ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
Rosamond Mojave Rehab (EA 09-36740)

Resolution SHOPP-P-1819-09B
(will be completed by CTC)

1. FUNDING PROGRAM

- ☐ Active Transportation Program
- ☐ Local Partnership Program (Competitive)
- ☐ Solutions for Congested Corridors Program
- ☒ State Highway Operation and Protection Program
- ☐ Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *Rosamond Mojave Rehab (EA 09-36740)*, effective on, DECEMBER 6, 2018 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Caltrans*, and the Implementing Agency, *Caltrans*, sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas at its March 22, 2018 meeting the Commission approved the State Highway Operation and Protection Program, and included in this program of projects the *Rosamond Mojave Rehab (EA 09-36740)*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.

4.2 To adhere, as applicable, to the provisions of the Commission:

- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Local Partnership Program", dated
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
- ☒ Resolution G-18-13, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated March 22, 2018
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

4.3 All signatories agree to adhere to the Commission's State Highway Operation and Protection Program, Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.

4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.

4.5 Caltrans agrees to secure funds for any additional costs of the project.

4.6 Caltrans agrees to report on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.

4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.

4.8 Caltrans agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.

5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.

5.3 Other Project Specific Provisions and Conditions

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Rosamond-Mojave Rehab

Resolution SHOPP-P-1819-09B

_____ _____
Date

Project Applicant

_____ _____
Date

Implementing Agency

_____ October 19, 2018
Brent Green Date

District Director

California Department of Transportation

_____ 11-6-18
Laurie Berman Date

Director

California Department of Transportation

_____ 12/18/18
Susan Bransen Date

Executive Director

California Transportation Commission

Baseline agreement information was extracted from Caltrans' project data systems. Project description, funding and performance measures are from CTIPS. Project delivery milestones are from PRSM. All information is current and accurate.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

BASELINE AGREEMENT

Date:	10/22/18 11:49:46 AM

District	EA	Project ID	PPNO	Project Manager
09	36740	0916000025	2633	ALCALA, DENNEE G

County	Route	Begin Postmile	End Postmile	Implementing Agency	
KER	14	R 4.7	R 12.6	PA&ED	Caltrans
				PS&E	Caltrans
				Right of Way	Caltrans
				Construction	Caltrans

Project Nickname

Rosamond-Mojave Rehab

Location/Description

In and near Rosamond and Mojave, from 1.4 miles south of Dawn Road Overcrossing (OC) to 0.5 mile north of Silver Queen Road OC. Rehabilitate lanes and ramps by replacing slabs and grinding lane 1, construct Continuous Reinforced Concrete Pavement (CRCP) lane 2, cold plane and overlay ramps with Rubberized Hot Mix Asphalt (RHMA-G). Replace guardrail, construct rumble strip, replace signs using retroreflective sheeting, and refresh pavement delineation. (G13 Contingency)

Legislative Districts

Assembly:	36	Senate:	16	Congressional:	23

PERFORMANCE MEASURES

	Primary Asset	Good	Fair	Poor	New	Total	Units
Existing Condition	Pavement		31.6			31.6	Lane-miles
Programmed Condition	Pavement	31.6				31.6	Lane-miles

Project Milestone	Actual	Planned
Project Approval and Environmental Document Milestone	06/20/18	
Right of Way Certification Milestone		01/03/20
Ready to List for Advertisement Milestone		01/23/20
Begin Construction Milestone (Approve Contract)		06/24/20

FUNDING (Allocated amounts are shaded)

Component	Fiscal Year	SHOPP					Total
PA&ED	17/18	370					370
PS&E	18/19	1,460					1,460
RW Support	18/19	250					250
Const Support	19/20	3,010					3,010
RW Capital	19/20	22					22
Const Capital	19/20	40,515					40,515
Total		45,627					45,627

09 - Kern - 14 - PM r4.7/r12.6
09-36740 – 0916000025 – PPNO 2633
20.10.201.122 – Roadway Rehabilitation
June 2018

PROJECT REPORT

To Request Programming in the 2018 SHOPP
&
For Project Approval

In Kern County at Rosamond and at Mojave from 1.4 miles south of Dawn Road Overcrossing to 0.5 mile north of Silver Queen Road Overcrossing

I have reviewed the right-of-way information contained in this report and the right-of-way data sheet attached hereto, and find the data to be complete, current and accurate:

Mark Heckman, ACTING OFFICE CHIEF
RIGHT OF WAY

APPROVAL RECOMMENDED:

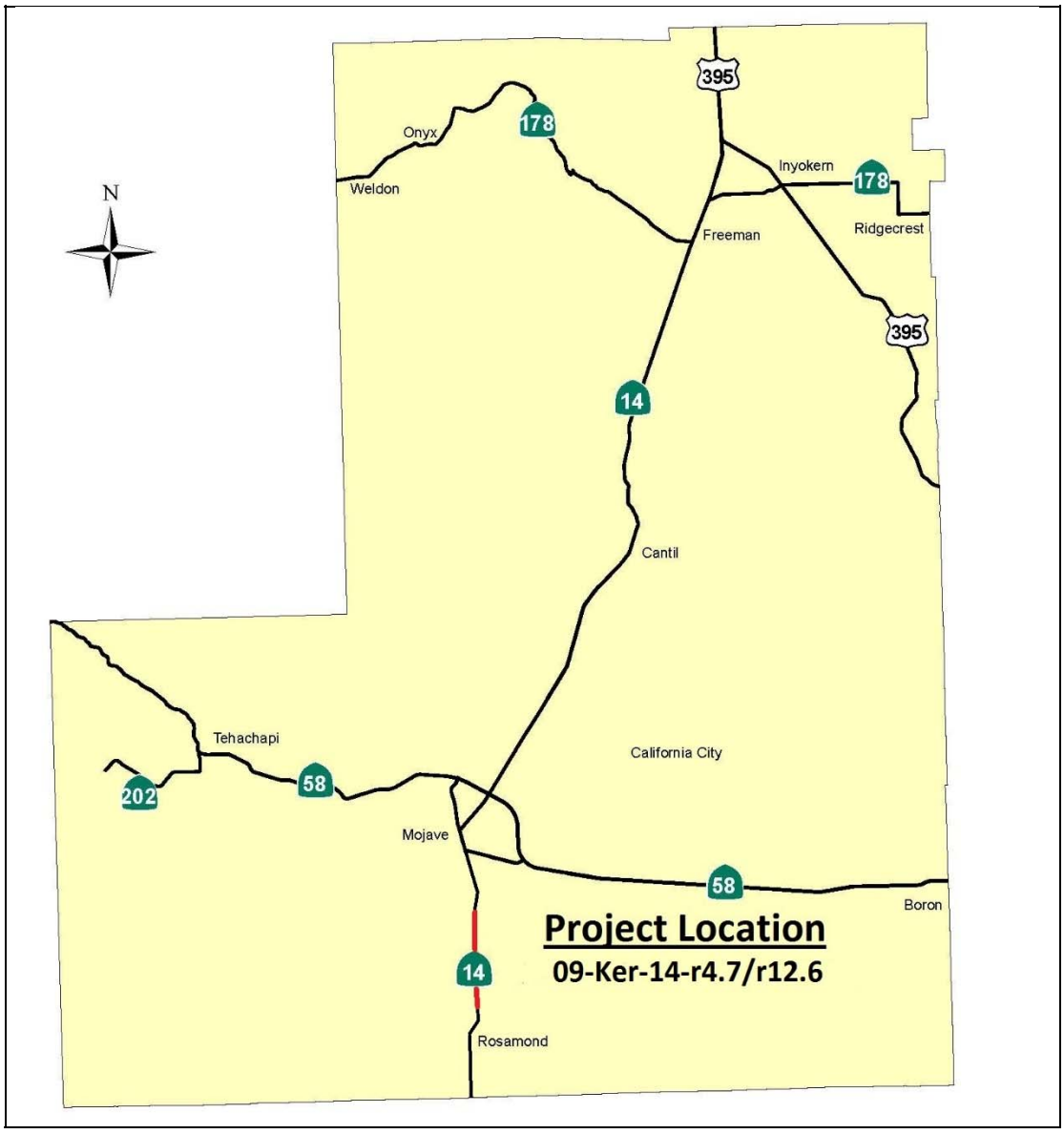
Dennee Alcala, PROJECT MANAGER

APPROVED:

Brent L. Green, DISTRICT 09 DIRECTOR

06-08-18
Date

Vicinity Map



This project report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

6/6/18

REGISTERED CIVIL ENGINEER *DATE*

1. INTRODUCTION

Project Description

This Pavement Rehabilitation project proposes strategies that should provide a service life of 40 years. This project proposes pavement rehabilitation for on/off ramps and adjacent shoulders. In addition, this project recommends upgrading the following: metal beam guardrail (MBGR), traffic loop detectors, and some other appurtenances and facilities within the project limits.

The project proposes to utilize SB1 funds via the 2018 State Highway Operation and Protection Program (SHOPP). The estimated project costs are shown in the table below:

Project Name	Rosamond-Mojave Rehabilitation	
Project Limits	09 - KER 14 – PM R4.7/PM R12.6	
Number of Alternatives	Two	
	Current Cost Estimate (2018)	**Escalated Cost Estimate**
Capital Outlay Support	$5,030,000	$5,180,500
Capital Outlay Construction	$47,163,000	$53,457,000
Capital Outlay Right-of-Way	$0	$0
Funding Source	SHOPP (201.122)	
Funding Year	2019/2020	
Type of Facility	4-Lane Freeway	
Number of Structures	0	
SHOPP Project Output	31.4 Lane Miles	
Anticipated Environmental Determination or Document	Categorical Exception (CE) under CEQA	
Legal Description	In Kern County at Rosamond and at Mojave from 1.4 miles south of Dawn Road Overcrossing to 0.5 mile north of Silver Queen Road Overcrossing	
Project Development Category	Category 5	

2. RECOMMENDATION

It is recommended that this project be approved and proceed to PS&E. It is also recommended to change the programmed capital cost from $40,515,000 to $53,457,000. The affected local agencies have been consulted with respect to the plan, their views have been considered, and are in general accord with the plan as presented.

3. BACKGROUND

Existing Facilities

Within the project limits, State Route 14 is a 4-lane National Highway System highway, functionally classified as a principal arterial which is in rolling desert terrain. This section of State Route 14 has been legislatively designated as the Aerospace Highway due to the proximity to Edwards Air Force Base and is a segment of the Strategic Highway Corridor Network. State Route 14 is also designated for use by large trucks as part of the STAA National Network. The posted speed along this segment of highway is 70 mph. The design speed for this project is 70 mph.

