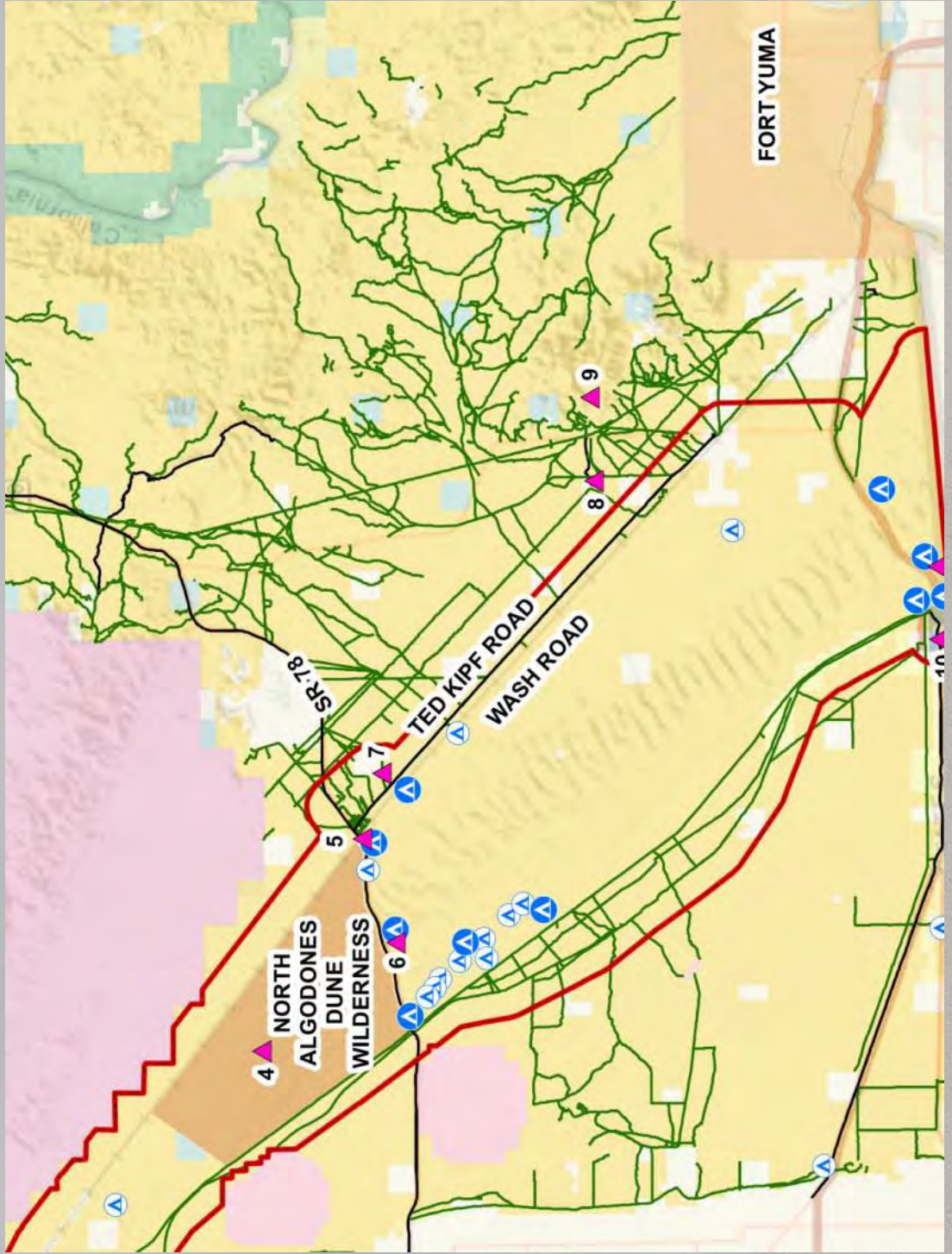


- Study is funded by State Planning and Research Funds
- Led by Imperial County Transportation Commission
- Key involvement from Technical Working Group

# Study Area:



# East Side Connections





# Public Workshop #1 - On-Site Engagement Summary

January 18, 2020



## Major Themes from Public Workshop

- There is a desire to cross the tracks for various reasons.
- A small crossing is sufficient.
- Participants thought Wash 10 would be a good place to cross.
- Safety is important.



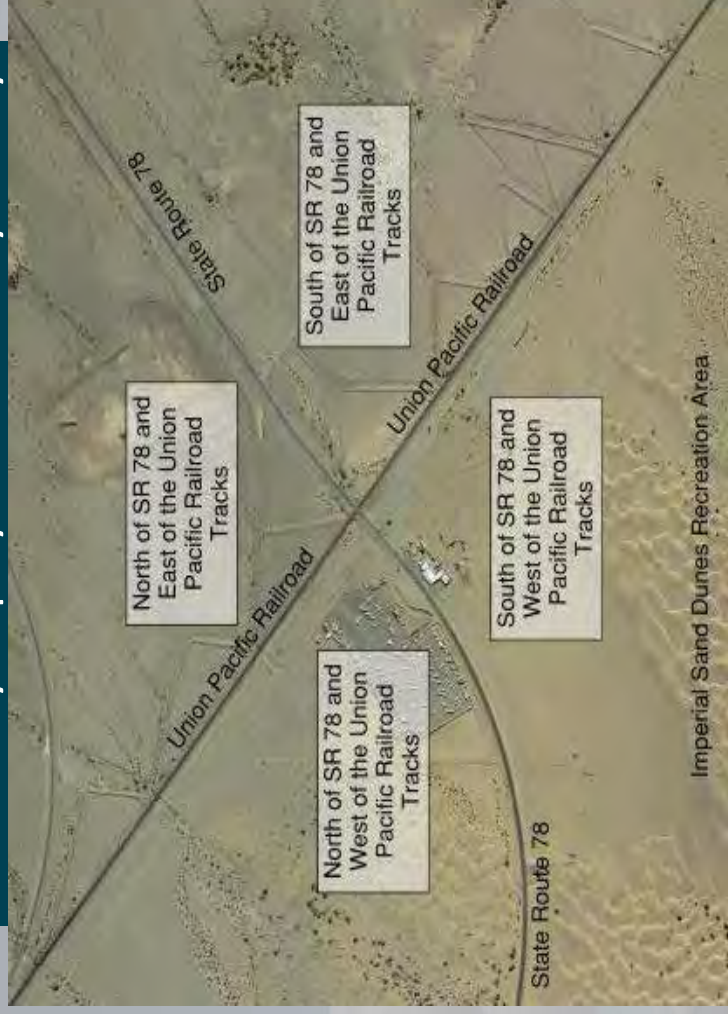
# Online Survey – January 2020

139

Where do you play? Where do you stay?

- 4,900 Respondents
- Topics included:
  - Use Frequency
  - Areas of Interest
  - Willingness to Pay

139



C 37

# Alternatives Considered



**Alternative**  
**78-Overcrossing**  
**Score 32.3**  
**Cost \$34.5M**

**Alternative**  
**78 Trail-Overcrossing**  
**Score 34.6**  
**Cost \$12M**



**Alternative**  
**9.5-Underpass**  
**Score 28.0**  
**Cost \$10.5M**

**Alternative**  
**10-Overcrossing**  
**Score 32.9**  
**Cost \$11.5M**

# GRADE SEPARATED CROSSING STRUCTURE TYPES

141

## Roadway Concepts



## Trail Concepts



Over the Railroad

141

Under the Railroad



C 39

14

## Feasibility Study – Evaluation Process

1. Develop and Weight Criteria
2. Select Range of Feasible Alternatives
3. Score Alternatives using Criteria
4. Estimate Cost of Alternatives
5. Use Scoring and Cost to Select Most Feasible Alternative

## Feasibility Study – Criteria

143

1. Connectivity
2. Traffic on Existing Roads (SR78, Ted Kipf, Wash Rd)
3. Rail Operations during Construction
4. Conflicts within Rail ROW
5. Conflicts with Private ROW
6. Maintenance and Operation efforts
7. Sensitive Resources
8. Aesthetics

143

C41

# Alternative 78 Trail-Overcrossing





# Alternative 78-0



# Alternative 9.5-Underpass



# Alternative 10-Overcrossing



# Updated Scoring Summary

148

|                                               | Alternatives                             |             |             |             |
|-----------------------------------------------|------------------------------------------|-------------|-------------|-------------|
|                                               | 78-0                                     | 78T-0       | 9.5-U       | 10-0        |
|                                               | <b>(0 = Overcrossing, U = Underpass)</b> |             |             |             |
| <b>1. Connectivity</b>                        | 2                                        | 3           | 5           | 4           |
| <b>2. Traffic on Existing Roads</b>           | 3                                        | 4           | 5           | 4           |
| <b>3. Rail Operations During Construction</b> | 4                                        | 5           | 3           | 5           |
| <b>4. Conflicts within Rail ROW</b>           | 5                                        | 5           | 3           | 5           |
| <b>5. Conflicts with Private ROW</b>          | 2                                        | 3           | 5           | 5           |
| <b>6. Maintenance and Operations Efforts</b>  | 5                                        | 4           | 3           | 3           |
| <b>7. Sensitive Resources</b>                 | 4                                        | 4           | 3           | 2           |
| <b>8. Aesthetics</b>                          | 1                                        | 2           | 5           | 2           |
| <b>Weighted Performance Score</b>             | <b>32.3</b>                              | <b>34.6</b> | <b>28.0</b> | <b>32.9</b> |

21

## Alternatives Cost Summary

149

|                     | Alternatives<br>(O = Overcrossing, U = Underpass) |        |         |
|---------------------|---------------------------------------------------|--------|---------|
|                     | 78-O                                              | 78T-O  | 9.5-U   |
| <b>Capital Cost</b> | \$28M                                             | \$9.7M | \$8.1M  |
| <b>Support Cost</b> | \$6.5M                                            | \$2.3M | \$2.4M  |
| <b>Project Cost</b> | \$34.5M                                           | \$12M  | \$10.5M |
|                     |                                                   |        | 10-O    |
|                     |                                                   |        | \$9.3M  |
|                     |                                                   |        | \$2.2M  |
|                     |                                                   |        | \$11.5M |

149

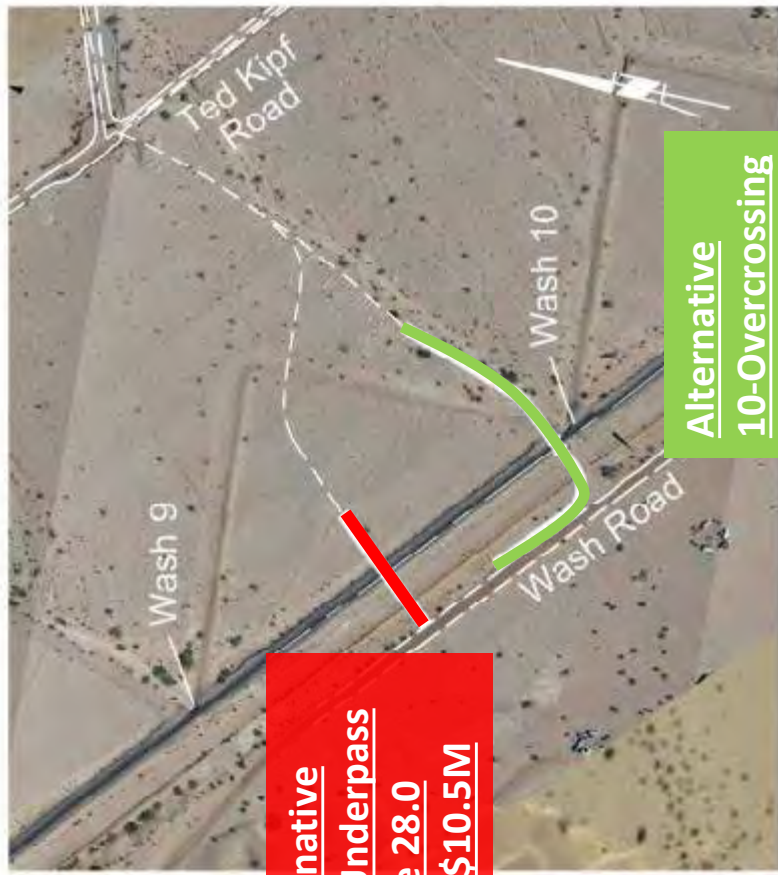
C 47

# Alternatives Considered



**Alternative**  
**78-Overcrossing**  
**Score 32.3**  
**Cost \$34.5M**

**Alternative**  
**78 Trail-Overcrossing**  
**Score 34.6**  
**Cost \$12M**



**Alternative**  
**9.5-Underpass**  
**Score 28.0**  
**Cost \$10.5M**

**Alternative**  
**10-Overcrossing**  
**Score 32.9**  
**Cost \$11.5M**

## Study Recommendations

- Alternative 78T-O is the most feasible
- Begin process to pursue funding opportunities
- Begin discussions on public agency ownership and construction of the proposed crossing

Ask Questions Now in Chatbox

Provide Comments Later at  
the ICTC website:  
[Imperialctc.org/sr-78-glamis-crossing/](https://Imperialctc.org/sr-78-glamis-crossing/)

Comment period ends Nov. 9th

*Next Virtual Public Meeting:  
October 24, 2020*



## **APPENDIX D**

### **ONLINE SURVEY RESULTS**

## Online Survey Results

for the  
For the SR-78 / Glamis Multiuse Grade Separated  
Crossing Feasibility Study

### Previous ISDRA Surveys

Previous surveys performed at the ISDRA include the following:

- 2017 Imperial Sand Dunes Recreation Area Visitor Survey. Prepared by Washington State University Social & Economic Sciences Research Center for the Bureau of Land Management, US Department of the Interior. Report No. IMSA17.
- 2011 Imperial Sand Dunes Recreation Area Visitor Survey. Prepared by the University of Idaho Park Studies Unit for the Bureau of Land Management, US Department of the Interior. Report No. IMSA311
- 2005 TRT Dune Users Survey
- 1998 Visitor Satisfaction Survey. Conducted by the California Department of Parks and Recreation.
- 1993 Imperial Sand Dunes Visitor Research Case Study. Report No. BLM/CA/ST-93-01 4-9560

The results of the past surveys were provided by the BLM and reviewed during the development of the User Survey for the Feasibility Study. In general, these studies focused on assessing visitor satisfaction and the quality of the recreational experience at the ISDRA.

### SR-78 / Glamis Multiuse Grade Separated Crossing User Survey

An online OHV User Survey was administered as part of the Feasibility Study to better understand off-highway vehicle (OHV) recreation and user preferences in the vicinity of the Study Area. The objectives of the survey were to obtain information from users to guide the location and design of potential crossing structures and inform the overall purpose and need for the project. The survey examined visitation, the types of recreational vehicles used, key points of interest, patterns of recreation use, and willingness to pay for a new crossing structure.

### Survey Methods

The survey was administered utilizing the online survey platform, Survey Gizmo, from January 1 through January 31, 2020. A unique URL address was created for online access. The online survey was secured using reCAPTCHA and restricted such that only one survey could be taken per IP address.

Public participation and outreach for the survey was coordinated with the Technical Working Group (TWG), American Sand Association, LANDS Imperial County, and other stakeholder organizations. Survey notifications were posted online using websites, online forums, and social media. An advertisement was also included in the S&S Off Road Magazine's January 2020 issue and printed flyers were posted at local businesses. In addition, cards with details on how to take the survey were distributed at Public Workshop No. 1.

Public outreach was performed with the assistance of stakeholders who have ties to the full range of Glamis users to publicize the project and involvement opportunities; however, it is acknowledged that an online survey format has some limitations. The intent of survey was to include as many Glamis users as possible to provide public input for the Feasibility Study rather than identifying and selecting a discrete representative sample of users to take the survey as required for a scientific research study.

## Survey Results

While examining the results of the surveys, it is important to be aware that the survey included several types of questions:

- Closed-ended questions: Questions that had a discrete answer set from which to choose.
- Scaled questions: Closed-ended questions presented in a scale or range, such as 0-5 rating of not important; a little or somewhat important; very important; extremely important.
- Single or multiple response questions: Some questions allowed only a single response, while other questions allow respondents to give more than one response or choose all that apply.
- Open-ended questions: Questions in which no answer is presented to respondents; rather, a fill-in response with anything that comes to mind from the question. Open ended responses were included for several of the multiple response questions.

A summary of key survey results are discussed further below. A comprehensive survey report is included in Appendix A.

## Survey Participation

9,938 viewers participated in the survey. Of those that viewed the survey, 4,021 respondents completed all survey questions and a total 918 respondents partially completed the survey by answering at least one question. The majority of the surveys were completed mobile devices.

Based on the origin of the IP addresses, more than half of the survey respondents were located in California at the time the survey was taken. Because the majority of the surveys were taken on mobile devices, the location where the survey was taken does not necessarily correlate to the place of residence. The following table presents the number of complete survey responses from a particular location.

| Location                                                                                                                | Number of Completed Survey Responses |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| CA                                                                                                                      | 2,734                                |
| AZ                                                                                                                      | 760                                  |
| NV                                                                                                                      | 69                                   |
| TN                                                                                                                      | 43                                   |
| WA                                                                                                                      | 28                                   |
| CO                                                                                                                      | 26                                   |
| UT                                                                                                                      | 26                                   |
| TX                                                                                                                      | 24                                   |
| IL                                                                                                                      | 20                                   |
| NC                                                                                                                      | 18                                   |
| OR                                                                                                                      | 18                                   |
| OH                                                                                                                      | 16                                   |
| NM                                                                                                                      | 13                                   |
| NY                                                                                                                      | 11                                   |
| MO                                                                                                                      | 10                                   |
| MN                                                                                                                      | 9                                    |
| FL                                                                                                                      | 8                                    |
| GA                                                                                                                      | 8                                    |
| MI                                                                                                                      | 8                                    |
| OK                                                                                                                      | 7                                    |
| ID                                                                                                                      | 6                                    |
| NJ                                                                                                                      | 6                                    |
| KS                                                                                                                      | 5                                    |
| Other (USA) <sup>1</sup> : IN; ON; SC; WI; AB; AK; HI; PA; VA;<br>IA; MD; ND; NE; WY; AR; BC; D8; LA; MA; MB;<br>MS; SD | 40                                   |
| Canada <sup>1</sup> : ON; AB; BC; MB                                                                                    | 9                                    |
| Mexico                                                                                                                  | 2                                    |
| Australia                                                                                                               | 1                                    |
| Unknown                                                                                                                 | 96                                   |
| <b>Total</b>                                                                                                            | <b>4,021</b>                         |

<sup>1</sup> Less than 5 responses from any one of these locations.

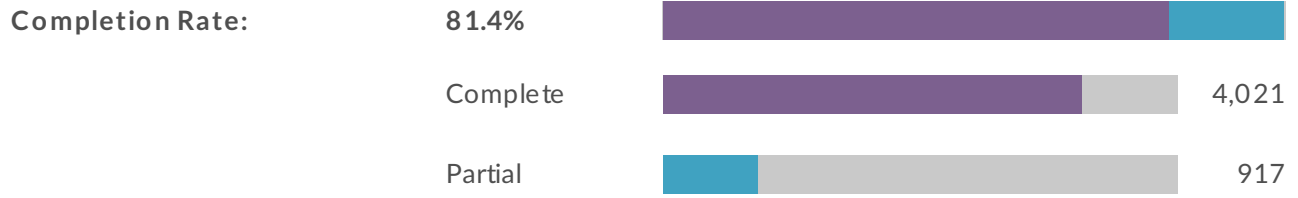
Further evaluation of the partial survey responses indicate that the majority of the respondents stopped the survey at Page 6 [When visiting in the Glamis region, how often do you stay overnight in the following areas?] or Page 7 [Please identify all of the areas of interest you visit with an OHV when recreating in the Glamis region and surrounding areas.] (See Appendix A). Partial survey responses were also provided from respondents located in the US, Canada, Australia, Mexico, Panama, and Costa Rica.

The subsequent pages contain the online survey results data.

# Survey Summary Data Report

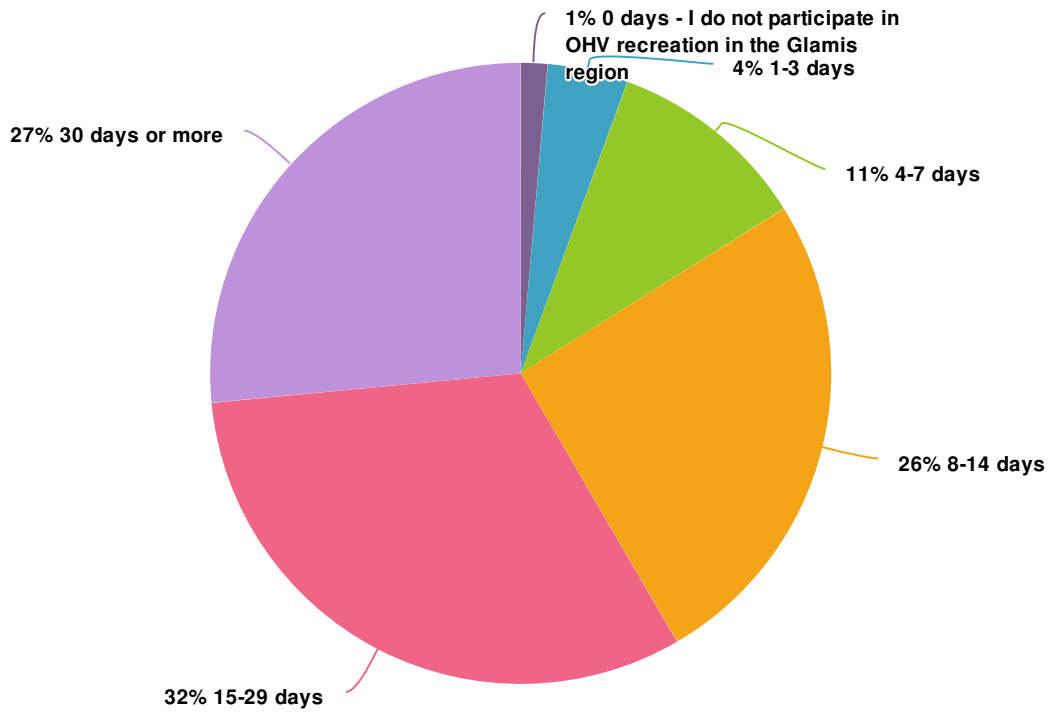
# Report for SR 78 / Glamis Multiuse Grade Separated Crossing User Survey

## Response Counts



Totals: 4,938

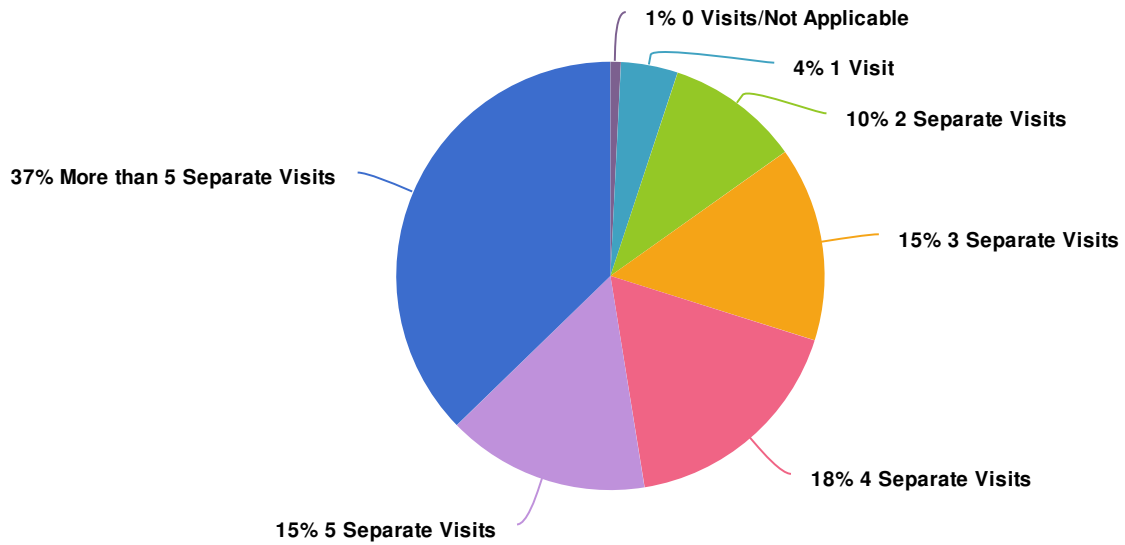
1. On average, how many days each year do you participate in OHV recreation, specifically in the Glamis region?



| Value                                                                | Percent | Responses |
|----------------------------------------------------------------------|---------|-----------|
| 0 days - I do not participate in OHV recreation in the Glamis region | 1.4%    | 66        |
| 1-3 days                                                             | 4.2%    | 203       |
| 4-7 days                                                             | 10.5%   | 506       |
| 8-14 days                                                            | 25.5%   | 1,231     |
| 15-29 days                                                           | 31.9%   | 1,540     |
| 30 days or more                                                      | 26.5%   | 1,281     |

Totals: 4,827

2. When visiting at the Imperial Sand Dunes Recreation Area, how many separate visits do you typically make in any given year?

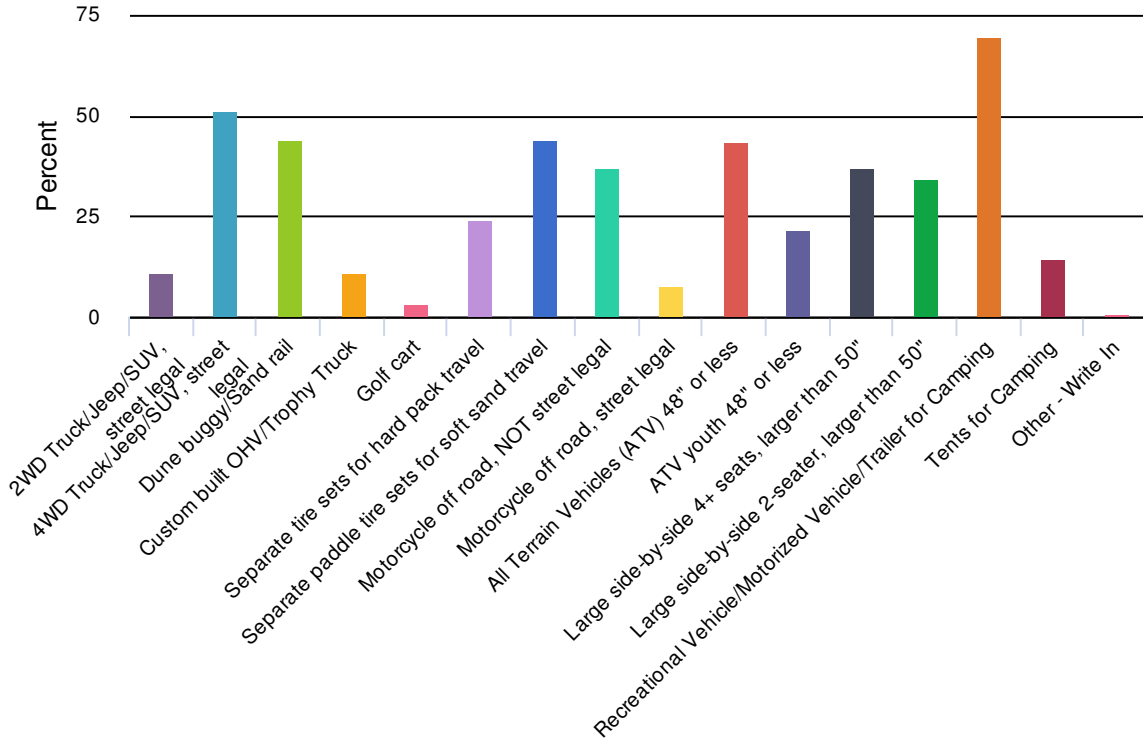


















| Value                       | Percent | Responses |
|-----------------------------|---------|-----------|
| 0 Visits/Not Applicable     | 0.8%    | 37        |
| 1 Visit                     | 4.3%    | 207       |
| 2 Separate Visits           | 10.1%   | 484       |
| 3 Separate Visits           | 14.7%   | 703       |
| 4 Separate Visits           | 17.6%   | 842       |
| 5 Separate Visits           | 15.3%   | 732       |
| More than 5 Separate Visits | 37.3%   | 1,790     |

Totals: 4,795



3. Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply)



|                                                            |                                                                                       |       |       |
|------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|-------|
| 2WD Truck/Jeep/SUV, street legal                           |    | 11.3% | 538   |
| 4WD Truck/Jeep/SUV, street legal                           |    | 51.5% | 2,442 |
| Dune buggy/Sand rail                                       |    | 44.0% | 2,088 |
| Custom built OHV/Trophy Truck                              |    | 10.9% | 518   |
| Golf cart                                                  |    | 3.6%  | 171   |
| Separate tire sets for hard pack travel                    |    | 24.1% | 1,141 |
| Separate paddle tire sets for soft sand travel             |    | 43.8% | 2,079 |
| Motorcycle off road, NOT street legal                      |    | 37.3% | 1,767 |
| Motorcycle off road, street legal                          |    | 7.6%  | 360   |
| All Terrain Vehicles (ATV) 48" or less                     |    | 43.5% | 2,062 |
| ATV youth 48" or less                                      |    | 21.9% | 1,038 |
| Large side-by-side 4+ seats, larger than 50"               |  | 37.1% | 1,758 |
| Large side-by-side 2-seater, larger than 50"               |  | 34.5% | 1,634 |
| Recreational Vehicle/Motorized Vehicle/Trailer for Camping |  | 69.8% | 3,310 |
| Tents for Camping                                          |  | 14.6% | 691   |
| Other - Write In                                           |  | 1.2%  | 56    |

**Other - Write In**

**Count**

|                        |    |
|------------------------|----|
| Motorhome              | 5  |
| Toy hauler             | 2  |
| 1 seat utv             | 1  |
| 2 quads                | 1  |
| 2 seater trail sxs 54" | 1  |
| Totals                 | 50 |

**Other - Write In****Count**

|                                                      |    |
|------------------------------------------------------|----|
| 3 wheeler                                            | 1  |
| 400cc quads and bigger                               | 1  |
| 50 "utv                                              | 1  |
| ATC                                                  | 1  |
| ATV 48" +                                            | 1  |
| Drag atv                                             | 1  |
| Electric bike                                        | 1  |
| Fifth wheel for camping                              | 1  |
| Go with friends                                      | 1  |
| Little confusing question not sure how big my OHV is | 1  |
| Magnetic broom                                       | 1  |
| Mod kart                                             | 1  |
| Motor home                                           | 1  |
| Off road wheelchair                                  | 1  |
| Quads                                                | 1  |
| RV                                                   | 1  |
| Sand Jeep                                            | 1  |
| Sand car                                             | 1  |
| Sandcars                                             | 1  |
| Semi                                                 | 1  |
| Sidexside, dirt bike, and quad and tent              | 1  |
| TRX 450 crf 150r both non street legal               | 1  |
| Toy hauler                                           | 1  |
| Totals                                               | 50 |

**Other - Write In****Count**

| <b>Other - Write In</b>                     | <b>Count</b> |
|---------------------------------------------|--------------|
| Toyhauler                                   | 1            |
| Trailer                                     | 1            |
| Trailer for vehicles                        | 1            |
| UTV                                         | 1            |
| UTV                                         | 1            |
| Varies each time.                           | 1            |
| We live in Brawley so we go out for the day | 1            |
| What ever i can rent for the day            | 1            |
| Wife                                        | 1            |
| Yamaha 2 seats less than 50 "               | 1            |
| atv greater than 48"                        | 1            |
| enclosed utility trailer                    | 1            |
| sand jeep, not street legal                 | 1            |
| toyhauler                                   | 1            |
| trailer for off road vehicles               | 1            |
| truck cab over camper                       | 1            |
| x2                                          | 1            |
| <b>Totals</b>                               | <b>50</b>    |

4. Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

Percent

No data to display



5. Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

Percent

No data to display



6. When riding in the Glamis region, how often do you operate an OHV in the following areas?



|                                                                                                            | Always or Nearly Always | Often          | Occasionally   | Rarely       | Never       | Don't Know  | Responses |
|------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------------|--------------|-------------|-------------|-----------|
| Imperial Sand Dunes Recreation Area - Fee Area<br>Count<br>Row %                                           | 3,138<br>70.3%          | 874<br>19.6%   | 289<br>6.5%    | 47<br>1.1%   | 29<br>0.7%  | 84<br>1.9%  | 4,461     |
| Designated routes of travel South of SR 78 and East of the Union Pacific Railroad tracks<br>Count<br>Row % | 1,139<br>25.8%          | 1,267<br>28.7% | 1,017<br>23.0% | 466<br>10.6% | 360<br>8.2% | 167<br>3.8% | 4,416     |

|                                                                                                                           | Always<br>or<br>Nearly<br>Always | Often          | Occasionally | Rarely       | Never        | Don't<br>Know | Responses |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------|--------------|--------------|--------------|---------------|-----------|
| Designated<br>routes of travel<br>North of SR 78<br>and East of the<br>Union Pacific<br>Railroad tracks<br>Count<br>Row % | 731<br>16.8%                     | 957<br>22.0%   | 857<br>19.7% | 680<br>15.6% | 913<br>20.9% | 220<br>5.0%   | 4,358     |
| Designated<br>routes of travel<br>South of SR 78<br>and West of the<br>Union Pacific<br>Railroad tracks<br>Count<br>Row % | 1,924<br>44.2%                   | 1,200<br>27.6% | 616<br>14.2% | 225<br>5.2%  | 199<br>4.6%  | 188<br>4.3%   | 4,352     |
| Designated<br>routes of travel<br>North of SR 78<br>and West of the<br>Union Pacific<br>Railroad tracks<br>Count<br>Row % | 782<br>18.3%                     | 910<br>21.3%   | 723<br>16.9% | 662<br>15.5% | 961<br>22.5% | 234<br>5.5%   | 4,272     |
| Washes along<br>Ted Kipf Road<br>Count<br>Row %                                                                           | 1,408<br>32.6%                   | 1,365<br>31.6% | 832<br>19.2% | 301<br>7.0%  | 163<br>3.8%  | 254<br>5.9%   | 4,323     |
| Totals<br>Total Responses                                                                                                 |                                  |                |              |              |              |               | 4461      |



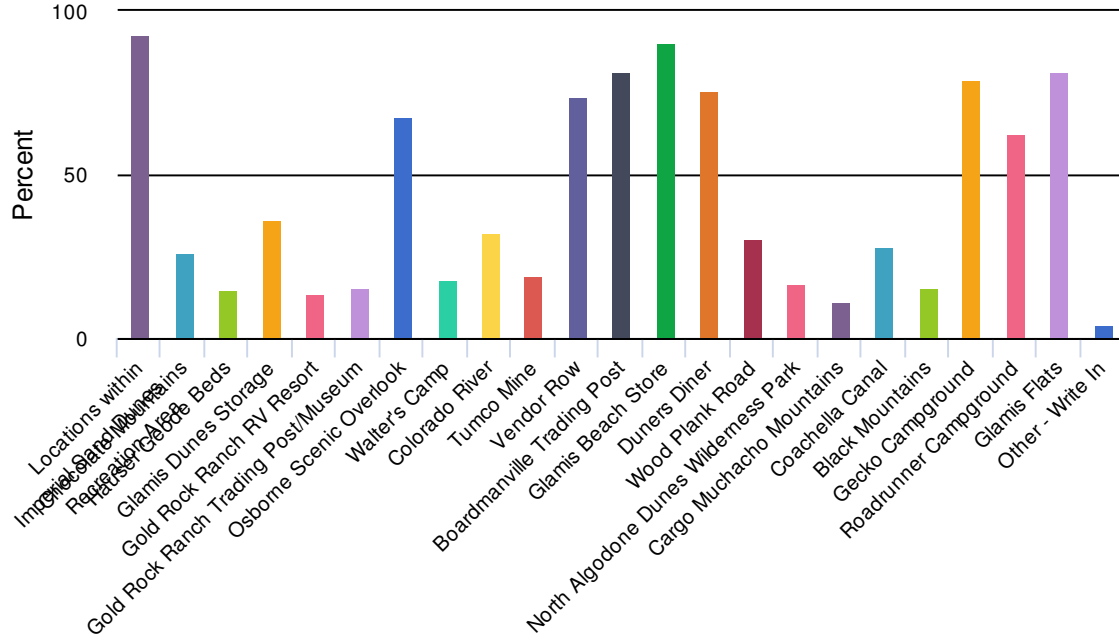
7. When visiting in the Glamis region, how often do you stay overnight in the following areas?



|                                                                                                                 | Always<br>or Nearly<br>Always | Often        | Occasionally | Rarely         | Never          | Responses |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------|--------------|--------------|----------------|----------------|-----------|
| Imperial Sand Dunes<br>Recreation Area - Fee<br>Area<br>Count<br>Row %                                          | 3,192<br>75.9%                | 651<br>15.5% | 215<br>5.1%  | 87<br>2.1%     | 59<br>1.4%     | 4,204     |
| Dispersed camping sites<br>South of SR 78 and East<br>of the Union Pacific<br>Railroad tracks<br>Count<br>Row % | 658<br>16.2%                  | 679<br>16.7% | 686<br>16.9% | 811<br>20.0%   | 1,226<br>30.2% | 4,060     |
| Dispersed camping sites<br>North of SR 78 and East<br>of the Union Pacific<br>Railroad tracks<br>Count<br>Row % | 450<br>11.1%                  | 575<br>14.2% | 627<br>15.4% | 741<br>18.3%   | 1,666<br>41.0% | 4,059     |
| Dispersed camping sites<br>South of SR 78 and West<br>of the Union Pacific<br>Railroad tracks<br>Count<br>Row % | 1,633<br>40.0%                | 860<br>21.1% | 654<br>16.0% | 408<br>10.0%   | 527<br>12.9%   | 4,082     |
| Dispersed camping sites<br>North of SR 78 and West<br>of the Union Pacific<br>Railroad tracks<br>Count<br>Row % | 487<br>12.1%                  | 598<br>14.9% | 611<br>15.2% | 705<br>17.5%   | 1,622<br>40.3% | 4,023     |
| Commercial lodging or<br>hotel<br>Count<br>Row %                                                                | 201<br>5.0%                   | 176<br>4.3%  | 186<br>4.6%  | 424<br>10.5%   | 3,060<br>75.6% | 4,047     |
| Day Use only<br>Count<br>Row %                                                                                  | 367<br>9.0%                   | 325<br>8.0%  | 626<br>15.4% | 1,004<br>24.7% | 1,740<br>42.8% | 4,062     |
| Totals<br>Total Responses                                                                                       |                               |              |              |                |                | 4204      |



8. Please identify all of the areas of interest you visit with an OHV when recreating in the Glamis region and surrounding areas. (Check all that apply)



| Value                                                | Percent | Responses |
|------------------------------------------------------|---------|-----------|
| Locations within Imperial Sand Dunes Recreation Area | 92.9%   | 3,866     |
| Chocolate Mountains                                  | 25.9%   | 1,079     |
| Hauser Geode Beds                                    | 15.0%   | 623       |
| Glamis Dunes Storage                                 | 36.2%   | 1,505     |
| Gold Rock Ranch RV Resort                            | 13.5%   | 561       |
| Gold Rock Ranch Trading Post/Museum                  | 15.7%   | 653       |
| Osborne Scenic Overlook                              | 68.0%   | 2,831     |
| Walter's Camp                                        | 18.0%   | 750       |
| Colorado River                                       | 32.3%   | 1,346     |
| Tumco Mine                                           | 19.1%   | 796       |
| Vendor Row                                           | 73.7%   | 3,067     |
| Boardmanville Trading Post                           | 81.4%   | 3,387     |
| Glamis Beach Store                                   | 90.5%   | 3,766     |
| Duners Diner                                         | 75.4%   | 3,139     |
| Wood Plank Road                                      | 30.2%   | 1,256     |
| North Algodone Dunes Wilderness Park                 | 16.4%   | 682       |
| Cargo Muchacho Mountains                             | 11.6%   | 483       |
| Coachella Canal                                      | 28.2%   | 1,176     |
| Black Mountains                                      | 15.3%   | 638       |
| Gecko Campground                                     | 79.0%   | 3,287     |
| Roadrunner Campground                                | 62.7%   | 2,610     |
| Glamis Flats                                         | 81.6%   | 3,397     |
| Other - Write In                                     | 4.1%    | 170       |

**Other - Write In****Count**

|                                                                                                                                              | Count |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Washes                                                                                                                                       | 6     |
| Boardmanville                                                                                                                                | 5     |
| Mammoth Wash                                                                                                                                 | 3     |
| Boardmanville                                                                                                                                | 2     |
| Glamis washes                                                                                                                                | 2     |
| Gordon's Well                                                                                                                                | 2     |
| washes                                                                                                                                       | 2     |
| ran broadmanville for year uChuckntil he died. It was DEAD wrong what the BLM and railroad did to broadmanville. Pleaae make it right agian. | 1     |
| Any cool landmark in the dunes.                                                                                                              | 1     |
| Anywhere else I end up                                                                                                                       | 1     |
| Bar                                                                                                                                          | 1     |
| Boardmanvile                                                                                                                                 | 1     |
| Boardmanville restaurant!!                                                                                                                   | 1     |
| Boardmanville via wash 10                                                                                                                    | 1     |
| Buttercup                                                                                                                                    | 1     |
| Buttercup, Ogilby Rd, Midway, Gordon's Well                                                                                                  | 1     |
| Camp rZR                                                                                                                                     | 1     |
| Canal road                                                                                                                                   | 1     |
| Cargo Muchacho Mtns                                                                                                                          | 1     |
| Cement flats                                                                                                                                 | 1     |
| China wall                                                                                                                                   | 1     |
| China wall                                                                                                                                   | 1     |
| Totals                                                                                                                                       | 139   |

**Other - Write In****Count**

|                                                                                                                                                                                |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| China wall, comp hill , flag post, swing set                                                                                                                                   | 1   |
| East of Whitlock Rd                                                                                                                                                            | 1   |
| Flag Pole on Veterans Day                                                                                                                                                      | 1   |
| Flag memorials                                                                                                                                                                 | 1   |
| Flag pole, swing set, oldsmobile hill                                                                                                                                          | 1   |
| Flag poles, swing set etc                                                                                                                                                      | 1   |
| Glamis Hill 5                                                                                                                                                                  | 1   |
| Glamis North                                                                                                                                                                   | 1   |
| Glamis as a whole                                                                                                                                                              | 1   |
| Glamis sand dunes                                                                                                                                                              | 1   |
| Glamis washes 2-22                                                                                                                                                             | 1   |
| Gordens Wells, Ogiby                                                                                                                                                           | 1   |
| Gordon's well                                                                                                                                                                  | 1   |
| Gordon's well                                                                                                                                                                  | 1   |
| Gordon's well, Buttercup                                                                                                                                                       | 1   |
| Gordon's well, buttercup                                                                                                                                                       | 1   |
| Gordons well                                                                                                                                                                   | 1   |
| Hot Springs                                                                                                                                                                    | 1   |
| Hot springs,                                                                                                                                                                   | 1   |
| I don't visit glamis only wish I could and ride there with family and friends                                                                                                  | 1   |
| I drive OTR, that's how i get to this beautiful place... i want to bring friends and family too enjoy this hole area!                                                          | 1   |
| I rarely use because I was told by rangers the area was closed to OHV. Got a ticket to prove it! I want access and my money back for the ticket. Hate the Rangers there jerks. | 1   |
| Totals                                                                                                                                                                         | 139 |

**Other - Write In****Count**

|                                                                                                                                                                                                                                                                                                                        |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| I think question 4 is confusing to the areas but I use to camp on the hardpack side of the tracks before UPRR closed access for us to ride to the dunes. So I use to camp and would camp more often on the other side of the tracks and use the trails if there was access. It's frustrating                           | 1   |
| I want access                                                                                                                                                                                                                                                                                                          | 1   |
| I want access everywhere                                                                                                                                                                                                                                                                                               | 1   |
| I want access without breaking and laws or rules.                                                                                                                                                                                                                                                                      | 1   |
| I want safe access everywhere                                                                                                                                                                                                                                                                                          | 1   |
| I want to see everything                                                                                                                                                                                                                                                                                               | 1   |
| I was not aware the north of 78, west of the RR tracks was open for recreational use.                                                                                                                                                                                                                                  | 1   |
| I would go to Boardmansville more often. Now I can only drive my motorhome over there. I used to go under wash 10 until it was closed for no apparent reason except change of ownership of the railroad. This has cost Glamis and California millions to build a new road and drove a small business bankrupt for why? | 1   |
| I would like access to visit the areas on the other side of the train tracks.                                                                                                                                                                                                                                          | 1   |
| I would like to explore other areas                                                                                                                                                                                                                                                                                    | 1   |
| I would like to have ohv access to ride east of the railroad and south of 78                                                                                                                                                                                                                                           | 1   |
| I would ride and camp on east side of tracks but I was told by BLM it was illegal                                                                                                                                                                                                                                      | 1   |
| I would visit these other places more often if access was easier                                                                                                                                                                                                                                                       | 1   |
| If access to the east side was easier would would visit those area every single trip                                                                                                                                                                                                                                   | 1   |
| Indian Pass, Midway Wells, Malpitas Wash                                                                                                                                                                                                                                                                               | 1   |
| Indian Pass.                                                                                                                                                                                                                                                                                                           | 1   |
| It would be nice to be able to get out to the Colorado River for the longer trips we take!                                                                                                                                                                                                                             | 1   |
| Julian Wash / Indian Pass                                                                                                                                                                                                                                                                                              | 1   |
| Mammoth wash                                                                                                                                                                                                                                                                                                           | 1   |
| Mammoth wash                                                                                                                                                                                                                                                                                                           | 1   |
| Totals                                                                                                                                                                                                                                                                                                                 | 139 |



**Other - Write In****Count**

|                                                          |            |
|----------------------------------------------------------|------------|
| Mammoth wash north                                       | 1          |
| Ogilby                                                   | 1          |
| Ogilby/Sidewinder road camp.                             | 1          |
| Ogilby Road                                              | 1          |
| Oglby                                                    | 1          |
| Olds                                                     | 1          |
| Olds hill china wall swing set flag pole                 | 1          |
| Oldsmobile                                               | 1          |
| Oldsmobile hill                                          | 1          |
| Olgeby                                                   | 1          |
| Olgiby                                                   | 1          |
| Pad 4                                                    | 1          |
| Patten Valley                                            | 1          |
| Superstition                                             | 1          |
| Swing set and the flag pole                              | 1          |
| Swing set, teter totter                                  | 1          |
| Swing set, flag pole, Oldsmobile hill, China wall,       | 1          |
| The Oasis west of Glamis Campground                      | 1          |
| Vinagree Wash                                            | 1          |
| Want safe access to all public lands from camping areas. | 1          |
| Wash 10                                                  | 1          |
| Wash 10,11,12,13,14                                      | 1          |
| Wash 13                                                  | 1          |
| <b>Totals</b>                                            | <b>139</b> |