Original Construction

State Route 14 was originally constructed in 1933 as a 2 lane highway between Lancaster and Mojave. The section of Route 14 between Rosamond and Mojave was realigned in 1972 from PM R4.8 to PM R13.1 and included the construction of the Dawn Road Overcrossing, Backus Road Overcrossing and Silver Queen Road Overcrossing. The proposed project area of SR 14 was built using 0.50’ of Class 3 Aggregate Subbase, 0.45’ of Class A Cement Treated Base and 0.65’ of Portland Cement Concrete (PCC) for the road surface. The on-ramps and exit ramps at the Dawn Road Overcrossing, Backus Road Overcrossing and Silver Queen Road Overcrossing were originally built with 0.50’ Class 3 Aggregate Subbase, 0.85’ Class 2 Aggregate Base with a 0.25’ Type B Asphalt Concrete surface.

Maintenance History

In the year 2000 slab replacement was performed from PM R10.5 to PM R11.0 of Route 14. Slabs of the existing 0.65’ PCC pavement in lane 2 of both the SB and NB direction was replaced with 0.98’ PCC slabs, 2’ of the 0.33’ AC shoulder was replaced with 0.98’of AC pavement and the existing base material was replaced with 0.69’ of Class 2 Aggregate Base. Lane 2 of the SB direction had 162’ of pavement surface replaced exclusively between PM R10.5 and PM R10.56. Lane 2 of the NB direction had 1,718 feet of slab replaced between PM R16.9 to PM R17.65.

In 2001 existing concrete pavement panels were replaced in 15 foot sections from PM R0.0 to PM R14.9. In this proposed project section from PM R5.7 to PM R12.6 there were 23 panels in lane 1 of the NB direction replaced, 50 panels in the number 2 lane of the NB direction replaced, 6 panels in lane 1 of the SB direction and 25 panels in lane 2 of the SB direction. Only the 0.65’ driving surface of PCC was replaced during this construction phase on Route 14. Outside shoulder rumble strips were installed along the length of this rehabilitation project.

In the year 2007 road surface patching was performed by replacing 15 foot panel sections of the existing PCC road surface with Type A asphalt concrete on Route 14 from PM R5.0 to PM R12.8. The number 2 lane of the SB direction had 38 panels replaced, 33 panels were replaced in the number 2 lane of the NB direction.

4. PURPOSE AND NEED

Purpose

The purpose of this project is to restore the pavement to good service condition, extend the service life of the pavement and reduce maintenance costs.

Need

Problem, Deficiencies, Justification

The 2013 Pavement Condition Survey Inventory presented in Attachment D and summarized in Section 4B, indicates that the existing pavement has structural problems. A field investigation conducted on April 18, 2017 by the SHOPP Pavement Program Advisor Robert Hogan and District 9 Maintenance Engineer John Fox, showed that the pavement condition needs major rehabilitation. The distress is beyond what can reasonably be maintained by Caltrans Maintenance staff. The continued deterioration of the pavement will decrease the ride quality of existing roadway.

Traffic Data

Present Year AADT (2015)	16,900		
Construction Year AADT (2022)	17,500	10-Year AADT (2032)	18,400
Construction Year DHV	1,630	20-Year AADT (2042)	19,340
Directional Split	68.34%	% Trucks	10.0%
*T.I. (10-Year)	11.0		
*T.I. (20-Year)	12.0		

* Must correlate with T.I. in Materials Report

The accident history for a 3-year study period, from January 1, 2012 to December 31, 2014, shows that the fatal plus injury (F&I) accident rate per million vehicle miles (Acc/MVM) within the project limits was 0.20Acc/MVM compared to 0.42 Acc/MVM which is the statewide average for a similar facility.

Location	Accident Rate (Acc/MVM)*					
	Actual			Statewide Average		
	Fatal	F+I**	**Total**	Fatal	F+I**	**Total**
SR 14	0.008	0.10	**0.20**	0.008	0.15	**0.42**

* Accidents per Million Vehicle Miles

** Fatal Plus Injury

Source: Caltrans District 9 Traffic Data Report Table B, from January 1, 2012 to December 31, 2014.

The accident data contained in this report is based on overall accident rates without specific investigation as to the nature, dynamics, driver movements, causative factors or

any determination of whether or not a pattern of accidents susceptible of correction by identified engineering countermeasures.

Within the 3 year analysis period there were 24 recorded accidents: 1 Fatal accident, 11 injury accidents and 12 property damage only (PDO). The predominant primary collision factors were "improper turn" (9 of the 24 accidents) and "speeding" (7 of the 24 accidents).

5. ALTERNATIVES

There are two pavement rehabilitation alternatives considered for this project.

1. **Build Alternative** This is the recommended alternative to address the pavement needs within the project limits. The proposed pavement rehabilitation strategies and the scope of work are stated below.

2. **No-Build Alternative** This alternative will result in the continued deterioration of the pavement surface and the structural section that will lead to continued repairs, decreased ride quality, and potentially decreased mobility. Pavement rehabilitation would still be necessary in the future.

Viable Alternatives

Mainline

Individual distressed slabs on the #1 lane will be replaced with Portland Concrete Cement (PCC). Following the slab replacement, the entire surface of lane #1 will be grinded to correct faulting problems and provide smooth driving conditions. A bond breaker will be placed between the underlying base and new slab pavement; the base will be repaired or replaced as needed. The #2 lane will be reconstructed with Continuously Reinforced Concrete Pavement (CRCP).

If necessary, Lean Concrete Base Rapid Strength (LCBR) or Roller Compacted Concrete Base (RCCB) will be considered to reduce construction time.

The pavement structural section for the mainline #2 lane replacement is proposed as follows:

0.90'	Continuously Reinforced Concrete Pavement (CRCP)
-------	Geo-synthetic Bond Breaker
0.25'	Hot Mix Asphalt (Type A)
1.15'	Total Depth

Shoulders on SR 14

The shoulders are in need of rehabilitation due to excessive thermal cracking.

On/Off Ramps

Cold-plane 0.15' and overlay with 0.15' Rubberized Hot Mix Asphalt-Type G (RHMA-G) along the travel lanes and cold-plane 0.10' and overlay with 0.10' RHMA-G along the shoulders.

Replace all affected traffic loop detectors.

Other Improvements

- Replace the MBGR in the median protecting the overcrossings at Dawn Road, Backus Road, and Silver Queen Road.
- Install inside shoulder (left side) rumble strips.
- Replace warning signs to meet the Traffic Operations Policy Directive (TOPD) 14.02 color standard of fluorescent yellow.
- Replace signs with white background with signs with retroreflective sheeting that meet the ASTM D4956-13 Type IX standard.
- If damaged, replace ramp loops on each of the 4 ramps at Dawn, Backus, and Silver Queen Roads.
- Marking, delineation will be replaced and reconfigured as needed.
- Replace existing lane lines and edge lines with thermoplastic striping with enhanced wet night visibility.
- Raised pavement markers will be installed per the 2010 Caltrans District 9 Marker Policy.
- Replace broken or missing dikes along the project. Upgrade existing nonstandard AC dikes to the 2010 standard.
- Install guardrail delineators and Type L object markers at the leading ends of the guardrails.

Changes to the Project Since the PID

On June 28, 2017 a Project Scope Summary Report (PSSR) was approved that set the project limits between R5.7 and R12.6. At the November 21, 2017 Project Delivery Team (PDT) meeting the South Area Maintenance Superintendent, Dave Batchelder, requested the southerly project limit be extended to capture failing slabs where maintenance efforts are becoming insufficient and excessively costly to prevent further pavement deterioration. On a December 7, 2017 field review with Mr. Batchelder it was determined the southerly PM limit should be R4.7.

A Value Analysis Study was completed for this project. While studying cost saving construction methods it became apparent that the shoulders would need to be rehabilitated. Not only do they show signs of distress but also will be needed for multi-month detours. In their current condition the shoulders are not capable of supporting prolonged truck traffic.

Rejected Alternatives

There are three other pavement rehabilitation strategies for the two outer lanes that were studied but not recommended; the rehabilitation strategies for the inner lanes are the same strategies discussed in Section 5.

Right-of-Way Issues

All work will be done within the State right of way.

6. CONSIDERATIONS REQUIRING DISCUSSION

Hazardous Waste

Aerially Deposited Lead (ADL) may exist in the unpaved surface soils. In addition, the following hazardous waste is anticipated:

- Removal of treated wood posts from MBGR will require special handling during removal and subsequent disposal. A special provision under the Title 22 CA Code of Regulations to address this concern should be included in the PS&E package.

Value Analysis

A Value Analysis (VA) study was conducted between January 16-19, 2018. The VA provided the following recommendations which, if implemented, would result in an estimated increase of $510,000 in construction capital and life-cycle maintenance costs and result in a higher performing project:

- Alternative 1.2:
  - Divert northbound traffic to the southbound side using detour crossovers, complete the northbound work, shift traffic to the northbound side, and then complete the southbound work. This alternative would cost the project an additional $550,000 in construction capital but would positively change the performance of the project.

- Alternative 2.0
  - Use Portland Cement Concrete in lieu of Rapid Strength Concrete for the slab replacements in the #1 lane. This alternative would save the project an estimated $1,060,000 in construction capital and life-cycle maintenance costs.

See Attachment J, the Value Analysis Study Summary Report, for more information.

Options studied in the Life-Cycle Cost Analysis (LCCA)

1. **LCCA Option 1 -** 0.85' Jointed Plain Concrete Pavement (JPCP) over 0.35' Lean Concrete Base (LCB) with a 20 year design life. The current capital outlay construction cost for this option is estimated at $28 million dollars and the total life-cycle cost (agency and user cost) for this strategy is $65 million. This option was rejected because it requires more maintenance and capital preventative maintenance than would a CRCP.

2. **LCCA Option 2 -** 1.0' JPCP over 0.35' LCB with a design life of 40 years. The current capital outlay construction cost for this option is estimated at $31 million dollars and the total life-cycle cost (agency and user cost) for this strategy is $42 million. This option was rejected because it requires the most annual maintenance and it requires more capital preventative maintenance than would a Continuously Reinforced Concrete Pavement (CRCP).

3. **LCCA Option 3 -** 0.80' of CRCP over 0.25' Hot Mix Asphalt – Type A (HMA-A) with a design life of 20 years. The current capital outlay construction cost for this option is estimated at $32.4 million dollars and the total life-cycle cost (agency and user cost) for this strategy is $53 million. This option would require minimal annual maintenance but would require capital preventive maintenance within the 55 year life cycle of the pavement. This option was rejected.