**Other - Write In****Count**

|                                                                                                                                   |            |
|-----------------------------------------------------------------------------------------------------------------------------------|------------|
| Wash 15 to wash 32                                                                                                                | 1          |
| Wash 21                                                                                                                           | 1          |
| Wash 6                                                                                                                            | 1          |
| Wash 6 through 12                                                                                                                 | 1          |
| Wash 8-10                                                                                                                         | 1          |
| Wash 9 and 10                                                                                                                     | 1          |
| Wash Road                                                                                                                         | 1          |
| Wash road                                                                                                                         | 1          |
| Wash road and washes thru 22                                                                                                      | 1          |
| Washes                                                                                                                            | 1          |
| Washes - typically camp 4, 10, or 12                                                                                              | 1          |
| Washes 10 to 21 camping                                                                                                           | 1          |
| Washes 6 - 17                                                                                                                     | 1          |
| Washes/wash rd                                                                                                                    | 1          |
| We camp in wash 6                                                                                                                 | 1          |
| We camp at wash 7                                                                                                                 | 1          |
| We don't often go outside of the dune area as there is no safe legal access to the other side of the rail road tracks any longer. | 1          |
| We want access back                                                                                                               | 1          |
| We would go to boardmanville once per trip to if we could cross the tracks                                                        | 1          |
| West of gecko rd                                                                                                                  | 1          |
| West of the old canal. Hot springs beyond the bombing range.                                                                      | 1          |
| Would like to visit boardmanville but unable to legally do so                                                                     | 1          |
| <b>Totals</b>                                                                                                                     | <b>139</b> |

**Other - Write In****Count**

|                                                                                                                                                                                                                |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Would love to explore more than what I already have                                                                                                                                                            | 1   |
| Would really like to stay and visit these areas. The problem is the Railroad cut off access and I can't camp east of the tracks and can't use public services. Please get us access so we can enjoy our lands! | 1   |
| Would travel a lot more if there was safe legal routes without being worried I was going to get a ticket or harassed by BLM                                                                                    | 1   |
| Would use everything if there is access.                                                                                                                                                                       | 1   |
| Would visit everything if there was access!!!                                                                                                                                                                  | 1   |
| being able to have access to Ted Keff rd Ted Kiff RD                                                                                                                                                           | 1   |
| bradshaw trail, general pattons museum. palo verde.                                                                                                                                                            | 1   |
| cement flats on Gecko Rd.                                                                                                                                                                                      | 1   |
| dune buggy flats                                                                                                                                                                                               | 1   |
| midway                                                                                                                                                                                                         | 1   |
| ogilby                                                                                                                                                                                                         | 1   |
| only those we can reach by OHV bc BLM won't let us cross the tracks                                                                                                                                            | 1   |
| wash road camping                                                                                                                                                                                              | 1   |
| wash's 22-23                                                                                                                                                                                                   | 1   |
| washes                                                                                                                                                                                                         | 1   |
| Totals                                                                                                                                                                                                         | 139 |

9. Please identify all of the areas of interest you visit with an OHV when recreating in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

Percent

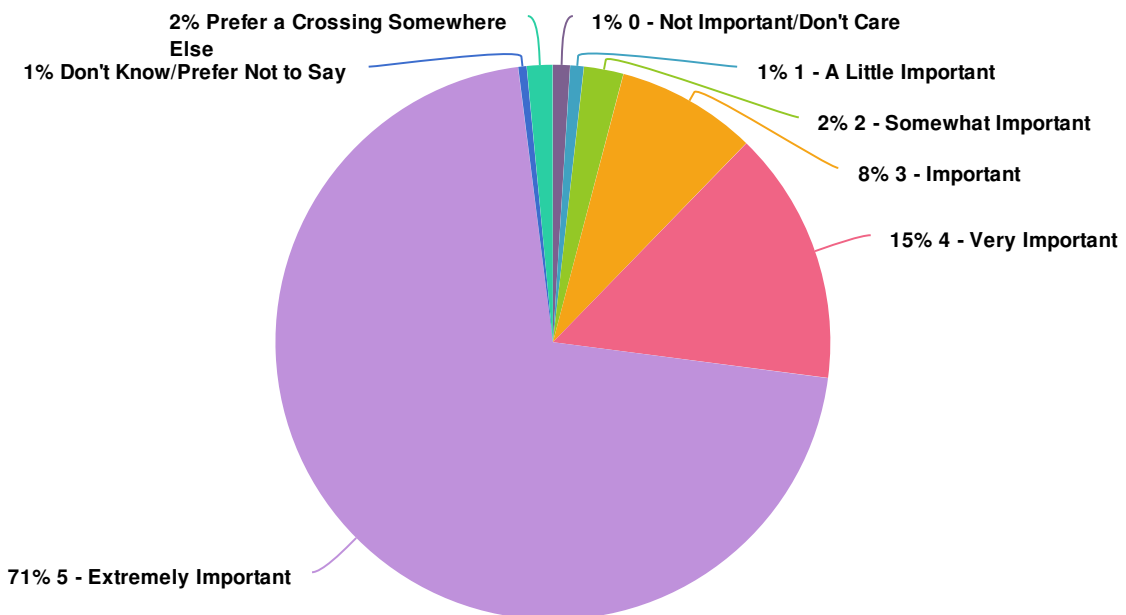
No data to display



10. On a scale of 0 to 5, how important is it to you that an OHV crossing of the tracks be constructed in the area of the existing SR 78 crossing as shown in the



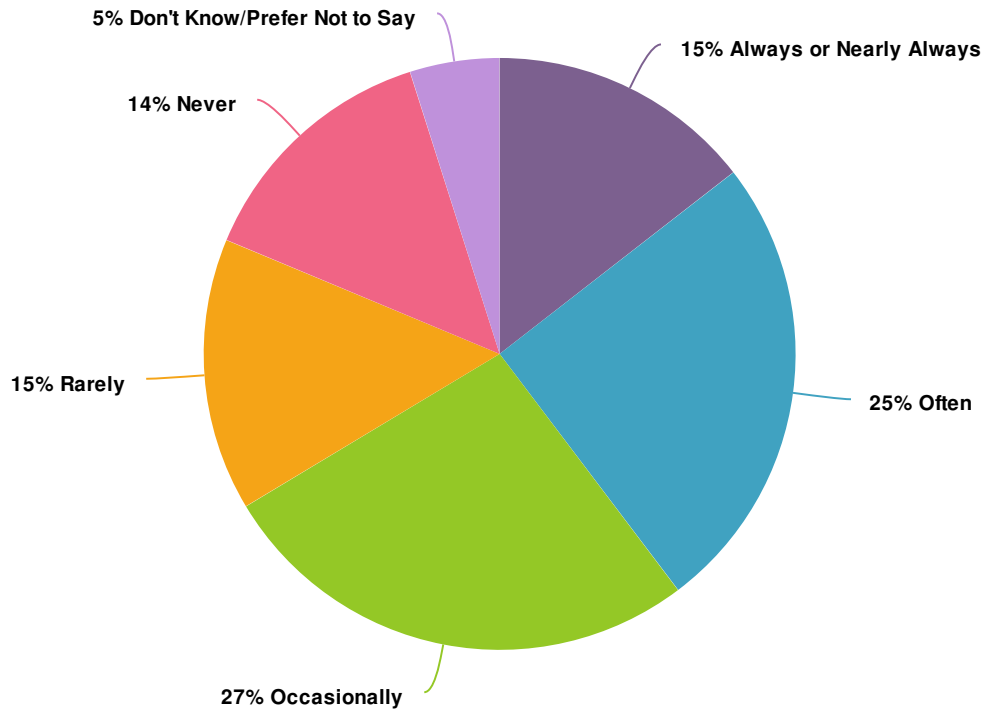
Figure?



|                                  |  |       |       |
|----------------------------------|--|-------|-------|
| 0 - Not Important/Don't Care     |  | 1.0%  | 42    |
| 1 - A Little Important           |  | 0.8%  | 35    |
| 2 - Somewhat Important           |  | 2.3%  | 93    |
| 3 - Important                    |  | 8.2%  | 337   |
| 4 - Very Important               |  | 14.8% | 608   |
| 5 - Extremely Important          |  | 71.0% | 2,927 |
| Don't Know/Prefer Not to Say     |  | 0.5%  | 19    |
| Prefer a Crossing Somewhere Else |  | 1.5%  | 60    |

Totals: 4,121

11. Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?



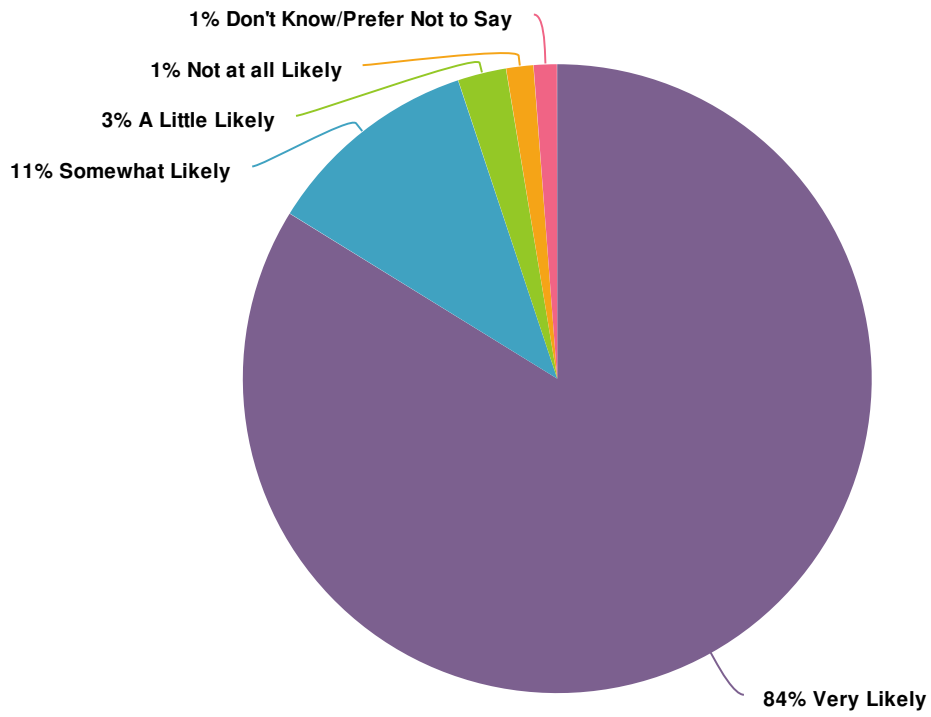
| Value                        | Percent | Responses |
|------------------------------|---------|-----------|
| Always or Nearly Always      | 14.5%   | 594       |
| Often                        | 25.2%   | 1,033     |
| Occasionally                 | 26.7%   | 1,095     |
| Rarely                       | 14.9%   | 609       |
| Never                        | 13.8%   | 563       |
| Don't Know/Prefer Not to Say | 4.9%    | 200       |

Totals: 4,094

12. How likely would you operate OHVs on the designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Imperial Sand Dunes Recreation Area if a new safe OHV crossing was constructed?

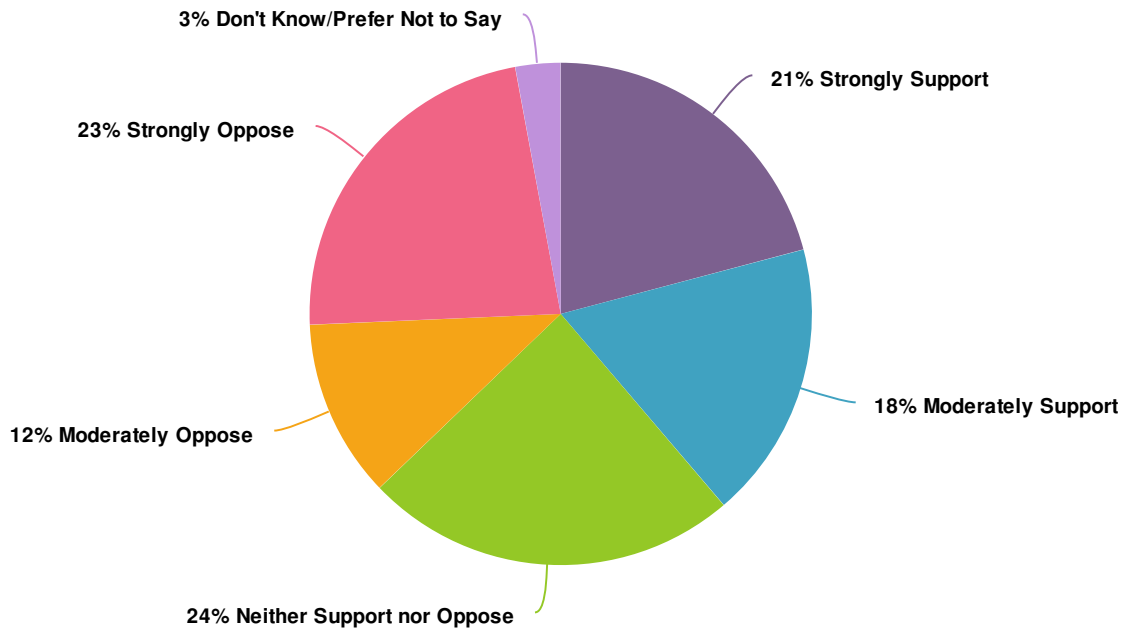






| Value                        | Percent | Responses            |
|------------------------------|---------|----------------------|
| Very Likely                  | 83.8%   | 3,407                |
| Somewhat Likely              | 11.1%   | 452                  |
| A Little Likely              | 2.5%    | 101                  |
| Not at all Likely            | 1.4%    | 56                   |
| Don't Know/Prefer Not to Say | 1.2%    | 49                   |
|                              |         | <b>Totals: 4,065</b> |

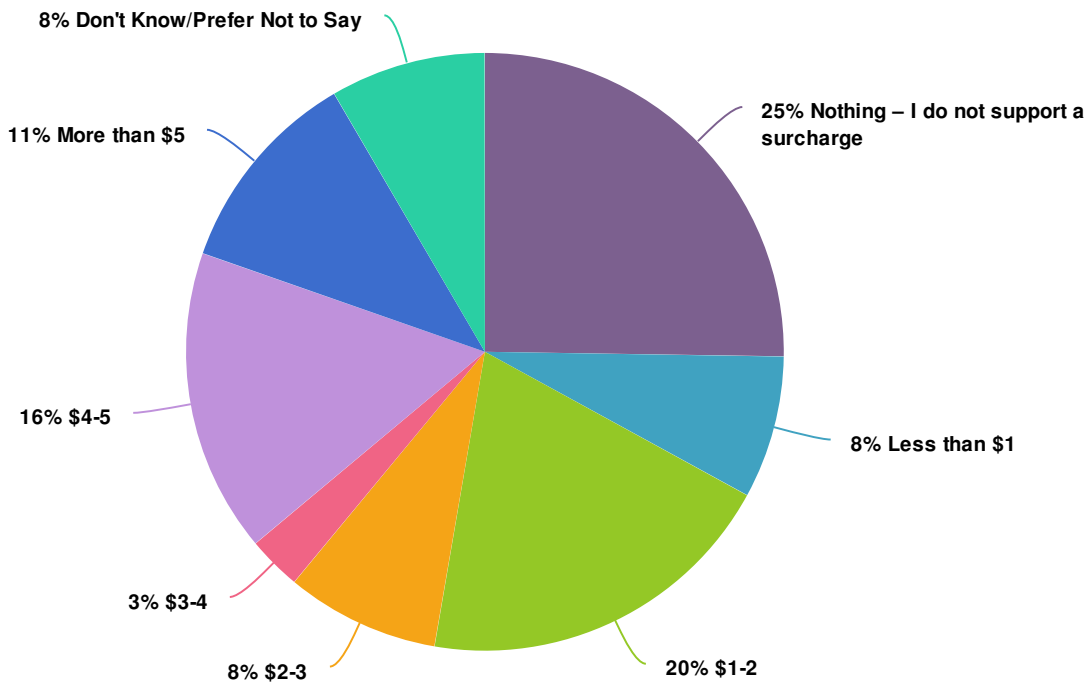
13. How supportive would you be to paying a surcharge (such as a crossing toll fee) in order to construct, operate and maintain a new safe OHV crossing?



| Value                        | Percent | Responses |
|------------------------------|---------|-----------|
| Strongly Support             | 20.9%   | 848       |
| Moderately Support           | 17.9%   | 725       |
| Neither Support nor Oppose   | 24.1%   | 975       |
| Moderately Oppose            | 11.5%   | 464       |
| Strongly Oppose              | 22.8%   | 924       |
| Don't Know/Prefer Not to Say | 2.9%    | 116       |

Totals: 4,052

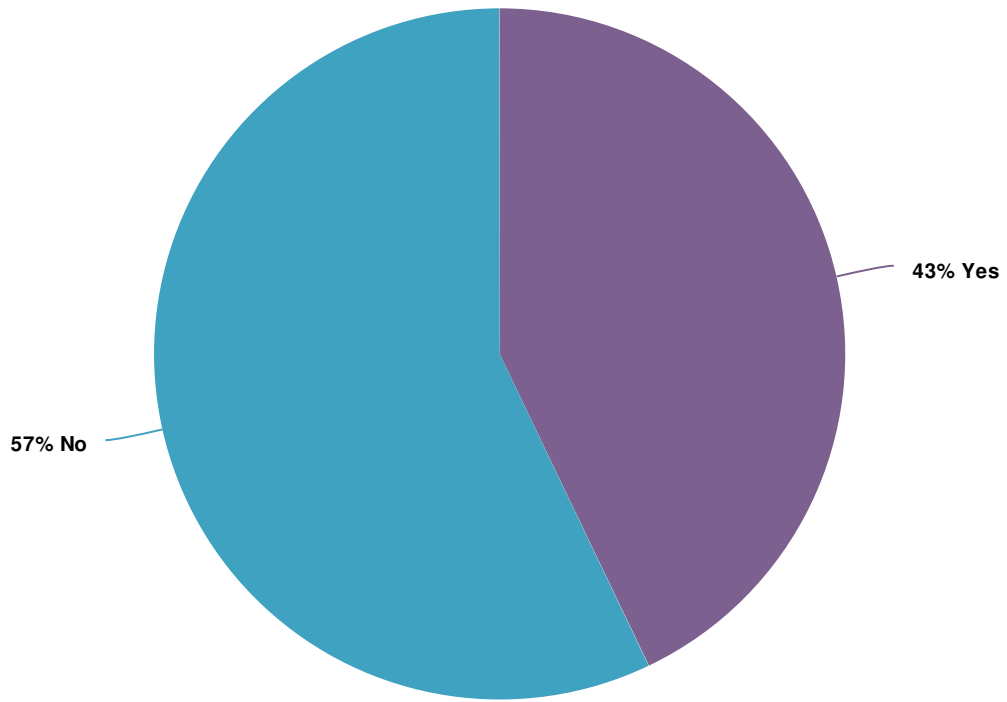
14. How much more would you be willing to pay per visit on an annual basis to have a new safe OHV crossing?



| Value                                  | Percent | Responses |
|----------------------------------------|---------|-----------|
| Nothing - I do not support a surcharge | 25.2%   | 1,020     |
| Less than \$1                          | 7.7%    | 313       |
| \$1-2                                  | 19.7%   | 797       |
| \$2-3                                  | 8.3%    | 336       |
| \$3-4                                  | 2.9%    | 117       |
| \$4-5                                  | 16.4%   | 664       |
| More than \$5                          | 11.2%   | 453       |
| Don't Know/Prefer Not to Say           | 8.4%    | 341       |

Totals: 4,041

15. Would you like to receive project updates and announcements about future public involvement opportunities?



| Value | Percent | Responses |
|-------|---------|-----------|
| Yes   | 42.9%   | 1,729     |
| No    | 57.1%   | 2,304     |

Totals: 4,033

# Comparison Report Raw Export Data

## New Comparison Report - 11 March 2020

On average, how many days each year do you participate in OHV recreation, specifically in the Glamis region?

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | 0 days - I do not participate in OHV recreation in the Glamis region | 1-3 days | 4-7 days | 8-14 days | 15-29 days | 30 days or more |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------|----------|-----------|------------|-----------------|
| Always or Nearly Always                                                                                                                              | 2                                                                    | 15       | 40       | 121       | 162        | 245             |
| Often                                                                                                                                                | 7                                                                    | 36       | 98       | 282       | 303        | 280             |
| Occasionally                                                                                                                                         | 4                                                                    | 46       | 126      | 274       | 384        | 242             |
| Rarely                                                                                                                                               | 4                                                                    | 15       | 53       | 153       | 224        | 156             |
| Never                                                                                                                                                | 3                                                                    | 4        | 54       | 150       | 225        | 123             |
| Don't Know/Prefer Not to Say                                                                                                                         | 5                                                                    | 8        | 18       | 41        | 71         | 46              |
| Totals                                                                                                                                               | 25                                                                   | 124      | 389      | 1021      | 1369       | 1092            |

When visiting at the Imperial Sand Dunes Recreation Area, how many separate visits do you typically make in any given year?

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | 0 Visits/Not Applicable | 1 Visit | 2 Separate Visits | 3 Separate Visits | 4 Separate Visits | 5 Separate Visits | More than 5 Separate Visits |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------|-------------------|-------------------|-------------------|-------------------|-----------------------------|
| Always or Nearly Always                                                                                                                              | 2                       | 18      | 43                | 70                | 92                | 69                | 291                         |
| Often                                                                                                                                                | 2                       | 29      | 98                | 146               | 188               | 146               | 397                         |
| Occasionally                                                                                                                                         | 3                       | 49      | 122               | 173               | 182               | 185               | 362                         |
| Rarely                                                                                                                                               | 1                       | 18      | 61                | 85                | 110               | 116               | 214                         |
| Never                                                                                                                                                | 3                       | 21      | 45                | 75                | 118               | 93                | 204                         |
| Don't Know/Prefer Not to Say                                                                                                                         | 4                       | 12      | 20                | 24                | 33                | 28                | 69                          |
| Totals                                                                                                                                               | 15                      | 147     | 389               | 573               | 723               | 637               | 1537                        |

191  
 Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply)

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | 2WD Truck/Jeep/SUV, street legal | 4WD Truck/Jeep/SUV, street legal | Sport utility vehicles, street legal | Dune buggy/Sand rail, NOT street legal | Dune buggy/Sand rail | Custom built OHV/Trophy Truck | Golf cart | Separate tire sets for hard pack travel | Se pa tir fo sa tri |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|--------------------------------------|----------------------------------------|----------------------|-------------------------------|-----------|-----------------------------------------|---------------------|
| Always or Nearly Always                                                                                                                              | 80                               | 316                              | 0                                    | 0                                      | 319                  | 107                           | 41        | 183                                     | 26                  |
| Often                                                                                                                                                | 131                              | 595                              | 0                                    | 0                                      | 459                  | 130                           | 46        | 278                                     | 45                  |
| Occasionally                                                                                                                                         | 103                              | 560                              | 0                                    | 0                                      | 456                  | 97                            | 30        | 282                                     | 48                  |
| Rarely                                                                                                                                               | 63                               | 296                              | 0                                    | 0                                      | 254                  | 44                            | 9         | 148                                     | 29                  |
| Never                                                                                                                                                | 39                               | 234                              | 0                                    | 0                                      | 240                  | 29                            | 8         | 108                                     | 25                  |
| Don't Know/Prefer Not to Say                                                                                                                         | 17                               | 80                               | 0                                    | 0                                      | 79                   | 15                            | 8         | 28                                      | 72                  |
| Totals                                                                                                                                               | 433                              | 2081                             | 0                                    | 0                                      | 1807                 | 422                           | 142       | 1027                                    | 18                  |

Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? |
|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Always or Nearly Always                                                                                                                              |
| Often                                                                                                                                                |
| Occasionally                                                                                                                                         |
| Rarely                                                                                                                                               |
| Never                                                                                                                                                |
| Don't Know/Prefer Not to Say                                                                                                                         |
| Totals                                                                                                                                               |

192  
Please identify all of the types of OHVs and equipment you bring, specifically for riding in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Always or Nearly Always                                                                                                                                     |
| Often                                                                                                                                                       |
| Occasionally                                                                                                                                                |
| Rarely                                                                                                                                                      |
| Never                                                                                                                                                       |
| Don't Know/Prefer Not to Say                                                                                                                                |
| Totals                                                                                                                                                      |

When riding in the Glamis region, how often do you operate an OHV in the following areas?:Imperial Sand Dunes Recreation Area - Fee Area

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 483                            | 74           | 13                  | 3             | 2            | 3                 |
| Often                                                                                                                                                       | 639                            | 307          | 46                  | 5             | 1            | 4                 |
| Occasionally                                                                                                                                                | 702                            | 225          | 114                 | 12            | 3            | 16                |
| Rarely                                                                                                                                                      | 482                            | 78           | 25                  | 7             | 1            | 9                 |
| Never                                                                                                                                                       | 468                            | 49           | 20                  | 3             | 7            | 9                 |
| Don't Know/Prefer Not to Say                                                                                                                                | 131                            | 25           | 5                   | 6             | 6            | 16                |
| Totals                                                                                                                                                      | 2905                           | 758          | 223                 | 36            | 20           | 57                |

When riding in the Glamis region, how often do you operate an OHV in the following areas?:Designated routes of travel South of SR 78 and East of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 363                            | 140          | 46                  | 13            | 8            | 7                 |
| Often                                                                                                                                                       | 271                            | 520          | 162                 | 22            | 8            | 13                |
| Occasionally                                                                                                                                                | 169                            | 305          | 464                 | 82            | 21           | 21                |
| Rarely                                                                                                                                                      | 91                             | 98           | 165                 | 185           | 41           | 16                |
| Never                                                                                                                                                       | 82                             | 47           | 58                  | 93            | 237          | 22                |
| Don't Know/Prefer Not to Say                                                                                                                                | 33                             | 23           | 32                  | 28            | 18           | 50                |
| Totals                                                                                                                                                      | 1009                           | 1133         | 927                 | 423           | 333          | 129               |



When riding in the Glamis region, how often do you operate an OHV in the following areas?: Designated routes of travel North of SR 78 and East of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 281                            | 117          | 55                  | 60            | 41           | 18                |
| Often                                                                                                                                                       | 179                            | 404          | 197                 | 122           | 55           | 23                |
| Occasionally                                                                                                                                                | 91                             | 210          | 360                 | 191           | 159          | 36                |
| Rarely                                                                                                                                                      | 35                             | 64           | 97                  | 172           | 198          | 21                |
| Never                                                                                                                                                       | 31                             | 25           | 40                  | 63            | 353          | 22                |
| Don't Know/Prefer Not to Say                                                                                                                                | 14                             | 30           | 21                  | 21            | 39           | 59                |
| Totals                                                                                                                                                      | 631                            | 850          | 770                 | 629           | 845          | 179               |

When riding in the Glamis region, how often do you operate an OHV in the following areas?: Designated routes of travel South of SR 78 and West of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 378                            | 124          | 32                  | 12            | 14           | 7                 |
| Often                                                                                                                                                       | 360                            | 448          | 103                 | 37            | 18           | 14                |
| Occasionally                                                                                                                                                | 370                            | 296          | 269                 | 62            | 24           | 27                |
| Rarely                                                                                                                                                      | 289                            | 118          | 73                  | 53            | 31           | 25                |
| Never                                                                                                                                                       | 317                            | 69           | 37                  | 29            | 74           | 21                |
| Don't Know/Prefer Not to Say                                                                                                                                | 58                             | 24           | 22                  | 14            | 11           | 55                |
| Totals                                                                                                                                                      | 1772                           | 1079         | 536                 | 207           | 172          | 149               |

194  
 When riding in the Glamis region, how often do you operate an OHV in the following areas?: Designated routes of travel North of SR 78 and West of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 262                            | 96           | 52                  | 59            | 62           | 18                |
| Often                                                                                                                                                       | 190                            | 375          | 163                 | 124           | 89           | 23                |
| Occasionally                                                                                                                                                | 106                            | 211          | 291                 | 187           | 194          | 46                |
| Rarely                                                                                                                                                      | 50                             | 67           | 82                  | 155           | 208          | 23                |
| Never                                                                                                                                                       | 55                             | 33           | 38                  | 64            | 321          | 23                |
| Don't Know/Prefer Not to Say                                                                                                                                | 21                             | 21           | 21                  | 23            | 34           | 56                |
| Totals                                                                                                                                                      | 684                            | 803          | 647                 | 612           | 908          | 189               |

When riding in the Glamis region, how often do you operate an OHV in the following areas?: Washes along Ted Kipf Road

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> | <b>Don't Know</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|-------------------|
| Always or Nearly Always                                                                                                                                     | 375                            | 129          | 35                  | 9             | 5            | 13                |
| Often                                                                                                                                                       | 313                            | 473          | 129                 | 30            | 4            | 22                |
| Occasionally                                                                                                                                                | 251                            | 321          | 335                 | 79            | 15           | 45                |
| Rarely                                                                                                                                                      | 151                            | 174          | 121                 | 89            | 22           | 36                |
| Never                                                                                                                                                       | 160                            | 111          | 91                  | 45            | 94           | 45                |
| Don't Know/Prefer Not to Say                                                                                                                                | 40                             | 34           | 30                  | 20            | 7            | 49                |
| Totals                                                                                                                                                      | 1290                           | 1242         | 741                 | 272           | 147          | 210               |

195  
 When visiting in the Glamis region, how often do you stay overnight in the following areas?:Imperial Sand Dunes Recreation Area - Fee Area

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|
| Always or Nearly Always                                                                                                                                     | 481                            | 61           | 17                  | 11            | 6            |
| Often                                                                                                                                                       | 649                            | 264          | 52                  | 17            | 11           |
| Occasionally                                                                                                                                                | 776                            | 175          | 87                  | 23            | 6            |
| Rarely                                                                                                                                                      | 512                            | 50           | 17                  | 11            | 10           |
| Never                                                                                                                                                       | 510                            | 23           | 6                   | 4             | 12           |
| Don't Know/Prefer Not to Say                                                                                                                                | 139                            | 26           | 10                  | 7             | 7            |
| Totals                                                                                                                                                      | 3067                           | 599          | 189                 | 73            | 52           |

When visiting in the Glamis region, how often do you stay overnight in the following areas?:Dispersed camping sites South of SR 78 and East of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|
| Always or Nearly Always                                                                                                                                     | 258                            | 108          | 80                  | 56            | 61           |
| Often                                                                                                                                                       | 150                            | 311          | 205                 | 185           | 112          |
| Occasionally                                                                                                                                                | 114                            | 140          | 260                 | 278           | 244          |
| Rarely                                                                                                                                                      | 29                             | 33           | 60                  | 170           | 292          |
| Never                                                                                                                                                       | 44                             | 18           | 19                  | 54            | 393          |
| Don't Know/Prefer Not to Say                                                                                                                                | 23                             | 14           | 22                  | 33            | 83           |
| Totals                                                                                                                                                      | 618                            | 624          | 646                 | 776           | 1185         |

196  
 When visiting in the Glamis region, how often do you stay overnight in the following areas?: Dispersed camping sites North of SR 78 and East of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|
| Always or Nearly Always                                                                                                                                     | 201                            | 89           | 69                  | 75            | 121          |
| Often                                                                                                                                                       | 103                            | 284          | 193                 | 169           | 214          |
| Occasionally                                                                                                                                                | 53                             | 100          | 246                 | 250           | 388          |
| Rarely                                                                                                                                                      | 15                             | 23           | 48                  | 141           | 358          |
| Never                                                                                                                                                       | 24                             | 11           | 11                  | 43            | 439          |
| Don't Know/Prefer Not to Say                                                                                                                                | 21                             | 16           | 25                  | 25            | 90           |
| Totals                                                                                                                                                      | 417                            | 523          | 592                 | 703           | 1610         |

When visiting in the Glamis region, how often do you stay overnight in the following areas?: Dispersed camping sites South of SR 78 and West of the Union Pacific Railroad tracks

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Always or Nearly Always</b> | <b>Often</b> | <b>Occasionally</b> | <b>Rarely</b> | <b>Never</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|---------------------|---------------|--------------|
| Always or Nearly Always                                                                                                                                     | 310                            | 110          | 67                  | 38            | 38           |
| Often                                                                                                                                                       | 269                            | 363          | 177                 | 95            | 65           |
| Occasionally                                                                                                                                                | 339                            | 202          | 251                 | 131           | 112          |
| Rarely                                                                                                                                                      | 270                            | 72           | 71                  | 73            | 108          |
| Never                                                                                                                                                       | 319                            | 38           | 23                  | 30            | 127          |
| Don't Know/Prefer Not to Say                                                                                                                                | 56                             | 22           | 30                  | 21            | 48           |
| Totals                                                                                                                                                      | 1563                           | 807          | 619                 | 388           | 498          |

197  
 When visiting in the Glamis region, how often do you stay overnight in the following areas?: Dispersed camping sites North of SR 78 and West of the Union Pacific Railroad tracks

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | Always or Nearly Always | Often | Occasionally | Rarely | Never |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------|--------------|--------|-------|
| Always or Nearly Always                                                                                                                              | 198                     | 96    | 68           | 73     | 121   |
| Often                                                                                                                                                | 98                      | 292   | 174          | 176    | 217   |
| Occasionally                                                                                                                                         | 67                      | 102   | 247          | 226    | 378   |
| Rarely                                                                                                                                               | 31                      | 32    | 51           | 123    | 348   |
| Never                                                                                                                                                | 37                      | 17    | 11           | 45     | 417   |
| Don't Know/Prefer Not to Say                                                                                                                         | 19                      | 13    | 24           | 28     | 89    |
| Totals                                                                                                                                               | 450                     | 552   | 575          | 671    | 1570  |

When visiting in the Glamis region, how often do you stay overnight in the following areas?: Commercial lodging or hotel

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | Always or Nearly Always | Often | Occasionally | Rarely | Never |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------|--------------|--------|-------|
| Always or Nearly Always                                                                                                                              | 99                      | 26    | 19           | 59     | 351   |
| Often                                                                                                                                                | 45                      | 80    | 48           | 130    | 657   |
| Occasionally                                                                                                                                         | 18                      | 32    | 68           | 130    | 784   |
| Rarely                                                                                                                                               | 6                       | 13    | 17           | 48     | 502   |
| Never                                                                                                                                                | 5                       | 5     | 6            | 18     | 495   |
| Don't Know/Prefer Not to Say                                                                                                                         | 6                       | 4     | 5            | 20     | 144   |
| Totals                                                                                                                                               | 179                     | 160   | 163          | 405    | 2933  |

When visiting in the Glamis region, how often do you stay overnight in the following areas?: Day Use only

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | Always or Nearly Always | Often | Occasionally | Rarely | Never |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------|--------------|--------|-------|
| Always or Nearly Always                                                                                                                              | 133                     | 58    | 64           | 112    | 193   |
| Often                                                                                                                                                | 69                      | 124   | 162          | 239    | 361   |
| Occasionally                                                                                                                                         | 59                      | 68    | 207          | 301    | 402   |
| Rarely                                                                                                                                               | 34                      | 25    | 87           | 172    | 271   |
| Never                                                                                                                                                | 34                      | 10    | 39           | 104    | 346   |
| Don't Know/Prefer Not to Say                                                                                                                         | 11                      | 7     | 30           | 33     | 98    |
| Totals                                                                                                                                               | 340                     | 292   | 589          | 961    | 1671  |

198  
Please identify all of the areas of interest you visit with an OHV when recreating in the Glamis region and surrounding areas. (Check all that apply)

| Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area? | Locations within Imperial Sand Dunes Recreation Area | Chocolate Mountains | Hauser Geode Beds | Glamis Dunes Storage | Gold Rock Ranch RV Resort | Gold Rock Ranch Trading Post/Museum | Osborne Scenic Overlook | Walter's Camp | Colorado River | Tumco Mine |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------|-------------------|----------------------|---------------------------|-------------------------------------|-------------------------|---------------|----------------|------------|
| Always or Nearly Always                                                                                                                              | 553                                                  | 242                 | 161               | 281                  | 161                       | 165                                 | 404                     | 185           | 273            | 195        |
| Often                                                                                                                                                | 934                                                  | 336                 | 206               | 415                  | 190                       | 218                                 | 677                     | 234           | 421            | 275        |
| Occasionally                                                                                                                                         | 986                                                  | 270                 | 136               | 377                  | 117                       | 154                                 | 727                     | 187           | 366            | 183        |
| Rarely                                                                                                                                               | 569                                                  | 96                  | 42                | 197                  | 33                        | 46                                  | 431                     | 62            | 119            | 49         |
| Never                                                                                                                                                | 529                                                  | 64                  | 38                | 137                  | 30                        | 36                                  | 407                     | 37            | 81             | 45         |
| Don't Know/Prefer Not to Say                                                                                                                         | 171                                                  | 27                  | 16                | 55                   | 14                        | 12                                  | 122                     | 21            | 35             | 21         |
| Totals                                                                                                                                               | 3742                                                 | 1035                | 599               | 1462                 | 545                       | 631                                 | 2768                    | 726           | 1295           | 768        |

199  
Please identify all of the areas of interest you visit with an OHV when recreating in the Glamis region and surrounding areas. (Check all that apply) - Text Analysis

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Always or Nearly Always                                                                                                                                     |
| Often                                                                                                                                                       |
| Occasionally                                                                                                                                                |
| Rarely                                                                                                                                                      |
| Never                                                                                                                                                       |
| Don't Know/Prefer Not to Say                                                                                                                                |
| Totals                                                                                                                                                      |

On a scale of 0 to 5, how important is it to you that an OHV crossing of the tracks be constructed in the area of the existing SR 78 crossing as shown in the Figure?

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>0 - Not Important/Don't Care</b> | <b>1 - A Little Important</b> | <b>2 - Somewhat Important</b> | <b>3 - Important</b> | <b>4 - Very Important</b> | <b>5 - Extremely Important</b> | <b>Don't Know/Prefer Not to Say</b> | <b>Prefer a Crossing Somewhere Else</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------|-------------------------------|----------------------|---------------------------|--------------------------------|-------------------------------------|-----------------------------------------|
| Always or Nearly Always                                                                                                                                     | 4                                   | 2                             | 2                             | 20                   | 21                        | 524                            | 3                                   | 9                                       |
| Often                                                                                                                                                       | 9                                   | 6                             | 6                             | 41                   | 142                       | 783                            | 3                                   | 16                                      |
| Occasionally                                                                                                                                                | 6                                   | 5                             | 33                            | 132                  | 204                       | 680                            | 5                                   | 11                                      |
| Rarely                                                                                                                                                      | 2                                   | 11                            | 21                            | 67                   | 111                       | 385                            | 1                                   | 7                                       |
| Never                                                                                                                                                       | 16                                  | 8                             | 18                            | 41                   | 86                        | 378                            | 0                                   | 12                                      |
| Don't Know/Prefer Not to Say                                                                                                                                | 4                                   | 0                             | 7                             | 16                   | 24                        | 131                            | 5                                   | 3                                       |
| Totals                                                                                                                                                      | 41                                  | 32                            | 87                            | 317                  | 588                       | 2881                           | 17                                  | 58                                      |

200  
 How likely would you operate OHVs on the designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Imperial Sand Dunes Recreation Area if a new safe OHV crossing was constructed?

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Very Likely</b> | <b>Somewhat Likely</b> | <b>A Little Likely</b> | <b>Not at all Likely</b> | <b>Don't Know/Prefer Not to Say</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|------------------------|--------------------------|-------------------------------------|
| Always or Nearly Always                                                                                                                                     | 544                | 20                     | 4                      | 10                       | 7                                   |
| Often                                                                                                                                                       | 878                | 96                     | 11                     | 10                       | 11                                  |
| Occasionally                                                                                                                                                | 828                | 191                    | 41                     | 6                        | 10                                  |
| Rarely                                                                                                                                                      | 501                | 79                     | 18                     | 5                        | 2                                   |
| Never                                                                                                                                                       | 485                | 36                     | 16                     | 21                       | 1                                   |
| Don't Know/Prefer Not to Say                                                                                                                                | 146                | 19                     | 7                      | 2                        | 16                                  |
| Totals                                                                                                                                                      | 3382               | 441                    | 97                     | 54                       | 47                                  |

How supportive would you be to paying a surcharge (such as a crossing toll fee) in order to construct, operate and maintain a new safe OHV crossing?

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Strongly Support</b> | <b>Moderately Support</b> | <b>Neither Support nor Oppose</b> | <b>Moderately Oppose</b> | <b>Strongly Oppose</b> | <b>Don't Know/Prefer Not to Say</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------|-----------------------------------|--------------------------|------------------------|-------------------------------------|
| Always or Nearly Always                                                                                                                                     | 187                     | 75                        | 111                               | 43                       | 153                    | 16                                  |
| Often                                                                                                                                                       | 225                     | 199                       | 226                               | 120                      | 215                    | 21                                  |
| Occasionally                                                                                                                                                | 172                     | 203                       | 276                               | 144                      | 251                    | 30                                  |
| Rarely                                                                                                                                                      | 108                     | 117                       | 161                               | 79                       | 125                    | 15                                  |
| Never                                                                                                                                                       | 112                     | 96                        | 131                               | 68                       | 134                    | 18                                  |
| Don't Know/Prefer Not to Say                                                                                                                                | 37                      | 29                        | 61                                | 9                        | 41                     | 13                                  |
| Totals                                                                                                                                                      | 841                     | 719                       | 966                               | 463                      | 919                    | 113                                 |



201  
How much more would you be willing to pay per visit on an annual basis to have a new safe OHV crossing?

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Nothing – I do not support a surcharge</b> | <b>Less than \$1</b> | <b>\$1-2</b> | <b>\$2-3</b> | <b>\$3-4</b> | <b>\$4-5</b> | <b>More than \$5</b> | <b>Don't Know/Prefer Not to Say</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------|--------------|--------------|--------------|--------------|----------------------|-------------------------------------|
| Always or Nearly Always                                                                                                                                     | 163                                           | 36                   | 99           | 37           | 13           | 91           | 107                  | 39                                  |
| Often                                                                                                                                                       | 233                                           | 95                   | 197          | 99           | 30           | 156          | 111                  | 85                                  |
| Occasionally                                                                                                                                                | 278                                           | 85                   | 243          | 84           | 34           | 172          | 100                  | 79                                  |
| Rarely                                                                                                                                                      | 141                                           | 40                   | 133          | 50           | 20           | 111          | 55                   | 55                                  |
| Never                                                                                                                                                       | 152                                           | 44                   | 89           | 44           | 12           | 101          | 63                   | 54                                  |
| Don't Know/Prefer Not to Say                                                                                                                                | 49                                            | 12                   | 32           | 18           | 7            | 31           | 16                   | 25                                  |
| Totals                                                                                                                                                      | 1016                                          | 312                  | 793          | 332          | 116          | 662          | 452                  | 337                                 |

Would you like to receive project updates and announcements about future public involvement opportunities?

| <b>Currently, how often do you operate OHVs on designated routes of travel East of the Union Pacific Railroad tracks during a visit to the Glamis area?</b> | <b>Yes</b> | <b>No</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|
| Always or Nearly Always                                                                                                                                     | 279        | 306       |
| Often                                                                                                                                                       | 432        | 574       |
| Occasionally                                                                                                                                                | 421        | 655       |
| Rarely                                                                                                                                                      | 268        | 337       |
| Never                                                                                                                                                       | 251        | 308       |
| Don't Know/Prefer Not to Say                                                                                                                                | 66         | 124       |
| Totals                                                                                                                                                      | 1717       | 2304      |

## **APPENDIX E**

### **PAIRED-COMPARISON CRITERIA WEIGHTING INFORMATION**

## Paired Comparison

The paired comparison process is an established method of determining a weighted value for different criteria to be used on a project. This process involves comparing each pair of criteria and selecting the more important between the two. Each criterion is assigned a number (1 through 8 for the Crossing Alternatives) and given a row in the stepped table. Then, moving across each row, the criterion in the row are compared to the criterion in each column of the table one at a time. The criterion deemed more important between the two is selected and the number of that criteria placed in the cell.

For example in the first row, criterion 1 – *Connectivity* is compared first against criterion 2 - *Traffic on Existing Roads*. In the selected weighting, 1- *Connectivity* is deemed more important to the project performance, so in the table where the row and column of the criteria compared intersect a 1 is placed. Once all the criteria are compared, the tally of occurrences of each criterion' designation number (1-8) are added into the tally column. The weighted percentages for the criteria are then calculated based on each criterion's tally divided by the sum of all the tallies. This process makes is possible for a low ranking criterion that is not more important than any of the other criterion to have a weight percentage of 0. This occurs for the 8-*Aesthetics* criterion in the comparison.

A Paired Comparison worksheet was provided to members of the Technical Working Group of the project and one was also completed by the Consultant Team. The paired comparison worksheets are provided in this Appendix as is a summary of the weighting selected and the different weighting percentages based on each provided paired comparison worksheet.

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

Contributors: All



|   | Weighted Criteria                      | Selected | Alternate | Consultant Team |          |            |      |     |     |
|---|----------------------------------------|----------|-----------|-----------------|----------|------------|------|-----|-----|
|   |                                        |          |           | UPRR            | Caltrans | L. Ricotta | ICTC | ASA |     |
| 1 | 1) Connectivity                        | 11%      | 14%       | 7%              | 7%       | 21%        | 18%  | 11% | 25% |
| 2 | 2) Traffic on Existing Roads           | 11%      | 7%        | 18%             | 11%      | 11%        | 7%   | 4%  | 11% |
| 3 | 3) Rail Operations During Construction | 21%      | 14%       | 21%             | 21%      | 14%        | 18%  | 14% | 7%  |
| 4 | 4) Conflicts Within Rail ROW           | 25%      | 21%       | 25%             | 25%      | 25%        | 21%  | 18% | 21% |
| 5 | 5) Conflicts with Private Property     | 4%       | 11%       | 0%              | 4%       | 7%         | 11%  | 7%  | 4%  |
| 6 | 6) Maintenance and Operations          | 18%      | 18%       | 14%             | 18%      | 18%        | 14%  | 21% | 18% |
| 7 | 7) Sensitive Resources                 | 11%      | 14%       | 11%             | 14%      | 0%         | 11%  | 25% | 14% |
| 8 | 8) Aesthetics                          | 0%       | 0%        | 4%              | 0%       | 4%         | 0%   | 0%  | 0%  |



**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: Selected Ranking**

 = Unanimous  
 = 5 to 1 vote

 = 4 to 2 vote  
 = 3 to 3 vote




|   |                                        | Weighted Criteria |                              |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|------------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Roads | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 1                            | 3                                      | 4                            | 1                                  | 6                             | 7                      | 1             | 3     | 11%    |
| 2 | 2) Traffic on Existing Roads           |                   |                              | 3                                      | 4                            | 2                                  | 6                             | 2                      | 2             | 3     | 11%    |
| 3 | 3) Rail Operations During Construction |                   |                              |                                        | 4                            | 3                                  | 3                             | 3                      | 3             | 6     | 21%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                              |                                        |                              | 4                                  | 4                             | 4                      | 4             | 7     | 25%    |
| 5 | 5) Conflicts with Private Property     |                   |                              |                                        |                              |                                    | 6                             | 7                      | 5             | 1     | 4%     |
| 6 | 6) Maintenance and Operations          |                   |                              |                                        |                              |                                    |                               | 6                      | 6             | 5     | 18%    |
| 7 | 7) Sensitive Resources                 |                   |                              |                                        |                              |                                    |                               |                        | 7             | 3     | 11%    |
| 8 | 8) Aesthetics                          |                   |                              |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|   |                                        |                   |                              |                                        |                              |                                    |                               |                        |               | 28    | 100%   |



**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: Alternate from Select w/ 3-3 votes swapped**

 = Unanimous  
 = 5 to 1 vote  


 = 4 to 2 vote  
 = 3 to 3 vote

|                   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|-------------------|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
| Weighted Criteria |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1                 | 1) Connectivity                        |                   | 2                         | 3                                      | 4                            | 1                                  | 1                             | 1                      | 1             | 4     | 14%    |
| 2                 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 5                                  | 6                             | 7                      | 2             | 2     | 7%     |
| 3                 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 6                             | 7                      | 3             | 4     | 14%    |
| 4                 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 7                      | 4             | 6     | 21%    |
| 5                 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 5                      | 5             | 3     | 11%    |
| 6                 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 5     | 18%    |
| 7                 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 4     | 14%    |
| 8                 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|                   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/10/19

**Contributors: Consultant Team**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 2                         | 3                                      | 4                            | 1                                  | 6                             | 7                      | 1             | 2     | 7%     |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 2                                  | 2                             | 2                      | 2             | 5     | 18%    |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 3                             | 3                      | 3             | 6     | 21%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 4                      | 4             | 7     | 25%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 7                      | 8             | 0     | 0%     |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 4     | 14%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 3     | 11%    |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 1     | 4%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: UPRR**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 2                         | 3                                      | 4                            | 1                                  | 6                             | 7                      | 1             | 2     | 7%     |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 2                                  | 6                             | 7                      | 2             | 3     | 11%    |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 3                             | 3                      | 3             | 6     | 21%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 4                      | 4             | 7     | 25%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 7                      | 5             | 1     | 4%     |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 5     | 18%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 4     | 14%    |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |



**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: Caltrans**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 1                         | 1                                      | 4                            | 1                                  | 1                             | 1                      | 1             | 6     | 21%    |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 2                                  | 6                             | 2                      | 2             | 3     | 11%    |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 6                             | 3                      | 3             | 4     | 14%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 4                      | 4             | 7     | 25%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 5                      | 5             | 2     | 7%     |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 5     | 18%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 8             | 0     | 0%     |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 1     | 4%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/10/19

**Contributors: Lance Ricotta**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 1                         | 3                                      | 4                            | 1                                  | 1                             | 1                      | 1             | 5     | 18%    |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 5                                  | 6                             | 2                      | 2             | 2     | 7%     |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 3                             | 7                      | 3             | 5     | 18%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 7                      | 4             | 6     | 21%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 5                      | 5             | 3     | 11%    |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 4     | 14%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 3     | 11%    |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: ICTC**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 1                         | 3                                      | 4                            | 1                                  | 6                             | 7                      | 1             | 3     | 11%    |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 3                                      | 4                            | 5                                  | 6                             | 7                      | 2             | 1     | 4%     |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 6                             | 7                      | 3             | 4     | 14%    |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 6                             | 7                      | 4             | 5     | 18%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 7                      | 5             | 2     | 7%     |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 7                      | 6             | 6     | 21%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 7     | 25%    |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

**Paired Comparison Tool**

Project: SR 78 - Glamis Grade Separated Crossing

Date: 12/19/19

**Contributors: ASA**

|   |                                        | Weighted Criteria |                           |                                        |                              |                                    |                               |                        |               |       |        |
|---|----------------------------------------|-------------------|---------------------------|----------------------------------------|------------------------------|------------------------------------|-------------------------------|------------------------|---------------|-------|--------|
|   |                                        | 1) Connectivity   | 2) Traffic on Existing Ro | 3) Rail Operations During Construction | 4) Conflicts Within Rail ROW | 5) Conflicts with Private Property | 6) Maintenance and Operations | 7) Sensitive Resources | 8) Aesthetics | Tally | Weight |
| 1 | 1) Connectivity                        |                   | 1                         | 1                                      | 1                            | 1                                  | 1                             | 1                      | 1             | 7     | 25%    |
| 2 | 2) Traffic on Existing Roads           |                   |                           | 2                                      | 4                            | 2                                  | 6                             | 7                      | 2             | 3     | 11%    |
| 3 | 3) Rail Operations During Construction |                   |                           |                                        | 4                            | 3                                  | 6                             | 7                      | 3             | 2     | 7%     |
| 4 | 4) Conflicts Within Rail ROW           |                   |                           |                                        |                              | 4                                  | 4                             | 4                      | 4             | 6     | 21%    |
| 5 | 5) Conflicts with Private Property     |                   |                           |                                        |                              |                                    | 6                             | 7                      | 5             | 1     | 4%     |
| 6 | 6) Maintenance and Operations          |                   |                           |                                        |                              |                                    |                               | 6                      | 6             | 5     | 18%    |
| 7 | 7) Sensitive Resources                 |                   |                           |                                        |                              |                                    |                               |                        | 7             | 4     | 14%    |
| 8 | 8) Aesthetics                          |                   |                           |                                        |                              |                                    |                               |                        |               | 0     | 0%     |
|   |                                        |                   |                           |                                        |                              |                                    |                               |                        |               | 28    | 100%   |

## **APPENDIX F**

### **ENVIRONMENTAL CONSTRAINTS MEMO**



*An Employee-Owned Company*

April 15, 2020

Mr. Kelly Burnell  
Kleinfelder  
550 West C Street, Suite #1200  
San Diego, CA 92101

Reference: State Route 78/Glamis Multiuse Grade Separation Project Environmental Constraints Memo  
(RECON Number 9512)

Dear Mr. Burnell:

This environmental constraints memo is intended to provide a preliminary assessment of the environmental topics that will need to be addressed to move forward with the construction and operation of a multi-use grade separation project (project) in Glamis, California. Specifically, the intent is to identify the environmental documents that would be required under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), including any technical reports needed to support the CEQA and NEPA documents. CEQA applies to all non-federal lands and agencies and NEPA applies only to federal lands and agencies. The lead agency for the current feasibility is the Imperial County Transportation Commission (ICTC) with funding provided by the California Department of Transportation (Caltrans). The lead agency under CEQA and/or NEPA for the construction and operation of the project has not yet been determined, as ICTC is a planning agency that does not own or operate facilities.

Information contained in this environmental constraints memo is based on a review of the Imperial Sand Dunes Recreation Area (ISDRA) Recreation Area Management Plan (RAMP)/California Desert Conservation Area (CDCA) Plan Amendment/Final Environmental Impact Statement (EIS) (BLM 2012), Imperial Sand Dunes Record of Decision/Approved ISDRA RAMP (BLM 2013), CDCA Plan relevant amendments, record searches, and site visits.

These are preliminary assessments of potential impacts to various resources for the purposes of environmental planning and budgeting of the project. All topic areas discussed below will need to be considered for study again once the environmental studies phase of the proposed project is initiated. Additional studies could also be identified during project scoping conducted pursuant to CEQA and NEPA requirements or to support policies that would need to be established in order to facilitate funding or authorizations for the project.

## **STUDY AREA**

The study area is located in Glamis, California in the eastern portion of Imperial County. The study area is primarily on federal lands managed by the Bureau of Land Management (BLM) and is designated as the ISDRA. Privately owned land, including the Glamis Beach Store and associated Specific Plan Area and the Union Pacific Railroad (UPRR), is also included in the study area.

The study area is within the eastern portion of the ISDRA and is approximately 3 miles long and 2,000 feet wide. It is bisected by the UPRR right-of-way from State Route 78 (SR-78) in the north to approximately Wash 15 in the south, encompassing Ted Kipf Road to the east, which is an Imperial County (County) maintained roadway on BLM-administered land. It also includes the Caltrans right-of-way for SR-78.

Mr. Kelly Burnell  
Page 2  
April 15, 2020

## **PROJECT DESCRIPTION**

The ICTC has contracted with Kleinfelder to perform a feasibility study (FS) to analyze and develop feasible design alternatives and locations for providing a safe Multiuse Grade Separated Crossing for off-highway vehicle (OHV) users across the UPRR rail line at the ISDRA (Figure 1). Due to potential conflicts and safety concerns between autos, commercial trucks, recreational vehicles, the UPRR, OHVs, bicyclists, and hikers that travel on SR-78, there is a need for a multiuse grade separated crossing feasibility study at this location. The intended outcome of this feasibility study is to remove conflicts between all modes of transportation and ultimately improve safety on SR-78.

Following are brief descriptions of four project alternatives, identified as 78-O, 78T-O, 9.5-U, and 10-O, including three overpasses and one underpass. The first two are located at SR-78 and are both overpasses. Alternative 9.5-U is located at mile 9.5 south of SR-78 and is an undercrossing. Alternative 10-O is located at mile 10.0 south of SR-78 and is an overpass. All overpasses would be built to provide a minimum clearance of 23 feet 4 inches above the track. Two of the alternatives, 9.5-U and 10-O, would each require an access route connecting the new grade separation infrastructure with Ted Kipf Road.

### **Alternative 78-O**

Alternative 78-O would replace a section of SR-78 where it currently crosses the UPRR rail tracks at grade with a 200-foot-long and 74-foot-wide highway bridge. The entire structure, including wall support approach ramps on either side of the bridge, would be 1,500 feet long.

### **Alternative 78T-O**

Under alternative 78T-O, SR-78 would remain at-grade with the UPRR rail tracks and a 200-foot-long by 20-foot-wide bridge would be built for OHV and pedestrian traffic only. This alternative would have a smaller footprint relative to alternative 78-O, with a steeper grade and only 350- to 400-foot approaches on either side of the bridge. The southwesterly ramp would originate along Wash Road, curving east in order to connect with the bridge.

### **Alternative 9.5-U**

Alternative 9.5-U proposes the construction of a new 65-foot-long by 20-foot-wide undercrossing between existing washes 9 and 10. Positioning the undercrossing away from the washes is intended to reduce risks and infrastructure issues associated with periods of high flow and sediment deposition. This alternative would position the impact area within one of the chevrons that was graded during the construction of the berms built to convey storm flow into each wash. An access route would connect the undercrossing with Ted Kipf Road, approximately 1,000 feet northeast.

One significant difference for an undercrossing option would be the need to create a temporary railroad detour, referred to as a shoofly. The shoofly would be a siding track approximately half a mile long that would be placed 30 feet to the side of the current UPRR rail tracks. The shoofly would be in place approximately 4 to 6 months. The shoofly would require regrading to create the space to construct the proposed undercrossing.

### **Alternative 10-O**

Under Alternative 10-O, a 200-foot-long by 20-foot-wide OHV and pedestrian overcrossing would be built at Wash 10 with a ramp parallel to Wash Road and an access route between the overcrossing and Ted Kipf Road, approximately 900 feet north of the overcrossing.

## **ENVIRONMENTAL SETTING**

The Algodones Sand Dunes in the ISDRA are the largest sand dunes open to OHV use in the United States. The dunes begin ten miles southeast of Niland and stretch all the way into Mexico, over 40 miles away. The

Mr. Kelly Burnell  
 Page 3  
 April 15, 2020

dunes vary in width from about a quarter mile at the northern end to about five miles in width below SR-78. The Algodones Sand Dune system covers 1,000 square miles, making it one of the largest dune complexes in North America. There are over 150,000 acres designated as open to motorized use or having limited motorized use. Approximately 32,000 acres are designated wilderness and closed to motorized recreation, including OHV use. While visited year-round, summer temperatures often exceed 110 degrees Fahrenheit, resulting in the most popular months to visit from October to May. On holiday weekends, there can be several hundred thousand visitors to this area. Besides OHV users, hiking, biking, camping, star-gazing, and historical sites are popular attractions. This area is directly served by SR-78 (an east-west route), which provides direct access to numerous campsites. On the westerly side of SR-78, the terrain is made up of the sand dunes; while the easterly side tends to be more washes and gullies. The ISDRA is managed by the BLM, who is responsible for collecting use fees, maintaining restroom and waste facilities, providing safety oversight and responsibly managing the federal resources.

SR-78 is also part of the California State Highway System bike route, which is designated as a shared Class III bicycle route and classified as the Southern Tier Long Distance Bicycle Route. It connects California with Florida, and is well travelled by long-distance cyclists. Bisecting the ISDRA is the UPRR. UPRR rail line serves freight movement as well as Amtrak service connecting Los Angeles with New Orleans (Sunset Route). The UPRR was constructed in the 1800s; in 2010, the rail was widened to two tracks (double-track).

## **LAND USE**

The proposed project study area is primarily located on BLM-administered lands within the ISDRA, but also includes Caltrans right-of-way for SR-78 and UPRR right-of-way for a double-tracked/single-tracked rail line, as well the portion of the privately-owned 160-acre Glamis Specific Plan Area that is located south of SR-78. The ISDRA also includes the North Algodones Dunes Wilderness Area located immediately to the north of SR-78 and west of the UPRR. Recreation within the wilderness area is limited to non-motorized uses.

The Glamis General Store and associated OHV serving businesses and facilities are located within the Glamis Specific Plan Area, which has been proposed for further development as a base for OHV recreation. The project study area within the Glamis Specific Plan Area is zoned as S-2 (Open Space/Preservation), with a small area around the Glamis Beach Store that is zoned C-2 (General Commercial). However, a Draft Specific Plan Amendment has been proposed, including a zone change to three new zones: CR-1 (the equivalent of neighborhood commercial), CR-2 (the equivalent of light commercial), and CR-3 (the equivalent of heavy commercial).

The ISDRA is a BLM-administered recreation area used extensively for OHV recreation. Open motorized use is permitted west of the UPRR right-of-way, while motorized use to the east of the right-of-way is limited to designated routes of travel only. There are no designated wild and scenic rivers in the project vicinity.

## **Recommendations**

While generally compatible with the adjacent recreational uses, the compatibility with the land uses regulated by the BLM, Caltrans, UPRR, and County must be considered.

## **BLM**

Within BLM-administered land, any overcrossing or undercrossing of the UPRR right-of-way would need to connect to an existing designated route of travel or a new route would need to be designated to make the connection to Ted Kipf Road, a County roadway. The proposed project may also require a BLM right-of-way permit or other BLM Lands and Realty related permit.

## **CALTRANS**

**Department of Transportation/Federal Highway Administration (FHWA).** U.S. Department of Transportation Act Section 4(f) properties include significant publicly owned public parks, recreation areas,



Mr. Kelly Burnell  
 Page 4  
 April 15, 2020

and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places. The majority of the project study area would need to be considered as a Section 4(f) resource if the project required FHWA involvement.

## **COUNTY OF IMPERIAL**

The study area includes a portion of the Glamis Specific Plan Area. The Glamis Specific Plan Area encompasses approximately 160 acres bisected by SR-78 approximately 27 miles east of the City of Brawley. The Southern Pacific Railroad crosses the site on the east. The Glamis Specific Plan Area is intended to accommodate recreation-supporting land uses including retail and service commercial, motel accommodations, recreational vehicle and mobile home parks, and community facilities. The Specific Plan shall be coordinated with the BLM and affected local agencies. A draft Glamis Specific Plan has been prepared and submitted to the County. The County is in the early stages of selecting a consultant to prepare the necessary CEQA document for this project. Therefore, any consideration of Alternatives 78-O and 78T-O should be closely coordinated with the County as they evaluate the Glamis Specific Plan.

## **FARMLANDS/TIMBERLANDS**

There are no farmlands, including Williamson Act lands and/or timberlands, in the study area. There are no potential impacts to agricultural land or timberlands associated with the proposed project alternatives. No further study of this topic is warranted.

### **Recommendations**

There are no potential environmental constraints related to farmlands or timberlands at the federal, state, or local levels.

## **POPULATION GROWTH**

The proposed project alternatives would not result in population growth-related changes in the study area. The purpose and need for the project is to improve safety for all forms of transportation crossing from one side of the UPRR to the other. No further study of this topic is warranted.

### **Recommendations**

There are no potential environmental constraints related to growth at the federal, state, or local levels.

## **COMMUNITY IMPACTS**

The study area is used extensively from October to May for camping and OHV recreation. No structures would be affected by right-of-way acquisition. The proposed project would not require any relocation of structures or individuals. Community impacts would likely be beneficial as safety would be improved for all forms of transportation crossing from one side of the UPRR to the other. The proposed project would facilitate cohesion by improving the safety of all forms of transportation crossing from one side of the UPRR right-of-way to the other, including emergency service vehicles.

The Glamis Beach Store and associated OHV serving facilities would benefit from the improved safety of a grade separation project.

### **Recommendations**

For Alternatives 78-O and 78T-O, there is a potential for the ingress/egress to the Glamis Beach Store to be adversely affected during project construction. The circulation of OHV traffic in the vicinity of the Glamis Beach Store and other potential future developments proposed under the Draft Glamis Specific Plan could adversely affect business access or operations. Therefore, a Community Impact Assessment (CIA) is recommended for these alternatives to further evaluate this issue per Caltrans guidelines. Conformance with the Glamis Specific Plan, once adopted, would also be required under County. A CIA and conformance

Mr. Kelly Burnell  
 Page 5  
 April 15, 2020

with the Glamis Specific Plan, once adopted, are not warranted for Alternatives 9.5-U or Alternative 10-O because there would not be adverse effects to ingress/egress or circulation of existing or proposed commercial business.

## UTILITIES/EMERGENCY SERVICES

The only community or public facilities in the study area are the Glamis Beach Store and the Boardmanville Trading Post, both of which serve as gathering spots that provide shelter, food, and drink. Law enforcement and emergency services are provided by the California Highway Patrol (CHP), BLM Park Rangers, and the Imperial County Sheriff's Office. The closest permanent law enforcement facility, the BLM Cahuilla Ranger Station, is located approximately 6.5 miles west of the project study area within the ISDRA. Mobile command centers are located in key activity centers of the ISDRA during busy weekends and holidays during the fall and winter months.

The study area is within a Contingency Corridor for utilities that includes and encompasses land on both sides of the UPRR. There are existing underground utilities within this corridor.

### Recommendations

The existing utilities would be potentially significantly impacted by an undercrossing option and possibly require relocation. These include a large natural gas line and railroad related telecommunication lines. This issue is relevant to lands under the jurisdiction of the BLM, Caltrans, and County.

The proposed project would also need to consider the need for utilities, such as electricity for lighting, and the accommodation of emergency vehicles.

## VISUAL AND AESTHETICS

SR-78 has not been designated by Caltrans as part of the state scenic highway system. The ISDRA provides dramatic desert scenery with sand dunes, desert washes, and views of distant mountains. The BLM has adopted Visual Resource Management (VRM) classes for the study area that are managed according to the objectives below.

### VRM Classes and Objectives

The VRM classes set VRM objectives for lands in each class, as well as the level of visual change in the landscape character that is allowed as a result of proposed management activities. The objectives and allowed levels of change for each of the four VRM classes are as follows:

- **VRM Class I Objective:** To preserve the existing character of the landscape. Allowed Level of Change: This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **VRM Class II Objective:** To retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **VRM Class III Objective:** To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Mr. Kelly Burnell  
 Page 6  
 April 15, 2020

- **VRM Class IV Objective:** To provide for management activities which require major modification of the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape can be high. Management activities may dominate the view and may be the major focus of viewer attention. However, the impact of these activities should be minimized through careful siting, minimal disturbance, and repeating the basic elements of form, line, color, and texture within the existing setting.

The nearby North Algodones Dunes Wilderness Area, north of SR-78 and west of the UPRR right-of-way is designated as VRM Class I. The project study area is VRM Class III on the east side of the UPRR right-of-way and Class IV on the west side of the UPRR right-of-way.

### Recommendations

A Visual Impact Assessment (VIA) would not be warranted for a proposed undercrossing of the UPRR, as an undercrossing would not be highly visible and would be similar in appearance to the 14 existing undercrossing locations that are designed exclusively for flood control purposes. However, for Alternatives 10-O and 78T-O that propose an overcrossing, the overcrossing would need to have a 23-foot four-inch clearance over the UPRR tracks, which would create a highly visible structure that could block or alter distant views. Therefore, a VIA would need to be prepared for these alternatives to determine the extent of the potential impact on the visual environment, including potential impacts to the existing views of the sand dunes and distant mountains. The VIA would need to address both BLM and Caltrans requirements for alternatives 78-O and 78T-O. Only BLM VIA guidelines would apply to alternative 10-O as it would not be highly visible from SR-78 or any other Caltrans properties.

### CULTURAL RESOURCES

RECON Environmental, Inc. (RECON) conducted a record search and literature review to determine the potential sensitivity of the study area regarding cultural resources. The management of cultural resources on BLM-administered land must be in compliance with several federal laws, including the Antiquities Act of 1906; the National Historic Preservation Act of 1966, as amended; the NEPA of 1969; Executive Order 11593–Protection and Enhancement of the Cultural Environment; Federal Land Policy and Management Act of 1976; the American Indian Religious Freedom Act of 1978; the Religious Freedom Restoration Act of 1993; the Archaeological Resource Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; Executive Order 13007–Indian Sacred Sites; and Executive Order 13287–Preserve America. The BLM also manages cultural resources in accordance with the National Programmatic Agreement (Among the Bureau of Land Management Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers Regarding the Manner in Which the BLM will Meet Its Responsibilities under the National Historic Preservation Act) of 2012. In addition, the BLM manages its cultural resources according to BLM Manuals 8100 through 8170, and in accordance with the BLM–California State Historic Preservation Officer Protocol Agreement of 2007, as amended.

Locations of cultural resource sites are to be kept confidential with the exception of public use sites. Therefore, the location and sensitivity of cultural resources within the study area is not presented in this report; only the potential need for additional surveys and/or monitoring.

### ISDRA RAMP Cultural Resource Goals and Objectives

- **CRM-01** Identify, preserve, and protect significant cultural resources, districts, and landscapes and ensure that they are available for appropriate uses by present and future generations.
- **CRM-02** Identify priority geographic areas for new field inventory, based upon a probability for unrecorded significant resources.
- **CRM-03** Enhance public understanding of and appreciation for cultural resources through educational outreach and heritage tourism opportunities.

Mr. Kelly Burnell  
 Page 7  
 April 15, 2020

- **CRM-04** Evaluate identified cultural resources under the criteria for the National Register of Historic Places. Eligible resources will be formally nominated for listing to the National Register of Historic Places, as appropriate.
- **CRM-05** Promote new survey efforts on an ongoing basis, utilizing partners where appropriate.
- **CRM-06** Maintain viewsheds of important cultural resources whose settings contribute significantly to their scientific, public, traditional, or conservation values.
- **CRM-07** Provide and encourage cultural resources research opportunities that would contribute to the understanding of the ways humans have used and influenced natural systems and processes.
- **CRM-08** Seek to reduce imminent threats, and direct and indirect impacts to cultural resources, or potential conflict with other resource uses.
- **CRM-09** Increase BLM nation-to-nation consultation and coordination with Native American Tribes.

### Records Search Results

RECON performed a records search at the California Historical Resources Information System, South Coastal Information Center at San Diego State University on January 13, 2020. A letter was sent to the Native American Heritage Commission (NAHC) on February 17, 2020 requesting them to search their files to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity.

The record search indicated that there have been 27 cultural resources investigations and 11 cultural resources identified within the one-mile search radius (Table 1). The study area has not been surveyed in the past. The historic sites include historic trash scatters, a cemetery, and features associated with the railroad. The prehistoric sites are comprised of a lithic scatter and a ceramic scatter. Five sites are located within or immediately adjacent to the study area. Of these, only one, the Historic Southern Pacific Railroad (CA-IMP-3424), has been evaluated and recommended eligible for listing on the NRHP and the CRHR. This resource would be impacted by all four alternatives. The other four resources within the study area have not been evaluated.

Historic aerial photographs from 1961 and 1996 were examined for structures over 50 years of age. None were identified. Based on an internet search, the Glamis Beach Store was opened in 1937 north of SR-78 and then dismantled (Glamis Dunes 2009). The 1961 aerial photograph shows a small structure approximately 800 feet northwest of the SR-78. The current Glamis Beach Store opened in 1979 south of SR-78 according to the owner's daughter, Jeannie LeBlanc (Polaris 2018). In 2018, the store was bought by Polaris. The 1996 aerial photograph shows the store in its current location. This structure is not over 50 years old.

Mr. Kelly Burnell  
Page 8  
April 15, 2020

| Table 1<br>Cultural Resources within 1-Mile of the Study Area |               |             |                                            |                                          |                                                                                                                 |                                                                                                                                                                       |
|---------------------------------------------------------------|---------------|-------------|--------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary                                                       | Trinomial     | Age         | Type                                       | Within Study Area/Alternative Footprints | NRHP Eligibility Status                                                                                         | Recording Date                                                                                                                                                        |
| P-13-003424                                                   | CA-IMP-003424 | Historic    | Railroad bed                               | 4 Alternatives                           | Historic Southern Pacific Railroad, ca. 1870s; Current Union Pacific Railroad; Recommended eligible CRHR, NRHP  | 1999 (Soil Systems, Inc.); 1999, (Jones & Stokes Associates); 2000 (KEA Environmental, Inc.); 2005 (ASM Affiliates); 2006, (K. Collins); 2008 (EDAW); 2016 (EPG, LLC) |
| P-13-004153                                                   | CA-IMP-004153 | Historic    | Trash scatter                              | Within Study Area                        | Less than 40 fragments of bottle glass (includes 4 pieces of SCA glass); Not evaluated                          | 1979 (Jan Townsend)                                                                                                                                                   |
| P-13-004154                                                   | CA-IMP-004154 | Prehistoric | Lithic scatter                             | Outside Study Area (within buffer area)  | -                                                                                                               | 1979 (Jan Townsend)                                                                                                                                                   |
| P-13-004155                                                   | CA-IMP-004155 | Historic    | Isolate - glass fragment                   | Outside Study Area (within buffer area)  | -                                                                                                               | 1979 (Jan Townsend)                                                                                                                                                   |
| P-13-004619                                                   | CA-IMP-004619 | Prehistoric | Ceramic scatter                            | Outside Study Area (within buffer area)  | -                                                                                                               | 1979 (RECON)                                                                                                                                                          |
| P-13-004621                                                   | CA-IMP-004621 | Historic    | Cemetery                                   | 3 Alternatives                           | Glamis Cemetery; Not evaluated                                                                                  | 1979 (RECON); 2001 (Tierra Environmental Services); 2005 (ASM Affiliates)                                                                                             |
| P-13-008730                                                   | CA-IMP-008212 | Historic    | Trash scatter                              | Outside Study Area (within buffer area)  | -                                                                                                               | 2001 (Tierra Environmental Services)                                                                                                                                  |
| P-13-008731                                                   | CA-IMP-008213 | Historic    | Trash scatter                              | Outside Study Area (within buffer area)  | -                                                                                                               | 2001 (Tierra Environmental Services)                                                                                                                                  |
| P-13-008732                                                   | CA-IMP-008214 | Historic    | Trash scatter                              | Within Study Area                        | 3 loci of bottle and plate glass (100+ fragments) with tin cans; Not evaluated                                  | 2001 (Tierra Environmental Services)                                                                                                                                  |
| P-13-009568                                                   | CA-IMP-008633 | Historic    | Trash scatter                              | Outside Study Area (within buffer area)  | -                                                                                                               | 2006 (Chambers Group, Inc.)                                                                                                                                           |
| P-13-009569                                                   | CA-IMP-008634 | Historic    | Railroad depot; Foundations; Trash scatter | Within Study Area                        | Former Glamis Station; only concrete foundations remain; sparse numbers of historic period trash; Not evaluated | 2007 (Chambers Group, Inc.)                                                                                                                                           |

## Recommendations

If either Alternative 78-O or 78T-O is chosen, CA-IMP-4621 and IMP-8634 would likely require formal evaluation to determine if impacts would be considered adverse. CA-IMP-8732 and IMP-4153 are within the study area but not in the footprint of any of the alternatives.

Based upon a reconnaissance of aerial photographs and noting the existing disturbances such as the construction of the dikes, the construction of the railroad, a significant amount of off-road vehicle activity, and washes due to rain events, the disturbed condition of the study area presents a very low potential for intact cultural resources. However, because none of the study area has been surveyed, RECON recommends that a Class III inventory, in accordance with BLM guidelines by a BLM permitted cultural resources specialist, be conducted to determine if cultural resources would be impacted. Additionally, the viewshed impacts to the Historic Southern Pacific Railroad should be analyzed to determine if the resource would be

Mr. Kelly Burnell  
 Page 9  
 April 15, 2020

adversely affected by proposed overcrossing or undercrossing alternatives. The results of these analyses would be documented in the following reports: Archaeological Survey Report, Historical Resources Evaluation Report, and Historic Property Survey Report per Caltrans guidelines.

### **TRIBAL CULTURAL RESOURCES**

RECON sent a letter to the NAHC on February 17, 2020 requesting them to search their files to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity and provide a list of tribes culturally affiliated to the study area. The sacred lands results from the NAHC were negative (Attachment 1). Once a project footprint is chosen, the lead federal agency will formally consult with Indian tribes and other tribal entities in accordance with Executive Orders regarding government-to-government relations with Native Americans and as part of the Section 106 of the NHPA. The Executive Orders include:

- Executive Order 11593 Protection and Enhancement of Cultural Environment (1971)
- Executive Order 13007 Indian Sacred Sites (1996)
- Executive Order 13175 Consultation and Coordination with Indian Tribal Governments (2000)
- Executive Order 13287 Preserve America (2003)

### **HYDROLOGY AND FLOODPLAIN**

The majority of the study area consists of an alluvial fan containing multiple washes that have been directed by earthen berms to flow beneath the UPRR at 14 locations identified as Washes 1–14. The terrain becomes nearly level on the west side of the UPRR and the washes continue to the west until ending within the Algodones Dune Complex. The depth to water within the study area is approximately 90 to 100 feet below ground surface. The study area is not within a sole-source aquifer. Groundwater is not anticipated to be encountered during project construction.

While the study area is dry much of the year, brief and intense rainfall can cause powerful floodwaters to turn what are typically dry washes into flash flood zones.

### **Recommendations**

Because washes are typically the easiest routes of travel in the desert, and because any undercrossing of the UPRR would create a low point, hydrology and drainage issues will be one of the most important issues to address with the design of any project alternative moving forward. While an overcrossing would largely avoid hydrology and floodplain issues, an undercrossing would be subjected to periodic inundation and sedimentation. Due to the potential to alter existing drainage patterns, the preparation of a technical report addressing drainage, water quality, and stormwater is recommended and this issue must be further addressed during alternative selection and design.

### **WATER QUALITY AND STORMWATER RUNOFF**

The ISDRA RAMP states that to ensure BLM activities or authorized activities do not degrade surface or groundwater in the planning area by identifying and protecting surface waters where possible, and preserving and enhancing natural conditions and hydrology of washes.

### **ISDRA RAMP Water Quality Management Actions**

- **WRM-05** Preserve and enhance the natural condition and hydrology of washes.
- **WRM-10** Maintain authorized vehicle routes in a manner that will promote natural hydrology and protect water quality through application of best management practices.

Mr. Kelly Burnell  
 Page 10  
 April 15, 2020

## Recommendations

BLM ISDRA RAMP requirements related to water quality and stormwater runoff would be accomplished by (1) preventing or reducing water quality degradation through implementation of applicable BMPs or other specific mitigation measures, and (2) implementing travel management actions that maintain authorized vehicle routes in a manner that will promote natural hydrology and protect water quality through application of BMPs and actions described below for the *Transportation and Public Access Management* Resource Category.

## GEOLOGY, SOILS, SEISMIC, AND TOPOGRAPHY

The ISDRA comprises a variety of dune types (e.g., draas, linear, parabolic, barchan, zibars). These dunes are separated occasionally by inter-dune areas, where relatively little sand accumulates into dune formations. The dune system lies on alluvial fan material emanating from the Cargo Muchacho and Chocolate Mountains. Some dunes reach 300 feet in height.

The study area is located along the eastern edge of the dune complex, with minor dune activity along the western side of the UPRR right-of-way. The portion of the study area east of the UPRR right-of-way consists of desert washes on a broad alluvial plain that slopes gently to the west with the periodic flow of water from the east to the west, beneath the UPRR tracks in 14 separate undercrossings.

Imperial County is a seismically active region. According to the Imperial County General Plan, some portion of Imperial County will be affected by a minor earthquake (less than Richter magnitude of 3.5 and causing little or no damage) every few months. Every five years, the county may experience a moderately damaging event (magnitude of 5.5 or greater). At least once every fifty years there will probably be a major earthquake (6.8 or greater). Micro seismicity occurs almost continuously in Imperial County (events less than 2.0), often dozens and sometimes hundreds of events per day.

## ISDRA RAMP Geology, Soils, Seismic, and Topography Goals and Objectives

- **SRM-01** Manage soils to maintain productivity and to minimize erosion.
- **SRM-02** Preserve the natural process of dune movement and formation.
- **SRM-03** Meet Land Health Standard #1, as related to soils and as described in the RAMP, Section 2.8.

## ISDRA RAMP Geology, Soils, Seismic, and Topography Management Actions

- **SRM-04** Minimize surface disturbance from authorized activities. Post-activity disturbed surfaces will be restored to a pre-disturbance or natural condition as applicable.
- **SRM-05** Incorporate erosion control measures into projects on a case-by-case basis.

## Recommendations

A geotechnical report should be prepared and any project alternative must be designed to withstand the anticipated seismic activity, as well as all other geologic conditions. The seismic standards would be the same for a structure on lands under the jurisdiction of the BLM, Caltrans, or the County.

## PALEONTOLOGY

Paleontological resources found on public lands are recognized by BLM as constituting a fragile and nonrenewable scientific record of the history of life on Earth. They therefore represent an important component of America's natural heritage. All lands within the ISDRA RAMP have been classified as containing vertebrate fossils.

Mr. Kelly Burnell  
 Page 11  
 April 15, 2020

The BLM manages paleontological resources principally under the following authorities:

- Title VI, Subtitle D of the Omnibus Public Land Management Act, known by its popular name, the Paleontological Resources Preservation Act (123 Stat. 1172; 16 USC 470aaa et seq.); BLM Manual 8270—Paleontological Resources Management; BLM Handbook.
- 8270-1—General Procedural Guidance for Paleontological Resources Management; Federal Land Policy and Management Act of 1976; NEPA of 1969; the Federal Cave Resources Protection Act of 1988; and various sections of BLMs regulations found in Code of Federal Regulations Title 43. BLM policy laid forth in these guidelines promotes the scientific, educational, and recreational uses of fossils on public lands, mitigates resource conflicts, and develops strategies to regularly monitor public lands where important paleontological localities have been identified.

Potential Fossil Yield Classification (PFYCs) are grouped into three categories based on the level of management concern and the type of assessment and mitigation actions that could be required (BLM 2016).

- PFYC Classes 1 and 2: Low/Very Low (LVL). Class 1 geologic units that are not likely to contain recognizable paleontological resources and management concerns are usually negligible or not applicable. Class 2 geologic units are not likely to contain paleontological resources and management concerns are generally low and further assessment is usually unnecessary, except where resources are known or found to exist.
- PFYC Class 3: Moderate (M) or Unknown. Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Management concerns are moderate because the existence of significant paleontological resources is known to be low.

*Class 3a—Moderate Potential.* Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

*Class 3b—Unknown Potential.* Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this class may eventually be placed in another class when sufficient survey and research is performed. The unknown potential of the units in this class should be carefully considered when developing any mitigation or management actions.

- PFYC Classes 4 and 5: High/Very High (HVH). Class 4 geologic units are known to contain a high occurrence of paleontological resources and management concerns are moderate to high, depending on the proposed action. Class 5 consists of highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources. Management concerns in Class 5 areas are high to very high.

Based on geologic resources mapped for the BLM El Centro Field Office, the study area has Unknown Potential for paleontological resources (Class 3a) (Figure 2).



Mr. Kelly Burnell  
Page 12  
April 15, 2020

### **ISDRA RAMP Paleontology Goals and Objectives**

- **PRM-01** Protect and conserve significant paleontological resources as they are discovered on public lands.
- **PRM-02** Manage paleontological resources in ways that prioritize research needs, facilitate educational and recreational needs, and protect important sites.
- **PRM-03** Develop specific objectives and management actions for fossil localities, when paleontological resources are discovered in the Planning Area.

### **ISDRA RAMP Paleontology Management Actions**

- **PRM-04** Evaluate paleontological resources as they are discovered, considering their scientific, educational, and recreational values. Identify appropriate objectives, management actions, and allowable uses for fossil localities as they are found.
- **PRM-05** Restrict the collection of all vertebrate fossils and invertebrate and plant fossils of paleontological interest to legitimate scientific or educational uses in accordance with permitting procedures.
- **PRM-06** Allow recreational collecting of common invertebrate and plant paleontological resources, in accordance with the Paleontological Resources Preservation Act.
- **PRM-07** Require immediate notification should paleontological resources be encountered during project surface-disturbing activities, and cease work in the area of the discovery. Work may not resume until the BLM issues a written authorization to proceed.
- **PRM-08** Although all lands within the Planning Area have been classified as Potential Fossil Yield Classification (PFYC) Class 2 (low likelihood for sensitive fossils), a field survey by a qualified paleontologist may be required if future information determines or indicates the presence of important paleontological resources prior to surface-disturbing activities. Management prescriptions for resource preservation and conservation through controlled access or special management designation could be considered. Surface disturbing activities may require an assessment in PFYC Class 2 areas to determine further courses of action. Assessment or mitigation in PFYC Class 1 areas will not be required except in very rare circumstances.

### **Recommendations**

If a Class 3b (Unknown Potential) unit underlies the area, it may be appropriate to require an onsite preliminary assessment by a qualified paleontologist. Consultation with the BLM would be required to determine if ISDRA RAMP PRM-8 is relevant to the study area. For lands under Caltrans or County jurisdictions, their respective guidelines for paleontological resources would apply. If the project sites are determined to be of low or no sensitivity, no mitigation would be required. For lands with moderate to high sensitivity, a paleontologist would be required to monitor excavation and grading activities.

### **HAZARDOUS WASTE/MATERIALS**

Hazardous materials consist of chemicals and materials that have the potential to adversely impact human health and the environment. In the ISDRA RAMP Planning Area, hazardous materials could include but are not limited to petroleum products, industrial chemicals, acids, heavy metals, lead-based paint, and asbestos-containing materials. Potential sources of hazardous materials include illegal dumping (including sewage), leaking fuel tanks and other fluids from OHV and associated tow/haul and camping vehicles, illegal drug manufacturing sites, abandoned buildings, and other sites. Illegal dumping has a potential to cause environmental impacts to BLM-administered land within the project study area.

Mr. Kelly Burnell  
 Page 13  
 April 15, 2020

Laws governing the management of these materials include Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA), Resource Conservation Recovery Act (RCA), other federal laws and regulations, and state and local regulations. Mining and milling wastes are managed under the CERCLA as potentially hazardous materials or hazardous waste.

According to a regulatory records search performed by Kleinfelder for the study area using the State Water Resources Control Board (SWRCB) GeoTracker database (SWRCB 2020) and the California Department of Toxic Substances Control (DTSC) EnviroStor database (DTSC 2020), a diesel fuel tank was found to be leaking at the Glamis Beach Store property in 1991; however, the site is listed as completed-case closed as of August 24, 1992. Because the listed sites have been previously evaluated with the oversight of a regulatory agency and have subsequently been listed as closed, and groundwater is not anticipated to be encountered during construction, it is unlikely that the historical release poses any remaining significant hazard to the public or the environment. Both SR-78 and the UPRR rail line have sustained heavy historical mechanized use and exposure to exhaust fumes containing lead. Aerially deposited lead (ADL) contamination from vehicle emissions could also be found in unpaved areas adjacent to roads and highways.

#### **ISDRA RAMP Hazardous Waste/Materials Management Actions**

- **PHS-23** Minimize the presence and potential impact to human health and the environment from hazardous materials.
- **PHS-24** Perform public notification of potential health risks by means of notices, signage, and other forms of communication.
- **PHS-25** Remediate areas contaminated with hazardous materials in accordance with applicable laws and regulations.

#### **Recommendations**

An Initial Site Assessment, updated records search, site visit, and an ADL evaluation is recommended to determine whether potential impacts may be considered to represent an environmental concern for any alternative. This would apply to lands under the jurisdiction of the BLM, Caltrans, and County.

#### **AIR QUALITY**

##### **Dust Control During Off Highway Vehicle Use**

The BLM applies dust control measures within the ISDRA. Specifically, the following access roads are treated for dust control to reduce the impact of OHV activities on air quality:

1. Wash Road adjacent to the UPRR and Dune Buggy Flats Road.
2. Certain unpaved areas located in the Imperial Sand Dunes, including Wash Road and the Dune Buggy Flats access road receive more than 50 vehicle trips per day during holiday weekends (Halloween, Thanksgiving, New Years' Day, and Presidents' Day) that fall between the months of October and February. BLM will continue to water these areas to reduce dust emissions.

In January 2003, the BLM approved and signed the Record of Decision (ROD) for the Western Colorado Deserts Routes of Travel Designations (WECO) and in December of 2002 the ROD for the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) was signed. Both of these Decisions are amendments of the 1980 BLM CDCA Plan. In these plans, BLM set forth control measures to help curb particulate matter with an aerodynamic diameter of 10 microns or less emissions.

Mr. Kelly Burnell  
 Page 14  
 April 15, 2020

As stated in the WECO Desert Routes of Travel Designation (these are also true for the Northern and Eastern Colorado Routes of Travel Designation):

There would be fewer roads designated as open than the current situation. There would be less miles of routes than existing conditions. The vehicle use limitation to street legal vehicles in the Yuha (and other areas) should result in a decrease in the use of this area. In addition to the designation of roads and the enforcement of the designation, land use should result in less off route travel. The off route travel creates new roads which increases the particulate matter emissions due to vehicular use and wind. This alternative also includes the mitigation requirement to restore closed roads to a natural desert landscape. This will result in fewer emissions due to the inability to easily use closed roads and the reduction in emissions due to wind.

BLM is currently implementing this plan. Since 2003 the BLM El Centro Field Office has restored 751 closed routes and unauthorized impacts within Imperial County totaling 65.89 miles of routes and 1,189 acres of public land. This restoration has returned the closed trails/routes to natural habitat and reduced the wind erosion for these areas.

### **Dust Control During Miscellaneous Construction Projects**

The BLM states that miscellaneous construction activities and general access activities tend to produce minimal fugitive dust emissions. Therefore, the BLM defers to the Imperial County Air Pollution Control District to determine if a proposed project would require the project coordinator to submit a dust plan to Imperial County Air Pollution Control District. It is recommended that a dust plan be prepared and submitted to the Imperial County Air Pollution Control District by the lead agency for this project.

### **Recommendations**

An air quality technical study would be required for any of the selected project alternatives. Impacts would likely be significant and mitigation measures would be required. There is no clear advantage to any one project alternative over the others. The air quality study would be required for lands under the jurisdiction of the BLM, Caltrans, and County.

### **NOISE AND VIBRATION**

The ISDRA provides for many types of recreational experiences, with OHV recreation as the dominant activity. The OHV enthusiasts who visit on holiday weekends experience large crowds, noise, and intensive, 24-hour, OHV activity in areas such as Glamis.

The vehicle types that can be found operating in the ISDRA are nearly limitless, and include: sand rails, dune buggies, all-terrain vehicles, motorcycles, 4 wheel-drive (WD) pickups, 2WD pickups, sport utility vehicles, and custom built OHVs. Private, law enforcement, military, commercial, and rescue aircraft frequently fly over the dunes at low altitudes.

Over one million individuals visit the ISDRA each year, with peak visitation occurring between October and May. Visitation is unevenly distributed throughout the year, with the highest visitation occurring during the major holiday weekends. The visitation estimates for the major holiday weekends can approach 200,000 visitors. For example, the average visitation during Thanksgiving weekend for fiscal years 2004 through 2009 was 179,677. Approximately 35 percent of the annual visitation occurs during 25 percent of the recreation season (i.e., two out of 8 months in the season).

Despite the noise levels that can be experienced on busy holiday weekends, the project study area has a very low ambient noise level much of the time, especially east of the UPRR tracks where OHV use is limited. Sensitive receptors to noise within the study area include the Glamis Beach Store and recreational users of the ISDRA. Due to proximity to the Glamis Beach Store, Alternatives 78-O and 78T-O have a greater

Mr. Kelly Burnell  
 Page 15  
 April 15, 2020

potential to affect sensitive receptors during project construction and operation than Alternatives 9.5U and 10-O, where the potential for adverse noise impacts is limited.

### **Recommendations**

A noise and vibration technical study would be required for any of the selected project alternatives. Impacts would likely be significant and mitigation measures would be required. Impacts and mitigation requirement for alternatives 78-O and 78T-O would likely be greater than the other two alternatives due to the proximity to the Glamis Beach Store. The noise and vibration study would be required for lands under the jurisdiction of the BLM, Caltrans, and County.

### **CLIMATE CHANGE**

The Southern California Association of Governments' (SCAG's) *Sustainability Grant Program—Imperial County Regional Climate Action Plan*: ICTC was awarded a SCAG Sustainable Planning Grant to develop a Regional Climate Action Plan (CAP). ICTC staff will work in collaboration with SCAG staff and a consultant to develop the Regional CAP. ICTC serves as the day-to-day project manager and SCAG staff serves as the administrative project manager. The goal of the project is to develop a regional framework for addressing greenhouse gas (GHG) emissions for a Regional CAP that allows each local agency to customize and fit into the context of the community each jurisdiction serves, that can be used at the local level in the development of jurisdiction-specific CAPs.

### **Recommendations**

A climate change technical study would be required for any of the selected project alternatives. Impacts would likely be significant and mitigation measures would be required. There is no clear advantage to any one project alternative over the others. The climate change study would be required for lands under the jurisdiction of the BLM, Caltrans, and County.

### **GHG EMISSIONS ESTIMATES AND REDUCTION MEASURES**

Transportation is the largest source of California's GHG emissions—mostly from light-duty passenger vehicles. Emissions declined from 2006 to 2016, but have increased slightly in recent years. The state has many policies in place to reduce GHG emissions in the transportation sector. The major categories of programs include (1) reducing emissions from light-duty vehicles, (2) reducing emissions from heavy-duty vehicles, (3) increasing the use of lower carbon fuels, and (4) reducing the number of vehicle miles traveled. These programs are intended to work in a variety of ways. For example, some programs provide financial assistance incentives to reduce the cost of adopting lower emission technologies, while other programs are designed to increase the costs of using higher emission technologies. Some programs are targeted towards consumers of fuel, while other programs are targeted towards vehicle manufacturers and fuel producers.

While GHG emissions are of global concern, the proposed project would likely result in a short-term increase in GHG emissions during construction and a long term reduction in GHG emissions by providing a more direct route of travel between the west and east sides of the UPRR right-of-way, reducing the distance traveled by vehicles using the existing crossings at SR-78 to the north and Ogilby Road to the south, a distance of approximately 18.5 miles.

### **Recommendations**

A GHG technical study would be required for any of the selected project alternatives. This is the same study as listed above under climate change. Impacts would likely be significant and mitigation measures would be required. There is no clear advantage to any one project alternative over the others. The GHG study would be required for lands under the jurisdiction of the BLM, Caltrans, and County.

Mr. Kelly Burnell  
 Page 16  
 April 15, 2020

## ENERGY

The study area is within a Contingency Corridor for utilities that includes and encompasses land on both sides of the UPRR. Energy would be required for the construction and operation of the proposed project. But energy may also be saved through the creation of a more efficient connection between the two sides of the UPRR tracks. It is approximately 18.5 miles between the SR-78 crossing and the Ogilby Road crossing, which are the only legally usable routes by street-legal vehicles.

## Recommendations

Energy usage would be addressed in the climate change/GHG technical study. There is no clear advantage to any one project alternative over the others. The energy study would be required for lands under the jurisdiction of the BLM, Caltrans, and County.

## BIOLOGICAL ENVIRONMENT

The biological resources in the project study area include several desert habitats that support a variety of desert plants, reptile and insect communities, including special-status and endemic species found only in the Algodones Dunes. The primary habitat types associated with the dune system are: creosote bush scrub, psammophytic scrub, active dune, microphyll woodland, Sonoran desert scrub, and canal-influenced vegetation. The primary habitat type found in the study area is creosote brush scrub.

Creosote bush scrub generally occurs on the edges of the dune system and occasionally in the central portion. Creosote bush scrub is the most common vegetation community in the Colorado Desert and typically occurs in well-drained secondary soils of slopes, fans, and valleys. Characteristic species for this community include creosote bush, brittlebush, and burrobrush. The creosote bush habitat in the ISDRA generally consists of widely spaced shrubs, usually interspersed with bare ground. The western flank consists of almost pure stands of creosote bush.