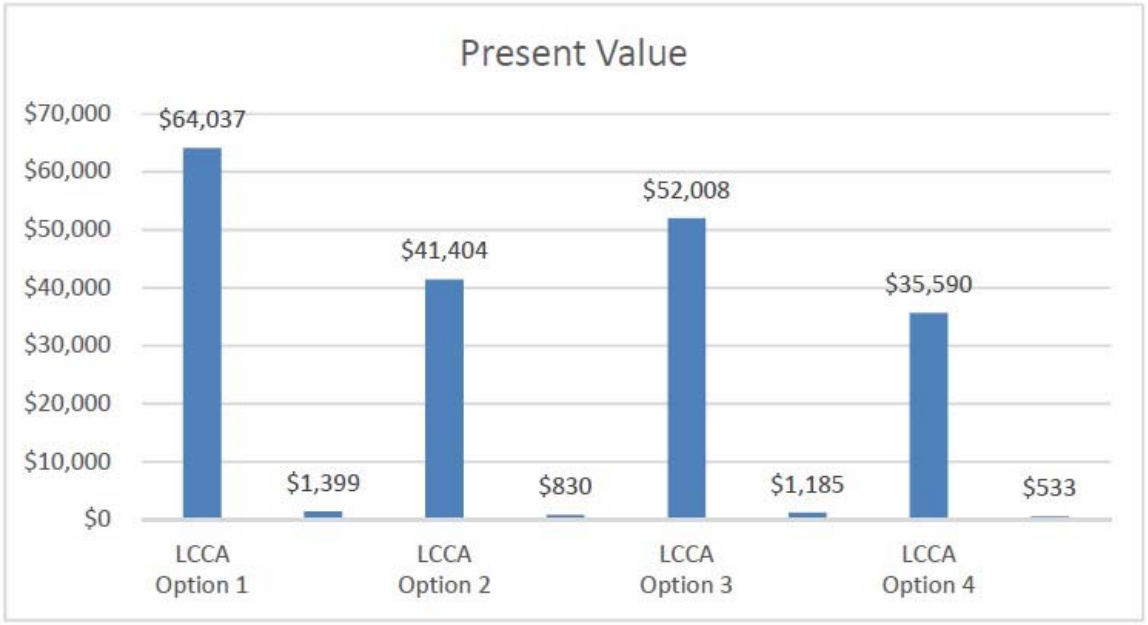
4. **LCCA Option 4 -** This LCCA option is project alternative 1, the build alternative. 0.90' CRCP over 0.25' HMA-A with a design life of 40 years. This option has the lowest life cycle cost.

Summary of the Life Cycle Cost Analysis

Total Cost								
	LCCA Option 1		LCCA Option 2		LCCA Option 3		LCCA Option 4	
Total Cost	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)
Present Value	$64,037	$1,399	$41,404	$830	$52,008	$1,185	$35,590	$533
Lowest Present Value Agency Cost	LCCA Option 4: CRCP with 40 year Design Life							
Lowest Present Value User Cost	LCCA Option 4: CRCP with 40 year Design Life							

Note: LCCA Option 4 is the preferred alternative and recommended for programming

Life Cycle Cost Analysis – 55 years of capital, maintenance and user costs in present value



Note: Large vertical bar represents Agency Cost and the smaller vertical bar represents User Costs

Options not included in the Life Cycle Cost Analysis

1. Crack, seat and overlay (CSO) the existing pavement with new asphalt pavement. This option can be engineered to provide either a 20-year or 40-year design life. This strategy is similar to Hot Mix Asphalt pavement which is not a viable long-term solution. The expected service life is 10 years, as such, additional maintenance would be needed at unforeseeable future costs, in order to obtain a service life of 40 years, which the other strategies provide.

2. Precast Pre-stressed Concrete Pavement (PPCP) strategy is similar to RSC pavement strategy discussed above. This option requires extensive level of survey and field engineering to implement. The current capital outlay construction cost for PPCP is the highest of all studied options.

Resource Conservation

Recycled material will be used wherever possible. Caltrans Standard Specifications and Standard Special Provisions encourage use of salvaged or recycled materials such as Class 2 Aggregate Base (AB) and Asphalt Concrete (AC).

Right-of-Way Issues

No work will be performed outside of the current Right of Way with this project.

Environmental Compliance

This project is Categorically Exempt pursuant to the California Quality Act (CEQA). Several environmental commitments exist for this project:

- The Caltrans Environmental Branch must be notified 30 days prior to construction.
- Pre-construction Desert Tortoise and Mohave ground squirrel training for contractor. A trained biologist will train contractor on avoidances and measures to reduce risk of impacting Desert tortoise or Mohave ground squirrel that may appear in the project or staging areas.
- Staging areas previously not cleared must first be cleared by a qualified biologist.
- 3,150 feet of temporary high visibility fence is anticipated to be placed in the median to prevent disturbance to sensitive resources. The fence, which will be shown on the contract plans, will not obstruct construction, detours, or staging.

There are no permits required for this project.

Air Quality Conformity

This project area is in a nonattainment area for ozone. It is in an attainment area for nitrogen dioxide. It is in an unclassified area for carbon monoxide (NAAQS pollutants). An air quality conformity checklist was completed for this project and it was determined that this project is exempt from air quality conformity analysis requirements.

Title VI Considerations

The Title VI Policy, referencing Title VI of the Civil Rights Act of 1964, states that the Department will ensure that no person, regardless of race, color, national origin, sex, disability, or age, will be subjected to discrimination under any program or activity that the Department administers.

- Environmental Justice: This project is not expected to result in any significant community or socio-economic impacts.
- Pedestrian and nonmotorized trails: There are no pedestrian facilities within the project limits.
- Ramped curbs: There are no proposed curbs within the project limits.
- Public transit stops: There are no transit facilities operating within the project limits.

Noise Abatement Decision Report

This project is not a Type 1 project; therefore, it does not require a project-level noise analysis. A type 1 project is a proposed Federal or Federal-aid highway project on a new location, or the physical alteration of an existing highway, where there is substantial change in vertical or horizontal alignment, or an addition of a through

traffic lane, that has a potential to increase noise at the noise source and the receptors (at a land use that is noise sensitive).

Stormwater Compliance

Standard Best Management Practices (BMP) will be employed to minimize compromising water quality. Some BMPs anticipated for this project include:

- Linear sediment barriers will be used to control discharge of sediment laden storm water from cleared and grubbed areas and exposed disturbed soil areas.
- Temporary soil stabilization on disturbed soil exposed during construction
- Drainage inlet protection
- Concrete washout facilities

The total disturbed soil area will be approximately 2.3 acres consisting of the temporary paved detours which will be removed at the end of the project. There is no new impervious surface. The contractor will be required to develop a Water Pollution Control Program (WPCP).

7. OTHER CONSIDERATIONS

Other Agencies Involved

The Lahontan Region Water Quality Control Board (RWQCB) will oversee the project's compliance with stormwater regulations.

Prolonged Temporary Ramp Closures

Ramp closures will be required. Traffic detours are anticipated and project specific closure charts will be developed during the design phase.

Stage Construction

The construction of this project is expected to be staged as follows, but will be fully developed during the design phase of the project:

1. Outside shoulder on NB direction will be removed and replaced with 0.6' HMA, the number 2 lane will be closed in three (3) mile sections during this first stage. Median Crossover detours will be constructed at both the north and south end of the project.
2. Removal of striping, and placing of temporary striping will be performed on the SB direction, then K-Rail will be placed along the SB direction.
3. NB traffic will be detoured to the #1 lane of the SB side, and SB traffic will be confined to the #1 lane of the SB direction. The NB direction will be fully rehabilitated.
4. Once the NB direction has been completely rehabilitated K-Rail and temporary striping will be placed on the NB direction.

5. SB traffic will be diverted onto the #1 lane of the NB direction, NB traffic will be confined to the #2 lane. The SB direction will be fully rehabilitated.
6. After the SB lane has been fully rehabilitated the K-Rail will be removed along with the temporary striping, permanent striping will be placed and all traffic will be returned to the proper side of the highway.
7. The median crossovers will be removed and the median will be restored to preconstruction conditions.

8. FUNDING, PROGRAMMING AND ESTIMATE

It has been determined that this project is eligible for federal-aid funding. This project was submitted for programming into the 2018 State Highway Operation Protection Program (SHOPP) cycle as part of the Pavement Preservation Program (201.122); the proposed program year is 2017/18. The estimated capital outlay construction cost including right of way is $47.163 million dollars (as of June 2018); the escalated capital outlay construction cost including right of way in the proposed program year will be $53.457 million dollars; the escalation factor is 3.4% per year for construction. The table below shows the escalated figures.

Requested Programming (Alternative 1) in the 2018 SHOPP

Fund Source	Fiscal Year Estimate				
20.XX.201.122	17/18	18/19	19/20		Total
Component	In thousands of dollars ($1,000)				
PA&ED Support	370				370
PS&E Support		1,460			1,460
Right-of-Way Support		250			250
Construction Support			3,010		3,010
Right-of-Way			22		22
Construction			53,457		53,457
Total	370	1,710	56,489		58,569

- All costs x $1,000
- Support Costs based on PRSM work plan on 09/11/17 and the approved Project Change Request (PCR) from 4/13/2018,
- Support costs escalated at 5%
- Construction Capital escalated at 3.4% to mid-point of construction
- Support to Capital Ratio is 10%

9. DELIVERY SCHEDULE

Project Milestones		**Milestone Date (Month/Day/Year)**
PA & ED	M200	07/02/2018

Maps to Surveys	M224	09/01/2018
Regular Right of Way	M225	09/01/2019
PS&E to DOE	M377	11/01/2019
Begin Secondary AADD Review		01/18/2020
Right of Way Certification	M410	01/03/2020
Ready to List	M460	01/23/2020
Anticipated CTC Vote Date		3/2020
Fund Allocation	M470	04/01/2020
Headquarters Advertise	M480	06/08/2020
Award	M495	08/26/2020
Approve Contract	M500	09/09/2020
Contract Acceptance	M600	11/17/2021
End Project	M800	06/30/2022

10. RISKS

Pursuant to District Directive 35 (DD-35), risk management activities were conducted. Based on the project size; these activities included a formal qualitative and quantitative risk analysis. The resulting risk register is found in Attachment H.

11. EXTERNAL AGENCY COORDINATION

Federal Highway Administration (FHWA)

This project is an Assigned Project in accordance with the current Federal Highway Administration (FHWA) and Department of Transportation (Caltrans) Joint Stewardship and Oversight Agreement.

The project requires the following coordination:

Kern County will be consulted in regard to the specifics of the freeway ramp closures and detours. Local circulation will be temporarily altered.