The area on the eastern side of the dune system is a large alluvial fan draining the Chocolate and Cargo Muchacho Mountains. The alluvial fan is dissected into numerous washes and plains. The microphyll woodland habitat is found along these dry-wash channels and around the cul-de-sac sinks at the end of the washes. Trees associated with this habitat are palo verde, ironwood, smoke tree, and, to a lesser degree, honey mesquite and desert willow. Microphyll woodland habitat supports the highest diversity of wildlife in the ISDRA.

Sonoran Desert Scrub occurs on the extreme eastern edge in the study area as a transition zone between creosote bush scrub and microphyll woodland. This habitat includes desert dry wash woodland, as well as alluvial fans that support ocotillo, brittlebush, and cacti.

### 1. Biological Record Search Findings

A biological records search of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation System (IPACS; USFWS 2020) and California Natural Diversity Database (CNDDDB) was conducted. The IPACS database reports species listed under the Endangered Species Act (ESA) as threatened and endangered that may occur within five miles of the study area. The report indicated that one federally listed species, the Pierson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*), has the potential to occur and could be affected by the proposed project.

The CNDDDB yielded 21 species observations within a five-mile radius of the study area. The full list of species observations is presented in Attachment 2. A CNDDDB report generated using the Rarefind application provides details on each documented species occurrence and is included in Attachment 3. Of these species, the following five species listed as threatened or endangered at the federal or state level, or are state candidate endangered: Pierson's milk-vetch, Mojave Desert tortoise (*Gopherus agassizii*), Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*), Gila woodpecker (*Melanerpes uropygialis*), and the western bumble bee (*Bombus occidentalis*). The Mojave Desert tortoise and the Pierson's milk-vetch are both

Mr. Kelly Burnell  
 Page 17  
 April 15, 2020

federally listed. Four additional species are considered BLM species of special concern: burrowing owl (*Athene cunicularia*), flat-tailed horned lizard (*Phrynosoma mcalli*), Le Conte's thrasher (*Toxostoma lecontei*), and the pallid bat (*Antrozous pallidus*).

The Algodones Dunes sunflower, the flat-tailed horned lizard, and the western bumble bee all have documented occurrences within the study area. No occurrence of desert tortoise or Pierson's milk-vetch has been recorded within the study area. However, two desert tortoise occurrences are documented within the search radius, both approximately 4.5 miles east of the study area, and the Pierson's milk-vetch has been documented throughout the dune complex within approximately 1.5 miles of the study area.

## 2. Literature Review

RECON conducted a literature review of agency protocols for listed and special status species with potential to occur within the study area. Documents reviewed included the ISDRA RAMP, the USFWS Biological Opinion on the ISDRA RAMP, Mojave Desert Tortoise Revised Recovery Plan (USFWS 2011), the Draft Pierson's Milk-Vetch Recovery Plan (USFWS 2019a), and the California Desert Biological Conservation Framework (CEC et al 2016). The results of the literature review for these species are presented below.

### a. Peirson's Milk-Vetch

Peirson's milk-vetch was listed by USFWS as threatened in 1998. It is also recognized as endangered by the State of California and as a special status species by the BLM. Peirson's milk-vetch habitat consists of sandy depressions at the base of high dunes and lower established dunes. Critical habitat for the Peirson's milk-vetch occurs in two main sections within the Algodones Dunes, which are located approximately 4.5 miles north-west of the study area, between SR-78 and the northern limit of the dune complex, and approximately 6 miles south of the study area, in the western portion of the dune complex.

#### *ISDRA RAMP Peirson's Milk-Vetch Goals and Objectives*

- **PMV-01** Promote population increase and protect habitat necessary to promote recovery.
- **PMV-02** Provide for habitat connectivity between Peirson's milk-vetch populations throughout the dunes.
- **PMV-03** Ensure no adverse modification of critical habitat, as mandated by the Endangered Species Act.
- **PMV-04** Achieve stable or increasing populations of Peirson's milk-vetch over time with adequate pollination, nurse plants, recruitment, and survivorship. Maintain desired habitat conditions or restore degraded habitats to promote pollinator success and survival.
- **PMV-05** Minimize effects resulting from human-caused disturbances.
- **PMV-06** Promote research activities to further management goals of Peirson's milkvetch.
- **PMV-07** Implement a monitoring plan for Peirson's milk-vetch. Analyze the monitoring data to compare the trend in species abundance due to the different types of impacts in each area.
- **PMV-08** Provide for recovery of Peirson's milk-vetch through critical habitat protection.
- **PMV-09** Prohibit motorized recreation within Peirson's milk-vetch critical habitat.
- **PMV-10** Exclude Peirson's milk-vetch critical habitat from solar energy development. Exclusion areas are defined as areas which are not available for location of rights-of-way under any conditions.
- **PMV-11** Exclude Peirson's milk-vetch critical habitat from wind energy development.
- **PMV-12** Exclude Peirson's milk-vetch critical habitat from all other types of land use authorization.

Mr. Kelly Burnell  
 Page 18  
 April 15, 2020

### ***Draft Recovery Plan for Pierson's Milk-Vetch***

A Draft Recovery Plan for the Pierson's milk-vetch was published on July 26, 2019, providing guidance on how to control impacts from current or potential future threats to the taxon, such that it no longer requires the protections afforded by the ESA and, therefore, warrants consideration for delisting. The Draft Recovery Plan is based on the Species Biological Report for the Pierson's milk-vetch (USFWS 2019b), which describes the life history and biology of the species, as well as its current status and threats. A third document, the Recovery Implementation Strategy, builds on the draft recovery plan by discussing recovery actions in more detail (USFWS 2019c). The Recovery Plan identifies several different threat types for the milk-vetch and prioritizes which threats to address first. The highest priority for the recovery of the Pierson's milk-vetch is to sufficiently reduce Factor A threats (the destruction or adverse modification of habitat) and Factor E threats (other natural or manmade factors, such as loss of genetic diversity due to population thinning, and OHV impacts to the taxon). The implementation schedule outlined in the Recovery Implementation Strategy and the delisting criteria provided in the Draft Recovery Plan both require the development of a taxon-specific adaptive management plan that ensures the long-term viability of the milk-vetch, preserves its habitat, and is responsive to survey and monitoring results, new research, and the population viability analysis.

#### **b. Desert Tortoise**

The Mojave population of desert tortoise was federally listed as threatened in 1990. It is also recognized as a special status species by BLM and as a threatened species by the State of California. In California, the desert tortoise is most commonly found in association with creosote bush scrub with intershrub space for growth of herbaceous plants. Critical habitat for the Mojave population of the desert tortoise extends south from the Chocolate Mountains towards the Algodones Dunes, stopping approximately 3.5 miles north of the study area. The BLM has identified the majority of the eastern portion of the dunes as tortoise habitat. The overall recovery objective for the Mojave population of the desert tortoise is to provide habitat capable of maintaining stable or increasing trends in abundance and survivorship of desert tortoise in all recovery units in the Mojave region. Recovery goals, objectives, strategies, and delisting criteria are described in the Mojave Desert Tortoise Revised Recovery Plan (USFWS 2011).

#### ***ISDRA RAMP Desert Tortoise Goals and Objectives***

- **MDT-01** Maintain and improve habitat for the Mojave population of the desert tortoise.
- **MDT-02** Promote population increase and protect habitat necessary to promote recovery.
- **MDT-03** Provide for habitat connectivity between desert tortoise populations.
- **MDT-04** Establish the goals and criteria for three categories of desert tortoise habitat areas designated in the desert tortoise recovery plan (USFWS 1994). These categories are:
  - Category I. Maintain stable, viable populations, retain natural shelter sites, protect existing tortoise habitat values, and increase populations where possible.
  - Category II. Maintain stable, viable populations and halt further declines in tortoise values.
  - Category III. Limit tortoise habitat and population declines to the extent possible through mitigating impacts.

Mr. Kelly Burnell  
 Page 19  
 April 15, 2020

- **MDT-05** The following management actions apply to all desert tortoise habitat within the Planning Area and are derived from the 2011 Revised Recovery Plan for the Mojave Population of the Desert Tortoise (USFWS).
  - Review land use requests on a case-by-case basis. Requests may be approved, denied, or require mitigation to achieve Goals and Objectives.
  - Compensate for loss of desert tortoise habitat in accordance with the Desert Tortoise Compensation Team report (1991).
  - Limit activities that would fragment or further isolate existing Mojave populations of desert tortoise (e.g., canals, highways).
  - Reduce the attraction of predators through proper management of garbage.
  - Reduce take of desert tortoises, by injury or death, through proper mitigation measures.
- **MDT-06** Allow camping within designated areas of desert tortoise habitat.

### ***Biological Opinion***

A Biological Opinion (BO) was issued to the BLM by the USFWS addressing the ISDRA RAMP and its effects on the Mojave desert tortoise. The BO assesses the potential for Wash Road maintenance activities or utility development projects along Ted Kipf Road to impact desert tortoises or their habitat. Based on the absence of the species in the study area and the measures proposed to minimize impacts to the species if encountered, the USFWS and the BLM determined that maintenance of Wash Road was not likely to adversely affect desert tortoises. Similarly, given the sparse densities of desert tortoises in the planning area, the USFWS anticipates that impacts to the species from activities along Ted Kipf Road relating to future utility development and other types of land use authorizations would be relatively minor.

#### **c. BLM Special Status Species**

The BLM defines special status species as species listed or proposed for listing under the ESA, and BLM sensitive species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. The RAMP identifies 14 BLM sensitive species within the ISDRA: Munz's cholla (*Cylindropuntia munzii*), giant Spanish needle (*Palafoxia arida* var. *gigantea*), sand food (*Pholisma sonora*), Orocopia sage (*Salvia greatae*), spotted bat (*Euderma maculatum*), California leaf-nosed bat (*Macrotus californicus*), cave myotis (*myotis velifer*), Townsend's bigeared bat (*Corynorhinus townsendii*), burrowing owl, LeConte's thrasher, lowland leopard frog (*Lithobates yavapaiensis*), Couch's spadefoot toad (*Scaphiopus couchii*), flat-tailed horned lizard, and Colorado Desert fringe-toed lizard (*Uma notata*). As stated in the RAMP, special status species must be fully analyzed in any BLM decision that could affect those species or their habitat. Analysis may include inventory, monitoring, evaluation, and identification of mitigation of effects. Potential mitigation actions may include project relocation or redesign (avoidance), monitoring, and site-specific mitigation.

### **3. RECON Site Visit Findings**

RECON Principal Environmental Planner Michael Page and RECON Biologist Katy Chappaz conducted a site visit on February 19, 2020, to ground truth the vegetation communities identified in the ISDRA RAMP and determine whether any variation in the location of resources within the study area could impact the final constraints applied to the proposed project. The study area was accessed from SR-78 and initially surveyed by driving along Wash Road to the southern end of the study area at Wash 14. Wash 14 was surveyed on foot, on both sides of the railway, and Wash 10 was surveyed on foot on either side of the railway and from the railway to Ted Kipf Road, affording an overview of the impact area should the construction of a new designated route be required between the grade separation and Ted Kipf Road.



Mr. Kelly Burnell  
 Page 20  
 April 15, 2020

Creosote scrub is the only vegetation community occurring within the study area, as mapped for the RAMP, though the vegetation is more disturbed within the graded flood control chevrons on the east side of the UPRR and along Wash Road, particularly near SR-78. The vegetation tends to be denser within the washes, and is sparsest within the chevrons. Despite these slight variations, the vegetation throughout the study area is homogenous enough that the same biological constraints and focused surveys would likely apply to all of the proposed alternatives, regardless of their location within the study area.

### **Recommendations**

The sensitivity of biological resources on the western side of the UPRR right-of-way are low as much of the area between the railroad and Wash Road has been disturbed by development and intensive use. However, much of the project study area east of the UPRR right-of-way exhibits limited recent disturbance and is considered to be sensitive. Biological surveys for special status/rare plants and wildlife species, particularly Pierson's milk vetch and reptiles such as the desert tortoise, flat-tailed horned lizard, and fringed-toed lizard, are recommended. Rare plant surveys would likely be required by BLM to be conducted during the spring blooming period, between February and May.

A Biological Assessment (BA) addressing the federally listed species should be prepared once the limits of the project alternatives have been defined. This would include protocol surveys for the desert tortoise. Informal consultation should be initiated with the USFWS to determine the scope of the BA. Informal consultation with the California Department of Fish and Wildlife should be initiated for potential impacts on Caltrans properties or private lands. A Natural Environment Study would also be required for potential impacts to Caltrans properties. The biological resources studies would need to conform to the requirements of the BLM, Caltrans, and County, depending on the alternative selected and the underlying ownership and management responsibilities.

### **MINERAL RESOURCES**

The general goals for mineral resources in the ISDRA RAMP are to:

- Assure the availability of known mineral resource lands for exploration and development within the multiple-use management framework.
- Encourage the development of mineral resources in a manner which satisfies national and local needs and provides for economically and environmentally sound exploration, extraction, and reclamation processes.
- Develop a mineral resource inventory; geology, energy, and minerals resources database; and professional, technical, and managerial staff knowledgeable in mineral exploration and development.

### **Recommendations**

There is no clear difference in the potential for impacts to mineral resources between the four project alternatives. Adverse impacts to mineral resources are not anticipated, but should be addressed under the guidelines of the BLM, Caltrans, and County, depending on the alternative selected and the underlying ownership and management responsibilities.

### **WILDFIRE**

Wildfire is of limited concern in the project study area due to the general lack of fuel. However, the ISDRA RAMP does include general goals for the prevention of wildfire impacts.

Mr. Kelly Burnell  
Page 21  
April 15, 2020

### **ISDRA RAMP Wildfire Goals and Objectives**

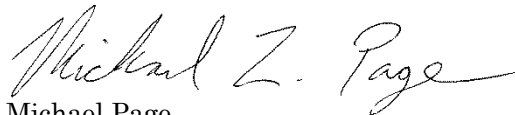
- **INP-03** Treat non-native invasive species that constitute significant fuel load and fire threat directly by using integrated pest management or management through fire breaks and other tactics.
- **WFM-03** Implement fuels reduction programs where needed, with wildland fuels decreased and maintained at a manageable level, creating conditions conducive to safe, efficient, and effective firefighting. Fire and fuels management treatments may include fire suppression, prescribed fire, and non-fire treatments (manual, chemical, mechanical, or biological treatments). Treat non-native invasive species that constitute significant fuel load and fire threat directly by using Integrated Pest Management or management through fire breaks and other tactics.
- **WFM-04** Identify, prioritize, and plan fuels reduction projects using a uniform system for determining wildland fire risk in wildland–urban interface (e.g., Risk Assessment and Mitigation Strategy).
- **WFM-05** Identify and implement post-fire stabilization and rehabilitation actions in burned areas to restore a functional landscape to meet the natural resource management objectives.
- **WFM-06** Apply the minimum impact management tactics, identified in the Interagency Standards for Fire and Aviation Operations, in the wilderness, when wildland fire suppression is required.
- **WFM-07** Consider the desired conditions and management prescriptions in implementing fire management activities for ACECs (see Section 2.22.3 for ACEC management actions).

### **Recommendations**

There is no clear difference in the potential for impacts regarding wildfire between the four project alternatives. Due to the limited fuel and potential for wildfire in the study area, combined with the lack of proposed habitation of the structure, the potential for wildfire impacts would be low.

If you have any questions, please call me at 619-308-9333 extension 145 or e-mail me at [mpage@reconenvrionmental.com](mailto:mpage@reconenvrionmental.com).

Sincerely,



Michael Page  
Principal, Environmental Division

cc: Kelly Burnell, Kleinfelder

Mr. Kelly Burnell  
 Page 22  
 April 15, 2020

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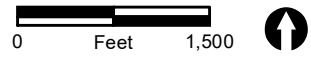
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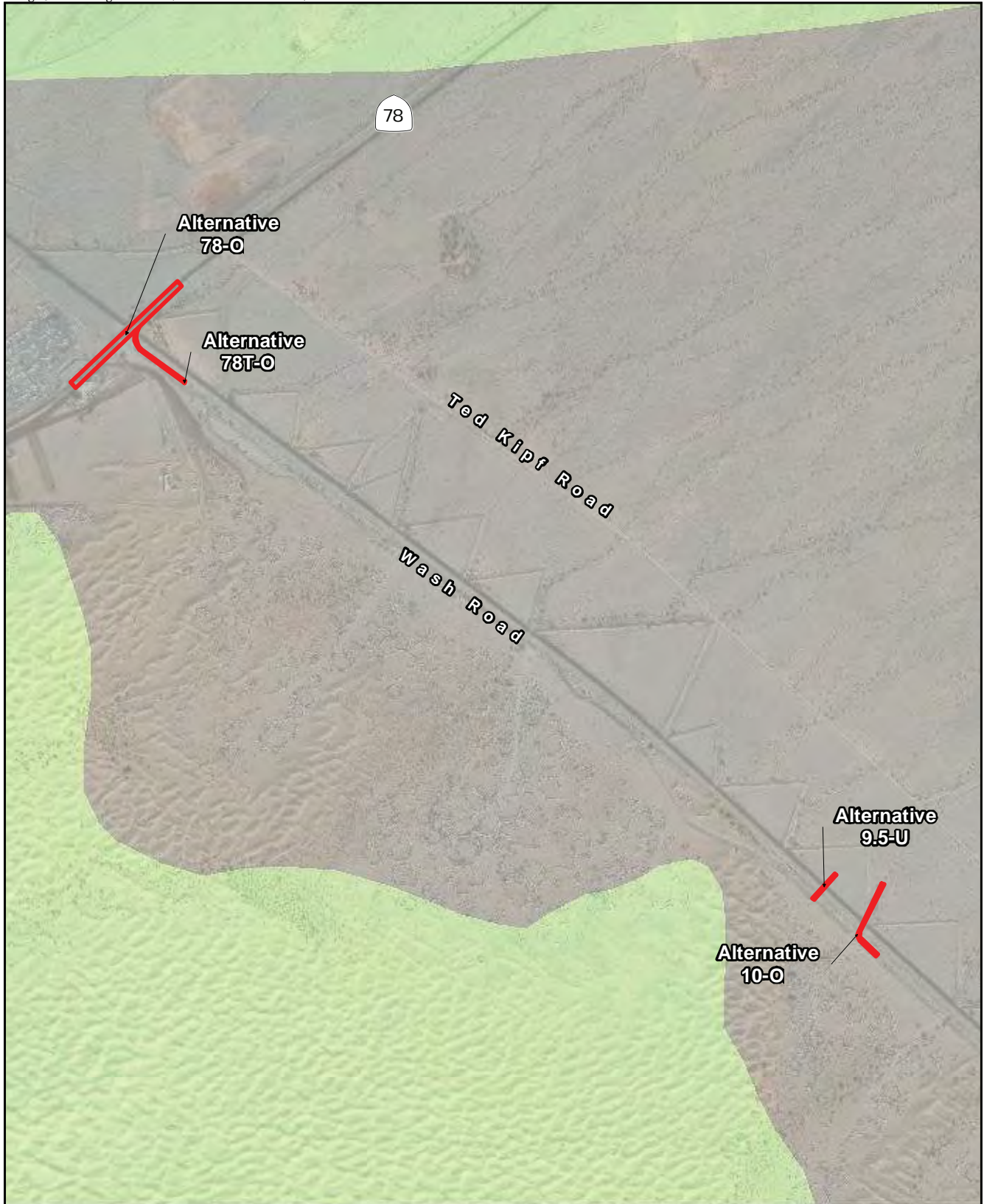

 Project Alternatives

FIGURE 1



Project Alternatives on Aerial Photograph  
236



 Project Alternatives

0 Feet 1,500 

**Potential Fossil Yield Classification**

-  Low
-  Unknown

**FIGURE 2**

**Potential Fossil Yield Classification in the Study Area**

## **ATTACHMENTS**

# **ATTACHMENT 1**

Native American Heritage Commission

## NATIVE AMERICAN HERITAGE COMMISSION

March 4, 2020

Carmen Zepeda-Herman  
RECON Environmental

Via Email to: [czepeda@reconenvironmental.com](mailto:czepeda@reconenvironmental.com)

Re: SR 78/Glamis Multiuse Feasibility Study Project, Imperial County

Dear Ms. Zepeda-Herman:

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

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

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

If you have any questions or need additional information, please contact me at my email address: [steven.quinn@nahc.ca.gov](mailto:steven.quinn@nahc.ca.gov).

Sincerely,



Steven Quinn  
Cultural Resources Analyst

Attachment



CHAIRPERSON  
Laura Miranda  
Luiseño

VICE CHAIRPERSON  
Reginald Pagaling  
Chumash

SECRETARY  
Merri Lopez-Keifer  
Luiseño

PARLIAMENTARIAN  
Russell Attebery  
Karuk

COMMISSIONER  
Marshall McKay  
Wintun

COMMISSIONER  
William Mungary  
Paiute/White Mountain  
Apache

COMMISSIONER  
Joseph Myers  
Pomo

COMMISSIONER  
Julie Tumamait-  
Stenslie  
Chumash

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
Christina Snider  
Pomo

NAHC HEADQUARTERS  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)



**Native American Heritage Commission  
Native American Contact List  
Imperial County  
3/4/2020**

**Barona Group of the Capitan Grande**

Edwin Romero, Chairperson  
1095 Barona Road Diegueno  
Lakeside, CA, 92040  
Phone: (619) 443 - 6612  
Fax: (619) 443-0681  
cloyd@barona-nsn.gov

**Campo Band of Diegueno Mission Indians**

Ralph Goff, Chairperson  
36190 Church Road, Suite 1 Diegueno  
Campo, CA, 91906  
Phone: (619) 478 - 9046  
Fax: (619) 478-5818  
rgoff@campo-nsn.gov

**Ewiiapaayp Band of Kumeyaay Indians**

Michael Garcia, Vice Chairperson  
4054 Willows Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 6315  
Fax: (619) 445-9126  
michaelg@leaningrock.net

**Ewiiapaayp Band of Kumeyaay Indians**

Robert Pinto, Chairperson  
4054 Willows Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 6315  
Fax: (619) 445-9126  
wmicklin@leaningrock.net

**Iipay Nation of Santa Ysabel**

Virgil Perez, Chairperson  
P.O. Box 130 Diegueno  
Santa Ysabel, CA, 92070  
Phone: (760) 765 - 0845  
Fax: (760) 765-0320

**Iipay Nation of Santa Ysabel**

Clint Linton, Director of Cultural Resources  
P.O. Box 507 Diegueno  
Santa Ysabel, CA, 92070  
Phone: (760) 803 - 5694  
cjlinton73@aol.com

**Inaja-Cosmit Band of Indians**

Rebecca Osuna, Chairperson  
2005 S. Escondido Blvd. Diegueno  
Escondido, CA, 92025  
Phone: (760) 737 - 7628  
Fax: (760) 747-8568

**Jamul Indian Village**

Erica Pinto, Chairperson  
P.O. Box 612 Diegueno  
Jamul, CA, 91935  
Phone: (619) 669 - 4785  
Fax: (619) 669-4817  
epinto@jiv-nsn.gov

**Kwaaymii Laguna Band of Mission Indians**

Carmen Lucas,  
P.O. Box 775 Kwaaymii  
Pine Valley, CA, 91962 Diegueno  
Phone: (619) 709 - 4207

**La Posta Band of Diegueno Mission Indians**

Javaughn Miller, Tribal Administrator  
8 Crestwood Road Diegueno  
Boulevard, CA, 91905  
Phone: (619) 478 - 2113  
Fax: (619) 478-2125  
jmiller@LPtribe.net

**La Posta Band of Diegueno Mission Indians**

Gwendolyn Parada, Chairperson  
8 Crestwood Road Diegueno  
Boulevard, CA, 91905  
Phone: (619) 478 - 2113  
Fax: (619) 478-2125  
LP13boots@aol.com

**Manzanita Band of Kumeyaay Nation**

Angela Elliott Santos, Chairperson  
P.O. Box 1302 Diegueno  
Boulevard, CA, 91905  
Phone: (619) 766 - 4930  
Fax: (619) 766-4957

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed SR 78/Glamis Multiuse Feasibility Study Project, Imperial County.

**Native American Heritage Commission  
Native American Contact List  
Imperial County  
3/4/2020**

**Mesa Grande Band of Diegueno  
Mission Indians**

Michael Linton, Chairperson  
P.O. Box 270 Diegueno  
Santa Ysabel, CA, 92070  
Phone: (760) 782 - 3818  
Fax: (760) 782-9092  
mesagrandeband@msn.com

**Sycuan Band of the Kumeyaay  
Nation**

Kristie Orosco, Kumeyaay  
Resource Specialist  
1 Kwaaypaay Court Kumeyaay  
El Cajon, CA, 92019  
Phone: (619) 445 - 6917

**Quechan Tribe of the Fort Yuma  
Reservation**

Jill McCormick, Historic  
Preservation Officer  
P.O. Box 1899 Quechan  
Yuma, AZ, 85366  
Phone: (760) 572 - 2423  
historicpreservation@quechantrib  
e.com

**Sycuan Band of the Kumeyaay  
Nation**

Cody Martinez, Chairperson  
1 Kwaaypaay Court Kumeyaay  
El Cajon, CA, 92019  
Phone: (619) 445 - 2613  
Fax: (619) 445-1927  
ssilva@sycuan-nsn.gov

**Quechan Tribe of the Fort Yuma  
Reservation**

Manfred Scott, Acting Chairman  
Kw'ts'an Cultural Committee  
P.O. Box 1899 Quechan  
Yuma, AZ, 85366  
Phone: (928) 750 - 2516  
scottmanfred@yahoo.com

**Viejas Band of Kumeyaay  
Indians**

John Christman, Chairperson  
1 Viejas Grade Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 3810  
Fax: (619) 445-5337

**San Pasqual Band of Diegueno  
Mission Indians**

John Flores, Environmental  
Coordinator  
P. O. Box 365 Diegueno  
Valley Center, CA, 92082  
Phone: (760) 749 - 3200  
Fax: (760) 749-3876  
johnf@sanpasqualtribe.org

**Viejas Band of Kumeyaay  
Indians**

Ernest Pingleton, Tribal Historic  
Officer, Resource Management  
1 Viejas Grade Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 659 - 2314  
epingleton@viejas-nsn.gov

**San Pasqual Band of Diegueno  
Mission Indians**

Allen Lawson, Chairperson  
P.O. Box 365 Diegueno  
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allenl@sanpasqualtribe.org

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed SR 78/Glamis Multiuse Feasibility Study Project, Imperial County.

**ATTACHMENT 2**  
CNDDDB Species Observations



4

# Selected Elements by Common Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



Query Criteria: Imported file selection



Selected Elements by Common Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



| Species                                                                     | Element Code | Federal Status | State Status         | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|-----------------------------------------------------------------------------|--------------|----------------|----------------------|-------------|------------|--------------------------------|
| <b>Algodones Dunes sunflower</b><br><i>Helianthus niveus ssp. tephrodes</i> | PDAST4N0Z2   | None           | Endangered           | G4T2T3      | S1         | 1B.2                           |
| <b>Andrew's dune scarab beetle</b><br><i>Pseudocotalpa andrewsi</i>         | IICOL37020   | None           | None                 | G1          | S1         |                                |
| <b>burrowing owl</b><br><i>Athene cunicularia</i>                           | ABNSB10010   | None           | None                 | G4          | S3         | SSC                            |
| <b>California mellitid bee</b><br><i>Melitta californica</i>                | IIHYM74010   | None           | None                 | G4?         | S2?        |                                |
| <b>Carlson's dune beetle</b><br><i>Anomala carlsoni</i>                     | IICOL30050   | None           | None                 | G1          | S1         |                                |
| <b>desert tortoise</b><br><i>Gopherus agassizii</i>                         | ARAAF01012   | Threatened     | Threatened           | G3          | S2S3       |                                |
| <b>flat-tailed horned lizard</b><br><i>Phrynosoma mcallii</i>               | ARACF12040   | None           | None                 | G3          | S2         | SSC                            |
| <b>giant spanish-needle</b><br><i>Palafoxia arida var. gigantea</i>         | PDAST6T012   | None           | None                 | G5T3?       | S2         | 1B.3                           |
| <b>Gila woodpecker</b><br><i>Melanerpes uropygialis</i>                     | ABNYF04150   | None           | Endangered           | G5          | S1         |                                |
| <b>Hardy's dune beetle</b><br><i>Anomala hardyorum</i>                      | IICOL30060   | None           | None                 | G1          | S1         |                                |
| <b>Le Conte's thrasher</b><br><i>Toxostoma lecontei</i>                     | ABPBK06100   | None           | None                 | G4          | S3         | SSC                            |
| <b>Munz's cholla</b><br><i>Cylindropuntia munzii</i>                        | PDCAC0D0V0   | None           | None                 | G3          | S1         | 1B.3                           |
| <b>pallid bat</b><br><i>Antrozous pallidus</i>                              | AMACC10010   | None           | None                 | G5          | S3         | SSC                            |
| <b>Peirson's milk-vetch</b><br><i>Astragalus magdalenae var. peirsonii</i>  | PDFAB0F532   | Threatened     | Endangered           | G3G4T1      | S1         | 1B.2                           |
| <b>pink fairy-duster</b><br><i>Calliandra eriophylla</i>                    | PDFAB0N040   | None           | None                 | G5          | S3         | 2B.3                           |
| <b>roughstalk witch grass</b><br><i>Panicum hirticaule ssp. hirticaule</i>  | PMPOA4K170   | None           | None                 | G5T5        | S2         | 2B.1                           |
| <b>sand evening-primrose</b><br><i>Chylismia arenaria</i>                   | PDONA03020   | None           | None                 | G4?         | S2S3       | 2B.2                           |
| <b>sand food</b><br><i>Pholisma sonorae</i>                                 | PDLNN02020   | None           | None                 | G2          | S2         | 1B.2                           |
| <b>slender cottonheads</b><br><i>Nemacaulis denudata var. gracilis</i>      | PDPGN0G012   | None           | None                 | G3G4T3?     | S2         | 2B.2                           |
| <b>western bumble bee</b><br><i>Bombus occidentalis</i>                     | IIHYM24250   | None           | Candidate Endangered | G2G3        | S1         |                                |
| <b>Wiggins' croton</b><br><i>Croton wigginsii</i>                           | PDEUP0H140   | None           | Rare                 | G2G3        | S2         | 2B.2                           |

Record Count: 21

**ATTACHMENT 3**  
CNDDDB Species Observations Report



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Query Criteria: Imported file selection

|                                  |                                                                                                                      |                                                                                                            |                   |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------|
| <b><i>Athene cunicularia</i></b> |                                                                                                                      | <b>Element Code:</b> ABNSB10010                                                                            |                   |
| burrowing owl                    |                                                                                                                      |                                                                                                            |                   |
| <b>Listing Status:</b>           | <b>Federal:</b> None                                                                                                 | <b>CNDDDB Element Ranks:</b>                                                                               | <b>Global:</b> G4 |
|                                  | <b>State:</b> None                                                                                                   |                                                                                                            | <b>State:</b> S3  |
| <b>Other:</b>                    | BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern |                                                                                                            |                   |
| <b>Habitat:</b>                  | <b>General:</b>                                                                                                      | OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION. |                   |
|                                  | <b>Micro:</b>                                                                                                        | SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.       |                   |

|                       |                           |                   |                 |                             |       |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b> | 1220                      | <b>Map Index:</b> | 72240           | <b>EO Index:</b>            | 73182 | <b>Element Last Seen:</b> | 2007-01-20 |
| <b>Occ. Rank:</b>     | Excellent                 | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |       | 2007-01-20                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |       | 2008-09-11                |            |

**Quad Summary:** Acolita (3311512)  
**County Summary:** Imperial

|                  |                           |                        |           |
|------------------|---------------------------|------------------------|-----------|
| <b>Lat/Long:</b> | 33.04224 / -115.13905     | <b>Accuracy:</b>       | 1/10 mile |
| <b>UTM:</b>      | Zone-11 N3657509 E673771  | <b>Elevation (ft):</b> | 280       |
| <b>PLSS:</b>     | T13S, R17.5E, Sec. 12 (S) | <b>Acres:</b>          | 0.0       |

**Location:** 5.0 MI NW OF GLAMIS ALONG RAILROAD.  
**Detailed Location:**  
**Ecological:** HABITAT CONSISTS OF DESERT SCRUB AND DISTURBED DESERT SCRUB. SUROUNDING AREAS ARE ALGODONES DUNES, OPEN SPACE, SOME AGRICULTURE AND SMALL TOWN DEVELOPMENT TO THE NORTH. AREA DISTURBED BY ORV USE AND LIMITED DEVELOPMENT.  
**General:** 1ADULT AT BURROW OBSERVED ON 20 JAN 2007 DURING A UNION PACIFIC SENSITIVE SPECIES PROJECT. 12 ADULTS OBSERVED ALONG TOTAL SURVEY AREA APPEARED TO BE WINTERING INDIVIDUALS.  
**Owner/Manager:** UNION PACIFIC



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Melanerpes uropygialis
Gila woodpecker
Element Code: ABNYF04150
Listing Status: Federal: None, State: Endangered, Other: BLM\_S-Sensitive, IUCN\_LC-Least Concern, USFWS\_BCC-Birds of Conservation Concern
Habitat: General: IN CALIFORNIA, INHABITS COTTONWOODS AND OTHER DESERT RIPARIAN TREES, SHADE TREES, AND DATE PALMS. Micro: CAVITY NESTER IN RIPARIAN TREES OR SAGUARO CACTUS.

Table with 4 columns: Occurrence No., Map Index, EO Index, Element Last Seen, Occ. Rank, Presence, Site Last Seen, Occ. Type, Trend, Record Last Updated.

Quad Summary: Clyde (3211488)
County Summary: Imperial

Table with 4 columns: Lat/Long, Accuracy, UTM, Elevation (ft), PLSS, Acres.

Location: EASTERN EDGE OF IMPERIAL SAND DUNES RECREATION AREA. ABOUT 1.2 MILES WNW OF CLYDE.
Detailed Location:
Ecological: MICROPHYLL WOODLAND DOMINATED BY PALO VERDE, CREOSOTE AND IRONWOOD. AREA USED FOR ORV RECREATION AND CAMPING.
General: 1 FEMALE OBSERVED CALLING AND MOVING FROM TREE TO TREE ON 6 DEC 2003.
Owner/Manager: BLM





**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



***Toxostoma lecontei***

**Element Code:** ABPBK06100

Le Conte's thrasher

|                        |                                                                                                                               |                                                                                                                          |                   |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Listing Status:</b> | <b>Federal:</b> None                                                                                                          | <b>CNDDB Element Ranks:</b>                                                                                              | <b>Global:</b> G4 |
|                        | <b>State:</b> None                                                                                                            |                                                                                                                          | <b>State:</b> S3  |
| <b>Other:</b>          | CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern |                                                                                                                          |                   |
| <b>Habitat:</b>        | <b>General:</b>                                                                                                               | DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.  |                   |
|                        | <b>Micro:</b>                                                                                                                 | COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND. |                   |

|                       |                           |                   |                 |                             |       |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b> | 81                        | <b>Map Index:</b> | 06470           | <b>EO Index:</b>            | 24501 | <b>Element Last Seen:</b> | 1975-04-05 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |       | 1975-04-05                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |       | 1989-08-10                |            |

**Quad Summary:** Glamis (3211581)

**County Summary:** Imperial

|                  |                          |                        |        |
|------------------|--------------------------|------------------------|--------|
| <b>Lat/Long:</b> | 32.95226 / -115.07386    | <b>Accuracy:</b>       | 1 mile |
| <b>UTM:</b>      | Zone-11 N3647641 E680042 | <b>Elevation (ft):</b> | 335    |
| <b>PLSS:</b>     | T14S, R18E, Sec. 45 (S)  | <b>Acres:</b>          | 0.0    |

**Location:** THREE MI S OF GLAMIS.

**Detailed Location:** ONE YOUNG AND ADULT SEEN ON PALO VERDE BRANCH.

**Ecological:** DESERT HABITAT - PALO VERDE AND CERCIPIUM.

**General:** EO FROM NORTH AMERICAN NEST RECORD CARD PROGRAM.

**Owner/Manager:** UNKNOWN



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                                  |                                                                                                                     |                                                                                                                          |                   |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b><i>Antrozous pallidus</i></b> |                                                                                                                     | <b>Element Code:</b> AMACC10010                                                                                          |                   |
| pallid bat                       |                                                                                                                     |                                                                                                                          |                   |
| <b>Listing Status:</b>           | <b>Federal:</b> None                                                                                                | <b>CNDDDB Element Ranks:</b>                                                                                             | <b>Global:</b> G5 |
|                                  | <b>State:</b> None                                                                                                  |                                                                                                                          | <b>State:</b> S3  |
| <b>Other:</b>                    | BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority |                                                                                                                          |                   |
| <b>Habitat:</b>                  | <b>General:</b>                                                                                                     | DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS AND FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING. |                   |
|                                  | <b>Micro:</b>                                                                                                       | ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.                        |                   |

|                       |                           |                   |                 |                             |       |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b> | 153                       | <b>Map Index:</b> | 58285           | <b>EO Index:</b>            | 66612 | <b>Element Last Seen:</b> | 1977-05-01 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |       | 1977-05-01                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |       | 2006-10-02                |            |

**Quad Summary:** Glamis (3211581), East of Acolita (3311511)  
**County Summary:** Imperial

|                  |                          |                        |        |
|------------------|--------------------------|------------------------|--------|
| <b>Lat/Long:</b> | 32.99335 / -115.07985    | <b>Accuracy:</b>       | 1 mile |
| <b>UTM:</b>      | Zone-11 N3652187 E679398 | <b>Elevation (ft):</b> | 300    |
| <b>PLSS:</b>     | T13S, R18E, Sec. 33 (S)  | <b>Acres:</b>          | 0.0    |

**Location:** 1 MI W OF GLAMIS.  
**Detailed Location:** EXACT LOCATION UNKNOWN. MAPPED IN THE GENERAL VICINITY OF 1 MI W OF GLAMIS.  
**Ecological:**  
**General:** 1 FEMALE SPECIMEN COLLECTED 1 MAY 1977, MSB #103268.  
**Owner/Manager:** BLM



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                                  |                                                                                                                                           |                                 |                    |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------|
| <b><i>Gopherus agassizii</i></b> |                                                                                                                                           | <b>Element Code:</b> ARAAF01012 |                    |
| desert tortoise                  |                                                                                                                                           |                                 |                    |
| <b>Listing Status:</b>           | <b>Federal:</b> Threatened                                                                                                                | <b>CNDDDB Element Ranks:</b>    | <b>Global:</b> G3  |
|                                  | <b>State:</b> Threatened                                                                                                                  |                                 | <b>State:</b> S2S3 |
|                                  | <b>Other:</b> IUCN_VU-Vulnerable                                                                                                          |                                 |                    |
| <b>Habitat:</b>                  | <b>General:</b> MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.                |                                 |                    |
|                                  | <b>Micro:</b> REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED. |                                 |                    |

|                           |                                                                  |                   |                        |                             |       |                           |            |
|---------------------------|------------------------------------------------------------------|-------------------|------------------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b>     | 473                                                              | <b>Map Index:</b> | 82794                  | <b>EO Index:</b>            | 83790 | <b>Element Last Seen:</b> | 2007-04-29 |
| <b>Occ. Rank:</b>         | Unknown                                                          | <b>Presence:</b>  | Presumed Extant        | <b>Site Last Seen:</b>      |       | 2007-04-29                |            |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                        | <b>Trend:</b>     | Unknown                | <b>Record Last Updated:</b> |       | 2011-06-06                |            |
| <b>Quad Summary:</b>      | Clyde (3211488)                                                  |                   |                        |                             |       |                           |            |
| <b>County Summary:</b>    | Imperial                                                         |                   |                        |                             |       |                           |            |
| <b>Lat/Long:</b>          | 32.97579 / -114.95297                                            |                   | <b>Accuracy:</b>       | 80 meters                   |       |                           |            |
| <b>UTM:</b>               | Zone-11 N3650463 E691293                                         |                   | <b>Elevation (ft):</b> | 560                         |       |                           |            |
| <b>PLSS:</b>              | T14S, R19E, Sec. 03, SE (S)                                      |                   | <b>Acres:</b>          | 0.0                         |       |                           |            |
| <b>Location:</b>          | 7 MI E OF GLAMIS, 10 MI NW OF HEDGES, 10 MI SW OF QUARTZ PEAK.   |                   |                        |                             |       |                           |            |
| <b>Detailed Location:</b> | MAPPED TO PROVIDED COORDINATES.                                  |                   |                        |                             |       |                           |            |
| <b>Ecological:</b>        | <b>General:</b> MALE TORTOISE (287 MM MCL) OBSERVED 29 APR 2007. |                   |                        |                             |       |                           |            |
| <b>Owner/Manager:</b>     | BLM                                                              |                   |                        |                             |       |                           |            |

|                           |                                                                  |                   |                        |                             |       |                           |            |
|---------------------------|------------------------------------------------------------------|-------------------|------------------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b>     | 474                                                              | <b>Map Index:</b> | 82795                  | <b>EO Index:</b>            | 83791 | <b>Element Last Seen:</b> | 2010-03-30 |
| <b>Occ. Rank:</b>         | Unknown                                                          | <b>Presence:</b>  | Presumed Extant        | <b>Site Last Seen:</b>      |       | 2010-03-30                |            |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                        | <b>Trend:</b>     | Unknown                | <b>Record Last Updated:</b> |       | 2011-06-06                |            |
| <b>Quad Summary:</b>      | Clyde (3211488)                                                  |                   |                        |                             |       |                           |            |
| <b>County Summary:</b>    | Imperial                                                         |                   |                        |                             |       |                           |            |
| <b>Lat/Long:</b>          | 32.99112 / -114.95277                                            |                   | <b>Accuracy:</b>       | 80 meters                   |       |                           |            |
| <b>UTM:</b>               | Zone-11 N3652164 E691279                                         |                   | <b>Elevation (ft):</b> | 600                         |       |                           |            |
| <b>PLSS:</b>              | T13S, R19E, Sec. 34, SE (S)                                      |                   | <b>Acres:</b>          | 0.0                         |       |                           |            |
| <b>Location:</b>          | 7 MI E OF GLAMIS, 10.5 MI NW OF HEDGES, 11 MI SW OF QUARTZ PEAK. |                   |                        |                             |       |                           |            |
| <b>Detailed Location:</b> | MAPPED TO PROVIDED COORDINATES.                                  |                   |                        |                             |       |                           |            |
| <b>Ecological:</b>        | <b>General:</b> MALE CARCASS (272 MM MCL) OBSERVED 30 MAR 2010.  |                   |                        |                             |       |                           |            |
| <b>Owner/Manager:</b>     | BLM                                                              |                   |                        |                             |       |                           |            |



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**California Natural Diversity Database**



|                                  |                                                                                                                                                   |                                 |                   |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|
| <b><i>Phrynosoma mcallii</i></b> |                                                                                                                                                   | <b>Element Code:</b> ARACF12040 |                   |
| flat-tailed horned lizard        |                                                                                                                                                   |                                 |                   |
| <b>Listing Status:</b>           | <b>Federal:</b> None                                                                                                                              | <b>CNDDDB Element Ranks:</b>    | <b>Global:</b> G3 |
|                                  | <b>State:</b> None                                                                                                                                |                                 | <b>State:</b> S2  |
|                                  | <b>Other:</b> BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened                                                       |                                 |                   |
| <b>Habitat:</b>                  | <b>General:</b> RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.                      |                                 |                   |
|                                  | <b>Micro:</b> CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS. |                                 |                   |

|                       |                           |                         |                                  |                             |            |
|-----------------------|---------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b> | 49                        | <b>Map Index:</b> 06432 | <b>EO Index:</b> 27930           | <b>Element Last Seen:</b>   | 2007-05-24 |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 2007-05-24 |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2015-09-10 |

**Quad Summary:** Glamis NW (3211582), Holtville NE (3211583)  
**County Summary:** Imperial

|                  |                          |                        |                  |
|------------------|--------------------------|------------------------|------------------|
| <b>Lat/Long:</b> | 32.96883 / -115.22148    | <b>Accuracy:</b>       | nonspecific area |
| <b>UTM:</b>      | Zone-11 N3649236 E666210 | <b>Elevation (ft):</b> | 100              |
| <b>PLSS:</b>     | T14S, R17E, Sec. 04 (S)  | <b>Acres:</b>          | 14844.0          |

**Location:** ALONG HIGHWAY 78, FROM ABOUT 5 MILES TO 14 ROAD MILES WEST OF GLAMIS.  
**Detailed Location:** 1955-1964: MAPPED TO SPECIMEN LOCALITIES ALONG HWY 78, 5-14 MI W OF GLAMIS. LATER SPECIMENS MAINLY FROM BETWEEN COACHELLA & HIGHLINE CANALS ON HWY 78. 2001, 2007 DETECTIONS ALONG HWY WITHIN 1 MI OF COACHELLA CANAL.  
**Ecological:** AERIAL IMAGERY SHOWS AREA WEST OF HIGHLINE CANAL IS PRIMARILY AGRICULTURAL LANDS, NOT SUITABLE HABITAT. AREA EAST OF HIGHLINE CANAL APPEARS UNDISTURBED.  
**General:** MANY COLLECTIONS MADE IN THIS VICINITY IN 1955, 1956, 1957, 1958, 1959, 1960, 1963, 1964, 1965, 1966, 1968, 1969, 1971, 1973, 2000, AND 2001. 2 AOR & 1 DOR OBSERVED, 2000. 1 OBSERVED 24 MAY 2007.  
**Owner/Manager:** BLM, PVT

|                       |                           |                         |                                  |                             |            |
|-----------------------|---------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b> | 57                        | <b>Map Index:</b> 06471 | <b>EO Index:</b> 27918           | <b>Element Last Seen:</b>   | 1969-05-06 |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1969-05-06 |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2016-07-21 |

**Quad Summary:** Glamis (3211581), East of Acolita (3311511)  
**County Summary:** Imperial

|                  |                          |                        |        |
|------------------|--------------------------|------------------------|--------|
| <b>Lat/Long:</b> | 33.00507 / -115.07001    | <b>Accuracy:</b>       | 1 mile |
| <b>UTM:</b>      | Zone-11 N3653503 E680295 | <b>Elevation (ft):</b> | 360    |
| <b>PLSS:</b>     | T13S, R18E, Sec. 27 (S)  | <b>Acres:</b>          | 0.0    |

**Location:** GLAMIS, ALGODONES DUNES.  
**Detailed Location:** LOCATIONS STATED AS "1 MI N GLAMIS, ALGODONES DUNES" (LACM) AND "GLAMIS, ALGODONES DUNES AREA" (MVZ).  
**Ecological:**  
**General:** MUSEUM SPECIMENS (LACM) #74206, 74261. MVZ #'S 85232, 85233, 85234, 85235 - 3 MALES AND 1 FEMALE COLLECTED BY ROBERT STEBBINS ON 6 MAY 1969.  
**Owner/Manager:** UNKNOWN

|                                |                      |                                 |                   |
|--------------------------------|----------------------|---------------------------------|-------------------|
| <b><i>Anomala carlsoni</i></b> |                      | <b>Element Code:</b> IICOL30050 |                   |
| Carlson's dune beetle          |                      |                                 |                   |
| <b>Listing Status:</b>         | <b>Federal:</b> None | <b>CNDDDB Element Ranks:</b>    | <b>Global:</b> G1 |
|                                | <b>State:</b> None   |                                 | <b>State:</b> S1  |
|                                | <b>Other:</b>        |                                 |                   |



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**California Natural Diversity Database**



|                 |                 |                                                                                                                                 |
|-----------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Habitat:</b> | <b>General:</b> | KNOWN PRIMARILY FROM CREOSOTE SCRUB IN VICINITY OF ALGODONES DUNES, IMPERIAL COUNTY. ALSO TAKEN FROM BORREGO, SAN DIEGO COUNTY. |
|                 | <b>Micro:</b>   | HOST PREFERENCES UNKNOWN.                                                                                                       |

|                       |                           |                   |                 |                             |            |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|------------|---------------------------|------------|
| <b>Occurrence No.</b> | 1                         | <b>Map Index:</b> | 06483           | <b>EO Index:</b>            | 22783      | <b>Element Last Seen:</b> | 1979-04-13 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-13 |                           |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> | 1989-08-11 |                           |            |

**Quad Summary:** Glamis (3211581)  
**County Summary:** Imperial

|                  |                            |                        |          |
|------------------|----------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.95121 / -115.03370      | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3647594 E683799   | <b>Elevation (ft):</b> | 340      |
| <b>PLSS:</b>     | T14S, R18E, Sec. 13, S (S) | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNES SYSTEM, 3.5 MI SE OF GLAMIS.  
**Detailed Location:**  
**Ecological:** VIRTUALLY NOTHING IS KNOWN ABOUT THE BIOLOGY OF THIS SPECIES.  
**General:** FOR YEARS THIS SPECIES WENT UNRECOGNIZED IN MIXED SERIES OF LEPTHOPLIA TESTACEIPENNIS; DESCRIBED BY HARDY IN 1976. FEMALE SPECIMENS ARE RARE; ONLY 3 KNOWN OF 1000 COLLECTED.  
**Owner/Manager:** BLM

|                       |                           |                   |                 |                             |            |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|------------|---------------------------|------------|
| <b>Occurrence No.</b> | 2                         | <b>Map Index:</b> | 06502           | <b>EO Index:</b>            | 22782      | <b>Element Last Seen:</b> | 1979-04-XX |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-XX |                           |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> | 1989-08-11 |                           |            |

**Quad Summary:** Clyde (3211488)  
**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.92059 / -114.98913    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3644277 E688031 | <b>Elevation (ft):</b> | 380      |
| <b>PLSS:</b>     | T14S, R19E, Sec. 29 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, 7 MI SE OF GLAMIS.  
**Detailed Location:**  
**Ecological:** VIRTUALLY NOTHING IS KNOWN ABOUT THE BIOLOGY OF THIS SPECIES.  
**General:** FOR YEARS THIS SPECIES WENT UNRECOGNIZED IN MIXED SERIES OF LEPTHOPLIA TESTACEIPENNIS. DESCRIBED BY HARDY IN 1976. FEMALE SPECIMENS ARE RARE - ONLY 3 KNOWN OF 1000 COLLECTED.  
**Owner/Manager:** BLM



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**California Natural Diversity Database**



|                           |                                                                                                                                                                                |                         |                                  |                             |            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 6                                                                                                                                                                              | <b>Map Index:</b> 06491 | <b>EO Index:</b> 22778           | <b>Element Last Seen:</b>   | 1979-04-10 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                        |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-10 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                      |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                               |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.92253 / -115.01191                                                                                                                                                          |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3644452 E685896                                                                                                                                                       |                         | <b>Elevation (ft):</b>           | 360                         |            |
| <b>PLSS:</b>              | T14S, R19E, Sec. 30 (S)                                                                                                                                                        |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 6.25 MI SSE OF GLAMIS.                                                                                                                                  |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                                |                         |                                  |                             |            |
| <b>Ecological:</b>        | VIRTUALLY NOTHING IS KNOWN ABOUT THE BIOLOGY OF THIS SPECIES.                                                                                                                  |                         |                                  |                             |            |
| <b>General:</b>           | FOR YEARS THIS SPECIES WENT UNRECOGNIZED IN MIXED SERIES OF LEPTHOPLIA TESTACEIPENNIS. DESCRIBED BY HARDY IN 1976. FEMALE SPECIMENS ARE RARE - ONLY 3 KNOWN OF 1000 COLLECTED. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                            |                         |                                  |                             |            |
| <b>Occurrence No.</b>     | 7                                                                                                                                                                              | <b>Map Index:</b> 06489 | <b>EO Index:</b> 22777           | <b>Element Last Seen:</b>   | 1979-04-10 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                        |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-10 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                      |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                               |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.93240 / -115.01349                                                                                                                                                          |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3645543 E685728                                                                                                                                                       |                         | <b>Elevation (ft):</b>           | 390                         |            |
| <b>PLSS:</b>              | T14S, R19E, Sec. 19 (S)                                                                                                                                                        |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 5 MI SSE OF GLAMIS.                                                                                                                                     |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                                |                         |                                  |                             |            |
| <b>Ecological:</b>        | VIRTUALLY NOTHING IS KNOWN ABOUT THE BIOLOGY OF THIS SPECIES.                                                                                                                  |                         |                                  |                             |            |
| <b>General:</b>           | FOR YEARS THIS SPECIES WENT UNRECOGNIZED IN MIXED SERIES OF LEPTHOPLIA TESTACEIPENNIS. DESCRIBED BY HARDY IN 1976. FEMALE SPECIMENS ARE RARE - ONLY 3 KNOWN OF 1000 COLLECTED. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                            |                         |                                  |                             |            |
| <b>Occurrence No.</b>     | 18                                                                                                                                                                             | <b>Map Index:</b> 58279 | <b>EO Index:</b> 58319           | <b>Element Last Seen:</b>   | 1972-09-16 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                        |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1972-09-16 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                      |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2004-12-02 |
| <b>Quad Summary:</b>      | East of Acolita (3311511)                                                                                                                                                      |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 33.02148 / -115.11725                                                                                                                                                          |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3655243 E675848                                                                                                                                                       |                         | <b>Elevation (ft):</b>           | 100                         |            |
| <b>PLSS:</b>              | T13S, R18E, Sec. 19 (S)                                                                                                                                                        |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | 3 MILES NW OF GLAMIS.                                                                                                                                                          |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                                |                         |                                  |                             |            |
| <b>Ecological:</b>        |                                                                                                                                                                                |                         |                                  |                             |            |
| <b>General:</b>           | ALLOTYPE FEMALE AND 200+ MALE PARATYPES (EXACT NUMBER NOT GIVEN FOR LATER COLLECTION DATE).                                                                                    |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                            |                         |                                  |                             |            |



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California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No. 19 Map Index: 58284 EO Index: 58320 Element Last Seen: 1972-02-27
Occ. Rank: Unknown Presence: Presumed Extant Site Last Seen: 1972-02-27
Occ. Type: Natural/Native occurrence Trend: Unknown Record Last Updated: 2004-12-02
Quad Summary: East of Acolita (3311511)
County Summary: Imperial
Lat/Long: 33.01297 / -115.10394 Accuracy: 1/5 mile
UTM: Zone-11 N3654322 E677109 Elevation (ft): 300
PLSS: T13S, R18E, Sec. 29 (S) Acres: 0.0
Location: 2 MILES NW OF GLAMIS.
Detailed Location:
Ecological:
General: HOLOTYPE MALE AND 3 MALE PARATYPES. FEMALES ARE RARE; ONLY 3 ARE KNOWN FROM APPROXIMATELY 1000 SPECIMENS COLLECTED. ADULTS ARE ATTRACTED TO LIGHTS AT NIGHT, & ADULT MALES ARE TAKEN ON SAND OR FLYING IN A LOW, LATERALLY OSCILLATING MANNER.
Owner/Manager: BLM

Occurrence No. 20 Map Index: 58285 EO Index: 58321 Element Last Seen: 1972-04-09
Occ. Rank: Unknown Presence: Presumed Extant Site Last Seen: 1972-04-09
Occ. Type: Natural/Native occurrence Trend: Unknown Record Last Updated: 2005-03-17
Quad Summary: Glamis (3211581), East of Acolita (3311511)
County Summary: Imperial
Lat/Long: 32.99335 / -115.07985 Accuracy: 1 mile
UTM: Zone-11 N3652187 E679398 Elevation (ft): 300
PLSS: T13S, R18E, Sec. 33 (S) Acres: 0.0
Location: GLAMIS TO 1 MILE WEST OF GLAMIS.
Detailed Location:
Ecological:
General: 4 MALE PARATYPES, 1 MILE WEST OF GLAMIS, DEPOSITED AT OSU. 5 MALE PARATYPES, GLAMIS, DEPOSITED IN COLLECTIONS OF ALAN HARDY AND H. F. HOWDEN. SPECIMENS FROM "GLAMIS" ARE PROBABLY FROM DUNES JUST WEST OF TOWN, AND MAPPED ACCORDINGLY.
Owner/Manager: BLM



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**California Natural Diversity Database**



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|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 21                                                                                                                                                              | <b>Map Index:</b> 58286 | <b>EO Index:</b> 58322           | <b>Element Last Seen:</b>   | 1973-05-04 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                         |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1973-05-04 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                       |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2005-04-29 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                        |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.99548 / -115.10834                                                                                                                                           |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3652376 E676732                                                                                                                                        |                         | <b>Elevation (ft):</b>           | 250                         |            |
| <b>PLSS:</b>              | T13S, R18E, Sec. 31 (S)                                                                                                                                         |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | 2 MILES WEST OF GLAMIS.                                                                                                                                         |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                 |                         |                                  |                             |            |
| <b>Ecological:</b>        |                                                                                                                                                                 |                         |                                  |                             |            |
| <b>General:</b>           | 259 MALE PARATYPES, DEPOSITED AT OSU. 2 PARATYPES AND 2 SPECIMENS DEPOSITED IN THE CALIFORNIA STATE COLLECTION OF ARTHROPODS (CDFA), COLLECTED BY R.B. ROBERTS. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | UNKNOWN                                                                                                                                                         |                         |                                  |                             |            |

|                           |                                                             |                         |                                  |                             |            |
|---------------------------|-------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 22                                                          | <b>Map Index:</b> 58287 | <b>EO Index:</b> 58323           | <b>Element Last Seen:</b>   | 1972-03-10 |
| <b>Occ. Rank:</b>         | Unknown                                                     |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1972-03-10 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                   |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2005-04-29 |
| <b>Quad Summary:</b>      | East of Acolita (3311511), Acolita (3311512)                |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                    |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 33.02662 / -115.12512                                       |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3655799 E675102                                    |                         | <b>Elevation (ft):</b>           | 200                         |            |
| <b>PLSS:</b>              | T13S, R17.5E, Sec. 13 (S)                                   |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | 3.5 MILES NW OF GLAMIS.                                     |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                             |                         |                                  |                             |            |
| <b>Ecological:</b>        |                                                             |                         |                                  |                             |            |
| <b>General:</b>           | 6 MALE PARATYPES, DEPOSITED AT CALIFORNIA DEPT AGRICULTURE. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                         |                         |                                  |                             |            |

|                                 |                      |                                                                                                      |                   |
|---------------------------------|----------------------|------------------------------------------------------------------------------------------------------|-------------------|
| <b><i>Anomala hardyorum</i></b> |                      | <b>Element Code:</b> IICOL30060                                                                      |                   |
| Hardy's dune beetle             |                      |                                                                                                      |                   |
| <b>Listing Status:</b>          | <b>Federal:</b> None | <b>CNDDB Element Ranks:</b>                                                                          | <b>Global:</b> G1 |
|                                 | <b>State:</b> None   |                                                                                                      | <b>State:</b> S1  |
|                                 | <b>Other:</b>        |                                                                                                      |                   |
| <b>Habitat:</b>                 | <b>General:</b>      | KNOWN ONLY FROM CREOSOTE BUSH SCRUB HABITAT IN THE VICINITY OF THE ALGODONES DUNES, IMPERIAL COUNTY. |                   |
|                                 | <b>Micro:</b>        | ADULTS ACTIVE AT DUSK, GENERALLY ON NORTH OR EAST SLIP FACES OF DUNES.                               |                   |





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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 1                                                                                                                                                                                                           | <b>Map Index:</b> 06483 | <b>EO Index:</b> 22766           | <b>Element Last Seen:</b>   | 1979-04-13 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                     |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-13 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                   |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                                                            |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                    |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.95121 / -115.03370                                                                                                                                                                                       |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3647594 E683799                                                                                                                                                                                    |                         | <b>Elevation (ft):</b>           | 340                         |            |
| <b>PLSS:</b>              | T14S, R18E, Sec. 13 (S)                                                                                                                                                                                     |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 4 MI SE OF GLAMIS.                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                                                             |                         |                                  |                             |            |
| <b>Ecological:</b>        | NO KNOWN HOST PLANT. ADULTS HAVE BEEN SIFTED FROM SAND BENEATH A WIDE VARIETY OF PLANTS. NOTHING IS KNOWN OF THE IMMATURE STAGES. ADULTS ARE ACTIVE AT DUSK, GENERALLY ON NORTH- OR EAST-FACING SLIP FACES. |                         |                                  |                             |            |
| <b>General:</b>           |                                                                                                                                                                                                             |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                         |                         |                                  |                             |            |
| <b>Occurrence No.</b>     | 2                                                                                                                                                                                                           | <b>Map Index:</b> 06502 | <b>EO Index:</b> 22765           | <b>Element Last Seen:</b>   | 1979-04-XX |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                     |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-XX |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                   |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2005-04-29 |
| <b>Quad Summary:</b>      | Clyde (3211488)                                                                                                                                                                                             |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                    |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.92059 / -114.98913                                                                                                                                                                                       |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3644277 E688031                                                                                                                                                                                    |                         | <b>Elevation (ft):</b>           | 380                         |            |
| <b>PLSS:</b>              | T14S, R19E, Sec. 29 (S)                                                                                                                                                                                     |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 7 MI SE OF GLAMIS.                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Detailed Location:</b> |                                                                                                                                                                                                             |                         |                                  |                             |            |
| <b>Ecological:</b>        | NO KNOWN HOST PLANT. ADULTS HAVE BEEN SIFTED FROM SAND BENEATH A WIDE VARIETY OF PLANTS. NOTHING IS KNOWN OF THE IMMATURE STAGES. ADULTS ARE ACTIVE AT DUSK, GENERALLY ON NORTH- OR EAST-FACING SLIP FACES. |                         |                                  |                             |            |
| <b>General:</b>           | 56 SPECIMENS DEPOSITED IN THE CALIFORNIA STATE COLLECTION OF ARTHROPODS (C DFA), COLLECTED AT BLACKLIGHT 19-24 MAR 1979.                                                                                    |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                         |                         |                                  |                             |            |



Multiple Occurrences per Page
California Department of Fish and Wildlife
California Natural Diversity Database



Table with 4 columns: Occurrence No., Map Index, EO Index, Element Last Seen. Contains two main entries for occurrence numbers 7 and 8, each with detailed location, ecological, and management information.



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Occurrence No.:** 17      **Map Index:** 58279      **EO Index:** 58315      **Element Last Seen:** 1970-04-23  
**Occ. Rank:** Unknown      **Presence:** Presumed Extant      **Site Last Seen:** 1970-04-23  
**Occ. Type:** Natural/Native occurrence      **Trend:** Unknown      **Record Last Updated:** 2004-12-02

**Quad Summary:** East of Acolita (3311511)

**County Summary:** Imperial

**Lat/Long:** 33.02148 / -115.11725      **Accuracy:** 1/5 mile  
**UTM:** Zone-11 N3655243 E675848      **Elevation (ft):** 100  
**PLSS:** T13S, R18E, Sec. 19 (S)      **Acres:** 0.0

**Location:** 3 MILES NW OF GLAMIS.

**Detailed Location:**

**Ecological:**

**General:** ORIGINAL DESCRIPTION/TYPE LOCALITY; HOLOTYPE MALE COLL. 12 APRIL 1969, ALLOTYPE FEMALE COLL. 23 APR 1970; 93 M, 8 F, SAME DATA, 3 APR-5 MAY; 91 M, 10 F, SAME EXCEPT VARIOUS STATIONS "NEARER GLAMIS," BETWEEN 26 MAR-4 MAY.

**Owner/Manager:** BLM

***Pseudocotalpa andrewsi***

**Element Code:** IICOL37020

Andrew's dune scarab beetle

**Listing Status:** **Federal:** None      **CNDDB Element Ranks:** **Global:** G1  
**State:** None      **State:** S1  
**Other:**

**Habitat:** **General:** ENDEMIC TO THE CREOSOTE BUSH SCRUB HABITAT OF ALGODONES DUNES, NW OF GLAMIS, IMPERIAL COUNTY; 100-400 FT ELEVATION.  
**Micro:** INHABITS BOTH SURFACE AND SUB-SURFACE OF SAND, UTILIZING THE WET SAND INTERFACE AS PROTECTION FROM THE HEAT OF THE DAY.

**Occurrence No.:** 1      **Map Index:** 06481      **EO Index:** 22711      **Element Last Seen:** 1979-04-13  
**Occ. Rank:** Unknown      **Presence:** Presumed Extant      **Site Last Seen:** 1979-04-13  
**Occ. Type:** Natural/Native occurrence      **Trend:** Unknown      **Record Last Updated:** 1989-08-11

**Quad Summary:** Glamis (3211581)

**County Summary:** Imperial

**Lat/Long:** 32.96364 / -115.03830      **Accuracy:** 1/5 mile  
**UTM:** Zone-11 N3648964 E683343      **Elevation (ft):** 340  
**PLSS:** T14S, R18E, Sec. 11 (S)      **Acres:** 0.0

**Location:** ALGODONES DUNE SYSTEM, 3 MI SE OF GLAMIS.

**Detailed Location:** ENDEMIC TO THE ALGODONES DUNES.

**Ecological:** FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.

**General:** ADULTS SWARM FROM APRIL TO MID-MAY.

**Owner/Manager:** BLM



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                       |                           |                         |                                  |                                        |
|-----------------------|---------------------------|-------------------------|----------------------------------|----------------------------------------|
| <b>Occurrence No.</b> | 2                         | <b>Map Index:</b> 06491 | <b>EO Index:</b> 22710           | <b>Element Last Seen:</b> 1979-04-10   |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b> 1979-04-10      |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> 1989-08-11 |

**Quad Summary:** Glamis (3211581)

**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.92253 / -115.01191    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3644452 E685896 | <b>Elevation (ft):</b> | 360      |
| <b>PLSS:</b>     | T14S, R19E, Sec. 30 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, ABOUT 7 MI SE OF GLAMIS.

**Detailed Location:** ENDEMIC TO THE ALGODONES DUNES.

**Ecological:** FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.

**General:** ADULTS SWARM FROM APRIL TO MID-MAY.

**Owner/Manager:** BLM

|                       |                           |                         |                                  |                                        |
|-----------------------|---------------------------|-------------------------|----------------------------------|----------------------------------------|
| <b>Occurrence No.</b> | 3                         | <b>Map Index:</b> 06483 | <b>EO Index:</b> 22709           | <b>Element Last Seen:</b> 1979-04-13   |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b> 1979-04-13      |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> 1989-08-11 |

**Quad Summary:** Glamis (3211581)

**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.95121 / -115.03370    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3647594 E683799 | <b>Elevation (ft):</b> | 340      |
| <b>PLSS:</b>     | T14S, R18E, Sec. 13 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, 3.5 MI SE OF GLAMIS.

**Detailed Location:** ENDEMIC TO THE ALGODONES DUNES.

**Ecological:** FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.

**General:** ADULTS SWARM FROM APRIL TO MID-MAY.

**Owner/Manager:** BLM



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                           |                                                                                                                                                                                                                       |                         |                                  |                             |            |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 4                                                                                                                                                                                                                     | <b>Map Index:</b> 06489 | <b>EO Index:</b> 22708           | <b>Element Last Seen:</b>   | 1979-04-10 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                               |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-10 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                             |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                                                                      |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                              |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.93240 / -115.01349                                                                                                                                                                                                 |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3645543 E685728                                                                                                                                                                                              |                         | <b>Elevation (ft):</b>           | 350                         |            |
| <b>PLSS:</b>              | T14S, R19E, Sec. 19 (S)                                                                                                                                                                                               |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 5.5 MI SE OF GLAMIS.                                                                                                                                                                           |                         |                                  |                             |            |
| <b>Detailed Location:</b> | ENDEMIC TO THE ALGODONES DUNES.                                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Ecological:</b>        | FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE. |                         |                                  |                             |            |
| <b>General:</b>           | ADULTS SWARM FROM APRIL TO MID-MAY.                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Occurrence No.</b>     | 5                                                                                                                                                                                                                     | <b>Map Index:</b> 06478 | <b>EO Index:</b> 22707           | <b>Element Last Seen:</b>   | 1979-04-13 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                               |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-13 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                             |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                                                                      |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                              |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.95182 / -115.04966                                                                                                                                                                                                 |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3647634 E682306                                                                                                                                                                                              |                         | <b>Elevation (ft):</b>           | 320                         |            |
| <b>PLSS:</b>              | T14S, R18E, Sec. 14 (S)                                                                                                                                                                                               |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 3.5 MI SSE OF GLAMIS.                                                                                                                                                                          |                         |                                  |                             |            |
| <b>Detailed Location:</b> | ENDEMIC TO THE ALGODONES DUNES.                                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Ecological:</b>        | FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE. |                         |                                  |                             |            |
| <b>General:</b>           | ADULTS SWARM FROM APRIL TO MID-MAY.                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                                   |                         |                                  |                             |            |



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California Department of Fish and Wildlife
California Natural Diversity Database



Occurrence No. 17 Map Index: 06479 EO Index: 22695 Element Last Seen: 1979-04-14
Occ. Rank: Unknown Presence: Presumed Extant Site Last Seen: 1979-04-14
Occ. Type: Natural/Native occurrence Trend: Unknown Record Last Updated: 1989-08-11
Quad Summary: Glamis (3211581)
County Summary: Imperial
Lat/Long: 32.92833 / -115.04344 Accuracy: 1/5 mile
UTM: Zone-11 N3645040 E682935 Elevation (ft): 360
PLSS: T14S, R18E, Sec. 23 (S) Acres: 0.0
Location: ALGODONES DUNE SYSTEM, 5 MI SSE OF GLAMIS.
Detailed Location: ENDEMIC TO THE ALGODONES DUNES.
Ecological: FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.
General: ADULTS SWARM FROM APRIL TO MID-MAY.
Owner/Manager: BLM

Occurrence No. 18 Map Index: 06484 EO Index: 22694 Element Last Seen: 1979-04-14
Occ. Rank: Unknown Presence: Presumed Extant Site Last Seen: 1979-04-14
Occ. Type: Natural/Native occurrence Trend: Unknown Record Last Updated: 1989-08-11
Quad Summary: Glamis (3211581)
County Summary: Imperial
Lat/Long: 32.91031 / -115.03025 Accuracy: 1/5 mile
UTM: Zone-11 N3643064 E684206 Elevation (ft): 400
PLSS: T14S, R18E, Sec. 36 (S) Acres: 0.0
Location: ALGODONES DUNE SYSTEM, 6.4 MI SSE OF GLAMIS.
Detailed Location: ENDEMIC TO THE ALGODONES DUNES.
Ecological: FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.
General: ADULTS SWARM FROM APRIL TO MID-MAY.
Owner/Manager: BLM



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 23                                                                                                                                                                                                                    | <b>Map Index:</b> 06476 | <b>EO Index:</b> 22689           | <b>Element Last Seen:</b>   | 1979-04-13 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                               |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-13 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                             |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                                                                      |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                              |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.94198 / -115.05831                                                                                                                                                                                                 |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3646527 E681517                                                                                                                                                                                              |                         | <b>Elevation (ft):</b>           | 300                         |            |
| <b>PLSS:</b>              | T14S, R18E, Sec. 15 (S)                                                                                                                                                                                               |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 4 MI SSE OF GLAMIS.                                                                                                                                                                            |                         |                                  |                             |            |
| <b>Detailed Location:</b> | ENDEMIC TO THE ALGODONES DUNES.                                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Ecological:</b>        | FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE. |                         |                                  |                             |            |
| <b>General:</b>           | ADULTS SWARM FROM APRIL TO MID-MAY.                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Occurrence No.</b>     | 24                                                                                                                                                                                                                    | <b>Map Index:</b> 06488 | <b>EO Index:</b> 22688           | <b>Element Last Seen:</b>   | 1979-04-14 |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                               |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1979-04-14 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                             |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1989-08-11 |
| <b>Quad Summary:</b>      | Glamis (3211581)                                                                                                                                                                                                      |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                              |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 32.89865 / -115.01996                                                                                                                                                                                                 |                         | <b>Accuracy:</b>                 | 1/5 mile                    |            |
| <b>UTM:</b>               | Zone-11 N3641790 E685193                                                                                                                                                                                              |                         | <b>Elevation (ft):</b>           | 400                         |            |
| <b>PLSS:</b>              | T14S, R18E, Sec. 36, NW (S)                                                                                                                                                                                           |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | ALGODONES DUNE SYSTEM, 7.5 MI SSE OF GLAMIS.                                                                                                                                                                          |                         |                                  |                             |            |
| <b>Detailed Location:</b> | ENDEMIC TO THE ALGODONES DUNES.                                                                                                                                                                                       |                         |                                  |                             |            |
| <b>Ecological:</b>        | FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE. |                         |                                  |                             |            |
| <b>General:</b>           | ADULTS SWARM FROM APRIL TO MID-MAY.                                                                                                                                                                                   |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                                   |                         |                                  |                             |            |



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                       |                           |                         |                                  |                                        |
|-----------------------|---------------------------|-------------------------|----------------------------------|----------------------------------------|
| <b>Occurrence No.</b> | 25                        | <b>Map Index:</b> 06490 | <b>EO Index:</b> 22687           | <b>Element Last Seen:</b> 1979-04-14   |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b> 1979-04-14      |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> 1989-08-11 |

**Quad Summary:** Glamis (3211581)  
**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.90420 / -115.01358    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3642416 E685778 | <b>Elevation (ft):</b> | 400      |
| <b>PLSS:</b>     | T14S, R19E, Sec. 31 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, 7.4 MI SSE OF GLAMIS.  
**Detailed Location:** ENDEMIC TO THE ALGODONES DUNES.  
**Ecological:** FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.  
**General:** ADULTS SWARM FROM APRIL TO MID-MAY.  
**Owner/Manager:** BLM

|                       |                           |                         |                                  |                                        |
|-----------------------|---------------------------|-------------------------|----------------------------------|----------------------------------------|
| <b>Occurrence No.</b> | 26                        | <b>Map Index:</b> 06496 | <b>EO Index:</b> 22686           | <b>Element Last Seen:</b> 1979-04-10   |
| <b>Occ. Rank:</b>     | Unknown                   |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b> 1979-04-10      |
| <b>Occ. Type:</b>     | Natural/Native occurrence |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> 1989-08-11 |

**Quad Summary:** Clyde (3211488)  
**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.92559 / -114.99720    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3644817 E687265 | <b>Elevation (ft):</b> | 390      |
| <b>PLSS:</b>     | T14S, R19E, Sec. 20 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, 6.5 MI SE OF GLAMIS.  
**Detailed Location:** ENDEMIC TO THE ALGODONES DUNES.  
**Ecological:** FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.  
**General:** ADULTS SWARM FROM APRIL TO MID-MAY.  
**Owner/Manager:** BLM





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California Department of Fish and Wildlife
California Natural Diversity Database



Table with 4 columns: Occurrence No., Map Index, EO Index, Element Last Seen. Includes detailed fields for Occ. Rank, Occ. Type, Quad Summary, County Summary, Lat/Long, UTM, PLSS, Accuracy, Elevation, Acres, Location, Detailed Location, Ecological, General, and Owner/Manager for two records (27 and 28).



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                       |                           |                   |                 |                             |       |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b> | 29                        | <b>Map Index:</b> | 78429           | <b>EO Index:</b>            | 79349 | <b>Element Last Seen:</b> | 2006-04-01 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |       | 2006-04-01                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |       | 2010-03-24                |            |

**Quad Summary:** Glamis (3211581)

**County Summary:** Imperial

|                  |                          |                        |          |
|------------------|--------------------------|------------------------|----------|
| <b>Lat/Long:</b> | 32.98420 / -115.05120    | <b>Accuracy:</b>       | 1/5 mile |
| <b>UTM:</b>      | Zone-11 N3651222 E682095 | <b>Elevation (ft):</b> | 357      |
| <b>PLSS:</b>     | T14S, R18E, Sec. 02 (S)  | <b>Acres:</b>          | 0.0      |

**Location:** ALGODONES DUNE SYSTEM, ABOUT 1.5 MILES SE OF GLAMIS.

**Detailed Location:** LOCATION GIVEN AS "5 MI. S. GLAMIS" BUT COORDINATES GIVEN ARE 1.5 MI SE OF GLAMIS. MAPPED TO THE COORDINATES GIVEN IN THE SBMNH SPECIMEN RECORD.

**Ecological:**

**General:** THREE BEETLES SEIVED FROM SAND ON 1 APR 2006 BY M.E. IRWIN. DEPOSITED IN THE SANTA BARBARA MUSEUM OF NATURAL HISTORY (#CBP0067583 - CBP0067585).

**Owner/Manager:** BLM

***Bombus occidentalis***

**Element Code:** IIHYM24250

western bumble bee

**Listing Status:** **Federal:** None **CNDDB Element Ranks:** **Global:** G2G3

**State:** Candidate Endangered **State:** S1

**Other:** USFS\_S-Sensitive, XERCES\_IM-Imperiled

**Habitat:** **General:** ONCE COMMON & WIDESPREAD, SPECIES HAS DECLINED PRECIPITOUSLY FROM CENTRAL CA TO SOUTHERN B.C., PERHAPS FROM DISEASE.

**Micro:**

|                       |                           |                   |                 |                             |        |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|--------|---------------------------|------------|
| <b>Occurrence No.</b> | 282                       | <b>Map Index:</b> | 58285           | <b>EO Index:</b>            | 100407 | <b>Element Last Seen:</b> | 1993-04-04 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |        | 1993-04-04                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |        | 2016-01-21                |            |

**Quad Summary:** Glamis (3211581), East of Acolita (3311511)

**County Summary:** Imperial

|                  |                          |                        |        |
|------------------|--------------------------|------------------------|--------|
| <b>Lat/Long:</b> | 32.99335 / -115.07985    | <b>Accuracy:</b>       | 1 mile |
| <b>UTM:</b>      | Zone-11 N3652187 E679398 | <b>Elevation (ft):</b> | 300    |
| <b>PLSS:</b>     | T13S, R18E, Sec. 33 (S)  | <b>Acres:</b>          | 0.0    |

**Location:** GLAMIS SANDDUNES.

**Detailed Location:** EXACT LOCATION UNKNOWN. THE LOCALITY "GLAMIS SANDDUNES" MAY REFER TO THE AREA NEAR THE SETTLEMENT OF GLAMIS. ALTERNATIVELY, SOME PEOPLE REFER TO THE ENTIRETY OF THE ALGODONES DUNES AS THE GLAMIS DUNES. MAPPED BY CNDDDB NEAR THE SETTLEMENT.

**Ecological:**

**General:** COLLECTED 4 APR 1993.

**Owner/Manager:** BLM



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>Melitta californica</b> |                                                                                                                                                                                                                                                  | <b>Element Code:</b> IIHYM74010                                                                                          |                    |
| California mellitid bee    |                                                                                                                                                                                                                                                  |                                                                                                                          |                    |
| <b>Listing Status:</b>     | <b>Federal:</b> None                                                                                                                                                                                                                             | <b>CNDDDB Element Ranks:</b>                                                                                             | <b>Global:</b> G4? |
|                            | <b>State:</b> None                                                                                                                                                                                                                               |                                                                                                                          | <b>State:</b> S2?  |
|                            | <b>Other:</b>                                                                                                                                                                                                                                    |                                                                                                                          |                    |
| <b>Habitat:</b>            | <b>General:</b>                                                                                                                                                                                                                                  | DESERT REGIONS OF SW ARIZONA, SE CALIFORNIA, AND BAJA CALIFORNIA, MEXICO. ALSO COLLECTED FROM TORREY PINES, SAN DIEGO CO |                    |
|                            | <b>Micro:</b>                                                                                                                                                                                                                                    | EARLIER RECORDS OF M. WILMATTAE PERTAIN TO THIS SPECIES; SPECIES WAS SYNONYMIZED WITH M. CALIFORNICA IN 1981.            |                    |
| <b>Occurrence No.</b>      | 3                                                                                                                                                                                                                                                | <b>Map Index:</b>                                                                                                        | 58279              |
|                            |                                                                                                                                                                                                                                                  | <b>EO Index:</b>                                                                                                         | 61721              |
| <b>Occ. Rank:</b>          | Unknown                                                                                                                                                                                                                                          | <b>Presence:</b>                                                                                                         | Presumed Extant    |
|                            |                                                                                                                                                                                                                                                  | <b>Element Last Seen:</b>                                                                                                | 1972-03-04         |
| <b>Occ. Type:</b>          | Natural/Native occurrence                                                                                                                                                                                                                        | <b>Site Last Seen:</b>                                                                                                   | 1972-03-04         |
|                            |                                                                                                                                                                                                                                                  | <b>Trend:</b>                                                                                                            | Unknown            |
|                            |                                                                                                                                                                                                                                                  | <b>Record Last Updated:</b>                                                                                              | 2005-06-21         |
| <b>Quad Summary:</b>       | East of Acolita (3311511)                                                                                                                                                                                                                        |                                                                                                                          |                    |
| <b>County Summary:</b>     | Imperial                                                                                                                                                                                                                                         |                                                                                                                          |                    |
| <b>Lat/Long:</b>           | 33.02148 / -115.11725                                                                                                                                                                                                                            | <b>Accuracy:</b>                                                                                                         | 1/5 mile           |
| <b>UTM:</b>                | Zone-11 N3655243 E675848                                                                                                                                                                                                                         | <b>Elevation (ft):</b>                                                                                                   | 100                |
| <b>PLSS:</b>               | T13S, R18E, Sec. 19 (S)                                                                                                                                                                                                                          | <b>Acres:</b>                                                                                                            | 0.0                |
| <b>Location:</b>           | 3 MILES NW OF GLAMIS.                                                                                                                                                                                                                            |                                                                                                                          |                    |
| <b>Detailed Location:</b>  |                                                                                                                                                                                                                                                  |                                                                                                                          |                    |
| <b>Ecological:</b>         |                                                                                                                                                                                                                                                  |                                                                                                                          |                    |
| <b>General:</b>            | ONE FEMALE, TWO MALES COLLECTED 4 MAR 1972 BY A. HARDY ON SPHAERALCEA, & DEPOSITED IN UTAH STATE UNIVERSITY AND LA COUNTY MUSEUM OF NATURAL HISTORY. AN UNKNOWN NUMBER COLLECTED BY E. KANE, 04 MAR 1972, IN THE COLLECTION OF ROBERT W. BROOKS. |                                                                                                                          |                    |
| <b>Owner/Manager:</b>      | BLM                                                                                                                                                                                                                                              |                                                                                                                          |                    |



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**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| <b><i>Helianthus niveus ssp. tephrodes</i></b> |                                                                                                                                                                                                                                                 | <b>Element Code:</b> PDAST4N0Z2  |                                        |
| Algodones Dunes sunflower                      |                                                                                                                                                                                                                                                 |                                  |                                        |
| <b>Listing Status:</b>                         | <b>Federal:</b> None                                                                                                                                                                                                                            | <b>CNDDDB Element Ranks:</b>     | <b>Global:</b> G4T2T3                  |
|                                                | <b>State:</b> Endangered                                                                                                                                                                                                                        |                                  | <b>State:</b> S1                       |
|                                                | <b>Other:</b> Rare Plant Rank - 1B.2, BLM_S-Sensitive, SB_USDA-US Dept of Agriculture                                                                                                                                                           |                                  |                                        |
| <b>Habitat:</b>                                | <b>General:</b> DESERT DUNES.                                                                                                                                                                                                                   |                                  |                                        |
|                                                | <b>Micro:</b> ON PARTIALLY STABILIZED DESERT DUNES. 90-300 M.                                                                                                                                                                                   |                                  |                                        |
| <b>Occurrence No.</b>                          | 1                                                                                                                                                                                                                                               | <b>Map Index:</b> 76052          | <b>EO Index:</b> 6541                  |
| <b>Occ. Rank:</b>                              | Good                                                                                                                                                                                                                                            | <b>Presence:</b> Presumed Extant | <b>Element Last Seen:</b> 2018-04-18   |
| <b>Occ. Type:</b>                              | Natural/Native occurrence                                                                                                                                                                                                                       | <b>Trend:</b> Stable             | <b>Site Last Seen:</b> 2018-04-18      |
|                                                |                                                                                                                                                                                                                                                 |                                  | <b>Record Last Updated:</b> 2018-09-27 |
| <b>Quad Summary:</b>                           | Grays Well NE (3211467), Grays Well (3211468), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)                   |                                  |                                        |
| <b>County Summary:</b>                         | Imperial, Mexico                                                                                                                                                                                                                                |                                  |                                        |
| <b>Lat/Long:</b>                               | 32.92889 / -115.07475                                                                                                                                                                                                                           | <b>Accuracy:</b>                 | specific area                          |
| <b>UTM:</b>                                    | Zone-11 N3645048 E680006                                                                                                                                                                                                                        | <b>Elevation (ft):</b>           | 300                                    |
| <b>PLSS:</b>                                   | T14S, R18E, Sec. 46 (S)                                                                                                                                                                                                                         | <b>Acres:</b>                    | 97758.0                                |
| <b>Location:</b>                               | ALGODONES DUNES.                                                                                                                                                                                                                                |                                  |                                        |
| <b>Detailed Location:</b>                      | SCATTERED ALONG DUNES BETWEEN SOUTHERN PACIFIC RAILROAD TRACKS AND COACHELLA CANAL. INCLUDES FORMER OCCURRENCES #2-40.                                                                                                                          |                                  |                                        |
| <b>Ecological:</b>                             | SAND DUNES WITHIN DESERT PSAMMOPHYTIC SCRUB (STABILIZED AND PARTIALLY STABILIZED DESERT DUNES). ASSOCIATES INCLUDE SEVERAL RARE PLANTS; AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ERIOGONUM DESERTICOLA, PILOSTYLES THURBERI, ETC. |                                  |                                        |
| <b>General:</b>                                | POP #S FOR PARTS OF OCC: 885 PLANTS IN 1984; 5,851 EST IN 1998; 7,545 IN 1999; 4,734 IN 2000; 7,376 IN 2001; 8,218 IN 2002; 88,704 IN 2003; 1,970,208 IN 2004 (86% SEEDLINGS); 325,122 ADULTS IN 2005, 25 IN 2013, 1 IN 2017, 427 IN 2018.      |                                  |                                        |
| <b>Owner/Manager:</b>                          | BLM                                                                                                                                                                                                                                             |                                  |                                        |



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                                             |                                                                                                                                  |                                                  |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b><i>Palafoxia arida var. gigantea</i></b> |                                                                                                                                  | <b>Element Code:</b> PDAST6T012                  |
| giant spanish-needle                        |                                                                                                                                  |                                                  |
| <b>Listing Status:</b>                      | <b>Federal:</b> None                                                                                                             | <b>CNDDB Element Ranks:</b> <b>Global:</b> G5T3? |
|                                             | <b>State:</b> None                                                                                                               | <b>State:</b> S2                                 |
|                                             | <b>Other:</b> Rare Plant Rank - 1B.3, BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden                                  |                                                  |
| <b>Habitat:</b>                             | <b>General:</b> DESERT DUNES.                                                                                                    |                                                  |
|                                             | <b>Micro:</b> ACTIVE AND STABLE DUNE AREAS; ASSOCIATED WITH AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ETC. 20-95 M. |                                                  |

|                       |                           |                                  |                                        |                                      |
|-----------------------|---------------------------|----------------------------------|----------------------------------------|--------------------------------------|
| <b>Occurrence No.</b> | 1                         | <b>Map Index:</b> 77872          | <b>EO Index:</b> 6544                  | <b>Element Last Seen:</b> 2013-04-20 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b> 2013-04-20      |                                      |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> 2014-05-28 |                                      |

**Quad Summary:** Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**County Summary:** Imperial, Mexico

|                  |                          |                        |               |
|------------------|--------------------------|------------------------|---------------|
| <b>Lat/Long:</b> | 32.92004 / -115.06355    | <b>Accuracy:</b>       | specific area |
| <b>UTM:</b>      | Zone-11 N3644086 E681072 | <b>Elevation (ft):</b> |               |
| <b>PLSS:</b>     | T14S, R18E, Sec. 51 (S)  | <b>Acres:</b>          | 118017.0      |

**Location:** ALGODONES DUNES.

**Detailed Location:** SCATTERED THROUGHOUT THE DUNES FROM SOUTHERN PACIFIC RR TRACKS WEST TO THE COACHELLA CANAL AND FROM MAMMOTH WASH SOUTH TO THE CA/MEXICO BORDER. MAPPED BY CNDDB USING MULTIPLE MAP SOURCES.

**Ecological:** SAND DUNES WITHIN DESERT PSAMMOPHYTIC SCRUB (STABILIZED AND PARTIALLY STABILIZED DESERT DUNES). ASSOCIATES INCLUDE SEVERAL RARE PLANTS: AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ERIOGONUM DESERTICOLA, PILOSTYLES THURBERI, ETC.

**General:** >3,000 PLANTS SEEN ALONG ALL AMERICAN CANAL IN 1993. 34,649 IN 1998; 1,458 IN 1999; 13,933 IN 2000. 25 PLANTS ALONG HWY 78 JUST E OF GECKO RD IN 2009. 80+ PLANTS N OF HWY 78 ~1 MI NW OF OSBORNE LOOKOUT IN 2013. INCL FRMR EOS 2-49, 51, 52.