12. PROJECT REVIEWS

Scoping team field review. Date 12/07/2017
District Program Advisor *John Fox* Date Done
Headquarters SHOPP Program Advisor *Robert Hogan* Date Done
District Maintenance *John Fox* Date 06/06/2018
District 9 Design Liaison *Brian Wesling* Date 05/11/2018
Project Manager *Dennee Alcala* Date 06/01/2018
District Safety Review *District 9 Traffic* Date 06/06/2018

Constructability Review PDT Date 06/06/2018

13. PROJECT PERSONNEL

Brian Wesling	Chief, Engineering Branch B, Project Engineer	(760) 872-0630
Scott Eagan	Design Engineer	(760) 872-0623
John Fox	District Program Advisor (201.121) and District Maintenance Engineer	(760) 872-5207
Dennee Alcala	Project Manager	(760) 872-0767
Tim Shultz	Chief, Engineering Branch C and District 9 Materials Engineer	(760) 872-5211

14. ATTACHMENTS (Number of Pages)

A. Location map
B. Typical Cross Sections
C. Storm Water Data Report-signed cover sheet
D. Traffic Data Report
E. Right of Way Data Sheet
F. Pavement Condition Survey
G. CEQA CE
H. Risk Register
I. Cost Estimate
J. Value Analysis Study Summary Report
K. PS&E Constructability Review Attendance Roster

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Ker	14	R4.7/R12.6		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

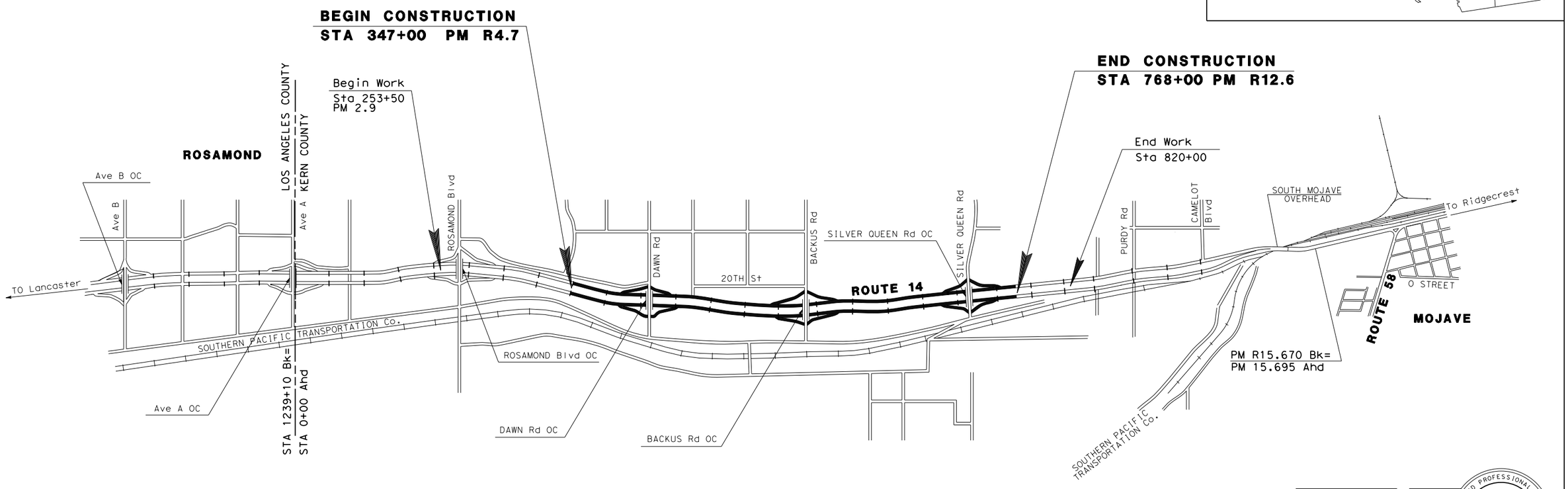
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN KERN COUNTY AT ROSAMOND AND AT MOJAVE
FROM 1.4 MILES SOUTH OF DAWN ROAD OVERCROSSING
TO 0.5 MILE NORTH OF SILVER QUEEN ROAD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015

LOCATION MAP



NO SCALE

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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

PROJECT MANAGER

DESIGN ENGINEER

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

CONTRACT No.	09-36740_
PROJECT ID	0916000025

LAST REVISION 05/11/18

DATE PLOTTED => 11-MAY-2018
TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Ker	14	R4.7/12.6	xx	xx

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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

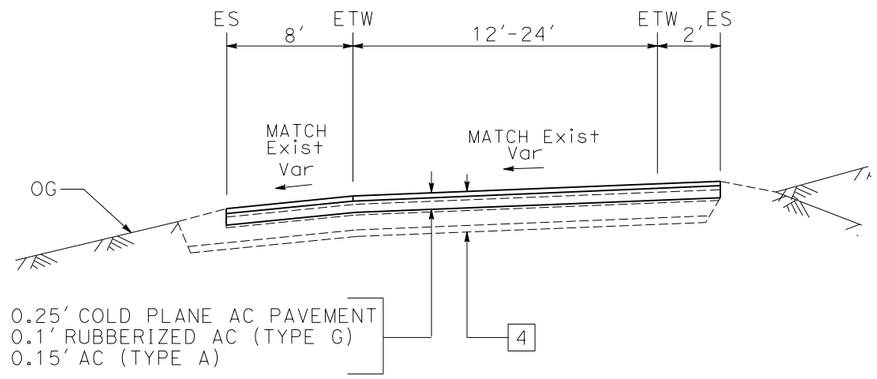
TYPICAL EXISTING PAVEMENT STRUCTURE SECTIONS

[1] 0.65′ PCC
0.45′ CLASS A CTB
0.50′ Cl 3 AS

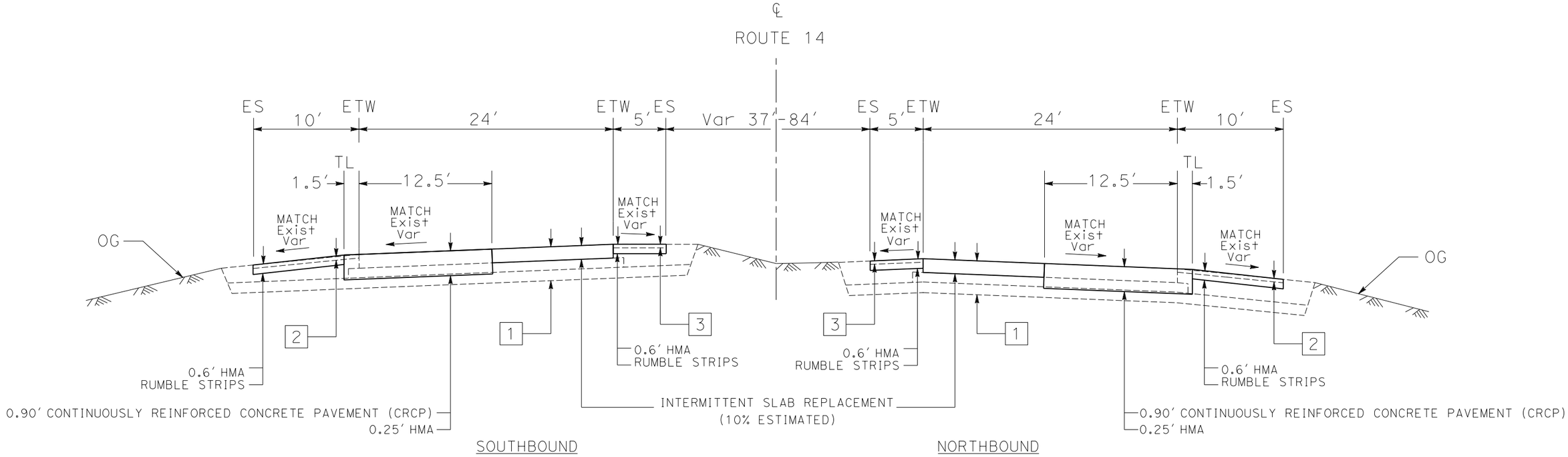
[2] 0.25′ RUBBERIZED AC (TYPE G)
RUMBLE STRIPS

[3] 0.20′ ASPHALT CONCRETE (TYPE B)

[4] 0.15′ AC (Type G)
0.3′ AC (Type A)
Cl 2 AB
CL 3 AS



ON AND OFF RAMPS PM R4.7 TO PM R12.6
ROUTE 14



PM R4.7 TO PM R12.6
ROUTE 14

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® PROJECT DELIVERY
FUNCTIONAL SUPERVISOR: BRIAN WESLING
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
ADRIAN VAN DER RIET

LAST REVISION 05-11-18
DATE PLOTTED => 11-MAY-2018
TIME PLOTTED => 13:24

BORDER LAST REVISED 7/2/2010
USERNAME => S126636
DGN FILE => X-Sections.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 4210
PROJECT NUMBER & PHASE 0916000025

Dist-County-Route: 09-KER-14
Post Mile Limits: PM R4.7-R12.6
Type of Work: Lane Replacement
Project ID (EA): 0916000025 (09-367401)
Program Identification: 20.20.201.122
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Lahontan (Region 6V)

1.	Does the project disturb 5 or more acres of soil?	Yes ☐	No ☒
2.	Does the project disturb 1 or more acres of soil and not qualify for the Rainfall Erosivity Waiver?	Yes ☒	No ☐
3.	Is the project required to implement Treatment BMPs?	Yes ☐	No ☒
4.	Does the project impact existing Treatment BMPs?	Yes ☐	No ☒

If the answer to any of the preceding questions is "Yes", prepare a Long Form – Stormwater Data Report. Unless otherwise agreed upon by the District/Regional Design Stormwater Coordinator.

Total Disturbed Soil Area: 2.25 Acres New Impervious Surface: 0.0 acres
Estimated Const. Start Date: 10/1/2020 Estimated Const. Completion Date: 10/1/2021
Risk Level: RL 1 ☐ RL 2 ☐ RL 3 ☐ Not Applicable ☒
Is MWELO applicable? Yes ☐ No ☒

This Short Form – Stormwater Data Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

6/6/18

[Stamp Required at PS&E only] *Brian Wesling, Registered Project Engineer* *Date*

I have reviewed the stormwater quality design issues and find this report to be complete, current, and accurate:

6/6/2018

Robert Sanchez, District Stormwater Manager *Date*

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

Serious Drought
Help Save Water!

To: **CORY FREEMAN**
Engineering Branch B

Date: January 30, 2017

File: 09-36740K
Kern 14 PM R0.0/16.1
Rosamond-Mojave 3R

From: **Jed Eropkin**
Traffic Operations

Subject: **TRAFFIC INDEX (TI) CALCULATIONS AND DESIGN DESIGNATION**

Attached you will find the Traffic Index (TI) Calculations and Design Designation for Rosamond-Mojave 3R Project, Kern 14 PM R0.0/R16.1. Project Number is 0916000025. Please include this document as an attachment to your Project Report.

Data Year	2015 AADT = 16900
Construction Year AADT	2022 AADT = 17500
5 Year AADT	2027 AADT = 17940
10 Year AADT	2032 AADT = 18400
20 Year AADT	2042 AADT = 19340
5 Year TI	2027 TI = 10.5
10 Year TI	2032 TI = 11.0
20 Year TI	2042 TI = 12.0
40 Year TI	2062 TI = 13.5
Construction Year DHV	2022 DHV = 1630
5 Year DHV	2027 DHV = 1670
10 Year DHV	2032 DHV = 1720
20 Year DHV	2042 DHV = 1800
40 Year DHV	2062 DHV = 1990

2015 Directional Split = 68.34 %
2015 Trucks = 10.0 %

If you have any questions, please do not hesitate to call me. I may be reached at (760) 872-0711.

Attachment
c: File

TRAFFIC INDEX and DESIGN DESIGNATION
CALCULATION SHEET

CO-RTE-PM Kern 14 PM R0.0/16.1
EA 09-36740K
JOB NAME Rosamond-Mojave 3R

Requested by: Cory Freeman
Unit: Engineering Branch B
Date: 01/30/17

Census Year 2015
Construction Year 2022
Complete Construction Year 2024
2 Way AADT 16,900
Lane Distribution Factor 1.0 (Table 602.3B, Highway Design Manual)

	AM Peak	PM Peak
Peak Hour Percent, K	6.55	9.33
Directional Split, D	68.34	61.48
Product of K and D, KD	4.48	5.74
DHV = AADT x K /100	1107	1577

PERCENT TRUCKS (%) 10.0
1 WAY TRUCK VOLUME 1155
GROWTH FACTOR, %/Year 0.5

----------TRAFFIC INDEX CALCULATIONS----------

Traffic Index Calculations are based on completion of construction per HDM 103.2

FIVE YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	5 Year Constant	Lane Factor	ESALs
2 axle	22	254.0	1.0590	269.0	345	1	92,805
3 axle	4	46.0	1.0590	49.0	920	1	45,080
4 axle	3	35.0	1.0590	37.0	1470	1	54,390
5 axle	71	820.0	1.0590	868.0	3445	1	2,990,260
TOTALS	100	1155.0		1223.0			3,182,535

Five Year TI **10.5**

TEN YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	10 Year Constant	Lane Factor	ESALs
2 axle	22	254.0	1.0723	272.0	690	1	187,680
3 axle	4	46.0	1.0723	49.0	1840	1	90,160
4 axle	3	35.0	1.0723	38.0	2940	1	111,720
5 axle	71	820.0	1.0723	879.0	6890	1	6,056,310
TOTALS	100	1155.0		1238.0			6,445,870

Ten Year TI **11.0**

TWENTY YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	20 Year Constant	Lane Factor	ESALs
2 axle	22	254.0	1.0994	279.0	1380	1	385,020
3 axle	4	46.0	1.0994	51.0	3680	1	187,680
4 axle	3	35.0	1.0994	38.0	5880	1	223,440
5 axle	71	820.0	1.0994	902.0	13780	1	12,429,560
TOTALS	100	1155.0		1270.0			13,225,700

Twenty Yr TI **12.0**

FORTY YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	40 Year Constant	Lane Factor	ESALs
2 axle	22	254.0	1.1556	294.0	2760	1	811,440
3 axle	4	46.0	1.1556	53.0	7360	1	390,080
4 axle	3	35.0	1.1556	40.0	11760	1	470,400
5 axle	71	820.0	1.1556	948.0	27560	1	26,126,880
TOTALS	100	1155.0		1335.0			27,798,800

Forty Yr TI **13.5**

SHOULDER TIs

Design Life	2% ESALs	TI
5 Year	63,651	**6.5**
10 Year	128,917	**7.0**
20 Year	264,514	**7.5**
40 Year	555,976	**8.5**

----------DESIGN DESIGNATION----------

Design Designation is based on year of construction per HDM 103.1

Construction Year AADT..... **AADT (2022) = 17500**
Five Year AADT..... **AADT (2027) = 17940**
Ten Year AADT..... **AADT (2032) = 18400**
Twenty Year AADT..... **AADT (2042) = 19340**
Forty Year AADT..... **AADT (2062) = 21360**
Construction Year DHV..... **DHV (2022) = 1630**
Five Year DHV..... **DHV (2027) = 1670**
Ten Year DHV..... **DHV (2032) = 1720**
Twenty Year DHV..... **DHV (2042) = 1800**
Forty Year DHV..... **DHV (2062) = 1990**
D = 68.34 %
T = 10.0 %

Jed Eropkin
TRAFFIC OPERATIONS

January 30, 2017
DATE

TRAFFIC DATA REPORT
May 1, 2017

Project: Rosamond-Mojave CAPM Project, Kern 14, PM R5.7-R12.6, EA 36740K

Speed: The posted speed limit on S.R. 14 PM R5.7/R12.6 through the project is 70 mph.

Accident Data:

3 year Table B – January 1, 2012 through December 31, 2014

Accident Rates expressed in Million Vehicle Miles (MVM).

Accident Rates (Per MVM)*		
Types	Actual Avg.	Statewide Avg.
Fatal	0.008	0.008
F + I*	0.10	0.15
Total	0.20	0.42
* Accidents per Million Vehicle Miles		
* Fatal plus Injury		

Summary: Twenty-four collisions were recorded during the three-year study period and there was one fatal and eleven injury collisions. Twelve collisions were property damage only (PDO).

Accident Statistics:

(15)	62.5%	Northbound
(13)	54.2%	Single Vehicle
(11)	45.8%	Multiple Vehicles (2 vehicles)

Primary Collision Factor

(9)	37.5%	Improper Turn
(7)	29.2%	Speeding
(4)	16.7%	Other Violation
(2)	8.3%	Influence of Alcohol
(2)	8.3%	Other Than Driver

Type of Collision

(9)	37.5%	Rear End
(8)	33.3%	Overturn
(4)	16.7%	Hit Object
(1)	4.2%	Sideswipe
(1)	4.2%	Broadside
(1)	4.2%	Auto-pedestrian

Weather Conditions

(21)	87.5%	Clear Weather
(2)	8.3%	Raining
(1)	4.2%	Other

Lighting

TRAFFIC DATA REPORT (cont.)

(17)	70.8%	Daylight
(6)	25.0%	Dark-No Street Light
(1)	4.2%	Dusk/Dawn

Roadway Conditions

(22)	91.7%	Dry
(2)	8.3%	Snow, Icy

Location of Collision

(11)	45.8%	Beyond Shoulder Driver's Right
(6)	25.0%	Right Lane
(3)	12.5%	Left Lane
(2)	8.3%	Beyond Shoulder Driver's Left
(1)	4.2%	Does Not Apply
(1)	4.2%	Right Shoulder Area

Accident Data: On and Off Ramps

PM R9.406-14 SB Off ramp to Backus Rd.

Accident Rates expressed in Million Vehicles (MV+).

Accident Rates (Per MV+)*		
Types	Actual Avg.	Statewide Avg.
Fatal	0.00	0.007
F + I*	0.00	0.34
Total	7.41	1.04
* Accidents per Million Vehicles		
* Fatal plus Injury		

Summary: One collision was recorded during the three-year study period resulting in no injuries and no fatalities and was property damage only (PDO).

Accident Statistics:

(1)	100%	Single Vehicle

Primary Collision Factor

(1)	100%	Speeding

Type of Collision

(1)	100%	Hit Object

Weather Conditions

(1)	100%	Cloudy

Lighting

TRAFFIC DATA REPORT (cont.)

(1) 100% Dark-No Street Light

Roadway Conditions
(1) 100% Dry

Location of Collision
(1) 100% Other

No other collisions were reported for the other on and off ramps included in the scope of this project.

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

RW Data Sheet - Minimum Report

To: Dennee Alcala
Project Manager

Attention: Brian Wesling, Design Manager
Scott Eagan, Project Engineer

Date: May 9, 2018
File Ref.: Kern 14 PM R4.7/R12.6
EA: 09-367400 updated
Proj. No.: 09-1600-0025

From: **DEPARTMENT OF TRANSPORTATION, District 9 Right of Way**

Subject: Minimum Right of Way Data Sheet

We have completed an UPDATED estimate of the right of way costs for the above-referenced project based on the Right of Way Data Sheet Request Form dated: *May 4, 2018. Asking for UPDATED right of way information now that the project scope has been changed to a 2-R rehabilitation style project and the staging area on private property is no longer needed. This project will now replace individual distressed slabs on NB and SB No. 1 lane, will replace both NB and SB No. 2 lanes, will mill and overlay ramps, plus replace guard-railing, signs, and delineation - "Rosamond-Mojave Rehab".* The following assumptions and limiting conditions were identified:

1. The project is listed in the March 2018 Bishop "Status of Projects" on page 14. The anticipated Right of Way Certification date is 1/3/2020. The anticipated Construction Award date is 4/30/2021.

2. The Project Engineer indicates that there is not any new right of way required, that environmental mitigation parcels are not required and that there are not any utility involvements (therefore Buy America Requirements do not apply).

3. Environmental Branch has been contacted, there are no anticipated filing/permit processing fees for this project.

4. Right of way cost is estimated at zero dollars and no right of way mapping is required for this project. A one-month lead-time may be required prior to issuing the RW Certification document.

5. PA&ED Acceptance or completion and a copy of CE will be needed prior to compiling RW Certification document.

MARK HECKMAN
(Acting) Office Chief, District 9
Right of Way

District 6

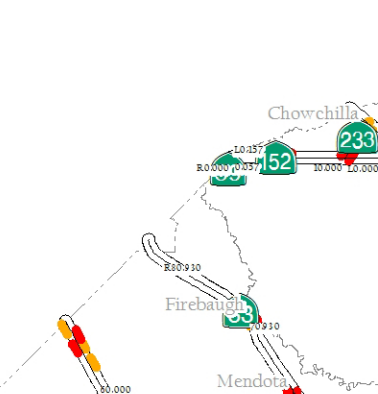
2015 Pavement Condition Survey
Location Summary

- Major Pavement Distress
- Minor Pavement Distress
- Bad Ride Only
- National Highway System
- County Boundary
- Park
- Water Feature
- Interstate Route
- State Route
- US Route

0 10 20 40 Miles

State of California
Department of Transportation
Division of Maintenance GIS
August 2015

N



PAVEMENT CONDITION SURVEY

To effectively manage the state's pavements, the California Department of Transportation (Caltrans) conducts an annual Pavement Condition Survey (PCS). The PCS uses a full-time crew of pavement raters that travel the state to observe and report the condition of pavements using an objective sampling process. The rating crew collects pavement distress information, such as the severity and extent of various structural pavement defects for most lanes. In addition, a 'profile' van travels the highways collecting ride quality information for the pavement. Applying the rating process uniformly to every highway in the state gives an accurate picture of the condition of the network and a useful time-series of data.