**Owner/Manager:** BLM



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| <b><i>Cylindropuntia munzii</i></b> |                                                                                                                                                                                                                                               | <b>Element Code:</b> PDCAC0D0V0  |                                        |
| Munz's cholla                       |                                                                                                                                                                                                                                               |                                  |                                        |
| <b>Listing Status:</b>              | <b>Federal:</b> None                                                                                                                                                                                                                          | <b>CNDDB Element Ranks:</b>      | <b>Global:</b> G3                      |
|                                     | <b>State:</b> None                                                                                                                                                                                                                            |                                  | <b>State:</b> S1                       |
|                                     | <b>Other:</b> Rare Plant Rank - 1B.3, BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden                                                                                                                                               |                                  |                                        |
| <b>Habitat:</b>                     | <b>General:</b> SONORAN DESERT SCRUB.                                                                                                                                                                                                         |                                  |                                        |
|                                     | <b>Micro:</b> SANDY AND ROCKY DESERT FLATS AND HILLS. 70-430 M.                                                                                                                                                                               |                                  |                                        |
| <b>Occurrence No.</b>               | 5                                                                                                                                                                                                                                             | <b>Map Index:</b> 06480          | <b>EO Index:</b> 12782                 |
| <b>Occ. Rank:</b>                   | Unknown                                                                                                                                                                                                                                       | <b>Presence:</b> Presumed Extant | <b>Element Last Seen:</b> 1981-XX-XX   |
| <b>Occ. Type:</b>                   | Natural/Native occurrence                                                                                                                                                                                                                     | <b>Trend:</b> Unknown            | <b>Site Last Seen:</b> 1981-XX-XX      |
|                                     |                                                                                                                                                                                                                                               |                                  | <b>Record Last Updated:</b> 2010-11-16 |
| <b>Quad Summary:</b>                | East of Acolita (3311511), Blue Mountain (3311521)                                                                                                                                                                                            |                                  |                                        |
| <b>County Summary:</b>              | Imperial                                                                                                                                                                                                                                      |                                  |                                        |
| <b>Lat/Long:</b>                    | 33.10237 / -115.05688                                                                                                                                                                                                                         | <b>Accuracy:</b>                 | nonspecific area                       |
| <b>UTM:</b>                         | Zone-11 N3664315 E681321                                                                                                                                                                                                                      | <b>Elevation (ft):</b>           | 650                                    |
| <b>PLSS:</b>                        | T12S, R18E, Sec. 26 (S)                                                                                                                                                                                                                       | <b>Acres:</b>                    | 3674.0                                 |
| <b>Location:</b>                    | S END CHOCOLATE MOUNTAIN AERIAL GUNNERY RANGE.                                                                                                                                                                                                |                                  |                                        |
| <b>Detailed Location:</b>           | MAPPED ACCORDING TO A 1983 BERRY REPORT MAP.                                                                                                                                                                                                  |                                  |                                        |
| <b>Ecological:</b>                  |                                                                                                                                                                                                                                               |                                  |                                        |
| <b>General:</b>                     | RECORDED AS RARE OR UNCOMMON DURING DESERT TORTOISE TRANSECT SURVEY. APPEARS TO BE SOMEWHAT ISOLATED FROM MAIN DISTRIBUTION OF PLANT WHICH IS ON THE NORTH SIDE OF THE CHOCOLATE MTNS AT THIS END OF THE CHOCOLATE MTNS AERIAL GUNNERY RANGE. |                                  |                                        |
| <b>Owner/Manager:</b>               | DOD-CHOCOLATE MOUNTAIN AGR                                                                                                                                                                                                                    |                                  |                                        |



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| <b><i>Croton wigginsii</i></b> |                                                                                                                                                                                                                                                 | <b>Element Code:</b> PDEUP0H140  |                                        |
| Wiggins' croton                |                                                                                                                                                                                                                                                 |                                  |                                        |
| <b>Listing Status:</b>         | <b>Federal:</b> None                                                                                                                                                                                                                            | <b>CNDDDB Element Ranks:</b>     | <b>Global:</b> G2G3                    |
|                                | <b>State:</b> Rare                                                                                                                                                                                                                              |                                  | <b>State:</b> S2                       |
|                                | <b>Other:</b> Rare Plant Rank - 2B.2, BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden                                                                                                                                                 |                                  |                                        |
| <b>Habitat:</b>                | <b>General:</b> DESERT DUNES, SONORAN DESERT SCRUB.                                                                                                                                                                                             |                                  |                                        |
|                                | <b>Micro:</b> ON SAND DUNES AND IN SANDY ARROYOS. 0-155 M.                                                                                                                                                                                      |                                  |                                        |
| <b>Occurrence No.</b>          | 2                                                                                                                                                                                                                                               | <b>Map Index:</b> 76077          | <b>EO Index:</b> 6543                  |
| <b>Occ. Rank:</b>              | Good                                                                                                                                                                                                                                            | <b>Presence:</b> Presumed Extant | <b>Element Last Seen:</b> 2019-02-22   |
| <b>Occ. Type:</b>              | Natural/Native occurrence                                                                                                                                                                                                                       | <b>Trend:</b> Increasing         | <b>Site Last Seen:</b> 2019-02-22      |
|                                |                                                                                                                                                                                                                                                 |                                  | <b>Record Last Updated:</b> 2019-05-31 |
| <b>Quad Summary:</b>           | Grays Well NE (3211467), Grays Well (3211468), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), Acolita (3311512), Amos (3311513), Tortuga (3311523)                                              |                                  |                                        |
| <b>County Summary:</b>         | Imperial                                                                                                                                                                                                                                        |                                  |                                        |
| <b>Lat/Long:</b>               | 32.91623 / -115.08879                                                                                                                                                                                                                           | <b>Accuracy:</b>                 | specific area                          |
| <b>UTM:</b>                    | Zone-11 N3643620 E678720                                                                                                                                                                                                                        | <b>Elevation (ft):</b>           | 300                                    |
| <b>PLSS:</b>                   | T14S, R18E, Sec. 50 (S)                                                                                                                                                                                                                         | <b>Acres:</b>                    | 72540.0                                |
| <b>Location:</b>               | ALGODONES DUNES.                                                                                                                                                                                                                                |                                  |                                        |
| <b>Detailed Location:</b>      | SCATTERED ALONG DUNES BETWEEN SOUTHERN PACIFIC RR TRACKS & COACHELLA CANAL. THE GREATEST DENSITY OF THIS PLANT IS ON THE W SIDE OF DUNES. ASTRAGALUS MAGDALENAE PEIRSONII, PALAFOXIA ARIDA GIGANTEA, AND HELIANTHUS NIVEUS TEPHRODES ALSO HERE. |                                  |                                        |
| <b>Ecological:</b>             | SAND DUNES WITHIN DESERT PSAMMOPHYTIC SCRUB (STABILIZED AND PARTIALLY STABILIZED DESERT DUNES). ASSOCIATES INCLUDE SEVERAL RARE PLANTS; AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ERIOGONUM DESERTICOLA, AND PILOSTYLES THURBERI.  |                                  |                                        |
| <b>General:</b>                | EO #2 & #11: 7,513 IN 1998; 9,697 IN 1999; 10,206 IN 2000. PARTS OF EO: ~314 PLANTS IN 1993, ~25 IN 2009, 15 IN 2013, 1447 IN 2018. ALSO SEEN IN 1977, 1979, 2005, 2008, 2010, 2014, & 2019. INCLUDES FRMR OCCS #1, 3-10, 13-36.                |                                  |                                        |
| <b>Owner/Manager:</b>          | BLM                                                                                                                                                                                                                                             |                                  |                                        |



2

**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



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|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| <b><i>Astragalus magdalenae var. peirsonii</i></b> |                                                                                                                                                                                                                                               | <b>Element Code:</b> PDFAB0F532  |                                        |
| Peirson's milk-vetch                               |                                                                                                                                                                                                                                               |                                  |                                        |
| <b>Listing Status:</b>                             | <b>Federal:</b> Threatened                                                                                                                                                                                                                    | <b>CNDDDB Element Ranks:</b>     | <b>Global:</b> G3G4T1                  |
|                                                    | <b>State:</b> Endangered                                                                                                                                                                                                                      |                                  | <b>State:</b> S1                       |
|                                                    | <b>Other:</b> Rare Plant Rank - 1B.2, SB_RSABG-Rancho Santa Ana Botanic Garden                                                                                                                                                                |                                  |                                        |
| <b>Habitat:</b>                                    | <b>General:</b> DESERT DUNES.                                                                                                                                                                                                                 |                                  |                                        |
|                                                    | <b>Micro:</b> SLOPES AND HOLLOWES IN MOBILE DUNES, USUALLY TO THE LEE OF THE PREVAILING WINDS. 60-225 M.                                                                                                                                      |                                  |                                        |
| <b>Occurrence No.</b>                              | 1                                                                                                                                                                                                                                             | <b>Map Index:</b> 71505          | <b>EO Index:</b> 6539                  |
| <b>Occ. Rank:</b>                                  | Good                                                                                                                                                                                                                                          | <b>Presence:</b> Presumed Extant | <b>Element Last Seen:</b> 2018-04-18   |
| <b>Occ. Type:</b>                                  | Natural/Native occurrence                                                                                                                                                                                                                     | <b>Trend:</b> Fluctuating        | <b>Site Last Seen:</b> 2018-04-18      |
|                                                    |                                                                                                                                                                                                                                               |                                  | <b>Record Last Updated:</b> 2018-09-26 |
| <b>Quad Summary:</b>                               | Grays Well NE (3211467), Grays Well (3211468), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)                 |                                  |                                        |
| <b>County Summary:</b>                             | Imperial, Mexico                                                                                                                                                                                                                              |                                  |                                        |
| <b>Lat/Long:</b>                                   | 32.90611 / -115.06111                                                                                                                                                                                                                         |                                  | <b>Accuracy:</b> specific area         |
| <b>UTM:</b>                                        | Zone-11 N3642545 E681328                                                                                                                                                                                                                      |                                  | <b>Elevation (ft):</b> 200             |
| <b>PLSS:</b>                                       | T14S, R18E, Sec. 54 (S)                                                                                                                                                                                                                       |                                  | <b>Acres:</b> 77751.0                  |
| <b>Location:</b>                                   | ALGODONES DUNES.                                                                                                                                                                                                                              |                                  |                                        |
| <b>Detailed Location:</b>                          | LARGE POLYGON MAPPED TO ENCOMPASS MULTIPLE SOURCES OF INFORMATION. INCLUDES FORMER OCCURRENCE #S 2-39, 43, 44.                                                                                                                                |                                  |                                        |
| <b>Ecological:</b>                                 | SAND DUNES WITHIN DESERT PSAMMOPHYTIC SCRUB (STABILIZED AND PARTIALLY STABILIZED DESERT DUNES). ASSOCIATES INCLUDE SEVERAL RARE PLANTS: PHOLISMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ERIOGONUM DESERTICOLA, AND PILOSTYLES THURBERI. |                                  |                                        |
| <b>General:</b>                                    | PLANTS OBS IN PARTIAL SURVEYS: 1422 IN 1984, >1300 IN 1993, 5064 IN 1998, 942 IN 1999, 86 IN 2000, 5930 IN 2001, 2297 IN 2002. TOTAL POP SIZE EST: 286,374 IN 2004, 1,831,076 IN 2005. SEEN IN 2006, '07, '09-'11. ~50 IN 2013. 8392 IN 2018. |                                  |                                        |
| <b>Owner/Manager:</b>                              | BLM                                                                                                                                                                                                                                           |                                  |                                        |





3

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|                                     |                                                                                |                                 |                   |
|-------------------------------------|--------------------------------------------------------------------------------|---------------------------------|-------------------|
| <b><i>Calliandra eriophylla</i></b> |                                                                                | <b>Element Code:</b> PDFAB0N040 |                   |
| pink fairy-duster                   |                                                                                |                                 |                   |
| <b>Listing Status:</b>              | <b>Federal:</b> None                                                           | <b>CNDDDB Element Ranks:</b>    | <b>Global:</b> G5 |
|                                     | <b>State:</b> None                                                             |                                 | <b>State:</b> S3  |
|                                     | <b>Other:</b> Rare Plant Rank - 2B.3, SB_RSABG-Rancho Santa Ana Botanic Garden |                                 |                   |
| <b>Habitat:</b>                     | <b>General:</b> SONORAN DESERT SCRUB.                                          |                                 |                   |
|                                     | <b>Micro:</b> SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.                  |                                 |                   |

|                           |                                                                                       |                         |                                  |                             |            |
|---------------------------|---------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 10                                                                                    | <b>Map Index:</b> 36288 | <b>EO Index:</b> 31285           | <b>Element Last Seen:</b>   | 1962-03-18 |
| <b>Occ. Rank:</b>         | Unknown                                                                               |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1962-03-18 |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                             |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 1997-07-30 |
| <b>Quad Summary:</b>      | Ninemile Wash (3311418), East of Acolita (3311511)                                    |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                              |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 33.04581 / -115.00576                                                                 |                         | <b>Accuracy:</b>                 | 1 mile                      |            |
| <b>UTM:</b>               | Zone-11 N3658133 E686212                                                              |                         | <b>Elevation (ft):</b>           | 600                         |            |
| <b>PLSS:</b>              | T13S, R19E, Sec. 07 (S)                                                               |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | 5 MILES NORTHEAST OF GLAMIS.                                                          |                         |                                  |                             |            |
| <b>Detailed Location:</b> | MAPPED 5 MILES NORTHEAST OF GLAMIS ALONG HIGHWAY 78.                                  |                         |                                  |                             |            |
| <b>Ecological:</b>        | OPEN DESERT.                                                                          |                         |                                  |                             |            |
| <b>General:</b>           | ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1962 COLLECTION BY HITCHCOCK AND MUHLICK. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                   |                         |                                  |                             |            |

|                           |                                                                                                                                                                                                                                         |                         |                                  |                             |            |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|------------|
| <b>Occurrence No.</b>     | 50                                                                                                                                                                                                                                      | <b>Map Index:</b> 86971 | <b>EO Index:</b> 87924           | <b>Element Last Seen:</b>   | 1881-04-XX |
| <b>Occ. Rank:</b>         | Unknown                                                                                                                                                                                                                                 |                         | <b>Presence:</b> Presumed Extant | <b>Site Last Seen:</b>      | 1881-04-XX |
| <b>Occ. Type:</b>         | Natural/Native occurrence                                                                                                                                                                                                               |                         | <b>Trend:</b> Unknown            | <b>Record Last Updated:</b> | 2014-08-26 |
| <b>Quad Summary:</b>      | East of Acolita (3311511)                                                                                                                                                                                                               |                         |                                  |                             |            |
| <b>County Summary:</b>    | Imperial                                                                                                                                                                                                                                |                         |                                  |                             |            |
| <b>Lat/Long:</b>          | 33.02188 / -115.10822                                                                                                                                                                                                                   |                         | <b>Accuracy:</b>                 | 1 mile                      |            |
| <b>UTM:</b>               | Zone-11 N3655302 E676690                                                                                                                                                                                                                |                         | <b>Elevation (ft):</b>           |                             |            |
| <b>PLSS:</b>              | T13S, R18E, Sec. 19 (S)                                                                                                                                                                                                                 |                         | <b>Acres:</b>                    | 0.0                         |            |
| <b>Location:</b>          | MESQUITE, NW OF GLAMIS.                                                                                                                                                                                                                 |                         |                                  |                             |            |
| <b>Detailed Location:</b> | EXACT LOCATION UNKNOWN. MAPPED IN THE VICINITY OF MESQUITE, 2.7 MILES NW OF GLAMIS ON TED KIPF ROAD AT ELEVATION POINT ON TOPO MAP MARKED "295SB".                                                                                      |                         |                                  |                             |            |
| <b>Ecological:</b>        |                                                                                                                                                                                                                                         |                         |                                  |                             |            |
| <b>General:</b>           | MAIN SOURCE OF INFORMATION IS A MARCH 25, 1881 PARISH & PARISH COLLECTION. AN APRIL 1881 PARISH & PARISH COLLECTION FROM "MESQUITE CANON [CANYON]", KERN COUNTY, IS ATTRIBUTED HERE; LIKELY IMPERIAL COUNTY BASED ON OTHER COLLECTIONS. |                         |                                  |                             |            |
| <b>Owner/Manager:</b>     | BLM                                                                                                                                                                                                                                     |                         |                                  |                             |            |



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Table with 2 columns: Field Name and Value. Includes Pholisma sonorae, sand food, Listing Status (Federal: None, State: None, Other: Rare Plant Rank - 1B.2, BLM\_S-Sensitive, SB\_RSABG-Rancho Santa Ana Botanic Garden), Habitat (General: DESERT DUNES, SONORAN DESERT SCRUB., Micro: LOOSE, DEEP SAND DUNES, USUALLY ON THE MORE STABLE, WINDWARD FACE. 0-125 M.), and Element Code: PDLNN02020.

Table with 4 columns: Occurrence No., Map Index, EO Index, Element Last Seen. Includes Occ. Rank: Good, Presence: Presumed Extant, Site Last Seen: 2018-04-22, Occ. Type: Natural/Native occurrence, Trend: Unknown, Record Last Updated: 2019-01-03. Also includes Quad Summary, County Summary, Lat/Long, UTM, PLSS, Accuracy, Elevation (ft), Acres, Location, Detailed Location, Ecological, General, and Owner/Manager information.

Table with 4 columns: Occurrence No., Map Index, EO Index, Element Last Seen. Includes Occ. Rank: Unknown, Presence: Presumed Extant, Site Last Seen: 1981-04-27, Occ. Type: Natural/Native occurrence, Trend: Unknown, Record Last Updated: 2010-02-08. Also includes Quad Summary, County Summary, Lat/Long, UTM, PLSS, Accuracy, Elevation (ft), Acres, Location, Detailed Location, Ecological, General, and Owner/Manager information.



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Chylismia arenaria

Element Code: PDONA03020

sand evening-primrose

Listing Status: Federal: None
State: None
Other: Rare Plant Rank - 2B.2
Habitat: General: SONORAN DESERT SCRUB.
Micro: SANDY OR ROCKY SITES. 155-425 M.

CNDDDB Element Ranks: Global: G4?
State: S2S3

Occurrence No. 12 Map Index: 86971 EO Index: 92731 Element Last Seen: 1881-03-25
Occ. Rank: Unknown Presence: Presumed Extant Site Last Seen: 1881-03-25
Occ. Type: Natural/Native occurrence Trend: Unknown Record Last Updated: 2014-02-20

Quad Summary: East of Acolita (3311511)
County Summary: Imperial

Lat/Long: 33.02188 / -115.10822 Accuracy: 1 mile
UTM: Zone-11 N3655302 E676690 Elevation (ft):
PLSS: T13S, R18E, Sec. 19 (S) Acres: 0.0

Location: MESQUITE.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED IN THE VICINITY OF MESQUITE, LOCATED ABOUT 2.7 AIR MILES NW OF GLAMIS ON TED KIPF ROAD AT ELEVATION POINT ON TOPO MAP MARKED "295SB."

Ecological:
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS AN 1881 PARISH & PARISH COLLECTION. NEEDS FIELDWORK.
Owner/Manager: BLM



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California Department of Fish and Wildlife
California Natural Diversity Database



Table with 4 columns: Field Name, Value, Field Name, Value. Includes sections for Species (Nemacaulis denudata var. gracilis), Listing Status, Habitat, Occurrence No., Map Index, EO Index, Element Last Seen, Occ. Rank, Presence, Site Last Seen, Occ. Type, Trend, Record Last Updated, Quad Summary, County Summary, Lat/Long, Accuracy, UTM, Elevation (ft), PLSS, Acres, Location, Detailed Location, Ecological, General, and Owner/Manager.



**Multiple Occurrences per Page**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



|                                                  |                                                                                                  |                                 |                     |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------|---------------------|
| <b><i>Panicum hirticaule ssp. hirticaule</i></b> |                                                                                                  | <b>Element Code:</b> PMPOA4K170 |                     |
| roughstalk witch grass                           |                                                                                                  |                                 |                     |
| <b>Listing Status:</b>                           | <b>Federal:</b> None                                                                             | <b>CNDDB Element Ranks:</b>     | <b>Global:</b> G5T5 |
|                                                  | <b>State:</b> None                                                                               |                                 | <b>State:</b> S2    |
|                                                  | <b>Other:</b> Rare Plant Rank - 2B.1, SB_RSABG-Rancho Santa Ana Botanic Garden                   |                                 |                     |
| <b>Habitat:</b>                                  | <b>General:</b> DESERT DUNES, JOSHUA TREE WOODLAND, MOJAVEAN DESERT SCRUB, SONORAN DESERT SCRUB. |                                 |                     |
|                                                  | <b>Micro:</b> SANDY, SILTY DEPRESSIONS. 60-1465 M.                                               |                                 |                     |

|                       |                           |                   |                 |                             |       |                           |            |
|-----------------------|---------------------------|-------------------|-----------------|-----------------------------|-------|---------------------------|------------|
| <b>Occurrence No.</b> | 2                         | <b>Map Index:</b> | 90910           | <b>EO Index:</b>            | 91952 | <b>Element Last Seen:</b> | 1999-08-15 |
| <b>Occ. Rank:</b>     | Unknown                   | <b>Presence:</b>  | Presumed Extant | <b>Site Last Seen:</b>      |       | 1999-08-15                |            |
| <b>Occ. Type:</b>     | Natural/Native occurrence | <b>Trend:</b>     | Unknown         | <b>Record Last Updated:</b> |       | 2013-11-19                |            |

**Quad Summary:** Clyde (3211488), Glamis (3211581)  
**County Summary:** Imperial

|                  |                          |                        |        |
|------------------|--------------------------|------------------------|--------|
| <b>Lat/Long:</b> | 32.94363 / -115.00040    | <b>Accuracy:</b>       | 1 mile |
| <b>UTM:</b>      | Zone-11 N3646812 E686928 | <b>Elevation (ft):</b> | 380    |
| <b>PLSS:</b>     | T14S, R19E, Sec. 17 (S)  | <b>Acres:</b>          | 0.0    |

**Location:** APPROXIMATELY 1 MILE SOUTH OF RUTHVEN, 7 MILES SOUTHEAST OF GLAMIS ON TED KIPF ROAD, ALGODONES DUNES.  
**Detailed Location:** EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB TO ENCOMPASS AREAS 1 AIR MILE SOUTH OF RUTHVEN AND 1 ROAD MILE SE OF RUTHVEN ON TED KIPF RD. ELEVATION ON COLLECTION LABEL (150 FT) IS LOWER THAN ELEVATION IN MAPPED AREA (ABOUT 380 FT).  
**Ecological:** EAST MARGIN OF DUNES.  
**General:** ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1999 COLLECTION BY GATES.  
**Owner/Manager:** BLM

## **APPENDIX G**

### **COST ESTIMATE DATA SUMMARY**

**COST ESTIMATE**

Type of Estimate : Planning Level Cost Estimate

Date: 5/11/2020

Description: **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**

Alternative : **78 - O**

|                                                             | Current Cost            | Escalated Cost          |
|-------------------------------------------------------------|-------------------------|-------------------------|
| CIVIL ITEMS                                                 | \$ 5,000,000.00         | \$ 5,627,545.00         |
| STRUCTURE ITEMS                                             | \$ 11,500,000.00        | \$ 12,943,352.00        |
| <b>SUBTOTAL CONSTRUCTION COST</b>                           | <b>\$ 16,500,000.00</b> | <b>\$ 18,570,897.00</b> |
| RIGHT OF WAY                                                | \$ 1,300,000.00         | \$ 1,420,546.00         |
| CONTINGENCY (40%)                                           | \$ 7,120,000.00         | \$ 7,996,577.20         |
| <b>TOTAL CAPITAL COST</b>                                   | <b>\$ 24,920,000.00</b> | <b>\$ 27,989,000.00</b> |
| PA/ED SUPPORT                                               |                         | \$ 2,492,000.00         |
| PS&E SUPPORT                                                |                         | \$ 1,653,400.00         |
| CONSTRUCTION SUPPORT                                        |                         | \$ 2,362,000.00         |
| <b>TOTAL SUPPORT COST</b>                                   |                         | <b>\$ 6,507,400.00</b>  |
| <b>TOTAL PROJECT COST \$ 24,950,000.00 \$ 34,500,000.00</b> |                         |                         |

|                                             |       |      |
|---------------------------------------------|-------|------|
|                                             | month | year |
| Date (Month/Year) of Estimate               | 10    | 2020 |
| Estimated Date (Month/Year) of Construction | 10    | 2024 |
| Number of Months of Escalation              | 48    |      |
| Number of Years of Escalation               | 4.00  |      |

**Estimated Project Schedule**

|                           |            |
|---------------------------|------------|
| <i>PA/ED Approval</i>     | April-23   |
| <i>PS&amp;E</i>           | May-24     |
| <i>RTL</i>                | June-24    |
| <i>Begin Construction</i> | October-24 |
| <i>End Construction</i>   | October-26 |

Date: 5/11/2020

Description: SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

Alternative : 78 - O

**I. CIVIL ITEMS**

|   |                   | <u>Notes</u>                          |    |           |
|---|-------------------|---------------------------------------|----|-----------|
| 1 | Roadway Section   | SR-78 Section - 120,000 sqft          | \$ | 1,800,000 |
| 2 | Trail Section     | 500' ft length                        | \$ | 50,000    |
| 3 | Drainage          | Roadway drainage                      | \$ | 500,000   |
| 4 | Environmental     | Mitigation, Monitoring, BMPs, Erosion | \$ | 750,000   |
| 5 | Traffic           | Signals                               | \$ | 500,000   |
| 6 | Railroad Flagging | 300 working days                      | \$ | 900,000   |
| 7 | Detours           | Staging of SR-78                      | \$ | 500,000   |

|                             |                     |
|-----------------------------|---------------------|
| <b>SUBTOTAL CIVIL ITEMS</b> | <b>\$ 5,000,000</b> |
|-----------------------------|---------------------|

**II. STRUCTURAL ITEMS**

|   |                |                          |    |           |
|---|----------------|--------------------------|----|-----------|
| 1 | Bridge         | 15,500 sqft Concrete Box | \$ | 5,000,000 |
| 2 | Retaining Wall | 65,000 sqft wall surface | \$ | 6,500,000 |

|                                  |                      |
|----------------------------------|----------------------|
| <b>SUBTOTAL STRUCTURAL ITEMS</b> | <b>\$ 11,500,000</b> |
|----------------------------------|----------------------|

**III. ROW ITEMS**

|   |                                                                  |    |           |
|---|------------------------------------------------------------------|----|-----------|
| 1 | Acquisition, including Fees, Goodwill, Mitigation, Railroad, Etc | \$ | 1,000,000 |
| 2 | Utility Relocation                                               | \$ | 300,000   |

|                           |                     |
|---------------------------|---------------------|
| <b>SUBTOTAL ROW ITEMS</b> | <b>\$ 1,300,000</b> |
|---------------------------|---------------------|

**Assumptions:**

- 1 Escalation rates used in this estimate for Highway Construction Capital Costs are 3.0% compounded annually to Construction year.
- 2 Contingency = 40% based on feasibility study level of detail
- 3 Escalation rate for ROW Items assumed to be 3% escalated to 1 year prior to construction
- 4 PAED Costs estimated as 10 % of Capital Cost
- 5 PSE Costs estimated as 7 % of Construction Cost Subtotal
- 6 Construction Support Costs estimated as 10 % of Construction Cost Subtotal



**Type of Estimate :** Operations and Maintenance Cost estimate

**Date:** 7/10/2020

**Description:** SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

**Alternative :** 78-O

Total 20 Yr Maintenance Cost in Year 0 \$ 100,000

Total 30 Yr Maintenance Cost in Year 0 \$ 150,000

| Year | Description            | Cost \$<br>(in Year 0) | (in Year of<br>activity) |
|------|------------------------|------------------------|--------------------------|
| 0    |                        |                        |                          |
| 1    | Sand                   | \$ 2,000               | \$ 2,060                 |
| 2    | Sand, Inspection       | \$ 3,000               | \$ 3,180                 |
| 3    | Sand                   | \$ 2,000               | \$ 2,190                 |
| 4    | Sand, Inspection       | \$ 3,000               | \$ 3,380                 |
| 5    | Sand, Drainage         | \$ 5,000               | \$ 5,800                 |
| 6    | Sand                   | \$ 2,000               | \$ 2,390                 |
| 7    | Sand, Inspection       | \$ 3,000               | \$ 3,690                 |
| 8    | Sand                   | \$ 2,000               | \$ 2,530                 |
| 9    | Sand, Inspection       | \$ 3,000               | \$ 3,910                 |
| 10   | Sand, Drainage, Repair | \$ 25,000              | \$ 33,600                |
| 11   | Sand                   | \$ 2,000               | \$ 2,770                 |
| 12   | Sand, Inspection       | \$ 3,000               | \$ 4,280                 |
| 13   | Sand                   | \$ 2,000               | \$ 2,940                 |
| 14   | Sand, Inspection       | \$ 3,000               | \$ 4,540                 |
| 15   | Sand, Drainage         | \$ 5,000               | \$ 7,790                 |
| 16   | Sand                   | \$ 2,000               | \$ 3,210                 |
| 17   | Sand, Inspection       | \$ 3,000               | \$ 4,960                 |
| 18   | Sand                   | \$ 2,000               | \$ 3,400                 |
| 19   | Sand, Inspection       | \$ 3,000               | \$ 5,260                 |
| 20   | Sand, Drainage, Repair | \$ 25,000              | \$ 45,150                |
| 21   | Sand                   | \$ 2,000               | \$ 3,720                 |
| 22   | Sand, Inspection       | \$ 3,000               | \$ 5,750                 |
| 23   | Sand                   | \$ 2,000               | \$ 3,950                 |
| 24   | Sand, Inspection       | \$ 3,000               | \$ 6,100                 |
| 25   | Sand, Drainage         | \$ 5,000               | \$ 10,470                |
| 26   | Sand                   | \$ 2,000               | \$ 4,310                 |
| 27   | Sand, Inspection       | \$ 3,000               | \$ 6,660                 |
| 28   | Sand                   | \$ 2,000               | \$ 4,580                 |
| 29   | Sand, Inspection       | \$ 3,000               | \$ 7,070                 |
| 30   | Sand, Drainage, Repair | \$ 25,000              | \$ 60,680                |
|      | <b>Total</b>           | <b>\$ 150,000</b>      | <b>\$ 260,320</b>        |

- Assumptions:
1. Assume operation inflation of 3%
  2. Inspection occurs every 2 years (\$1000 ea)
  3. No approach grading maintenance
  4. Sand drift maintenance occurs each year (\$2000 ea)
  5. Drainage maintenance every 5 years (\$3000 ea)
  6. Repairs to fencing or railing due to collisions occur every 10 years. (\$20,000 ea)

**COST ESTIMATE**

Type of Estimate : Planning Level Cost Estimate

Date: 5/11/2020

Description: **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**Alternative : **78T-O**

|                                   | Current Cost           | Escalated Cost          |
|-----------------------------------|------------------------|-------------------------|
| CIVIL ITEMS                       | \$ 730,000.00          | \$ 821,622.00           |
| STRUCTURE ITEMS                   | \$ 4,900,000.00        | \$ 5,514,994.00         |
| <b>SUBTOTAL CONSTRUCTION COST</b> | <b>\$ 5,630,000.00</b> | <b>\$ 6,336,616.00</b>  |
| RIGHT OF WAY                      | \$ 550,000.00          | \$ 601,000.00           |
| CONTINGENCY (40%)                 | \$ 2,472,000.00        | \$ 2,775,046.40         |
| <b>TOTAL CAPITAL COST</b>         | <b>\$ 8,652,000.00</b> | <b>\$ 9,713,000.00</b>  |
| PA/ED SUPPORT                     |                        | \$ 865,200.00           |
| PS&E SUPPORT                      |                        | \$ 648,160.00           |
| CONSTRUCTION SUPPORT              |                        | \$ 810,200.00           |
| <b>TOTAL SUPPORT COST</b>         |                        | <b>\$ 2,323,560.00</b>  |
| <b>TOTAL PROJECT COST</b>         | <b>\$ 8,700,000.00</b> | <b>\$ 12,050,000.00</b> |

|                                             |       |      |
|---------------------------------------------|-------|------|
|                                             | month | year |
| Date (Month/Year) of Estimate               | 10    | 2020 |
| Estimated Date (Month/Year) of Construction | 10    | 2024 |
| Number of Months of Escalation              | 48    |      |
| Number of Years of Escalation               | 4.00  |      |

**Estimated Project Schedule**

|                           |            |
|---------------------------|------------|
| <i>PA/ED Approval</i>     | April-23   |
| <i>PS&amp;E</i>           | May-24     |
| <i>RTL</i>                | June-24    |
| <i>Begin Construction</i> | October-24 |
| <i>End Construction</i>   | October-25 |

Date: 5/11/2020

Description: SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

Alternative : 78T-O

**I. CIVIL ITEMS**

|   |                   | <u>Notes</u>                          |    |         |
|---|-------------------|---------------------------------------|----|---------|
| 1 | Roadway Section   | Wash Rd Realignment                   | \$ | 100,000 |
| 2 | Trail Section     | 500' ft length                        | \$ | 50,000  |
| 3 | Drainage          | Minor drainage                        | \$ | 75,000  |
| 4 | Environmental     | Mitigation, Monitoring, BMPs, Erosion | \$ | 300,000 |
| 5 | Traffic           | none                                  | \$ | -       |
| 6 | Railroad Flagging | 60 working days                       | \$ | 180,000 |
| 7 | Detours           | Wash Rd                               | \$ | 25,000  |

|                             |                   |
|-----------------------------|-------------------|
| <b>SUBTOTAL CIVIL ITEMS</b> | <b>\$ 730,000</b> |
|-----------------------------|-------------------|

**II. STRUCTURAL ITEMS**

|   |                |                          |    |           |
|---|----------------|--------------------------|----|-----------|
| 1 | Bridge         | 6000 sqft steel truss    | \$ | 2,400,000 |
| 2 | Retaining Wall | 25,000 sqft wall surface | \$ | 2,500,000 |

|                                  |                     |
|----------------------------------|---------------------|
| <b>SUBTOTAL STRUCTURAL ITEMS</b> | <b>\$ 4,900,000</b> |
|----------------------------------|---------------------|

**III. ROW ITEMS**

|   |                                                                  |    |         |
|---|------------------------------------------------------------------|----|---------|
| 1 | Acquisition, including Fees, Goodwill, Mitigation, Railroad, Etc | \$ | 500,000 |
| 2 | Utility Relocation                                               | \$ | 50,000  |

|                           |                   |
|---------------------------|-------------------|
| <b>SUBTOTAL ROW ITEMS</b> | <b>\$ 550,000</b> |
|---------------------------|-------------------|

**Assumptions:**

- 1 Escalation rates used in this estimate for Highway Construction Capital Costs are 3.0% compounded annually to Construction year.
- 2 Contingency = 40% based on feasibility study level of detail
- 3 Escalation rate for ROW Items assumed to be 3% escalated to 1 year prior to construction
- 4 PAED Costs estimated as 10 % of Capital Cost
- 5 PSE Costs estimated as 8 % of Construction Cost Subtotal
- 6 Construction Support Costs estimated as 10 % of Construction Cost Subtotal

**Type of Estimate :** Operations and Maintenance Cost estimate

**Date:** 7/10/2020

**Description:** SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

**Alternative :** 78T-O

Total 20 Yr Maintenance Cost in Year 0 \$ 170,000

Total 30 Yr Maintenance Cost in Year 0 \$ 255,000

| Year | Description                   | Cost \$<br>(in Year 0) | (in Year of<br>activity) |
|------|-------------------------------|------------------------|--------------------------|
| 0    |                               |                        |                          |
| 1    | Approach, Drainage            | \$ 7,000               | \$ 7,210                 |
| 2    | Approach, Inspection          | \$ 6,000               | \$ 6,370                 |
| 3    | Approach, Drainage            | \$ 7,000               | \$ 7,650                 |
| 4    | Approach, Inspection          | \$ 6,000               | \$ 6,750                 |
| 5    | Approach, Drainage            | \$ 7,000               | \$ 8,110                 |
| 6    | Approach, Inspection          | \$ 6,000               | \$ 7,160                 |
| 7    | Approach, Drainage            | \$ 7,000               | \$ 8,610                 |
| 8    | Approach, Inspection          | \$ 6,000               | \$ 7,600                 |
| 9    | Approach, Drainage            | \$ 7,000               | \$ 9,130                 |
| 10   | Approach, Inspection, Repairs | \$ 26,000              | \$ 34,940                |
| 11   | Approach, Drainage            | \$ 7,000               | \$ 9,690                 |
| 12   | Approach, Inspection          | \$ 6,000               | \$ 8,550                 |
| 13   | Approach, Drainage            | \$ 7,000               | \$ 10,280                |
| 14   | Approach, Inspection          | \$ 6,000               | \$ 9,080                 |
| 15   | Approach, Drainage            | \$ 7,000               | \$ 10,910                |
| 16   | Approach, Inspection          | \$ 6,000               | \$ 9,630                 |
| 17   | Approach, Drainage            | \$ 7,000               | \$ 11,570                |
| 18   | Approach, Inspection          | \$ 6,000               | \$ 10,210                |
| 19   | Approach, Drainage            | \$ 7,000               | \$ 12,270                |
| 20   | Approach, Inspection, Repairs | \$ 26,000              | \$ 46,960                |
| 21   | Approach, Drainage            | \$ 7,000               | \$ 13,020                |
| 22   | Approach, Inspection          | \$ 6,000               | \$ 11,500                |
| 23   | Approach, Drainage            | \$ 7,000               | \$ 13,820                |
| 24   | Approach, Inspection          | \$ 6,000               | \$ 12,200                |
| 25   | Approach, Drainage            | \$ 7,000               | \$ 14,660                |
| 26   | Approach, Inspection          | \$ 6,000               | \$ 12,940                |
| 27   | Approach, Drainage            | \$ 7,000               | \$ 15,550                |
| 28   | Approach, Inspection          | \$ 6,000               | \$ 13,730                |
| 29   | Approach, Drainage            | \$ 7,000               | \$ 16,500                |
| 30   | Approach, Inspection, Repairs | \$ 26,000              | \$ 63,110                |
|      | <b>Total</b>                  | <b>\$ 255,000</b>      | <b>\$ 429,710</b>        |

- Assumptions:
1. Assume operation inflation of 3%
  2. Inspection occurs every 2 years (\$1000 ea)
  3. Approach grading maintenance occurs each year (\$5,000 ea)
  4. Drainage maintenance occurs every other year (\$2,000 ea)
  5. Repairs to fencing or railing due to collisions occur every 10 years. (\$20,000 ea)

**COST ESTIMATE**

Type of Estimate : Planning Level Cost Estimate

Date: 5/11/2020

Description: **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**Alternative : **9.5-U**

|                                   | Current Cost           | Escalated Cost          |
|-----------------------------------|------------------------|-------------------------|
| CIVIL ITEMS                       | \$ 2,070,000.00        | \$ 2,329,804.00         |
| STRUCTURE ITEMS                   | \$ 1,350,000.00        | \$ 1,519,437.00         |
| <b>SUBTOTAL CONSTRUCTION COST</b> | <b>\$ 3,420,000.00</b> | <b>\$ 3,849,241.00</b>  |
| RIGHT OF WAY                      | \$ 1,800,000.00        | \$ 1,966,909.00         |
| CONTINGENCY (40%)                 | \$ 2,088,000.00        | \$ 2,326,460.00         |
| <b>TOTAL CAPITAL COST</b>         | <b>\$ 7,308,000.00</b> | <b>\$ 8,143,000.00</b>  |
| PA/ED SUPPORT                     |                        | \$ 1,096,200.00         |
| PS&E SUPPORT                      |                        | \$ 440,640.00           |
| CONSTRUCTION SUPPORT              |                        | \$ 826,200.00           |
| <b>TOTAL SUPPORT COST</b>         |                        | <b>\$ 2,363,040.00</b>  |
| <b>TOTAL PROJECT COST</b>         | <b>\$ 7,350,000.00</b> | <b>\$ 10,550,000.00</b> |

|                                             |       |      |
|---------------------------------------------|-------|------|
|                                             | month | year |
| Date (Month/Year) of Estimate               | 10    | 2020 |
| Estimated Date (Month/Year) of Construction | 10    | 2024 |
| Number of Months of Escalation              | 48    |      |
| Number of Years of Escalation               | 4.00  |      |

**Estimated Project Schedule**

|                           |            |
|---------------------------|------------|
| <i>PA/ED Approval</i>     | April-23   |
| <i>PS&amp;E</i>           | May-24     |
| <i>RTL</i>                | June-24    |
| <i>Begin Construction</i> | October-24 |
| <i>End Construction</i>   | October-25 |

Date: 5/11/2020

Description: SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

Alternative : 9.5-U

**I. CIVIL ITEMS**

|                             |                   | <u>Notes</u>                          |           |                  |
|-----------------------------|-------------------|---------------------------------------|-----------|------------------|
| 1                           | Roadway Section   | none                                  | \$        | -                |
| 2                           | Trail Section     | 1200' ft length                       | \$        | 120,000          |
| 3                           | Drainage          | Permanent Feature                     | \$        | 200,000          |
| 4                           | Environmental     | Mitigation, Monitoring, BMPs, Erosion | \$        | 500,000          |
| 5                           | Traffic           | none                                  | \$        | -                |
| 6                           | Railroad Flagging | 250 working days                      | \$        | 750,000          |
| 7                           | Detours           | RR Shoofly                            | \$        | 500,000          |
| <b>SUBTOTAL CIVIL ITEMS</b> |                   |                                       | <b>\$</b> | <b>2,070,000</b> |

**II. STRUCTURAL ITEMS**

|                                  |                |                                 |           |                  |
|----------------------------------|----------------|---------------------------------|-----------|------------------|
| 1                                | Bridge         | 1000 Precast Concrete Underpass | \$        | 600,000          |
| 2                                | Retaining Wall | 5,000 sqft wall surface         | \$        | 750,000          |
| <b>SUBTOTAL STRUCTURAL ITEMS</b> |                |                                 | <b>\$</b> | <b>1,350,000</b> |

**III. ROW ITEMS**

|                           |                                                                  |  |           |                  |
|---------------------------|------------------------------------------------------------------|--|-----------|------------------|
| 1                         | Acquisition, including Fees, Goodwill, Mitigation, Railroad, Etc |  | \$        | 1,000,000        |
| 2                         | Utility Relocation                                               |  | \$        | 800,000          |
| <b>SUBTOTAL ROW ITEMS</b> |                                                                  |  | <b>\$</b> | <b>1,800,000</b> |

**Assumptions:**

- 1 Escalation rates used in this estimate for Highway Construction Capital Costs are 3.0% compounded annually to Construction year.
- 2 Contingency = 40% based on feasibility study level of detail
- 3 Escalation rate for ROW Items assumed to be 3% escalated to 1 year prior to construction
- 4 PAED Costs estimated as 15 % of Capital Cost
- 5 PSE Costs estimated as 8 % of Construction Cost Subtotal
- 6 Construction Support Costs estimated as 15 % of Construction Cost Subtotal

**Type of Estimate :** Operations and Maintenance Cost estimate

**Date:** 7/10/2020

**Description:** **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**

**Alternative :** **10-O**

Total 20 Yr Maintenance Cost in Year 0 \$ 230,000

Total 30 Yr Maintenance Cost in Year 0 \$ 345,000

| Year | Description                                | Cost \$<br>(in Year 0) | (in Year of<br>activity) |
|------|--------------------------------------------|------------------------|--------------------------|
| 0    |                                            |                        |                          |
|      | 1 Approach, Drainage                       | \$ 10,000              | \$ 10,300                |
|      | 2 Approach, Drainage, Inspection           | \$ 11,000              | \$ 11,670                |
|      | 3 Approach, Drainage                       | \$ 10,000              | \$ 10,930                |
|      | 4 Approach, Drainage, Inspection           | \$ 11,000              | \$ 12,380                |
|      | 5 Approach, Drainage                       | \$ 10,000              | \$ 11,590                |
|      | 6 Approach, Drainage, Inspection           | \$ 11,000              | \$ 13,130                |
|      | 7 Approach, Drainage                       | \$ 10,000              | \$ 12,300                |
|      | 8 Approach, Drainage, Inspection           | \$ 11,000              | \$ 13,930                |
|      | 9 Approach, Drainage                       | \$ 10,000              | \$ 13,050                |
|      | 10 Approach, Drainage, Inspection, Repairs | \$ 21,000              | \$ 28,220                |
|      | 11 Approach, Drainage                      | \$ 10,000              | \$ 13,840                |
|      | 12 Approach, Drainage, Inspection          | \$ 11,000              | \$ 15,680                |
|      | 13 Approach, Drainage                      | \$ 10,000              | \$ 14,690                |
|      | 14 Approach, Drainage, Inspection          | \$ 11,000              | \$ 16,640                |
|      | 15 Approach, Drainage                      | \$ 10,000              | \$ 15,580                |
|      | 16 Approach, Drainage, Inspection          | \$ 11,000              | \$ 17,650                |
|      | 17 Approach, Drainage                      | \$ 10,000              | \$ 16,530                |
|      | 18 Approach, Drainage, Inspection          | \$ 11,000              | \$ 18,730                |
|      | 19 Approach, Drainage                      | \$ 10,000              | \$ 17,540                |
|      | 20 Approach, Drainage, Inspection, Repairs | \$ 21,000              | \$ 37,930                |
|      | 21 Approach, Drainage                      | \$ 10,000              | \$ 18,600                |
|      | 22 Approach, Drainage, Inspection          | \$ 11,000              | \$ 21,080                |
|      | 23 Approach, Drainage                      | \$ 10,000              | \$ 19,740                |
|      | 24 Approach, Drainage, Inspection          | \$ 11,000              | \$ 22,360                |
|      | 25 Approach, Drainage                      | \$ 10,000              | \$ 20,940                |
|      | 26 Approach, Drainage, Inspection          | \$ 11,000              | \$ 23,720                |
|      | 27 Approach, Drainage                      | \$ 10,000              | \$ 22,210                |
|      | 28 Approach, Drainage, Inspection          | \$ 11,000              | \$ 25,170                |
|      | 29 Approach, Drainage                      | \$ 10,000              | \$ 23,570                |
|      | 30 Approach, Drainage, Inspection, Repairs | \$ 21,000              | \$ 50,970                |
|      | <b>Total</b>                               | <b>\$ 345,000</b>      | <b>\$ 570,670</b>        |

- Assumptions:
1. Assume operation inflation of 3%
  2. Inspection occurs every 2 years (\$1000 ea)
  3. Approach grading maintenance occurs each year (\$3,000 ea)
  4. Drainage maintenance occurs each year (\$7,000 ea)
  5. Repairs to fencing or railing due to collisions occur every 10 years. (\$10,000 ea)

**COST ESTIMATE**

Type of Estimate : Planning Level Cost Estimate

Date: 5/11/2020

Description: **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**Alternative : **10-O**

|                                   | Current Cost           | Escalated Cost          |
|-----------------------------------|------------------------|-------------------------|
| CIVIL ITEMS                       | \$ 1,380,000.00        | \$ 1,553,203.00         |
| STRUCTURE ITEMS                   | \$ 4,000,000.00        | \$ 4,502,036.00         |
| <b>SUBTOTAL CONSTRUCTION COST</b> | <b>\$ 5,380,000.00</b> | <b>\$ 6,055,239.00</b>  |
| RIGHT OF WAY                      | \$ 550,000.00          | \$ 601,000.00           |
| CONTINGENCY (40%)                 | \$ 2,372,000.00        | \$ 2,662,495.60         |
| <b>TOTAL CAPITAL COST</b>         | <b>\$ 8,302,000.00</b> | <b>\$ 9,319,000.00</b>  |
| PA/ED SUPPORT                     |                        | \$ 830,200.00           |
| PS&E SUPPORT                      |                        | \$ 620,160.00           |
| CONSTRUCTION SUPPORT              |                        | \$ 775,200.00           |
| <b>TOTAL SUPPORT COST</b>         |                        | <b>\$ 2,225,560.00</b>  |
| <b>TOTAL PROJECT COST</b>         | <b>\$ 8,350,000.00</b> | <b>\$ 11,550,000.00</b> |

|                                             |       |      |
|---------------------------------------------|-------|------|
|                                             | month | year |
| Date (Month/Year) of Estimate               | 10    | 2020 |
| Estimated Date (Month/Year) of Construction | 10    | 2024 |
| Number of Months of Escalation              | 48    |      |
| Number of Years of Escalation               | 4.00  |      |

**Estimated Project Schedule**

|                           |            |
|---------------------------|------------|
| <i>PA/ED Approval</i>     | April-23   |
| <i>PS&amp;E</i>           | May-24     |
| <i>RTL</i>                | June-24    |
| <i>Begin Construction</i> | October-24 |
| <i>End Construction</i>   | October-25 |



Date: 5/11/2020

Description: SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study

Alternative : 10-O

**I. CIVIL ITEMS**

|                             |                   | <u>Notes</u>                          |           |                  |
|-----------------------------|-------------------|---------------------------------------|-----------|------------------|
| 1                           | Roadway Section   | none                                  | \$        | -                |
| 2                           | Trail Section     | 500' ft length                        | \$        | 50,000           |
| 3                           | Drainage          | Permanent Feature                     | \$        | 400,000          |
| 4                           | Environmental     | Mitigation, Monitoring, BMPs, Erosion | \$        | 750,000          |
| 5                           | Traffic           | none                                  | \$        | -                |
| 6                           | Railroad Flagging | 60 working days                       | \$        | 180,000          |
| 7                           | Detours           | none                                  | \$        | -                |
| <b>SUBTOTAL CIVIL ITEMS</b> |                   |                                       | <b>\$</b> | <b>1,380,000</b> |

**II. STRUCTURAL ITEMS**

|                                  |                |                          |           |                  |
|----------------------------------|----------------|--------------------------|-----------|------------------|
| 1                                | Bridge         | 5000 sqft steel truss    | \$        | 2,000,000        |
| 2                                | Retaining Wall | 20,000 sqft wall surface | \$        | 2,000,000        |
| <b>SUBTOTAL STRUCTURAL ITEMS</b> |                |                          | <b>\$</b> | <b>4,000,000</b> |

**III. ROW ITEMS**

|                           |                                                                  |  |           |                |
|---------------------------|------------------------------------------------------------------|--|-----------|----------------|
| 1                         | Acquisition, including Fees, Goodwill, Mitigation, Railroad, Etc |  | \$        | 500,000        |
| 2                         | Utility Relocation                                               |  | \$        | 50,000         |
| <b>SUBTOTAL ROW ITEMS</b> |                                                                  |  | <b>\$</b> | <b>550,000</b> |

**Assumptions:**

- 1 Escalation rates used in this estimate for Highway Construction Capital Costs are 3.0% compounded annually to Construction year.
- 2 Contingency = 40% based on feasibility study level of detail
- 3 Escalation rate for ROW Items assumed to be 3% escalated to 1 year prior to construction
- 4 PAED Costs estimated as 10 % of Capital Cost
- 5 PSE Costs estimated as 8 % of Construction Cost Subtotal
- 6 Construction Support Costs estimated as 10 % of Construction Cost Subtotal

**Type of Estimate :** Operations and Maintenance Cost estimate

**Date:** 7/10/2020

**Description:** **SR-78 / Glamis Multiuse Grade Separated Crossing Feasibility Study**

**Alternative :** **10-O**

Total 20 Yr Maintenance Cost in Year 0 \$ 250,000

Total 30 Yr Maintenance Cost in Year 0 \$ 375,000

| Year | Description                                | Cost \$<br>(in Year 0) | (in Year of<br>activity) |
|------|--------------------------------------------|------------------------|--------------------------|
| 0    |                                            |                        |                          |
|      | 1 Approach, Drainage                       | \$ 10,000              | \$ 10,300                |
|      | 2 Approach, Drainage, Inspection           | \$ 11,000              | \$ 11,670                |
|      | 3 Approach, Drainage                       | \$ 10,000              | \$ 10,930                |
|      | 4 Approach, Drainage, Inspection           | \$ 11,000              | \$ 12,380                |
|      | 5 Approach, Drainage                       | \$ 10,000              | \$ 11,590                |
|      | 6 Approach, Drainage, Inspection           | \$ 11,000              | \$ 13,130                |
|      | 7 Approach, Drainage                       | \$ 10,000              | \$ 12,300                |
|      | 8 Approach, Drainage, Inspection           | \$ 11,000              | \$ 13,930                |
|      | 9 Approach, Drainage                       | \$ 10,000              | \$ 13,050                |
|      | 10 Approach, Drainage, Inspection, Repairs | \$ 31,000              | \$ 41,660                |
|      | 11 Approach, Drainage                      | \$ 10,000              | \$ 13,840                |
|      | 12 Approach, Drainage, Inspection          | \$ 11,000              | \$ 15,680                |
|      | 13 Approach, Drainage                      | \$ 10,000              | \$ 14,690                |
|      | 14 Approach, Drainage, Inspection          | \$ 11,000              | \$ 16,640                |
|      | 15 Approach, Drainage                      | \$ 10,000              | \$ 15,580                |
|      | 16 Approach, Drainage, Inspection          | \$ 11,000              | \$ 17,650                |
|      | 17 Approach, Drainage                      | \$ 10,000              | \$ 16,530                |
|      | 18 Approach, Drainage, Inspection          | \$ 11,000              | \$ 18,730                |
|      | 19 Approach, Drainage                      | \$ 10,000              | \$ 17,540                |
|      | 20 Approach, Drainage, Inspection, Repairs | \$ 31,000              | \$ 55,990                |
|      | 21 Approach, Drainage                      | \$ 10,000              | \$ 18,600                |
|      | 22 Approach, Drainage, Inspection          | \$ 11,000              | \$ 21,080                |
|      | 23 Approach, Drainage                      | \$ 10,000              | \$ 19,740                |
|      | 24 Approach, Drainage, Inspection          | \$ 11,000              | \$ 22,360                |
|      | 25 Approach, Drainage                      | \$ 10,000              | \$ 20,940                |
|      | 26 Approach, Drainage, Inspection          | \$ 11,000              | \$ 23,720                |
|      | 27 Approach, Drainage                      | \$ 10,000              | \$ 22,210                |
|      | 28 Approach, Drainage, Inspection          | \$ 11,000              | \$ 25,170                |
|      | 29 Approach, Drainage                      | \$ 10,000              | \$ 23,570                |
|      | 30 Approach, Drainage, Inspection, Repairs | \$ 31,000              | \$ 75,250                |
|      | <b>Total</b>                               | <b>\$ 375,000</b>      | <b>\$ 626,450</b>        |

- Assumptions:
1. Assume operation inflation of 3%
  2. Inspection occurs every 2 years (\$1000 ea)
  3. Approach grading maintenance occurs each year (\$5,000 ea)
  4. Drainage maintenance occurs each year (\$5,000 ea)
  5. Repairs to fencing or railing due to collisions occur every 10 years. (\$20,000 ea)



**IMPERIAL COUNTY  
TRANSPORTATION COMMISSION**

1503 N. IMPERIAL AVE., SUITE 104  
EL CENTRO, CA 92243-2875  
PHONE: (760) 592-4494  
FAX: (760) 592-4410

## **Fact Sheet**

### **I. INFORMATION CALENDAR**

- A. Congestion Mitigation Air Quality (CMAQ) & Surface Transportation Block Grant (STBG) 2021 Call for Projects Guidelines:** Below is a detailed description of programs, funding availability, and program milestones.

#### **Congestion Mitigation and Air Quality Improvement (CMAQ)**

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program is a federally-funded program that provides funding for transportation projects and programs to help meet the requirements of the Clean Air Act (CAA) (42 U.S.C. 7401 *et seq.*). Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), or particulate matter (i.e., nonattainment areas), and for areas that were out of compliance but have now met the standards (i.e., maintenance areas). The CMAQ program is designed to create a balanced program of transportation projects that improve air quality and the flow of traffic. Major emphasis is placed on projects that support alternative modes of transportation, reduce PM-10 emissions, and improve the flow of traffic.

The table below summarizes the CMAQ funds anticipated to be available for programming for the three-year period FFY 2021/2022 – 2023/2024.

| <b>CMAQ Funding Estimates</b> |                  |                  |              |
|-------------------------------|------------------|------------------|--------------|
| <b>FFY 21/22</b>              | <b>FFY 22/23</b> | <b>FFY 23/24</b> | <b>TOTAL</b> |
| \$1,741,362                   | \$1,740,810      | \$1,740,248      | \$5,222,420  |

#### **Surface Transportation Block Grant Program (STBG)**

The Surface Transportation Block Grant (STBG) Program is a federal funding program authorized under the Fixing America's Surface Transportation (FAST) Act (Pub. L. 114-94) signed by the President on December 4, 2015. The FAST Act changed the name of the program from "Surface Transportation Program (STP)" to STBG. The program will provide funds for transportation projects located on federal-aid roads system.

**CITIES OF BRAWLEY, CALEXICO, CALIPATRIA, EL CENTRO, HOLTVILLE, IMPERIAL, WESTMORLAND,  
IMPERIAL IRRIGATION DISTRICT AND COUNTY OF IMPERIAL**

The table below summarizes the STBG funds anticipated to be available for programming for the three-year period FFY 2021/2022- 2023/2024:

| <b>STBG Funding Estimates</b> |                  |                  |              |
|-------------------------------|------------------|------------------|--------------|
| <b>FFY 21/22</b>              | <b>FFY 22/23</b> | <b>FFY 23/24</b> | <b>TOTAL</b> |
| \$2,570,088                   | \$2,568,035      | \$2,565,941      | \$7,704,064  |

ICTC staff is currently working on releasing the 2021 Call for Projects Guidelines for both STBG and CMAQ Programs. Program Guidelines highlight eligible and ineligible project types as well as an overview of each program and submittal instructions. Funding availability is projected for FFY2021/2022 thru FFY 2023/2024. The Call for Projects is open to all cities and the County of Imperial. Below is the proposed Call for Projects implementation schedule for both CMAQ and STBG.

**Call for Projects Schedule:**

| <b>2021 CMAQ AND STBG CALL FOR PROJECTS SCHEDULE</b> |                                                                                                                       |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| December 17, 2020<br>(Thursday)                      | ICTC Technical Advisory Committee (TAC) reviews preliminary draft 2021 CMAQ & STBG Guidelines                         |
| January 28, 2021<br>(Thursday)                       | TAC approves the draft 2021 CMAQ & STBG Guidelines                                                                    |
| February 10, 2021<br>(Wednesday)                     | Management Committee reviews and approves the 2021 CMAQ & STBG Guidelines                                             |
| February 24, 2021<br>(Wednesday)                     | ICTC reviews and approves the 2021 CMAQ & STBG Guidelines                                                             |
| February 26, 2021<br>(Friday)                        | Call for Projects begins. The Approved 2021 CMAQ & STBG Guidelines application document is posted on the ICTC website |
| April 15, 2021<br>(Thursday)                         | Call for Projects ends. Project applications deadline is 5:00 pm                                                      |
| April 19, 2021<br>(Monday)                           | Project selection process begins                                                                                      |
| April 30, 2021<br>(Friday)                           | Project selection process ends (ICTC staff generates list of projects recommended for funding)                        |
| May 27, 2021<br>(Thursday)                           | TAC reviews and approves project selection recommendations                                                            |
| June 9, 2021<br>(Wednesday)                          | Management Committee reviews and approves project selection recommendations                                           |
| June 23, 2021<br>(Wednesday)                         | ICTC reviews and approves project selection recommendations                                                           |



# 2021 CALL FOR PROJECTS

**CONGESTION MITIGATION AND AIR QUALITY (CMAQ) PROGRAM**

**SURFACE TRANSPORTATION BLOCK GRANT (STBG) PROGRAM**

DRAFT

**GUIDELINES, APPLICATIONS  
AND INSTRUCTIONS**



***DECEMBER 7, 2020 DRAFT***

**DRAFT**

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## TABLE OF CONTENTS

|                                                                        |    |
|------------------------------------------------------------------------|----|
| <b>Introduction</b>                                                    | 1  |
| <b>General Instructions Applicable to Both Programs</b>                | 1  |
| Call For Projects Schedule                                             | 2  |
| Funding and Programming Cycle                                          | 2  |
| Eligible Project Phases                                                | 3  |
| Local Match Requirement                                                | 3  |
| AB 1012 Timely Use of Funds                                            | 3  |
| Council/Board Resolution                                               | 3  |
| Scoring Committee                                                      | 4  |
| Project Priority                                                       | 4  |
| <b>Congestion Mitigation and Air Quality Program (CMAQ) Guidelines</b> | 5  |
| Project Eligibility                                                    | 5  |
| Emissions Analysis & Cost-Effectiveness of Projects                    | 5  |
| Exhibit 1: Eligible Projects and Programs                              | 6  |
| CMAQ Project Scoring Criteria                                          | 20 |
| CMAQ Project Category Targets                                          | 20 |
| CMAQ Project Application Form                                          | 23 |
| <b>Surface Transportation Block Grant (STBG) Program Guidelines</b>    | 27 |
| Eligibility: Location of Projects                                      | 27 |
| Eligibility: Project Type                                              | 27 |
| Exhibit 2: Eligible Projects and Activities                            | 28 |
| STBG Project Scoring Criteria                                          | 31 |
| STBG Project Application Form                                          | 32 |
| <b>Attachment 1: Sample Resolution</b>                                 | 37 |
| <b>Attachment 2: CMAQ Air Quality Screening Codes</b>                  | 38 |
| <b>Attachment 3: CMAQ Project Application Example</b>                  | 39 |
| <b>Attachment 4: STBG Project Application Example</b>                  | 43 |

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## INTRODUCTION

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The Imperial County Transportation Commission (ICTC) is responsible for selecting and programming federal Congestion Mitigation and Air Quality (CMAQ) and Surface Transportation Block Grant (STBG) program funds. The 2021 Call for Projects will provide additional funds for programming in federal fiscal years<sup>1</sup> (FFY) 2021-22, 2022-23, and 2023-24. A total of \$5,222,420 million in CMAQ and \$7,704,064 in STBG funds are available for programming over the three-year period. Projects approved by ICTC will be added to the Federal Transportation Improvement Program (FTIP) to allow project sponsors to “obligate” the funds.

Specific CMAQ and STBG program information and eligibility requirements are provided in the individual program sections included in these Guidelines. The process for obligating non-transit projects is described in the Caltrans Local Assistance Procedures Manual available at <https://dot.ca.gov/programs/local-assistance>.

## GENERAL INSTRUCTIONS APPLICABLE TO BOTH PROGRAMS

---

The Call for Projects information and procedures described in this section apply to both CMAQ and STBG programs.

### APPLICATION SUBMITTAL & CONTACT INFORMATION

CMAQ and STBG project **applications are due by 5:00 p.m. on Thursday, April 15, 2021** (or postmarked no later than April 15, 2021). Applications should be delivered or mailed to:

Imperial County Transportation Commission  
1503 N. Imperial Avenue, Suite 104  
El Centro, CA 92243

For additional information, please contact Marlene Flores at (760) 592-4494 or [marleneflores@imperialctc.org](mailto:marleneflores@imperialctc.org).

### CALL FOR PROJECTS SCHEDULE

The schedule on the next page provides the major milestones of the 2021 CMAQ and STBG Call for Projects process.

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<sup>1</sup> The federal fiscal years begins October 1 and ends September 30.



| <b>2021 CMAQ AND STBG CALL FOR PROJECTS SCHEDULE</b> |                                                                                                                       |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| December 17, 2020<br>(Thursday)                      | ICTC Technical Advisory Committee (TAC) reviews preliminary draft 2021 CMAQ & STBG Guidelines                         |
| January 28, 2021<br>(Thursday)                       | TAC approves the draft 2021 CMAQ & STBG Guidelines                                                                    |
| February 10, 2021<br>(Wednesday)                     | Management Committee reviews and approves the 2021 CMAQ & STBG Guidelines                                             |
| February 24, 2021<br>(Wednesday)                     | ICTC reviews and approves the 2021 CMAQ & STBG Guidelines                                                             |
| February 26, 2021<br>(Friday)                        | Call for Projects begins. The Approved 2021 CMAQ & STBG Guidelines application document is posted on the ICTC website |
| April 15, 2021<br>(Thursday)                         | Call for Projects ends. Project applications deadline is 5:00 pm                                                      |
| April 19, 2021<br>(Monday)                           | Project selection process begins                                                                                      |
| April 30, 2021<br>(Friday)                           | Project selection process ends (ICTC staff generates list of projects recommended for funding)                        |
| May 27, 2021<br>(Thursday)                           | TAC reviews and approves project selection recommendations                                                            |
| June 9, 2021<br>(Wednesday)                          | Management Committee reviews and approves project selection recommendations                                           |
| June 23, 2021<br>(Wednesday)                         | ICTC reviews and approves project selection recommendations                                                           |

### FUNDING & PROGRAMMING CYCLE

The 2021 Call for Projects provides three years of new CMAQ and STBG funds for projects in FFYs 2021-22, 2022-23, and 2023-24. ICTC plans to program a total of \$5,222,420 million in CMAQ and \$7,704,064 in STBG funds over the three-year period. The funding estimates were developed by Caltrans and listed in the table below by FFY.

**CMAQ and STP Apportionment Estimates for FY 2021/22 – FY 2023/24**

| Program     | FFY 21-22   | FFY 22-23   | FFY 23-24   | Total        |
|-------------|-------------|-------------|-------------|--------------|
| <b>CMAQ</b> | \$1,741,362 | \$1,740,810 | \$1,740,248 | \$5,222,420  |
| <b>STBG</b> | \$2,570,088 | \$2,568,035 | \$2,565,941 | \$7,704,064  |
| Total       | \$4,311,450 | \$4,308,845 | \$4,306,189 | \$12,926,484 |



### ELIGIBLE PROJECT PHASES

All project phases are eligible for funding under both CMAQ and STBG programs. The phases are:

- Preliminary Engineering (includes both PA&ED and PS&E phases)
- Right-of-way acquisition
- Construction (includes construction engineering)
- Purchase and installation of eligible activities

### LOCAL MATCH REQUIREMENT

The minimum local match requirement is 11.47% for both CMAQ and STBG program funds. Local, state and private funds are eligible local match sources.

### AB 1012 TIMELY USE OF FUNDS

AB 1012 (enacted 1999) requires that state and federal funds be expended in a timely manner. To avoid losing funds to the “use-it-or-lose-it” provisions of AB 1012, project sponsors must “obligate” or encumber project funds on time as proposed in the application or as programmed in the FTIP if different than the date listed in the application. The commitment to deliver projects in a timely manner will be provided through City Council or Board of Supervisors resolution (see section below for additional information).

### COUNCIL/BOARD RESOLUTION

Projects must be approved by the local agency submitting the project application through City Council or Board of Supervisors resolution. Adopted resolutions should be included in the applications. If a resolution has not been adopted by the April 12<sup>th</sup> application deadline, a draft resolution should be included in the application with a note indicating the expected adoption date. Resolutions must indicate:

- Project name and requested amounts by funding source.
- The local match amount and the source and type of funds. If more than one project is included in the resolution, the local match amount and the source and type of funds should be provided for each project.
- Opportunity for public comment was provided at a public meeting.
- Project is in compliance with the local agency’s planning process such as included in the circulation element of the local agency’s general plan.
- Project is included in an adopted pavement management plan (rehabilitation projects only).
- Local agency commits to completing the project based on the project schedule included in the application to avoid losing funds to the “use-it-or-lose-it” provisions of AB 1012.



A sample resolution is provided in Attachment 1.

### SCORING COMMITTEE

The Scoring Committee will evaluate and score the CMAQ and STBG applications. The Scoring Committee will be comprised of the following members:

- Air Pollution Control District staff representative
- ICTC staff representative
- Local agency TAC representative (Note: one representative per local agency; local Agency representatives will not score applications submitted by her/his local agency)

In addition to the above listed Scoring Committee members, a Caltrans District 11 staff representative will participate as a non-scoring member of the Scoring Committee to assist in evaluating the projects.

### PROJECT PRIORITY

Local agencies must rank their projects if more than one application is submitted. The ranking of projects is one of the line items in the application forms.

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## CONGESTION MITIGATION & AIR QUALITY (CMAQ) PROGRAM

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program is a federal program that provides funding for transportation projects to help meet the requirements of the Clean Air Act (CAA) (42 U.S.C. 7401 *et seq.*). Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), or particulate matter (i.e., nonattainment areas), and for areas that were out of compliance but have now met the standards (i.e., maintenance areas). The CMAQ program was established under the Intermodal Surface Transportation Efficiency Act of 1991 (Pub. L. 102-240, 105 Stat. 1914), and most recently reauthorized under the Fixing America's Surface Transportation (FAST) Act in 2015 (Pub. L. 114-94, 129 Stat. 1312).

### PROJECT ELIGIBILITY

Each CMAQ project must meet three basic criteria: ***must be a transportation project, generate an emissions reduction, and located in or benefit a nonattainment or maintenance area.*** CMAQ projects may be located on any public road with no restriction to functional classification (such as with the STBG program where road improvements are restricted to federal-aid roads only). CMAQ funds cannot be used to remove and/or replace existing pavement on or off the federal-aid system. CMAQ funds can be used for activities listed below. For additional information on eligible projects, see Exhibit 1 on the next page that was obtained from: [https://www.fhwa.dot.gov/environment/air\\_quality/cmaq/policy\\_and\\_guidance/2013\\_guidance/index.cfm](https://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/2013_guidance/index.cfm)

- **Capital Investment:** New or expanded transportation projects or programs that reduce emissions including capital investments in transportation infrastructure, congestion relief efforts, vehicle acquisitions, diesel engine retrofits, or other capital projects.
- **Operating Assistance:** For new transit services. Operating assistance includes all costs of providing new transportation services for up to five years.

### EMISSIONS ANALYSIS & COST-EFFECTIVENESS OF PROJECTS

Federal guidelines require that CMAQ funding proposals include an assessment of the project's expected emission reduction benefits and cost-effectiveness. The analysis is required for all CMAQ projects and must be included in application submittals. Applicants are required to use the CMAQ Cost-Effectiveness Analysis Tool provided by the California Air Resources Board to estimate reduction in emissions and cost-effectiveness. The Tool is available at: <https://ww2.arb.ca.gov/resources/documents/congestion-mitigation-and-air-quality-improvement-cmaq-program>



## EXHIBIT 1: ELIGIBLE PROJECTS AND PROGRAMS

**1. Diesel Engine Retrofits & Other Advanced Truck Technologies:** These efforts are defined as vehicle replacement, repowering (replacing an engine with a cleaner diesel engine, alternative fuels, etc.), rebuilding an engine, or other technologies determined by the EPA as appropriate for reducing emissions from diesel engines. This latter point, highlighting developing technologies, establishes a degree of flexibility and a need for periodic adjustment in the definition by the EPA. The legislation defines retrofit projects as applicable to both on-road motor vehicles and non-road construction equipment; the latter must be used in Title 23 projects based in nonattainment or maintenance areas for either PM or ozone. The MAP-21 expanded the prior focus created by the SAFETEA-LU. Specifically, for PM<sub>2.5</sub> areas, diesel retrofits are called out as eligible projects in the Priority Consideration section. Similarly, such efforts are again highlighted in the discussion of the PM<sub>2.5</sub> priority set-aside and emphasized again in the closely related section on construction vehicles and equipment. More than 13 million diesel engines make up the legacy fleet operating in the U.S. The vast majority of these power on-road heavy-duty and medium-duty trucks, locomotives, and off-road construction equipment—all of which may be eligible for CMAQ funding. There are a number of specific project types in the diesel retrofit area for which CMAQ funds are eligible. Assuming all other CMAQ criteria are met, eligible projects could include diesel engine or full vehicle replacement; full engine rebuilding and reconditioning; and purchase and installation of after-treatment hardware, including particulate matter traps and oxidation catalysts, and other technologies; and support for heavy-duty vehicle retirement programs. Project agreements involving replacements for either engines or full vehicles should include a provision for disposal or destruction of the engine block, verification that the engine is no longer contributing emissions in the nonattainment or maintenance area, or for other processes at the State's discretion that track the retirement of the vehicle or engine in accordance with the State's or sub-grantee's program. MAP-21 provided one change to the approach in establishing eligibility for emissions control equipment. After-treatment and other on-board control devices are restricted to those EPA or the California Air Resources Board (CARB) verified and/or technologies as defined in section 791 of the Energy Policy Act of 2005 (42 U.S.C. 16131). Eligible acquisitions or retrofits would be for those capital items used for highway construction projects in PM<sub>2.5</sub> nonattainment or maintenance areas. Equipment or vehicles used predominantly in a maintenance role would not qualify. These would include loaders or backhoes in yard or depot work, tractors assigned to mowing or other median maintenance, impactors or rollers involved in routine work, such as pothole repair, and others. The CMAQ funds may be used to purchase and install emission control equipment on school buses. (Such projects, generally, should be administered by FHWA; see Transit Improvements, below). In addition, although CMAQ funds should not be used for the initial purchase of conventionally fueled airport parking lot shuttles, funds may be used for purchase and installation of after treatment hardware or repowering (with a hybrid drive train, for example). Refueling is not



eligible as a stand-alone project but is eligible if it is required to support the installation of emissions control equipment, repowering, rebuilding, or other retrofits of non-road engines. In addition to equipment and technology, outreach activities that provide information exchange and technical assistance to diesel owners and operators on retrofit options are eligible investments. These projects could include the actual education and outreach program, construction or acquisition of appropriate classroom buildings, and other efforts to promote the use of retrofit technologies. Non-road mobile source projects also are eligible for CMAQ funding. Most notably, a considerable amount of CMAQ support has been directed to locomotive retrofit and the acquisition of clean locomotives, such as railyard switchers and shunters that fit the generator-set criterion (See Freight and Intermodal, Section VII. F.4). The FHWA acknowledges that diesel retrofit projects may include non-road mobile source endeavors, which traditionally have been outside the Federal-aid process. However, the MAP-21 clarifies CMAQ eligibility for non-road diesel retrofit projects. Areas that fund these projects are not required to take credit for the projects in the transportation conformity process. For areas that want to take credit, the EPA developed guidance for estimating diesel retrofit emission reductions and for applying the credit in the SIP and transportation conformity processes.

**2. Idle Reduction:** Idle reduction projects that reduce emissions and are located within, or in proximity to and primarily benefiting, a nonattainment or maintenance area are eligible for CMAQ investment. (The geographic requirement mainly applies to off-board projects, i.e., truck stop electrification (TSE) efforts.) However, if CMAQ funding is used for an on-board project (i.e. auxiliary power units, direct fired heaters, etc.) the vehicle—usually a heavy-duty truck—should travel within, or in proximity to and primarily benefiting, a nonattainment or maintenance area. Idle reduction devices are verified by the EPA. There have been several instances where operating assistance funds have been requested for TSE services. CMAQ funding for TSE projects has been limited to capital costs (i.e. deployment of TSE infrastructure). Operating assistance for TSE projects should not be funded under the CMAQ program since TSE projects generate their own revenue stream and therefore should be able to cover all operating expenses from the accumulated revenue. Commercial idle reduction facilities cannot be located within rest areas of the Interstate right-of-way (ROW).

**3. Congestion Reduction & Traffic Flow Improvements:** Traffic flow improvements may include the following:

a. **Traditional Improvements:** Traditional traffic flow improvements, such as the construction of roundabouts, HOV lanes, left-turn lanes or other managed lanes, are eligible for CMAQ funding provided they demonstrate net emissions benefits through congestion relief.

b. **Intelligent Transportation Systems:** ITS projects, such as traffic signal synchronization projects, traffic management projects, and traveler information systems, can be effective in relieving traffic congestion, enhancing transit bus performance, and improving air quality. The following have the greatest potential for improving air quality:



- Regional multimodal traveler information systems
- Traffic signal control systems
- Freeway management systems
- Electronic toll-collection systems
- Transit management systems
- Incident management programs.

The FHWA has provided a lengthier discussion of the benefits associated with various operational improvements.

c. Value/Congestion Pricing: Congestion pricing is a market-based mechanism that allows tolls to rise and fall depending on available capacity and demand. Tolls can be charged electronically, thereby eliminating the need for full stops at tollbooths. In addition to the benefits associated with reducing congestion, revenue is generated that can be used to pay for a wide range of transportation improvements, including Title 23-eligible transit services in the newly tolled corridor. Parking pricing can include time-of-day parking charges that reflect congested conditions. These strategies should be designed to influence trip-making behavior and may include charges for using a parking facility at peak periods, or a range of employer-based parking cash-out policies that provide financial incentives to avoid parking or driving alone. Parking pricing integrated with other pricing strategies is encouraged. Pricing encompasses a variety of market-based approaches such as:

- HOT lanes, or High Occupancy Toll lanes, on which variable tolls are charged to drivers of low-occupancy vehicles using HOV lanes, such as the "FasTrak" Lanes.
- New variably tolled express lanes on existing toll-free facilities.
- Variable tolls on existing or new toll roads.
- Network-wide or cordon pricing.
- Usage-based vehicle pricing, such as mileage-based vehicle taxation, or pay-per-mile car insurance.

As with any eligible CMAQ project, value pricing should generate an emissions reduction. Marketing and outreach efforts to expand and encourage the use of eligible pricing measures may be funded indefinitely. Eligible expenses for reimbursement include, but are not limited to: tolling infrastructure, such as transponders and other electronic toll or fare payment systems; small roadway modifications to enable tolling, marketing, public outreach, and support services, such as transit in a newly tolled corridor. Innovative pricing approaches yet to be deployed in the U.S. also may be supported through the [Value Pricing Pilot Program](#). Operating expenses for traffic operating centers (TOCs) are eligible for CMAQ funding if they can be shown to produce air quality benefits, and if the expenses are incurred from new or additional





funding if they can be shown to produce air quality benefits, and if the expenses are incurred from new or additional capacity. The operating assistance parameters discussed in Section VII.A.2 apply. Projects or programs that involve the purchase of integrated, interoperable emergency communications equipment are eligible for CMAQ funding.

**4. Freight/Intermodal:** Projects and programs targeting freight capital costs-rolling stock or ground infrastructure-are eligible provided that air quality benefits can be demonstrated. Freight projects that reduce emissions fall generally into two categories: primary efforts that target emissions directly or secondary projects that reduce net emissions. Successful primary projects could include new diesel engine technology or retrofits of vehicles or engines. See discussion in Section VII.F.1. Eligibility under CMAQ is not confined to highway projects, but also applies to non-road mobile freight projects such as rail. Secondary projects reduce emissions through modifications or additions to infrastructure and the ensuing modal shift. Support for an intermodal container transfer facility may be eligible if the project demonstrates reduced diesel engine emissions when balancing the drop-in truck VMT against the increase in locomotive or non-highway activity. Intermodal facilities, such as inland transshipment ports or near/on-dock rail, may generate substantial emissions reductions through the decrease in miles traveled for older, higher-polluting heavy-duty diesel trucks. This secondary, indirect effect on truck traffic and the ensuing drop in diesel emissions help demonstrate eligibility. The transportation function of these freight/intermodal projects should be emphasized. Marginal projects that support freight operations in a very tangential manner are not eligible for CMAQ funding. Warehouse handling equipment, for example, is not an eligible investment of program funds. Warehouses, themselves, or other similar structures, such as transit sheds, bulk silos or other permanent, non-mobile facilities that function more as storage resources are not eligible. However, equipment that provides a transportation function or directly supports this function is eligible, such as railyard switch locomotives or shunters that fall into the generator-set or other clean engine category. Similarly, large-scale container gantry cranes, or other heavy-duty container handling equipment that is a clear link in the intermodal process can be eligible as well. Also, on the ground operations side of aviation, the purchase or retrofit of airport handling equipment can be eligible, including baggage handlers, aircraft tow motors, and other equipment that plays a role in this intermodal link.

**5. Transportation Control Measures (TCM):** Most of the TCMs included in Section 108 of the CAA, listed below, are eligible for CMAQ funding. We would note that one particular CAA TCM, created to encourage removal of pre-1980 light-duty vehicles, is specifically excluded from CMAQ eligibility.

- i. Programs for improved public transit;
- ii. Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or HOV;



- iii. Employer-based transportation management plans, including incentives;
- iv. Trip-reduction ordinances;
- v. Traffic flow improvement programs that reduce emissions;
- vi. Fringe and transportation corridor parking facilities serving multiple-occupancy vehicle programs or transit service;
- vii. Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;
- viii. Programs for the provision of all forms of high-occupancy, shared-ride services;
- ix. Programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- x. Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- xi. Programs to control extended idling of vehicles;
- xii. Reducing emissions from extreme cold-start conditions;
- xiii. Employer-sponsored programs to permit flexible work schedules;
- xiv. Programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for SOV travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity; and
- xv. Programs for new construction and major reconstructions of paths, tracks, or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest.

**6. Transit Improvements:** Many transit projects are eligible for CMAQ funds. The general guideline for determining eligibility is whether the project increases transit capacity and would likely result in an increase in transit ridership and a potential reduction in congestion. As with other types of CMAQ projects, there should be a quantified estimate of the project's emissions benefits accompanying the proposal. The FTA administers most transit projects. For such projects, after the FTA determines a project eligible, CMAQ funds will be transferred, or "flexed," from the FHWA to the FTA, and the project will be administered according to the appropriate FTA program requirements. Certain types of eligible transit projects for which FTA lacks statutory authority, such as diesel retrofit equipment for public school bus fleets, may be the responsibility of the State or other eligible project sponsor and are administered by FHWA.

- a. Facilities: New transit facilities (e.g., lines, stations, terminals, transfer facilities) are eligible if they are associated with new or enhanced public transit, passenger rail, or other similar services. Routine maintenance or rehabilitation of existing facilities is not eligible, as it does not reduce emissions. However, rehabilitation of a facility may be eligible if the vast majority of the project involves physical improvements that will increase transit service capacity. In such cases there should be supporting documentation



showing an expected increase in transit ridership that is more than minimal. If the vast majority of the project involves capacity enhancements, other elements involving refurbishment and replacement-in-kind also are eligible.

b. Vehicles and Equipment: New transit vehicles (bus, rail, or van) to expand the fleet or replace existing vehicles are eligible. Transit agencies are encouraged to purchase vehicles that are most cost-effective in reducing emissions. Diesel engine retrofits, such as replacement engines and exhaust after-treatment devices, are eligible if certified or verified by the EPA or California Air Resources Board (CARB). See discussion in Section VII.F.1. Routine preventive maintenance for vehicles is not eligible as it only returns the vehicles to baseline conditions. Other than diesel engine retrofits, other transit equipment may be eligible if it represents a major systemwide upgrade that will significantly improve speed or reliability of transit service, such as advanced signal and communications systems.

c. Fuel: Fuel, whether conventional or alternative fuel, is an eligible expense only as part of a project providing operating assistance for new or expanded transit service under the CMAQ program. This includes fuels and fuel additives considered diesel retrofit technologies by the EPA or CARB. Purchase of alternative fuels is authorized in some States based on the continuation of a series of exemptions for uses expressly eligible for CMAQ funding under SAFETEA-LU section 1808(k) and certain provisions in subsequent appropriations acts. The maximum allowable assistance level and time limitation described in Section VII.A.2. will apply.

d. Operating Assistance: There are several general conditions for operating assistance eligibility under the CMAQ program (see the November 2013 CMAQ Program Interim Guidance for a complete discussion on CMAQ project eligibility requirements):

- a. Operating assistance is limited to start up operating costs for new transportation services or the incremental costs of expanding such services, including transit, commuter and intercity passenger rail services, intermodal facilities, and travel demand management strategies, including traffic operation centers.
- b. In using CMAQ funds for operating assistance, the intent is to help start up viable new transportation services that can demonstrate air quality benefits and eventually cover costs as much as possible. Other funding sources should supplement and ultimately replace CMAQ funds



for operating assistance, as these projects no longer represent additional, net air quality benefits but have become part of the baseline transportation network. The provisions in 23 U.S.C. 116 place responsibilities for maintenance of transportation facilities on the States. Since facility maintenance is akin to operations, a time-limited period of CMAQ assistance provides adequate incentive and flexibility while not creating a pattern of excessive or even perpetual support.

- c. Operating assistance includes all costs of providing new transportation services, including, but not limited to, labor, fuel, administrative costs, and maintenance.
- d. When CMAQ funds are used for operating assistance, non-Federal share requirements still apply.
- e. With the focus on start-up and recognizing the importance of flexibility in the timing of financial assistance, the 3 years of operating assistance allowable under the CMAQ program may now be spread over a longer period, for a total of up to 5 sequential years of support. Grantees who propose to use CMAQ funding for operating support may spread the third-year amount (an amount not to exceed the greater of year 1 or 2) across an additional 2 years (i.e. years 4 and 5). This approach will provide an incremental, taper-down approach, while other funding is used for a higher proportion of the operating costs as needed. See Table 3 for examples of possible funding allocations. At the conclusion of the 5-year period, operating costs would have to be maintained with non-CMAQ funding. It is anticipated that this approach may enable a transition to more independent system operation. The amounts which apply to years 1 and/or 2 are established at the discretion of the State or local sponsor.

Table 3 - Example Allocations of CMAQ Funds for Operating Assistance

| Example | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---------|--------|--------|--------|--------|--------|-------|
| A       | \$300  | \$300  | \$200  | \$50   | \$50   | \$900 |
| B       | 300    | 300    | 100    | 100    | 100    | 900   |
| C       | 100    | 400    | 200    | 100    | 100    | 900   |

Except as noted in paragraph (f) below, activities that already have received 3 years of operating assistance under prior authorizations of the CMAQ program are not considered to be in a start-up phase and are not eligible for new CMAQ operating assistance or the expanded assistance period.



- f. Section 125 of the 2014 Appropriations Act included changes to the Operating Assistance Section of the CMAQ program (23 USC 149(m)). The changes added new language that specifically prohibits the imposition of a time limitation for operating assistance eligibility on a system "for which CMAQ funding was made available, obligated or expended in fiscal year 2012." The phrase "made available" applies to projects designated for CMAQ operating assistance in statute, or to any commitment by the party that by law selects projects for operating assistance funding so long as it occurred during FY2012. There must be official documentation demonstrating that there was a specific commitment in FY 2012 to provide CMAQ funding for operating assistance for a particular project or service. Such official documentation could include a TIP or STIP, or other State or MPO official records. The specific project or service for which the CMAQ funds are being sought for operating assistance without a time limitation must be clearly identified in this documentation. Transportation services expressly eligible for CMAQ funding under SAFETEA-LU sections 1808(g)-(k) and certain provisions in previous appropriations acts are eligible to use CMAQ funds for operating assistance without time limitations. Consistent with Section IX of the CMAQ Program Interim Guidance, States retain the discretion to decide whether or not to fund the operating assistance.
- g. Elements of operating assistance prohibited by statute or regulation are not eligible for CMAQ participation, regardless of their emissions or congestion reduction potential.

**7. Transit Fare Subsidies:** The CMAQ funds may be used to subsidize regular transit fares in an effort to prevent the NAAQS from being exceeded, but only under the following conditions: The reduced or free fare should be part of a comprehensive area-wide program to prevent such an anticipated exceedance. For example, "Ozone Action" programs vary in scope around the country, but they generally include actions that individuals and employers can take, and they are aimed at all major sources of air pollution, not just transportation. The subsidized fare should be available to the general public and may not be limited to specific groups. It may only be offered during periods of elevated pollution when the threat of exceeding the NAAQS is greatest; e.g., it is not intended for the entire high-ozone season. The fare subsidy proposal should demonstrate that the responsible local agencies will combine the reduced or free fare with a robust marketing program to inform SOV drivers of other transportation options. Because the fare subsidy is not strictly a form of operating assistance, it would not be subject to the 5-year limit.



**8. Bicycle and Pedestrian Facilities and Programs:** Bicycle and pedestrian facilities and programs are included as a TCM in section 108(f)(1)(A) of the CAA (42 U.S.C. 7408(f)(1)(A)). The following are eligible projects:

- Constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips.
- Non-construction outreach related to safe bicycle use.
- Establishing and funding State bicycle/pedestrian coordinator positions for promoting and facilitating nonmotorized transportation modes through public education, safety programs, etc. (Limited to one full-time position per State).

Bicycle and pedestrian programs that are not supported under 23 CFR Part 652, *Pedestrian and Bicycle Accommodations and Projects*, also are not eligible for CMAQ funding. For example, under 23 CFR 652.9(b)(3), a non-construction bicycle project does not include salaries for administration, maintenance costs, and other items akin to operational support under 23 CFR 652.9(b)(3), and, therefore, these are not allowable CMAQ costs. Additional activities related to bicycle and pedestrian programs can be supported by other elements of the Federal-aid highway program. These efforts are described at the FHWA's [Bicycle and Pedestrian Programs Web site](#).

**9. Travel Demand Management:** Travel demand management (TDM) encompasses a diverse set of activities that focus on physical assets and services that provide real-time information on network performance and support better decision making for travelers choosing modes, times, routes, and locations. Such projects can help ease congestion and reduce SOV use-contributing to mobility, while enhancing air quality and saving energy resources. Similar to ITS and Value Pricing, today's TDM programs seek to optimize the performance of local and regional transportation networks. The following activities are eligible if they are explicitly aimed at reducing SOV travel and associated emissions:

- Fringe parking
- Traveler information services
- Shuttle services
- Guaranteed ride home programs
- Carpools, vanpools
- Traffic calming measures
- Parking pricing
- Variable road pricing
- Telecommuting/Teleworking
- Employer-based commuter choice programs.



The CMAQ funds may support capital expenses and, as discussed in Section VII.A.2, up to 5 years of operating assistance to administer and manage new or expanded TDM programs. Marketing and outreach efforts to expand use of TDM measures may be funded indefinitely, but only if they are broken out as distinct line items. Eligible telecommuting activities include planning, preparing technical and feasibility studies, and training. Construction of telecommuting centers and computer and office equipment purchases should not be supported with CMAQ funds.

**10. Public Education and Outreach Activities:** The goal of CMAQ-funded public education and outreach activities is to educate the public, community leaders, and potential project sponsors about connections among trip making and transportation mode choices, traffic congestion, and air quality. Public education and outreach can help communities reduce emissions and congestion by inducing drivers to change their transportation choices. More important, an informed public is likely to support larger regional measures necessary to reduce congestion and meet CAA requirements. A wide range of public education and outreach activities is eligible for CMAQ funding, including activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits, transit "store" operations, and any other activities that help forward less-polluting transportation options. Using CMAQ funds, communities have disseminated many transportation and air quality public education messages, including maintain your vehicle; curb SOV travel by trip chaining, telecommute and use alternate modes; fuel properly; observe speed limits; don't idle your vehicle for long durations; eliminate "jack-rabbit" starts and stops; and others. Long-term public education and outreach can be effective in raising awareness that can lead to changes in travel behavior and ongoing emissions reductions; therefore, these activities may be funded indefinitely.

**11. Transportation Management Associations:** Transportation Management Associations (TMAs) are groups of citizens, firms, or employers that organize to address the transportation issues in their immediate locale by promoting rideshare programs, transit, shuttles, or other measures. The TMAs can play a useful role in brokering transportation services to private employers. Subject to applicable cost principles under 2 CFR Part 225, CMAQ funds may be used to establish TMAs provided that they reduce emissions. Eligible expenses include TMA start-up costs and up to 5 years of operating assistance as discussed in Section VII.A.2. Eligibility of specific TMA activities is addressed throughout this guidance.



**12. Carpooling and Vanpooling:** Eligible activities can be divided into two types of costs: marketing (which applies to both carpools and vanpools) and vehicle (which applies to vanpools only).

a. Carpool/vanpool marketing covers existing, expanded, and new activities designed to increase the use of carpools and vanpools and includes purchase and use of computerized matching software and outreach to employers. Guaranteed ride home programs are also considered marketing tools. Marketing costs may be funded indefinitely.

b. Vanpool vehicle capital costs include purchasing or leasing vans for use in vanpools. Eligible operating costs, limited to 5 years as set forth in Section VII.A.2, empty-seat subsidies, maintenance, insurance, administration, and other related expenses. Prorated cost sharing plans that establish grant proportions for undefined shares of capital and operating costs need to be broken down to the specific components or line items that establish the capital-operating shares.

The CMAQ funds should not be used to buy or lease vans that would directly compete with or impede private sector initiatives. States and MPOs should consult with the private sector prior to using CMAQ funds to purchase vans, and if private firms have definite plans to provide adequate vanpool service, CMAQ funds should not be used to supplant that service. In accordance with 23 U.S.C. 120(c)(1), carpooling and vanpooling activities may be supported with up to 100 percent Federal funding, under certain limitations.

**13. Carsharing:** The MAP-21 specifically highlights carsharing projects in the amended section on traffic demand. These efforts involve the pooling of efficient, low-emission vehicles, provided to travelers who have occasional need for a vehicle but not the constant, daily necessity that demands ownership. As with any CMAQ project, sponsors need to demonstrate an emissions reduction from the carsharing program. If a program-wide emissions reduction cannot be demonstrated, CMAQ funding may be available to support vehicle costs under Alternative Fuels and Vehicles eligibility, discussed in Section VII.F.17.

**14. Extreme Low-Temperature Cold Start Programs:** Projects intended to reduce emissions from extreme cold-start conditions are eligible for CMAQ funding. Such projects include retrofitting vehicles and fleets with water and oil heaters and installing electrical outlets and equipment in publicly owned garages or fleet storage facilities.

**15. Training:** States and MPOs may use Federal-aid funds to support training and educational development for the transportation workforce. Such activities are subject to applicable cost principles in 2 CFR Part 225. The FHWA encourages State and local officials to weigh the air quality benefits of such training against other cost-effective strategies detailed elsewhere in this guidance before using CMAQ funds for this purpose. Training funded with





**16. Inspection/Maintenance (I&M) Programs:** Funds under the CMAQ program may be used to establish either publicly or privately owned I&M facilities. Eligible activities include construction of facilities, purchase of equipment, I&M program development, and one-time start-up activities, such as updating quality assurance software or developing a mechanic training curriculum. The I&M program must constitute new or additional efforts, existing funding (including inspection fees) should not be displaced, and operating expenses are eligible for 5 years as discussed in Section VII.A.2. States or other sponsors planning new or expanded I&M programs that incorporate other elements of a State's vehicle administrative function, e.g. registration, safety inspection, titling, etc., must remove these line items from the CMAQ project. These tasks are not linked to the CMAQ purpose and are, therefore, not allowable costs.

Privately Owned I&M Facilities: In States that rely on privately owned I&M facilities, State or local I&M program-related administrative costs may be funded under the CMAQ program as in States that use public I&M facilities. However, CMAQ support to establish I&M facilities at privately owned stations, such as service stations that own the equipment and conduct emission test-and-repair services, requires a PPP. The establishment of "portable" I&M programs, including remote sensing, is also eligible under the CMAQ program, provided that they are public services, reduce emissions, and do not conflict with statutory I&M requirements or EPA regulations.

**17. Innovative Projects:** State and local organizations have worked with various types of transportation services to better meet the travel needs of their constituents. These innovative projects also may show promise in reducing emissions, but do not yet have supporting data. The FHWA has supported and funded some of these projects as demonstrations to determine their benefits and costs. Such innovative strategies are not intended to bypass the definition of basic project eligibility but seek to better define the projects' future role in strategies to reduce emissions. For a project or program to qualify as an innovative project, it should be defined as a transportation project and be expected to reduce emissions by decreasing VMT, fuel consumption, congestion, or by other factors. The FHWA encourages States and MPOs to creatively address their air quality problems and to consider new services, innovative financing arrangements, PPPs, and complementary approaches that use transportation strategies to reach clean air goals. Given the untried nature of these innovative projects, before-and-after studies should be completed to determine actual project impacts on air quality as measured by net emissions reduced. These assessments should document the project's immediate impacts in addition to long-term benefits. A schedule for completing the study should be a part of the project agreement. Completed studies should be submitted to the FHWA Division office within 3 years of implementation of the project or 1 year after the project's completion, whichever is sooner.



**18. Alternative Fuels and Vehicles:** The FHWA issued a memorandum in April 2011, covering the relationship between the required emissions reduction benefits of alternative fuel vehicles and the associated cost principles at 2 CFR Part 225. Essentially, this guidance illustrates the cost-benefit relationship between different vehicle types and functions and the air quality benefit provided as a cost basis under the CMAQ program. The memorandum, outlining the requirements in 23 U.S.C. 149, supports eligibility only for the incremental cost, limited to the marginal emissions-reducing elements of the alternative fuel vehicles that are acquired through PPPs or that are purchased by public sponsors. Program funds may be used to support projects involving the alternative or renewable fuels defined in the Energy Policy Act of 1992 or the Energy Independence and Security Act of 2007. All standard eligibility criteria apply. Aside from fuel acquisitions that are part of a transit operating support effort, stand-alone purchase of any fuel-alternative or otherwise-is not an eligible CMAQ cost. However, the few exceptions provided by Section 1808(k) of SAFETEA-LU continue under MAP-21, subject to the limitation on operating assistance as described in Section VII.A.2. Generally, CMAQ support for alternative fuel vehicle projects can be broken into the following areas:

Infrastructure: Except as noted below, establishing publicly owned fueling facilities and other infrastructure needed to fuel alternative-fuel vehicles is an eligible expense, unless privately-owned fueling stations are in place and reasonably accessible. Fueling facilities can dispense one or more of the alternative fuels identified in section 301 of the 1992 Energy Policy Act or biodiesel or provide recharging for electric vehicles. Additionally, CMAQ funds may support converting a private fueling facility to support alternative fuels through a public-private partnership agreement. In accordance with 23 U.S.C. 149(c)(2), and 23 U.S.C. 111, regarding the prohibition of commercial activities in the Interstate ROW, CMAQ-funds may be used to establish or support refueling facilities within the Interstate ROW, providing these services are offered at no charge.

Non-transit Vehicles: The CMAQ funds may be used to purchase publicly owned alternative fuel vehicles, including passenger vehicles, service trucks, street cleaners, and others. However, only publicly owned vehicles providing a dominant transportation function can be fully funded, such as paratransit vans, incident management support vehicles, refuse haulers, and others. Costs associated with converting fleets to run on alternative fuels are also eligible. When non-transit vehicles are purchased through PPPs, only the cost difference between the alternative fuel vehicles and comparable conventional fuel vehicles is eligible. Such vehicles should be fueled by one of the alternative fuels identified in section 301 of the 1992 Energy Policy Act or biodiesel. Eligible projects also include alternatives to diesel engines and vehicles. Alternative fuel vehicle projects that are implemented as diesel retrofits and involve the replacement of an operable engine-not standard fleet turnover-would be eligible for full Federal participation, i.e. an 80 percent Federal share of the full vehicle cost.



Hybrid Vehicles: Although not defined by the Energy Policy Act of 1992 as alternative fuel vehicles, certain hybrid vehicles that have lower emissions rates than their non-hybrid counterparts may be eligible for CMAQ investment. Hybrid vehicle models that are in part the focus of State legislation addressing HOV exemptions for alternative fuel and low emissions vehicles are considered eligible for CMAQ support. Other hybrid vehicles will be assessed on a case specific basis, as there is no specific EPA regulation available to rate the lower emissions and energy efficiency advantages of the models involved. Projects involving heavier vehicles, including refuse haulers and delivery trucks, also may be appropriate for program support. Eligibility should be based on a comparison of the emissions projections of these larger candidate vehicles and other comparable models.

### Projects Ineligible for CMAQ Funding

The following projects are ineligible for CMAQ funding:

1. Light-duty vehicle scrappage programs.
2. Projects that add new capacity for SOVs are ineligible for CMAQ funding unless construction is limited to high-occupancy vehicle (HOV) lanes. This HOV lane eligibility includes the full range of HOV facility uses authorized under 23 U.S.C 166, such as high-occupancy toll (HOT) and low-emission vehicles.
3. Routine maintenance and rehabilitation projects (e.g., replacement-in-kind of track or other equipment, reconstruction of bridges, stations, and other facilities, and repaving or repairing roads) are ineligible for CMAQ funding as they only maintain existing levels of highway and transit service, and therefore do not reduce emissions.
4. Administrative costs of the CMAQ program may not be defrayed with program funds, e.g., support for a State's "CMAQ Project Management Office" is not eligible.
5. Projects that do not meet the specific eligibility requirements of Titles 23 and 49, United States Code, are ineligible for CMAQ funds.
6. Stand-alone projects to purchase fuel.
7. Models and Monitors-Acquisition, operation, or development of models or monitoring networks are not eligible for CMAQ funds. As modeling or monitoring emissions, traffic operations, travel demand or other related variables do not directly lead to an emissions reduction, these activities or acquisitions are not eligible. Such efforts may be appropriate for Federal planning funds.
8. Litigation costs surrounding CMAQ or other Federal-aid projects.



## PROJECT SCORING CRITERIA

**General Intent:** The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (both PM<sub>10</sub> and PM<sub>2.5</sub>). The ICTC CMAQ program is designed to create a balanced program of transportation projects that improve air quality and the flow of traffic. Major emphasis is placed on projects that support alternative modes of transportation, reduce PM-10 emissions, and improve the flow of traffic. ICTC has developed the following project category funding targets aimed at developing a balanced CMAQ program.