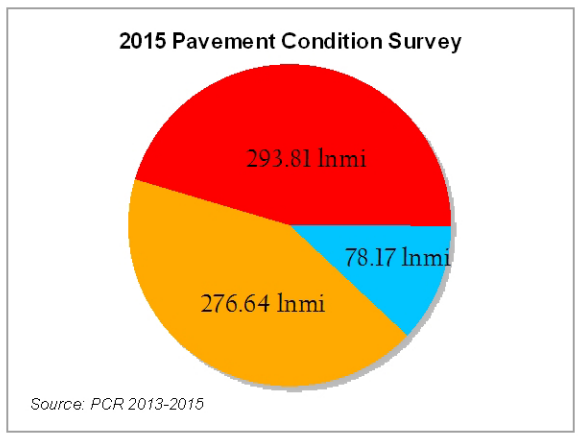
The Pavement Condition Survey that provides the data for the PMS has been reengineered to improve both the quantity and quality of data available to users throughout Caltrans. These updates ensure that pavement condition is continuously monitored and reported through field evaluation of both the ride quality and structural condition. Data collected during the PCS is transferred to Caltrans headquarters and analyzed within the Pavement Management System (PMS).

DISCLAIMER

MAP INFORMATION

Projection: Albers Meters NAD 83
Data Source: 2013-215 Pavement Condition Survey - Location Summary
Project Location: f:\gis\2015_PCS_District06.mxd

DISTRICT 06 "HA" DISTRESS TOTALS



Collection Date: / / : : AM
Printed: 10/21/2015

Caltrans Maintenance Program
2013 Pavement Condition Survey Inventory
Caltrans Drive Order

District 6, KER, Rte 014, PM 0.0 - 14.5

District		6
County		KER
Route		014
Begin PM	R	0.000

District 6 County KER Route 014

Begin PM - End PM		Length	LaneMi. (Est.)	Type	AADT (,000)	MSL								
Lane	Surface Type	Alligator Cracking A %	B %	C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	3rd %	Corner %	Faulting	Patching Area %	Poor Cond.?	Ride, IRI	Priority	Skid	Defect
R 0.000 - R 1.000		**1.000**	**4.000**	**MLD**		**35**		**1**							
L1	R											5 77	98		GOOD CONDITION
L2	R					34	2	7				5 92	31		SLAB CRACKING
R1	R											5 86	98		GOOD CONDITION
R2	R					34	10	2				5 85	7		THIRD ST.CRKNG
R 1.000 - R 2.000		**1.000**	**4.000**	**MLD**		**35**		**1**							
L1	R											5 84	98		GOOD CONDITION
L2	R					50	8	1				5 115	7		THIRD ST.CRKNG
R1	R											5 88	98		GOOD CONDITION
R2	R					33	3	3				5 85	31		SLAB CRACKING
R 2.000 - R 3.000		**1.000**	**4.000**	**MLD**		**35**		**1**							
L1	R											5 83	98		GOOD CONDITION
L2	R					51	8	2				5 95	7		THIRD ST.CRKNG
R1	R											5 90	98		GOOD CONDITION
R2	R					29	7	10				5 85	7		THIRD ST.CRKNG
R 3.000 - R 4.000		**1.000**	**4.000**	**MLD**		**35**		**1**							
L1	R											5 83	98		GOOD CONDITION
L2	R					54	18	6				5 120	7		THIRD ST.CRKNG
R1	R											5 95	98		GOOD CONDITION
R2	R					38	9	4				5 110	7		THIRD ST.CRKNG
R 4.000 - R 5.000		**1.000**	**4.000**	**MLD**		**19**		**1**							
L1	R											5 90	98		GOOD CONDITION
L2	R					58	7	11				5 105	7		THIRD ST.CRKNG
R1	R											5 90	98		GOOD CONDITION
R2	R					42	17	5				5 105	7		THIRD ST.CRKNG
R 5.000 - R 6.000		**1.000**	**4.000**	**MLD**		**19**		**1**							
L1	R											5 80	98		GOOD CONDITION
L2	R					59	9	22				5 100	7		THIRD ST.CRKNG
R1	R											5 85	98		GOOD CONDITION
R2	R					37	32	8				5 99	7		THIRD ST.CRKNG

*Surface type of 'EB' is Enhanced Binder.

Caltrans Maintenance Program
2013 Pavement Condition Survey Inventory
Caltrans Drive Order

District 6, KER, Rte 014, PM 0.0 - 14.5

District 6 County KER Route 014

Begin PM - End PM		Length	LaneMi. (Est.)	Type	AADT (,000)	MSL
R 6.000 - R 7.000		**1.000**	**4.000**	**MLD**	**19**	**1**
R 7.000 - R 8.000		**1.000**	**4.000**	**MLD**	**19**	**1**
R 8.000 - R 9.000		**1.000**	**4.000**	**MLD**	**19**	**1**
R 9.000 - R 10.000		**1.000**	**4.000**	**MLD**	**19**	**1**
R 10.000 - R 11.000		**1.000**	**4.000**	**MLD**	**19**	**1**
R 11.000 - R 12.000		**1.000**	**4.000**	**MLD**	**19**	**1**

Lane	Surface Type	Alligator Cracking A %	Alligator Cracking B %	Alligator Cracking C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	Slab Cracking 3rd %	Slab Cracking Corner %	Faulting	Patching Area %	Patching Poor Cond.?	Ride, IRI	Priority	Skid	Defect
L1	R											5 77	98		GOOD CONDITION
L2	R					60	10	25				5 97	7		THIRD ST.CRKNG
R1	R											5 88	98		GOOD CONDITION
R2	R					40	23	12				5 97	7		THIRD ST.CRKNG
L1	R											5 77	98		GOOD CONDITION
L2	R					57	19	29				5 102	7		THIRD ST.CRKNG
R1	R											5 78	98		GOOD CONDITION
R2	R					44	23	17				5 94	7		THIRD ST.CRKNG
L1	R											5 77	98		GOOD CONDITION
L2	R					51	22	33				5 109	7		THIRD ST.CRKNG
R1	R											5 75	98		GOOD CONDITION
R2	R					44	22	4				5 94	7		THIRD ST.CRKNG
L1	R											5 77	98		GOOD CONDITION
L2	R					49	29	36				5 116	7		THIRD ST.CRKNG
R1	R											5 84	98		GOOD CONDITION
R2	R					37	22	27				5 91	7		THIRD ST.CRKNG
L1	R											5 87	98		GOOD CONDITION
L2	R					40	27	35				5 106	7		THIRD ST.CRKNG
R1	R											5 90	98		GOOD CONDITION
R2	R					24	36	24				5 104	7		THIRD ST.CRKNG
L1	R											5 79	98		GOOD CONDITION
L2	R					48	30	31				7 126	7		THIRD ST.CRKNG
R1	R											5 81	98		GOOD CONDITION
R2	R					35	31	35				5 93	7		THIRD ST.CRKNG

*Surface type of 'EB' is Enhanced Binder.

Caltrans Maintenance Program
2013 Pavement Condition Survey Inventory
Caltrans Drive Order

District 6, KER, Rte 014, PM 0.0 - 14.5

District 6 County KER Route 014

Begin PM - End PM		Length	LaneMi. (Est.)	Type	AADT (,000)	MSL								
Lane	Surface Type	Alligator Cracking A %	B %	C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	3rd %	Corner %	Faulting	Patching Area %	Poor Cond.?	Ride, IRI	Priority	Skid	Defect
R 12.000 - R 12.565		**0.565**	**2.260**	**MLD**		**19**		**1**							
L1	R											5 90	98		GOOD CONDITION
L2	R					54	36	26				13 144	7		THIRD ST.CRKNG
R1	R											5 76	98		GOOD CONDITION
R2	R					32	31	16				5 106	7		THIRD ST.CRKNG
R 12.565 - R 12.623		**0.058**	**0.232**	**MLD**		**19**		**1**							
L1	F -DG	0	0									N/A	33		MISC. UNSEALED CRACKS
L2	F -DG	0	0									N/A	98		GOOD CONDITION
R2	R					32	31	16				N/A	7		THIRD ST.CRKNG
R 12.623 - R 13.000		**0.377**	**1.508**	**MLD**		**19**		**1**							
L1	F -DG	0	0									7 96	33		MISC. UNSEALED CRACKS
L2	F -DG	0	0									12 116	98		GOOD CONDITION
R1	F -DG	11	0									11 110	32		ALL. A, NO B, OPEN CRKS
R2	F -DG	0	0									20 144	33		MISC. UNSEALED CRACKS
R 13.000 - R 14.000		**1.000**	**4.000**	**MLD**		**19**		**1**							
L1	F -DG	0	0									5 83	33		MISC. UNSEALED CRACKS
L2	F -DG	50	0									13 118	32		ALL. A, NO ALL. B
R1	F -DG	0	0									5 80	33		MISC. UNSEALED CRACKS
R2	F -DG	0	0									11 112	99		NO DISTRESS OBSERVED
R 14.000 - R 15.000		**1.000**	**4.000**	**MLD**		**19**		**1**							
L1	F -DG	0	0									9 103	33		MISC. UNSEALED CRACKS
L2	F -DG	0	100									21 151	7		HIGH ABC
R1	F -DG	0	0									7 96	33		MISC. UNSEALED CRACKS
R2	F -DG	58	0									15 127	32		ALL. A, NO B, OPEN CRKS

*Surface type of 'EB' is Enhanced Binder.

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

09-KER-14	4.7/12.6	09-36740	0916000025 Rosamond-Mojave Rehab
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

PROJECT DESCRIPTION:

Caltrans proposes to construct a pavement rehabilitation project on State Route (SR) 14 in Kern County, from 1.4 miles south of Dawn Road to 0.5 miles north of Silver Queen Road. The #1 lane will have individual concrete slab replacement where needed. The #2 lane will be replaced in total. To isolate construction activities paved traffic crossovers will be installed north and south of the project to divert all traffic to the northbound or eastbound lanes. Other freeway elements will be replaced where warranted, such as but not limited to: guardrails, rumble strips, delineators, traffic census loops, AC dikes, signs and thermoplastic striping. No known biological, hazardous, visual, or historic properties will be impacted by the project. See pages two (2) to five (5) for a listing of the environmental commitments.

CALTRANS CEQA DETERMINATION (Check one)

☐ **Not Applicable – Caltrans is not the CEQA Lead Agency**

☐ **Not Applicable – Caltrans has prepared an Initial Study or Environmental Impact Report under CEQA**

Based on an examination of this proposal, supporting information, and the above statements, the project is:

☐ **Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)

☒ **Categorically Exempt. Class 1(c).** (PRC 21084; 14 CCR 15300 et seq.)

Based on an examination of this proposal and supporting information, the following statements are true and exceptions do not apply:

- If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 ("Cortese List").
- This project does not cause a substantial adverse change in the significance of a historical resource.

☐ **Exempt by General Rule.** [This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (14 CCR 15061[b][3].)

Angie Calloway
Print Name: Senior Environmental Planner or Environmental Branch Chief

Signature 6/20/18 Date

Dennee Alcala
Print Name: Project Manager

Signature 6.20.18 Date

NEPA COMPLIANCE

In accordance with 23 CFR 771.117, and based on an examination of this proposal and supporting information, the State has determined that this project:

- does not individually or cumulatively have a significant impact on the environment as defined by NEPA, and is excluded from the requirements to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS), and
- has considered unusual circumstances pursuant to 23 CFR 771.117(b).

CALTRANS NEPA DETERMINATION (Check one)

☐ **23 USC 326:** The State has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). As such, the project is categorically excluded from the requirements to prepare an EA or EIS under the National Environmental Policy Act. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated May 31, 2016, executed between the FHWA and the State. The State has determined that the project is a Categorical Exclusion under:

- ☐ **23 CFR 771.117(c): activity (c)(___)**
- ☐ **23 CFR 771.117(d): activity (d)(___)**
- ☐ **Activity ___ listed in Appendix A of the MOU between FHWA and the State**

☐ **23 USC 327:** Based on an examination of this proposal and supporting information, the State has determined that the project is a Categorical Exclusion under 23 USC 327. The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Print Name: Senior Environmental Planner or Environmental Branch Chief

Signature Date

Print Name: Project Manager/DLA Engineer

Signature Date

Date of Categorical Exclusion Checklist completion:

Date of ECR or equivalent :

Environmental Commitments Record for EA 09-36740_ / ID 0916000025

Last updated 6/19/2018

Rosamond-Mojave Rehab

KER-014-4.700/12.600

Current Project Phase:

EP: Benjamin Downard 760-872-0657

CL:

RE:

Permits

Permit	Agency	Date Submitted	Date Received	Expiration	Requirements Completed Name	Requirements Completed Date	Comments
Report of Waste Discharge	Regional Water Quality Control Board						

Commitments

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name	Task Completed Date	Remarks/Due Date
PS&E/Before RTL							
Cultural Resources							
Caltrans Archaeologist will ensure that the ESAs are clearly described and illustrated in the Plans, Specifications, and Estimate submittal (PS&E) prepared for construction.	Section 106	SSP	PM, Archaeologist	Submit PSE package for review			
Pre-Construction							
Biology							
45 days prior to construction start, submit CV for at least one designated biologist (DB) to Caltrans Biologist for review and approval; DB will conduct preconstruction surveys, preconstruction WEAP and full time construction monitoring	SSP	SSP	contractor RE	Submit biologist CV to Caltrans Biologist at least 45 days prior to construction start			
All employees to take WEAP and sign WEAP attendance sheet prior to starting on the job site;	Env Doc	SSP	DB contractor RED	All employees to take WEAP and sign WEAP sign in sheet			
Contact Caltrans Biologist via phone or email immediately after surveys with survey results submit preconstruction survey report to Caltrans Biologist for review and approval prior to ground disturbance	SSP	SSP	DB contractor RE	submit survey results to Caltrans biologist submit survey report to Caltrans biologist			
DB to conduct pre-construction surveys for DT, MGS, BUOW, special-status animals and plants within 14 days prior to ground disurbance	SSP	SSP	DB contractor RE	pre-construction surveys within 14 days prior to ground disturbance			
DB to prepare fact sheet for WEAP, other WEAP training material and NRPP and get Caltrans Biologist approval prior to WEAP training	Env Doc	SSP	DB	Obtain Caltrans Biologist approval of WEAP Fact Sheet, WEAP Training Material and NRPP			

Rosamond-Mojave Rehab

KER-014-4.700/12.600

Current Project Phase:

EP: Benjamin Downard 760-872-0657

CL:

RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name	Task Completed Date	Remarks/Due Date
DB to provide WEAP sign in sheet to Caltrans Biologist every Friday	Env Doc	SSP	DB RE	DB submit WEAP sign in sheet to Caltrans Biologist every Friday			
indicate on plans ESA 12 feet from edge of pavement on teh outside shoulder from project start to project stop	Env Doc	SSP	PE RE				
Notify Environmental 30 days prior to construction	Bio Memo		RE	Notify Environmental 30 days prior to construction			
Pre-construction Desert Tortoise and Mohave ground squirrel training for contractor. A trained biologist will train contractor on avoidances and measures to reduce risk of impacting Desert tortoise or Mohave ground squirrel that may appear in the project or staging areas	Bio Memo		RE; Biologist	Notify Environmental 30 days prior to construction			
Staging areas previously not cleared must first be cleared by a qualified biologist	Bio Memo		RE; Biologist	Notify Environmental is staging areas or scope of project changes			
Cultural Resources							
All responsible parties will ensure that ESAs are discussed during the pre-construction meeting. The importance of ESAs will be discussed with construction personnel and it will be stressed that no construction activity (including storage or staging of equipment or materials) should occur within the ESAs and that workers must remain outside the ESAs at all times. Additionally, personnel will be informed of historic preservation laws that protect archaeological sites against any unauthorized disturbance or removal of artifacts and the consequences of such actions.	Section 106	SSP	RE, Archaeologist, Contractor(s)	Notify Environmental 14 days prior to pre-construction meeting			
All responsible parties will perform a field review of ESA locations at least one calendar week prior to construction activities.	Section 106	SSP	RE, Archaeologist, Contractor(s)	Perform Field Review			
Contractor will install temporary plastic fencing as field marked by the Caltrans Archaeologist (or a qualified archaeologist under the Caltrans Archaeologist's direction). The Caltrans Archaeologist (or a qualified archaeologist under the Caltrans Archaeologist's direction) will coordinate this activity with the Resident Engineer, and be present to supervise the fence installation. The fencing will be installed at least one calendar week prior to initiating any work in those areas	Section 106	SSP	RE, Archaeologist, Contractor(s)	Contractor installs ESA fence under Archaeologist's direction			

Rosamond-Mojave Rehab

KER-014-4.700/12.600

Current Project Phase:

EP: Benjamin Downard 760-872-0657

CL:

RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name	Task Completed Date	Remarks/Due Date
The Resident Engineer will notify the Caltrans Archaeologist and Environmental Office Chief at least 30 days in advance of construction to ensure that a Caltrans Archaeologist (or qualified archaeologist under direction of a Caltrans Archaeologist) will be available to monitor fence installation and allow for field review of ESA locations.	Section 106	SSP	RE, Archaeologist	RE notify Environmental and Archaeologist at least 30 days prior to construction			
Construction							
Biology							
DB to be present on-site full time, every day of construction, without leaving the site, from 30 min before construction start to construction stop	Env Doc	SSP	DB RE contractor	full time DB monitor			
DB to check proper staging of equipment and material	Env Doc	SSP	B RE contractor	DB to monitor staging			
DB to check under equipment, check trenches, pipes and culverts	Env Doc	SSP	DB RE contractor	DB to check for SSS in am			
DB to enforce ESA line at all times during construction	Env Doc	SSP	DB RE contractor	Enforce ESA line during construction			
DB to monitor all active construction areas for DT, MGS, BUOW, nesting birds and other special-status plant and animal species and enforce avoidance measures	Env Doc	SSP	DB RE contractor	Monitor for SSS			
equipment, personnel and construction activities are not allowed outside of the project limits of wiithin the ESA							
Cultural Resources							
The Caltrans Archaeologist, or a qualified archaeologist under direction of the Caltrans Archaeologist, will conduct periodic inspection to ensure the integrity of ESAs.	Section 106	SSP	Archaeologist	Spot monitor ESA fence integrity			
Post-Construction							

Environmental Commitments Record for EA 09-36740_ / ID 0916000025

Last updated 6/19/2018

Rosamond-Mojave Rehab

KER-014-4.700/12.600

Current Project Phase:

EP: Benjamin Downard 760-872-0657

CL:

RE:

Task and Brief Description	Source	SSP/ NSSP	Responsible Staff	Action to Comply	Task Completed Name	Task Completed Date	Remarks/Due Date
Cultural Resources							
Under supervision of the Caltrans Archaeologist, or a qualified archaeologist under direction of the Caltrans Archaeologist, the Contractor will remove temporary fencing at the conclusion of construction.	Section 106	SSP	RE, Archaeologist, Contractor(s)	RE notifies archaeologist of completion of construction. Archaeologist monitors removal of ESA fence			

Risk Register / Risk Management Plan for 36740 (09-1600-0025), Rosamond/Mojave Rehabilitation

v3.1 last modified 04/13/2018 CB

Risk Checkpoint:	
Date:	
Project Nickname:	
EA:	
Co-Rt, Post Miles:	
Project Manager:	
FY & Program (SHOPP or STIP):	
Total Costs (Capital & Support):	
RTL Target:	

Phase	Cost Contingency Range $k			Schedule Contingency Range (Wkg Days)		
	Optimistic	PERT	Pessimistic	Optimistic	PERT	Pessimistic
0-PA&ED	$0	$0	$0	0	0	0
1-PS&E	$0	$0	$0	0	0	0
2-RW Sup	$0	$0	$0	0	0	0
3-Con Sup	$0	$0	$0	0	0	0
9-RW Cap	$0	$0	$0	0	0	0
4-Con Cap	$0	$0	$0	0	0	0