### CMAQ PROJECT CATEGORY TARGETS

| Project Category                     | Percentage  | Funding Targets    |
|--------------------------------------|-------------|--------------------|
| Transit Improvements & Miscellaneous | 15%         | \$783,363          |
| Traffic Flow Improvements            | 30%         | \$1,566,726        |
| Pedestrians & Bicycle Improvements   | 15%         | \$783,363          |
| PM-10 Reduction                      | 40%         | \$2,088,968        |
| <b>Total</b>                         | <b>100%</b> | <b>\$5,222,420</b> |

The amount of \$5,222,420 listed in the table above is the total three-year estimate of CMAQ funds available for programming in FFYs 2021-22, 2022-23, and 2023-24. The scoring criteria to rank CMAQ projects is presented in the table below.

### CMAQ PROJECT SCORING CRITERIA

| Points           | Criteria Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (0 to 20 points) | <p><b>Congestion Relief</b> – Projects that reduce congestion or increase service capacity or reliability as follows:</p> <p><u>Transit Projects</u></p> <p><b>High Impact:</b> Projects that significantly reduce transit vehicle crowding or significantly increase service capacity or service reliability. Projects that are Transportation Control measures or reduce travel time; bus interconnect or fare coordination projects; bus turnouts at major intersections; and intermodal facilities that accommodate major transfers.</p> <p><b>Medium Impact:</b> Projects that moderately reduce transit vehicle crowding or moderately increase service capacity or service reliability; interconnect/fare coordination projects with moderate impact; general bus turnouts; and intermodal facilities that accommodate some transfers.</p> <p><b>Low Impact:</b> Projects that increase passenger comfort or convenience; bike racks.</p> |



|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | <p><b><u>Road Projects</u></b></p> <p><b>High Impact:</b> Projects that are Transportation Control Measures; signal coordination projects with multiple signals (&gt;3); traffic operation system projects; gap closures; traffic flow improvements; and Intersection improvements including left turn packets.</p> <p><b>Medium Impact:</b> Signal coordination projects (2-3 signals); and park and ride lots.</p> <p><b>Low Impact:</b> New signals where none currently exist and where warranted by volume or delay; ramp metering with HOV bypass when demonstrated not to adversely affect surface streets.</p> <p><b><u>Bicycle &amp; Pedestrian Projects</u></b></p> <p><b>High Impact:</b> Projects that are Transportation Control Measures; facilities that will primarily serve commuters and/or school sites; and new sidewalks where none exist.</p> <p><b>Medium Impact:</b> Public educational, promotional, and safety programs that promote and facilitate increased use of non-motorized modes of transportation.</p> <p><b>Low Impact:</b> Bicycle and pedestrian facilities for recreation and commuters; sidewalk upgrades; signage.</p> |
| (0 to 20 points) | <p><b>Emissions Reduction</b> – Projects will be evaluated on a relative basis (i.e., how projects compare to each other) based on total emissions (ROG+NOx+PM10+CO) reduced in pounds per year. Applicants are required to use the CMAQ Cost-Effectiveness Analysis Tool provided by the California Air Resources Board (CARB) to estimate reduction in emissions. The Tool is available at:<br/> <a href="https://ww2.arb.ca.gov/resources/documents/congestion-mitigation-and-air-quality-improvement-cmaq-program">https://ww2.arb.ca.gov/resources/documents/congestion-mitigation-and-air-quality-improvement-cmaq-program</a>.</p> <p>The results of the analysis must be attached to the application.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (0 to 20 points) | <p><b>Cost-Effectiveness</b> – Projects will be evaluated on a relative basis (i.e., how projects compare to each other) based on <i>CMAQ dollars per pound of total emissions (ROG+NO+PM10) reduced</i> as calculated by the CARB Cost-Effectiveness Analysis Tool. Projects with lower CMAQ dollars/lbs. are more cost-effective than projects with higher CMAQ dollars/lbs. Note that CO is not included in the calculation to determine cost-effectiveness.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| (0 to 20 points) | <p><b>Project Readiness / Ability to Deliver</b> – Project milestone dates are fully identified in the application for all project phases including Preliminary Engineering (PA&amp;ED and PS&amp;E) ROW acquisition and Construction as appropriate for the project. Project schedules will be used to help determine project readiness. A description of proposed activities to ensure and/or accelerate completion of the project as proposed in the schedules should be provided.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



|                  |                                                                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (0 to 20 points) | <b>Factors of Overriding Concern</b> – The Evaluation Committee may use this category to consider factors of overriding concern including but not limited to projects of regional significance, timely use of funds, project delivery requirements, leveraging additional funding sources, etc. |
| 100 points total |                                                                                                                                                                                                                                                                                                 |

The CMAQ Project Application form is provided on the next page.

DRAFT



## CMAQ PROJECT APPLICATION FORM

**Agency:**

**Project Title:**

**Project Priority** (if agency submits more than one project i.e. 1 of 2): \_\_\_ of \_\_\_

Select the project category from the drop-down box below titled “Choose an item”

**Project Category**

**Air Quality Screening Criteria Code:** Select the applicable Air Quality Screening Code(s) for the project from the list provided in Attachment 2.

Enter the amount of CMAQ Program funds requested (in whole numbers) in the box below by project phase and FFY of obligation (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase “Preliminary Engineering (PE)”; Construction Engineering should be included with Construction if applicable; For bus purchases, add funding in Construction).

|    | Project Phase | CMAQ Amount Requested | FFY |
|----|---------------|-----------------------|-----|
| PE | PA&ED         |                       |     |
|    | PS&E          |                       |     |
|    | ROW           |                       |     |
|    | CON           |                       |     |
|    | Total         |                       |     |

1. Provide a detailed description of the project including Purpose and Need and Scope of Work. For Transit bus or vehicle purchases indicate whether vehicles are replacements or for new or expanded service (include fuel type of the new vehicles and buses to be replaced, as applicable).



2. Describe the location of the project including route number, post miles, street name(s), project limits, and project segment length, as applicable. Attach photos, maps, and diagrams of the project area or facility as appropriate. For traffic signal projects, attach Warrant Study calculations including level of service and traffic volumes on each leg.

3. Provide the Accident Rate for project road segments or intersections associated with the project, as applicable. For Highway/Road segments use Accidents/Million Vehicle Miles (MVM) and three years of data; for Intersections use Accidents/Million Vehicle (MV) entering the intersection and five years of data; and for Ramps use Accidents/Million Vehicle (MV) traversing the ramps and 5 years of data.

4. *Bicycle, Pedestrian, Transit, Signal and Road Projects:* Provide Average Daily Traffic volume(s) on all roads associated with the project.

5. Use the CMAQ Cost-Effectiveness Analysis Tool provided by the California Air Resources Board (CARB) to estimate reduction in emissions and cost-effectiveness. The Tool is available at: <https://ww2.arb.ca.gov/resources/documents/congestion-mitigation-and-air-quality-improvement-cmaq-program>. Attach a copy of the analysis to the application.

- a. Enter the amount of emissions reduced for ROG, NOx, PM2.5, CO (when applicable) and total emissions in pounds per year in the table below. Attach a copy of the analysis to the application.

**EMISSIONS REDUCED (POUNDS/YEAR)**

| ROG | NOx | PM2.5 | CO | Total |
|-----|-----|-------|----|-------|
|     |     |       |    |       |





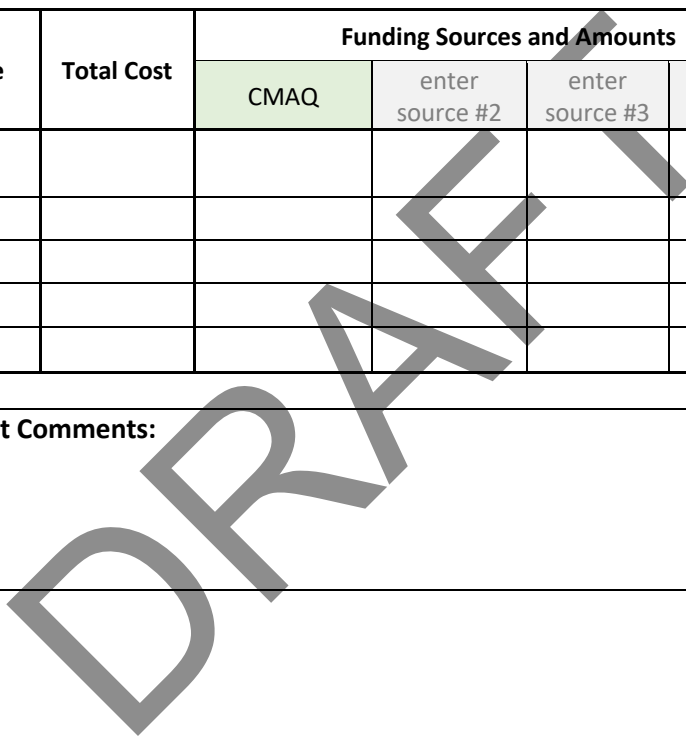
b. Enter the CMAQ cost-effectiveness (dollars per pound) calculated by the CMAQ Cost-Effectiveness Analysis tool.

6. Enter the total project budget in the box below. Include all funding sources by phase. In the project budget comment section, describe which funds have and have not been secured for the project (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)", use PA&ED year of obligation; For bus purchases, add dollars in construction; the minimum Local Match is 11.47%).

**Project Budget**

|    | Project Phase         | Total Cost | Funding Sources and Amounts |                 |                 |                 | FFY of Obligation |
|----|-----------------------|------------|-----------------------------|-----------------|-----------------|-----------------|-------------------|
|    |                       |            | CMAQ                        | enter source #2 | enter source #3 | enter source #4 |                   |
| PE | Environmental (PA&ED) |            |                             |                 |                 |                 |                   |
|    | Design (PS&E)         |            |                             |                 |                 |                 |                   |
|    | Right-of-Way          |            |                             |                 |                 |                 |                   |
|    | Construction          |            |                             |                 |                 |                 |                   |
|    | <b>Total</b>          |            |                             |                 |                 |                 |                   |

**Project Budget Comments:**





7. Add project milestone dates in the box below. Select an environmental document type from the drop-down box titled “Choose an item” (CEQA/NEPA format). Project milestone dates should be consistent with the FFY Obligation information included in the Project Budget in Section 1 h. of the application (notes: FFY begins October 1 and ends September 30; The “Begin Environmental (PA&ED) phase” date represents the obligation date for PE; for purchase projects, add dates in Construction phase).

| Project Milestone                                                   |                      |                 | Date |
|---------------------------------------------------------------------|----------------------|-----------------|------|
| Begin Environmental (PA&ED) Phase                                   | <b>Document Type</b> | Choose an item. |      |
| End Environmental Phase (PA&ED Milestone)                           |                      |                 |      |
| Begin Design (PS&E) Phase                                           |                      |                 |      |
| End Design Phase (Ready to List for Advertisement Milestone)        |                      |                 |      |
| Begin Right of Way Phase                                            |                      |                 |      |
| End Right of Way Phase (Right of Way Certification Milestone)       |                      |                 |      |
| Begin Construction Phase (Contract Award Milestone)                 |                      |                 |      |
| End Construction Phase (Construction Contract Acceptance Milestone) |                      |                 |      |
| Begin Closeout Phase                                                |                      |                 |      |
| End Closeout Phase (Closeout Report)                                |                      |                 |      |

**Authorized By** \_\_\_\_\_  
Authorized Signature (as authorized in the Resolution)

**Date:**



## SURFACE TRANSPORTATION BLOCK GRANT (STBG) PROGRAM

The Surface Transportation Block Grant (STBG) Program is a federal-aid transportation program authorized under the Fixing America's Surface Transportation (FAST) Act (Pub. L. 114-94) signed by the President on December 4, 2015 for transportation improvement projects. The FAST Act changed the name of the program from "Surface Transportation Program (STP)" to STBG. The purpose of the program is to provide flexibility in local transportation decisions and eligibility to address transportation needs.

### ELIGIBILITY: LOCATION OF PROJECTS

STBG funded projects must be located on roads functionally classified as Urban Minor Collector or higher (Major Collector, Minor Arterial, Other Principal Arterial, Other Freeway or Expressway, and Interstate). Roads classified as Local Road or Rural Minor Collector are not eligible for STBG funds with a few exceptions as described in item 1.a of Exhibit 1: *Eligible Projects and Activities* on the next page.

California Road Systems (CRS) functional classification maps are available at

<https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538>

### ELIGIBILITY: PROJECT TYPE

A wide variety of transportation improvements are eligible under the STBG Program including:

- Road construction, reconstruction, rehabilitation and resurfacing
- Bicycle and pedestrian facilities including recreational trails
- Road and transit safety projects including railroad/highway grade separation
- Capital and operating cost for traffic management systems
- Intelligent Transportation Systems
- Environmental mitigation
- Planning programs

A more detailed description of eligible projects and activities is provided in Exhibit 2 on the next page. The information was obtained from the Federal Highway Administration (FHWA) website available at <https://www.fhwa.dot.gov/specialfunding/stp/160307.cfm>



## EXHIBIT 2: ELIGIBLE PROJECTS AND ACTIVITIES

### 1. ELIGIBILITY

- a. Location of Projects (23 U.S.C. 133(c)): STBG projects may not be undertaken on a road functionally classified as a local road or a rural minor collector unless the road was on a Federal-aid highway system on January 1, 1991, except-

(1) For a bridge or tunnel project (other than the construction of a new bridge or tunnel at a new location);

(2) For a project described in 23 U.S.C. 133(b)(4)-(11) and described below under "Eligible Activities" (b)(4) through (11);

(3) For transportation alternatives projects described in 23 U.S.C. 101(a)(29) before enactment of the FAST Act (these are described in 23 U.S.C. 133(h) and in separate TA Set-Aside guidance.); and

(4) As approved by the Secretary.

- b. Eligible Activities (23 U.S.C. 133(b)): Subject to the location of projects requirements in paragraph (a), the following eligible activities are listed in 23 U.S.C. 133(b):

(1) Construction, as defined in 23 U.S.C. 101(a)(4), of the following:

i. Highways, bridges, and tunnels, including designated routes of the Appalachian development highway system and local access roads under 40 U.S.C. 14501;

ii. Ferry boats and terminal facilities eligible under 23 U.S.C. 129(c);

iii. transit capital projects eligible under chapter 53 of title 49, United States Code;

iv. Infrastructure-based intelligent transportation systems capital improvements, including the installation of vehicle-to-infrastructure communication equipment;

v. Truck parking facilities eligible under Section 1401 of MAP-21 (23 U.S.C. 137 note); and

vi. Border infrastructure projects eligible under Section 1303 of SAFETEA- LU (23 U.S.C. 101 note).

(2) Operational improvements and capital and operating costs for traffic monitoring, management, and control facilities and programs. Operational improvement is defined in 23 U.S.C. 101(a)(18).

(3) Environmental measures eligible under 23 U.S.C. 119(g), 328, and 329, and transportation control measures listed in Section 108(f)(1)(A) (other than clause (xvi) of that section) of the Clean Air Act (42 U.S.C. 7408(f)(1)(A)).

(4) Highway and transit safety infrastructure improvements and programs, including railway-highway grade crossings.

(5) Fringe and corridor parking facilities and programs in accordance with 23 U.S.C. 137 and carpool projects in accordance with 23 U.S.C. 146. Carpool project is defined in 23 U.S.C. 101(a)(3).



(6) Recreational trails projects eligible under 23 U.S.C. 206, pedestrian and bicycle projects in accordance with 23 U.S.C. 217 (including modifications to comply with accessibility requirements under the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.)), and the Safe Routes to School Program under Section 1404 of SAFETEA-LU (23 U.S.C. 402 note).

(7) Planning, design, or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

(8) Development and implementation of a State asset management plan for the National Highway System (NHS) and a performance-based management program for other public roads.

(9) Protection (including painting, scour countermeasures, seismic retrofits, impact protection measures, security countermeasures, and protection against extreme events) for bridges (including approaches to bridges and other elevated structures) and tunnels on public roads, and inspection and evaluation of bridges and tunnels and other highway assets.

(10) Surface transportation planning programs, highway and transit research and development and technology transfer programs, and workforce development, training, and education under chapter 5 of title 23, United States Code.

(11) Surface transportation infrastructure modifications to facilitate direct intermodal interchange, transfer, and access into and out of a port terminal.

(12) Projects and strategies designed to support congestion pricing, including electronic toll collection and travel demand management strategies and programs.

(13) Upon request of a State and subject to the approval of the Secretary, if Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance is approved for an STBG-eligible project, then the State may use STBG funds to pay the subsidy and administrative costs associated with providing Federal credit assistance for the projects.

(14) The creation and operation by a State of an office to assist in the design, implementation, and oversight of public-private partnerships eligible to receive funding under title 23 and chapter 53 of title 49, United States Code, and the payment of a stipend to unsuccessful private bidders to offset their proposal development costs, if necessary to encourage robust competition in public-private partnership procurements.

(15) Any type of project eligible under 23 U.S.C. 133 as in effect on the day before the FAST Act was enacted. Among these are:

i. Replacement of bridges with fill material;

ii. Training of bridge and tunnel inspectors;

iii. Application of calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and deicing compositions for bridges (and approaches to bridges and other elevated structures) and tunnels;



- iv. Projects to accommodate other transportation modes continue to be eligible pursuant to 23 U.S.C. 142(c) if such accommodation does not adversely affect traffic safety;
- v. Transit capital projects eligible for assistance under chapter 53 of title 49, United States Code, including vehicles and facilities (publicly or privately owned) that are used to provide intercity passenger bus service;
- vi. Approach roadways to ferry terminals to accommodate other transportation modes and to provide access into and out of the ports;
- vii. [Transportation alternatives](#) previously described in 23 U.S.C. 101(a)(29) and described in 23 U.S.C. 213;
- viii. Projects relating to intersections having disproportionately high accident rates, high levels of congestion (as evidenced by interrupted traffic flow at the intersection and a level of service rating of "F" during peak travel hours, calculated in accordance with the Highway Capacity Manual), and are located on a Federal-aid highway;
- ix. Construction and operational improvements for any minor collector if the minor collector and the project to be carried out are in the same corridor and in proximity to an NHS route; the construction or improvements will enhance the level of service on the NHS route and improve regional traffic flow; and the construction or improvements are more cost-effective, as determined by a benefit-cost analysis, than an improvement to the NHS route;
- x. Workforce development, training, and education activities discussed in 23 U.S.C. 504(e);
- xi. Advanced truck stop electrification systems. Truck stop electrification system is defined in 23 U.S.C. 101(a)(32);
- xii. Installation of safety barriers and nets on bridges, hazard eliminations, projects to mitigate hazards caused by wildlife;
- xiii. Electric vehicle and natural gas vehicle infrastructure in accordance with 23 U.S.C. 137;
- xiv. Data collection, maintenance, and integration and the costs associated with obtaining, updating, and licensing software and equipment required for risk-based asset management and performance-based management, and for similar activities related to the development and implementation of a performance-based management program for other public roads;
- xv. Construction of any bridge in accordance with 23 U.S.C. 144(f) that replaces any low water crossing (regardless of the length of the low water crossing); any bridge that was destroyed prior to January 1, 1965; any ferry that was in existence on January 1, 1984; or any road bridge that is rendered obsolete as a result of a Corps of Engineers flood control or channelization project and is not rebuilt with funds from the Corps of Engineers. Not subject to the Location of Project requirement in 23 U.S.C. 133(c); and
- xvi. Actions in accordance with the definition and conditions in 23 U.S.C. 144(g) to preserve or reduce the impact of a project on the historic integrity of a historic bridge if the load capacity and safety features of the historic bridge are adequate to serve the intended use for the life of the historic bridge. Not subject to the Location of Project requirement in 23 U.S.C. 133(c).



## PROJECT SCORING CRITERIA

The criteria for scoring STBG projects are summarized in the table below. The criteria and points remain unchanged from the 2018 STBG Guidelines.

### **STBG PROJECT SCORING CRITERIA**

| Criteria                                         | Criteria Description                                                                                                                                                                                                                                                           |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community Benefit</b><br>(0 to 30 points)     | Project generates social benefits such as increased safety, employment, reduces vehicle emissions, improves connectivity between communities, improves aesthetics, etc.                                                                                                        |
| <b>Project Readiness</b><br>(0 to 40 points)     | Project milestone dates are fully identified in the application for all project phases including Preliminary Engineering (PA&ED and PS&E) ROW acquisition and Construction as appropriate for the project. Project schedules will be used to help determine project readiness. |
| <b>Regional Significance</b><br>(0 to 20 points) | Project is consistent with adopted local and regional planning documents such as the 20-year Local Transportation Plan, the Regional Transportation Plan, etc.                                                                                                                 |
| <b>Continuity</b><br>(0 to 10 points)            | Project provides continuity of transportation infrastructure between jurisdictions. Project received funds for earlier project phase(s).                                                                                                                                       |
| 100 points total                                 |                                                                                                                                                                                                                                                                                |

## PROJECT APPLICATION FORM

The 2021 Call for Projects application form for STBG projects is provided on the next page. The application instructions are included in the application form.



## STBG PROJECT APPLICATION FORM

**Agency:**

**Project Title:**

**Project Priority** (if agency submits more than one project i.e. 1 of 2): \_\_\_ of \_\_\_

**Enter the amount of STBG Program funds requested (in whole numbers) in the box below by project phase and FFY of obligation** (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)"; Construction Engineering should be included with Construction if applicable).

|    | Project Phase | STBG Amount Requested | FFY |
|----|---------------|-----------------------|-----|
| PE | PA&ED         |                       |     |
|    | PS&E          |                       |     |
|    | ROW           |                       |     |
|    | CON           |                       |     |
|    | Total         |                       |     |

### Baseline Screening Criteria

Check if true:

- California Road Systems (CRS) Map that identifies the project location is attached to the application.**
- City Council or County Board of Supervisors Resolution is attached to the application.**

Resolution approved on \_\_\_\_\_

**Resolution indicates:**

- Opportunity for public comment was provided at Council/Board meeting.
- Identification of specific local match amount, and, source or type of any other funds used to leverage the project.
- Compliance with the circulation element of the agency's general plan.
- Confirmation that a pavement management plan is in place for rehab projects.

Comments:



**SECTION 1: GENERAL INFORMATION (ZERO POINTS)**

- a. Describe the project and the transportation issue or problem the project will improve

- b. Describe the location of the project including project limits

- c. Describe the project scope and how the project will improve the transportation issue or problem

- d. What is the functional classification of the road?

- e. Does the project expand capacity?

- f. What is the condition of the existing facility (if applicable)?

- g. Describe the consequences, if any, of not completing the project.



- h. Enter the total project budget in the box below. Include all funding sources by phase. In the project budget comment section, describe which funds have and have not been secured for the project (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)", use PA&ED year of obligation).

### Project Budget

|    | Project Phase         | Total Cost | Funding Sources and Amounts |                 |                 | FFY of Obligation |
|----|-----------------------|------------|-----------------------------|-----------------|-----------------|-------------------|
|    |                       |            | STBG                        | enter source #2 | enter source #3 |                   |
| PE | Environmental (PA&ED) |            |                             |                 |                 |                   |
|    | Design (PS&E)         |            |                             |                 |                 |                   |
|    | Right-of-Way          |            |                             |                 |                 |                   |
|    | Construction          |            |                             |                 |                 |                   |
|    | <b>Total</b>          |            |                             |                 |                 |                   |

**Project Budget Comments:**

## SECTION 2: COMPETITIVE QUESTIONS (100 POINTS MAX.)

### 1. Community Benefits (30 points max.)

Describe the benefits that would be generated by the project for the community including but not limited to improving safety, increasing employment, reducing emissions, improving connectivity between communities, improving aesthetics, etc. Provide supporting documentation as an attachment.



**2. Project Readiness** (40 points max.)

Add project milestone dates in the box below. Select an environmental document type from the drop-down box titled “Choose an item” (CEQA/NEPA format). Project milestone dates should be consistent with the FFY Obligation information included in the Project Budget in Section 1 h. of the application (notes: FFY begins October 1 and ends September 30; The “Begin Environmental (PA&ED) phase” date represents the obligation date for PE).

| Project Milestone                                                   |                      |                 | Date |
|---------------------------------------------------------------------|----------------------|-----------------|------|
| Begin Environmental (PA&ED) Phase                                   | <b>Document Type</b> | Choose an item. |      |
| End Environmental Phase (PA&ED Milestone)                           |                      |                 |      |
| Begin Design (PS&E) Phase                                           |                      |                 |      |
| End Design Phase (Ready to List for Advertisement Milestone)        |                      |                 |      |
| Begin Right of Way Phase                                            |                      |                 |      |
| End Right of Way Phase (Right of Way Certification Milestone)       |                      |                 |      |
| Begin Construction Phase (Contract Award Milestone)                 |                      |                 |      |
| End Construction Phase (Construction Contract Acceptance Milestone) |                      |                 |      |
| Begin Closeout Phase                                                |                      |                 |      |
| End Closeout Phase (Closeout Report)                                |                      |                 |      |

**3. Regional Significance** (20 points max.)

Describe the regional significance of the project as identified in approved public documents including but not limited to adopted planning documents such as the 20 Year Local Transportation Plan and the Regional Transportation Plan, traffic analysis reports, and project study reports. Attach supporting documentation.

**4. Continuity** (10 points max.)

Explain if the project has received STP/STBG funds (or other ICTC programmed funds) in previous years for earlier project phases, and why the project should receive continued support. Also explain if the project would provide continuity of transportation infrastructure or service between jurisdictions. Attach supporting documentation.



DRAFT

Authorized By \_\_\_\_\_  
Authorized Signature (as authorized in the Resolution)

Date:



## ATTACHMENT 1: SAMPLE RESOLUTION

**BEFORE THE  
(NAME OF CITY/COUNTY/DISTRICT COUNCIL/BOARD)  
RESOLUTION NO. 2019-\_\_**

In the Matter of:

ICTC RESOLUTION SUPPORTING  
(SURFACE TRANSPORTATION BLOCK GRANT (STBG) / CONGESTION MITIGATION AND AIR QUALITY (CMAQ))  
FUNDING, PROJECT MILESTONE DATES, AND TIMELY USE OF FUNDS.

WHEREAS, the (City/County/District) is eligible to apply for and receive Federal and State transportation funds including (STBG/CMAQ) funds; and

WHEREAS, AB 1012 requires that state and federal funds be expended in a timely manner; and

WHEREAS, the (City/County/District) desires to ensure that its projects are delivered in a timely manner to avoid losing funds for non-delivery; and

WHEREAS, it is understood by the (City/County/District) that failure for not meeting project milestone dates for any phase of a project may jeopardize federal or state funding to the Region; and

NOW THEREFORE BE IT RESOLVED, that the (Council/Board/District) hereby agrees to ensure that all project milestone schedules for all project phases will be met or exceeded, and:

- a. The opportunity for public comment was provided at a public meeting;
- b. Local funds in the amount of \$ \_\_\_\_\_ from \_\_\_\_\_ (source and type of funds) will be used to leverage the federal funds for the project;
- c. Project(s) is consistent with the \_\_\_\_\_ (plan: i.e., circulation element of the agency's general plan) planning process;
- d. Project(s) is consistent with the adopted pavement management plan (for rehabilitation projects only).

BE IT FURTHER RESOLVED, that failure to meet project milestone schedules may be deemed as sufficient cause for the Imperial County Transportation Commission Policy Board to terminate funding and reprogram the funds as deemed necessary.

THE FOREGOING RESOLUTION was passed and adopted by the (Council/Board/District) on \_\_\_\_\_, 2021.

AYES:

NOES:

ABSTAIN:

ABSENT

ATTEST:

Signed: \_\_\_\_\_

Mayor, City of (-----)

Chair, Board of (-----)

Chair, (-----) Board

I hereby certify that the foregoing is a true copy of a resolution of the (Council/Board/District) duly adopted at a regular meeting thereof held on the \_\_\_\_\_ day of \_\_\_\_\_, 2021.

Signed: \_\_\_\_\_

(-----, City/County Clerk)



## ATTACHMENT 2: CMAQ AIR QUALITY SCREENING CODES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1.00 SAFETY PROGRAMS</b></p> <ul style="list-style-type: none"> <li>1.01 Railroad/Highway Crossing</li> <li>1.02 Hazard Elimination Program</li> <li>1.03 Safer non-Federal-aid system roads</li> <li>1.04 Shoulder improvements</li> <li>1.05 Increasing sight distance</li> <li>1.06 Safety Improvement Program</li> <li>1.07 Traffic control devices and operating assistance other than signalization projects</li> <li>1.08 Railroad/highway crossing warning devices</li> <li>1.09 Guardrail, median barriers, crash cushions</li> <li>1.10 Pavement resurfacing and/or rehabilitation</li> <li>1.11 Pavement marking demonstration</li> <li>1.12 Emergency Relief (23 U.S.C. 125)</li> <li>1.13 Fencing</li> <li>1.14 Skid treatments</li> <li>1.15 Safety roadside rest areas</li> <li>1.16 Adding medians</li> <li>1.17 Truck climbing lanes outside the urbanized area</li> <li>1.18 Lighting improvements</li> <li>1.19 Widening narrow pavements or reconstructing bridges (no additional travel lanes)</li> <li>1.20 Emergency truck pullovers</li> </ul> <p><b>2.00 MASS TRANSIT</b></p> <ul style="list-style-type: none"> <li>2.01 Operating assistance to transit agencies</li> <li>2.02 Purchase of support vehicles</li> <li>2.03 Rehabilitation of transit vehicles</li> <li>2.04 Purchase of office, shop and operating equipment for existing facilities</li> <li>2.05 Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.)</li> <li>2.06 Construction or renovation of power, signal, and communications systems</li> <li>2.07 Construction of small passenger shelters and information kiosks</li> <li>2.08 Reconstruction or renovation of transit buildings and structures</li> <li>2.09 Rehabilitation or reconstruction of track structures, track, and track-bed in existing right-of-way</li> <li>2.10 Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of fleet</li> <li>2.11 Construction of new bus, rail storage/maintenance facilities categorically excluded (23 CFR 771)</li> </ul> | <p><b>3.00 AIR QUALITY</b></p> <ul style="list-style-type: none"> <li>3.01 Continuation of ridesharing and van-pooling promotion activities at current levels</li> <li>3.02 Bicycle and pedestrian facilities</li> </ul> <p><b>4.00 LANDSCAPING/SIGNS</b></p> <ul style="list-style-type: none"> <li>4.01 Specific activities that do not involve or lead directly to construction</li> <li>4.05 Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action</li> <li>4.06 Noise attenuation</li> <li>4.07 Emergency or hardship advance land acquisitions [23 CFR 712.204(d)].</li> <li>4.08 Acquisition of scenic easements</li> <li>4.09 Plantings, landscape, etc.</li> <li>4.10 Sign removal</li> <li>4.11 Directional and informational signs</li> <li>4.12 Transportation enhancement activities (except rehabilitation and operation of historic buildings, structures, or facilities).</li> <li>4.13 Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity increase.</li> </ul> <p><b>5.00 OTHER</b></p> <ul style="list-style-type: none"> <li>5.01 Intersection channelization projects</li> <li>5.02 Intersection signalization projects at individual intersections</li> <li>5.03 Changes in vertical and horizontal alignment</li> <li>5.04 Interchange reconfiguration projects</li> <li>5.05 Truck size and weight inspection stations</li> <li>5.06 Bus terminals and transfer points</li> <li>5.07 Traffic signal synchronization</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## ATTACHMENT 3: CMAQ PROJECT APPLICATION EXAMPLE



### CMAQ PROJECT APPLICATION FORM

**Agency:**

**Project Title:**

**Project Priority** (if agency submits more than one project i.e. 1 of 2): 1 of 1

Select the project category from the drop-down box below titled "Choose an item"

**Project Category**

**Air Quality Screening Criteria Code:** Select the applicable Air Quality Screening Code(s) for the project from the list provided in Attachment 2.

Enter the amount of CMAQ Program funds requested (in whole numbers) in the box below by project phase and FFY of obligation (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)"; Construction Engineering should be included with Construction if applicable; For bus purchases, add funding in Construction).

|    | Project Phase | CMAQ Amount Requested | FFY     |
|----|---------------|-----------------------|---------|
| PE | PA&ED         | \$0                   |         |
|    | PS&E          | \$0                   |         |
|    | ROW           | \$0                   |         |
|    | CON           | \$70,824              | 2021/22 |
|    | Total         | \$70,824              |         |

1. Provide a detailed description of the project including Purpose and Need and Scope of Work. For Transit bus or vehicle purchases indicate whether vehicles are replacements or for new or expanded service (include fuel type of the new vehicles and buses to be replaced, as applicable).

The project will construct Class 2 bicycle lanes on ABC Avenue between 1<sup>st</sup> and Main Street. The project includes Class 2 bike lane stripping along both sides of ABC Avenue and signage. The purpose and need of the project are to complete a critical link in the City bike system to provide residents with bicycle access to education, employment, shopping and transit. PS&E is scheduled to be completed in May 2021. Preliminary road plans and profile drawings are attached.



2. Describe the location of the project including route number, post miles, street name(s), project limits, and project segment length, as applicable. Attach photos, maps, and diagrams of the project area or facility as appropriate. For traffic signal projects, attach Warrant Study calculations including level of service and traffic volumes on each leg.

The project is located near the Civic Center on ABC Avenue beginning at Main Street (crosses 3<sup>rd</sup> and 2<sup>nd</sup> streets) and ending at 1<sup>st</sup> Street. See attached map. The project segment is 1.13 miles long and would provide 2.26 new bike lane miles. ABC Avenue is four-lane undivided arterial within the project limits. There are existing Class 2 bike lanes west and east of the project segment. Within one-quarter mile of the project, there is a college, a shopping center, a transit hub, and an office building. No additional ROW is required as the project would be constructed within the existing roadway facility. Photos of the project area are attached. The City's population is 128,000.

3. Provide the Accident Rate for project road segments or intersections associated with the project, as applicable. For Highway/Road segments use Accidents/Million Vehicle Miles (MVM) and three years of data; for Intersections use Accidents/Million Vehicle (MV) entering the intersection and five years of data; and for Ramps use Accidents/Million Vehicle (MV) traversing the ramps and 5 years of data.

The accident rate for the project segment is 1.67 which is equivalent to the statewide average for a similar facility. The accident rate is based on three-years of accident data beginning January 1, 2017 and ending December 31, 2019 from the City's accident database. Attached is backup documentation.

4. *Bicycle, Pedestrian, Transit, Signal and Road Projects:* Provide Average Daily Traffic volume(s) on all roads associated with the project.

The average daily traffic volume on ABC Avenue between Main Street and 1<sup>st</sup> Street is 20,000.

5. Use the CMAQ Cost-Effectiveness Analysis Tool provided by the California Air Resources Board (CARB) to estimate reduction in emissions and cost-effectiveness. The Tool is available at: <https://ww2.arb.ca.gov/resources/documents/congestion-mitigation-and-air-quality-improvement-cmaq-program>. Attach a copy of the analysis to the application.

- a. Enter the amount of emissions reduced for ROG, NO<sub>x</sub>, PM<sub>2.5</sub>, CO (when applicable) and total emissions in pounds per year in the table below. Attach a copy of the analysis to the application.

| EMISSIONS REDUCED (POUNDS/YEAR) |                 |                   |    |       |
|---------------------------------|-----------------|-------------------|----|-------|
| ROG                             | NO <sub>x</sub> | PM <sub>2.5</sub> | CO | Total |
| 14                              | 8               | 3                 | na | 26    |

- b. Enter the CMAQ cost-effectiveness (dollars per pound) calculated by the CMAQ Cost-Effectiveness Analysis tool.

\$230.22





6. Enter the total project budget in the box below. Include all funding sources by phase. In the project budget comment section, describe which funds have and have not been secured for the project (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)", use PA&ED year of obligation; For bus purchases, add dollars in construction; the minimum Local Match is 11.47%).

**Project Budget**

|    | Project Phase         | Total Cost       | Funding Sources and Amounts |                 |                 |                 | FFY of Obligation |
|----|-----------------------|------------------|-----------------------------|-----------------|-----------------|-----------------|-------------------|
|    |                       |                  | CMAQ                        | LTF             | enter source #3 | enter source #4 |                   |
| PE | Environmental (PA&ED) | \$10,000         | \$0                         | \$10,000        |                 |                 | 2019/20           |
|    | Design (PS&E)         | \$25,000         | \$0                         | \$25,000        |                 |                 |                   |
|    | Right-of-Way          | \$0              | \$0                         | \$0             |                 |                 |                   |
|    | Construction          | \$80,000         | \$70,824                    | \$9,176         |                 |                 | 2021/22           |
|    | <b>Total</b>          | <b>\$115,000</b> | <b>\$70,824</b>             | <b>\$44,176</b> |                 |                 |                   |

**Project Budget Comments:** PE funds were obligated in FFY 2019/20. Local match funds of \$9,176 for construction has been secured. The amount of \$70,824 requested for construction has not been secured. A preliminary Engineer's Estimate detail is attached.

7. Add project milestone dates in the box below. Select an environmental document type from the drop-down box titled "Choose an item" (CEQA/NEPA format). Project milestone dates should be consistent with the FFY Obligation information included in the Project Budget in Section 1 h. of the application (notes: FFY begins October 1 and ends September 30; The "Begin Environmental (PA&ED) phase" date represents the obligation date for PE; for purchase projects, add dates in Construction phase).

| Project Milestone                                                   | Document Type | CE/CE | Date     |
|---------------------------------------------------------------------|---------------|-------|----------|
| Begin Environmental (PA&ED) Phase                                   |               |       | 11/01/19 |
| End Environmental Phase (PA&ED Milestone)                           |               |       | 06/15/20 |
| Begin Design (PS&E) Phase                                           |               |       | 10/01/20 |
| End Design Phase (Ready to List for Advertisement Milestone)        |               |       | 05/15/21 |
| Begin Right of Way Phase                                            |               |       | 01/15/21 |
| End Right of Way Phase (Right of Way Certification Milestone)       |               |       | 05/15/21 |
| Begin Construction Phase (Contract Award Milestone)                 |               |       | 12/01/21 |
| End Construction Phase (Construction Contract Acceptance Milestone) |               |       | 07/01/22 |
| Begin Closeout Phase                                                |               |       | 08/01/22 |
| End Closeout Phase (Closeout Report)                                |               |       | 02/01/23 |


**BICYCLE FACILITIES**

**County:** Imperial

**Federal Number:**

**Approval Date:**

**Caltrans DIST-EA:**

**Short Description:** ABC Avenue Class 2 Bikeway Facility

**Project Scope:** Class 2 bike lanes on both sides of ABC Avenue between 1st and Main Street. Facility length is 1.13 miles.

**Project Sponsor:** City of ABC

**Private Agency:** No

**CMAQ Funding:** \$70,824      **Annual Auto Trips Reduced:** 16,000

**Local Match:** \$9,176      **Annual Auto VMT Reduced:** 28,800

**Capital Recovery Factor:** 0.08

**Project Analysis Period:** 15 years

**Days (D):** 200 days of use/year

**Average Daily Traffic (ADT):** 20,000 trips per day

**Adjustment (A) on ADT:** 0.0020

**Credit (C) for**

**Activity Centers near project:** 0.0020

**EMISSION**

**FACTORS:**

**Auto Trip End Factor**

**ROG :** 0.241 grams per trip

**NOx :** 0.103

**PM2.5 :** 0.002

**Auto VMT Factor**

0.087 grams per mile

0.074

0.053

**EMISSION**

**REDUCTIONS:**

**Pounds per Year**

**ROG:** 14

**NOx:** 8

**PM2.5:** 3

**Total:** 26

**Kilograms per Day**

0

0

0

0

**COST-EFFECTIVENESS OF:**

**CMAQ Funds:** \$230.22 per pound      \$460,448 per ton

**All Funding Sources:** \$260.05 per pound      \$520,104 per ton



## ATTACHMENT 4: STBG PROJECT APPLICATION EXAMPLE



### STBG PROJECT APPLICATION FORM

**Agency:**

**Project Title:**

**Project Priority** (if agency submits more than one project i.e. 1 of 2): 1 of 1

**Enter the amount of STBG Program funds requested (in whole numbers) in the box below by project phase and FFY of obligation** (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)"; Construction Engineering should be included with Construction if applicable).

|    | Project Phase | STBG Amount Requested | FFY     |
|----|---------------|-----------------------|---------|
| PE | PA&ED         | \$250,000             | 2021/22 |
|    | PS&E          | \$250,000             |         |
|    | ROW           | \$0                   |         |
|    | CON           | \$0                   |         |
|    | Total         | \$500,000             |         |

#### Baseline Screening Criteria

Check if true:

- California Road Systems (CRS) Map that identifies the project location is attached to the application.
- City Council or County Board of Supervisors Resolution is attached to the application.

Resolution approved on (not yet approved; draft resolution attached)

**Resolution indicates:**

- Opportunity for public comment was provided at Council/Board meeting.
- Identification of specific local match amount, and, source or type of any other funds used to leverage the project.
- Compliance with the circulation element of the agency's general plan.
- Confirmation that a pavement management plan is in place for rehab projects.

Comments: City Council scheduled to adopt resolution on April 21, 2021.



**SECTION 1: GENERAL INFORMATION (ZERO POINTS)**

**a. Describe the project and the transportation issue or problem the project will improve**

The project will widen XYZ Road from an undivided two-lane road to a divided four-lane road to eliminate the bottleneck that occurs within the project segment. XYZ Road is a four-lane divided road north and south of the project limits. The project segment is the only section along the 10-mile corridor that has not been widened to four lanes. XYZ Road is a major arterial that provides local access through the City and also serves regional traffic between XYZ City and ABC City. Traffic congestion currently occurs during the AM and PM peak periods which causes travel delays and accidents. There have been 50 accidents in the past three years, most of which were rear-end collisions attributed to traffic congestion. Average daily traffic is projected to increase from the current 24,000 vehicles to 39,000 in 20 years. The project is needed to reduce traffic congestion and accidents within the project segment.

**b. Describe the location of the project including project limits**

The project is located on XYZ Road between H Road and 1<sup>st</sup> Street, a distance of 1.5 miles, at the east end of the City. There are major residential developments under construction along the project segment that will increase traffic on the road. Attached is a map that locates the project segment and that shows the bottleneck and the surrounding land use.

**c. Describe the project scope and how the project will improve the transportation issue or problem**

The project will widen XYZ Road from an undivided two-lane road to a divided four-lane road to match the existing roadway on both sides of the project segment. The existing Class 2 Bike Lane will be preserved. New pedestrian sidewalks will be added on both sides of the road as none exist today. The added lanes will reduce congestion and accidents caused by congestion.

**d. What is the functional classification of the road?**

Other Principal Arterial

**e. Does the project expand capacity?**

Yes, from 2 to 4 lanes

**f. What is the condition of the existing facility (if applicable)?**

The Pavement Condition Index for XYZ road within the project segment is 60 which is considered At Risk pavement.

**g. Describe the consequences, if any, of not completing the project.**

Without the project, congestion-related accidents will continue to increase due to the projected increase in traffic in the next 20 years. The accident rate of 2.90 MVM for the project segment is higher than the statewide average of 2.39 MVM for a similar facility. Adding roadway capacity is expected to reduce the accident rate to 1.44



based on the statewide average of a divided 4-lane road. The project is also needed to relieve traffic congestion caused by the 2-lane bottleneck to improve travel time through the corridor.

- h. Enter the total project budget in the box below. Include all funding sources by phase. In the project budget comment section, describe which funds have and have not been secured for the project (notes: FFY begins October 1 and ends September 30; PA&ED and PS&E phases are programmed in the FTIP as one phase "Preliminary Engineering (PE)", use PA&ED year of obligation).

**Project Budget**

|    | Project Phase         | Total Cost          | Funding Sources and Amounts |                     |                 | FFY of Obligation |
|----|-----------------------|---------------------|-----------------------------|---------------------|-----------------|-------------------|
|    |                       |                     | STBG                        | Agency              | enter source #3 |                   |
| PE | Environmental (PA&ED) | \$1,500,000         | \$250,000                   | \$1,250,000         |                 | 2021/22           |
|    | Design (PS&E)         | \$1,500,000         | \$250,000                   | \$1,250,000         |                 |                   |
|    | Right-of-Way          | \$0                 | \$0                         | \$0                 |                 |                   |
|    | Construction          | \$30,000,000        | \$0                         | \$30,000,000        |                 | 2024/25           |
|    | <b>Total</b>          | <b>\$33,000,000</b> | <b>\$500,000</b>            | <b>\$32,500,000</b> |                 |                   |

**Project Budget Comments:** The \$3,000,000 local match for PE has been secured. The STBG requested amount of \$250,000 has not been secured. City will seek additional funding from various sources for Construction.

**SECTION 2: PROJECT SPECIFIC QUESTIONS (100 POINTS MAX.)**

**1. Community Benefits** (30 points max.)

Describe the benefits that would be generated by the project for the community including but not limited to improving safety, increasing employment, reducing emissions, improving connectivity between communities, improving aesthetics, etc. Provide supporting documentation as an attachment.

Adding capacity to the roadway is expected to reduce the accident rate by 54%, from 2.90 MVM to 1.44 MVM of travel. Reducing congestion on the road is expected to reduce vehicle emissions including PM2.5, CO2, NOx, and ROG to improve air quality. Attached to the application is a summary of the accident analysis including data. Also attached is documentation that shows reduction in emissions attributed to increasing average speed from the existing 20 MPH during the peak period to up to the speed limit of 45 MPH. Travel time savings information is also included in the attachment.



**2. Project Readiness** (40 points max.)

Add project milestone dates in the box below. Select an environmental document type from the drop-down box titled “Choose an item” (CEQA/NEPA format). Project milestone dates should be consistent with the FFY Obligation information included in the Project Budget in Section 1 h. of the application (notes: FFY begins October 1 and ends September 30; The “Begin Environmental (PA&ED) phase” date represents the obligation date for PE).

| Project Milestone                                                   | Document Type | ND/FONSI | Date     |
|---------------------------------------------------------------------|---------------|----------|----------|
| Begin Environmental (PA&ED) Phase                                   |               |          | 12/01/21 |
| End Environmental Phase (PA&ED Milestone)                           |               |          | 11/01/22 |
| Begin Design (PS&E) Phase                                           |               |          | 01/15/24 |
| End Design Phase (Ready to List for Advertisement Milestone)        |               |          | 01/15/25 |
| Begin Right of Way Phase                                            |               |          | 03/01/25 |
| End Right of Way Phase (Right of Way Certification Milestone)       |               |          | 12/15/24 |
| Begin Construction Phase (Contract Award Milestone)                 |               |          | 05/15/25 |
| End Construction Phase (Construction Contract Acceptance Milestone) |               |          | 09/01/26 |
| Begin Closeout Phase                                                |               |          | 10/01/26 |
| End Closeout Phase (Closeout Report)                                |               |          | 04/01/27 |

**3. Regional Significance** (20 points max.)

Describe the regional significance of the project as identified in approved public documents including but not limited to adopted planning documents such as the 20 Year Local Transportation Plan and the Regional Transportation Plan, traffic analysis reports, and project study reports. Attach supporting documentation.

This project has been designated as a high priority in the 20-Year Local Transportation Plan and is identified as regionally significant in the Regional Transportation Plan. Attached is back-up documentation.

**4. Continuity** (10 points max.)

Explain if the project has received STP/STBG funds (or other ICTC programmed funds) in previous years for earlier project phases, and why the project should receive continued support. Also explain if the project would provide continuity of transportation infrastructure or service between jurisdictions. Attach supporting documentation.

This project has not received federal or state funds for any phase. XYZ Road segments north and south of the project (the corridor) have received STP/STBG funds in the past. This project would also provide continuity of the transportation infrastructure by widening the road to four lanes to match the existing number of lanes on either side of the project segment.