Risk Identification								Risk Assessment											
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)										
Active	2	Threat	Environmental	Encountering human remains	As a result of encountering human remains during construction, construction activities may need to stop until a coroner can assess the situation and advise how to proceed.	Discovery is unlikely but always a possibility. Section 7050.5 of the Health and Safety Code requires construction to stop if remains are found	Encountering human remains (not on federal/tribal lands)	2-Low (11-30%)			Accept	If found, remains would need to be identified by a coroner and determined if the remains are Native American and the Most Likely Descendent would need to be consulted	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
															0-PA&ED Sup		O ML P	O ML P
Active	4	Threat	Environmental	Special Status	As a result of Special-Status, State or Federally-listed Species present within the PIA during pre-construction surveys, project delays may result.	It is unlikely that listed species will be discovered in the PIA during pre-con surveys.	Pre-construction surveys	2-Low (11-30%)			Accept	Consult with regulatory agencies early and often in the project delivery process so unexpected delays due to special status species do not occur.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
															0-PA&ED Sup		O ML P	O ML P
Active	5	Threat	Environmental	Changes to project scope	As a result of changes to the project scope, additional environmental surveys and studies may be required which would lead to schedule delays and increased cost.	Current scope is not expected to change. Design will coordinate with Environmental throughout PS&E.	Scope changes	2-Low (11-30%)			Accept	Environmental will communicate adverse impacts to the PDT resulting from scope/design changes. Re-work of environmental document, specialist studies, and environmental commitments may be necessary. Schedule delays and support cost increases may occur.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
															0-PA&ED Sup		O ML P	O ML P
Active	6	Threat	Environmental	Species status change	As a result of a species status change during project delivery, additional permits, studies, reports, and coordination with regulatory agencies may be required, which could lead to cost increases and schedule delays.	Currently there are no proposed special status species changes.	Species status change	2-Low (11-30%)			Accept	Re-work of environmental document, biology studies, and environmental commitments may be necessary. Consultation and permitting with regulatory agencies may be required. Schedule delays and support cost increases may occur.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
															0-PA&ED Sup		O ML P	O ML P
Active	8	Threat	Environmental	Encountering unknown cultural resources	As a result of encountering unknown cultural resources during construction, construction activities may have to stop until a qualified archaeologist can assess the situation and determine how to proceed.	The project area has been cleared for known archaeological resources, however not all existing resources are included in databases	Unforeseen cultural resources encountered	1-Very Low (1-10%)			Accept	If unexpected discovery occurs, follow standard specification protocol for informing CT archaeologist and stopping work in that location.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
															0-PA&ED Sup		O ML P	O ML P
Active	9	Threat	Environmental	ESAs not implementable	During Design and/or Construction, ESAs cannot be implemented due to conflicts with design and construction methods may require reassessment of effects to protected resources and additional consultation with regulatory agencies	Current ESA plans do not conflict with proposed Design or Construction.	ESAs conflict with constructability	1-Very Low (1-10%)			Accept	Environmental will communicate adverse impacts to the PDT as a result of not being able to implement ESA. Re-work of environmental document, specialist studies, and environmental commitments may be necessary. Schedule delays and support cost increases may occur.	Angela Calloway, Env	5/21/2018	1-PS&E Sup		O ML P	O ML P
															3-Con Sup		O ML P	O ML P

Risk Identification								Risk Assessment			Risk Response				Quantifying "Red" (High P & I) Level Risks			
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (PxI)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Calculated Contingency	Support (hours) Capital Cost $k	Schedule (Days)
Active	10	Threat	Design	Asphalt and Concrete prices inflate	Because of the large quantity, an increase in HMA and/or Concrete cost would have a significant impact.	Staff continue to review and adjust construction capital costs based on market trends and incoming bids.	Unforeseen Material costs	4-High (51-70%)	2 - Low (<$2278.35k)	8	Accept	A PCR to address construction capital will be needed.	Brad Rockwell, OE	5/23/2018	1-PS&E Sup		O ML P	O ML P
									4 - Moderate (1-3 months)	16					4-Con Cap	$325k	O $5,000k ML $6,000k P $10,000k PERT $6,500k	O ML P
								5%										
Active	11	Threat	Funding	Funding Uncertainty	Uncertainty in funding requirements, processes, priorities may impact the project schedule adversely as well as Departmental goals and mission.	Assumptions: Project funding will be identified within 6 years	Changes to statewide priority, repeal of SB1, changes to District 9 pavement priorities, lack of SHOPP funding	3-Moderate (31-50%)	2 - Low (<$2278.35k)	6	Escalate	We will share this threat with our district management so that they are aware of it however we will not set aside any time or money to address this threat since cost impacts are completely unknown.	Dennee Alcala, PM	6/5/2018				
									16 - Very High (>6 months)	48					4-Con Cap	$15,867k	O $0k ML $46,000k P $54,000k PERT $39,667k	O ML P
								40%										
Retired	7	Threat	Environmental	Identification of a Tribal Cultural Resource	As a result of identification of a Tribal Cultural Resource, elevation of the CEQA document could occur, which could lead to increases to the cost, scope, and schedule.		Tribal Cultural Resource	2-Low (11-30%)	1 - Very Low (Insignificant)	2	Accept		Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
									2 - Low (<1 month)	4					0-PA&ED Sup		O ML P	O ML P
								20%										
Retired	3	Threat	Environmental	Encountering Native American human remains	As a result of encountering human remains on federal and/or Tribal lands, delays to the project schedule may occur and costs would increase.	Discovery is unlikely, but always a possibility. The Native American Graves Protection and Repatriation Act (NAGPRA) requires construction activities to stop in the area of discovery and the Federal Land Mgmt. Agency to consult with Tribes	Encountering human remains on Federal or Tribal lands	2-Low (11-30%)	2 - Low (<$2278.35k)	4	Accept	Such a discovery may also highlight needs for construction monitoring, although such a requirement is currently considered unlikely to be necessary.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
									4 - Moderate (1-3 months)	8					0-PA&ED Sup		O ML P	O ML P
								20%										
Retired	1	Threat	Environmental	Discovering unavoidable/ unidentified deposits	As a result of discovering unavoidable and previously unidentified archaeological deposits, additional consultation with CSO and/or SHPO may be required, which would lead to increased costs and schedule delays.	additional studies during PA&ED phase to determine if additional consultation is needed	Archaeological deposits	2-Low (11-30%)	2 - Low (<$2278.35k)	4	Accept	In such an event, the cost and schedule for delivery of cultural studies necessary prior to completion of PA&ED will likely need extension. Additional costs may be incurred under WBS 165 and WBS 235.	Angela Calloway, Env	5/17/2018	0-PA&ED Sup		O ML P	O ML P
									4 - Moderate (1-3 months)	8					0-PA&ED Sup		O ML P	O ML P
								20%										

Rosamond Mojave Rehabilitation

Project ID: 0916000025
EA: 09-36740

Type of Estimate: Project Scope Summary Report
Program Code: 201.121
Project Limits: KER-14-R4.7/R12.6

Description: This project proposes to rehabilitate the mainline, shoulders and the on/off ramps to upgrade MBGR, and some highway appurtenances and facilities

Scope: Pavement Rehabilitation (2R Project)
Alternative: 1 (build)

	Current Cost	Escalated Cost
ROADWAY ITEMS **	$ 47,163,000	$53,457,000
STRUCTURE ITEMS **	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 47,163,000	$ 53,457,000
RIGHT OF WAY **	$ -	
TOTAL CAPITAL OUTLAY COST	$ 47,163,000	$ 53,457,000

Date of Estimate	5/4/2018
Date of "Begin Construction"	8/1/2021
Date of "End Construction"	8/1/2022
Date of "Midpoint Construction"	1/30/2022
Months between "midpoint construction" and estimate date:	45.0
Annual Rate of Escalation:	3.4%

** = Rounded to the nearest thousand dollars

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	$ 989,333
2	Pavement Structural Section	$ 25,922,422
3	Drainage	$ -
4	Specialty Items	$ 61,560
5	Environmental	$ 444,178
6	Traffic Items	$ 4,904,360
7	Detours	$ 1,284,780
8	Minor Items	$ 1,008,199
9	Roadway Mobilization	$ 2,769,187
10	Supplemental Work	$ 157,500
11	State Furnished	$ 460,000
12	Overhead	$ 3,461,483
13	Contingencies	$ 5,700,228
	TOTAL ROADWAY ITEMS	**$ 47,163,230**

PR Cost Estimate for the Rosamond Mojave Rehabilitation

09-36740, 0916000025, 201.121, 5/4/2018

Estimate Prepared By: Scott Eagan _____ 5/4/2018
Name Date

Estimate Reviewed By: Brian Westing _____ 5/4/18
Name Date

Section 1: EARTHWORK

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
190101 Roadway Excavation	CY	28,266.67	$ 35.0	$ 989,333
418002 Remove Concrete Pavement (CY)	CY	48,415	$ 50.0	$ 2,420,750
TOTAL EARTHWORK SECTION ITEMS				**$ 989,333**

Section 2: PAVEMENT STRUCTURAL SECTION

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
398200 Cold Plane Asphalt Concrete Pavement (ramps)	SY	69,813	$ 3.30	$ 230,384
400050 Continuously Reinforced Concrete Pavement	CY	39,293	$ 345	$ 13,556,200
390132 Hot Mix Asphalt (base)	TON	21,366	$ 130	$ 2,777,548
390132 Hot Mix Asphalt (shoulders)	TON	52,010	$ 130	$ 6,761,344
393004 Geosynthetic Pavement Interlayer	SY	130,978	$ 1.95	$ 255,407
846051 12" Rumble Strip (HMA) Median Shoulder	STA	842	$ 65.00	$ 54,730
846052 12" Rumble Strip (Concrete Pavement) Outside Shoulder	STA	842	$ 130.00	$ 109,460
411105 Individual Slab Replacement (RSC)	CY	2,510	$ 760	$ 1,907,910
420201 Grind Existing Concrete Pavement	SY	37,422	$ 7.20	$ 269,440
TOTAL PAVEMENT STRUCTURAL SECTION ITEMS				**$ 25,922,422**

Section 3: DRAINAGE

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
TOTAL DRAINAGE SECTION ITEMS				**$ -**

Section 4: SPECIALTY ITEMS

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
839779 Remove Metal Railing	LF	562	$ 40	$ 22,464
070030 Lead Compliance Plan	LS	1	$ 5,400	$ 5,400
832006 Midwest Guardrail System (Steel Post)	LF	562	$ 60	$ 33,696
TOTAL SPEICIALTY ITEMS				**$ 61,560**

Section 5: ENVIRONMENTAL

Section 5a: ENVIRONMENTAL MITIGATION

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
141120 Treated Wood Waste (guardrail post)	lb	8,320	$ 1.80	$ 14,976
146001 Contractor Supplied Biologist (Day)	Day	80	$ 1,250.00	$ 100,000
141000 Temporary Fence (Type ESA)	LF	16,667	$ 6.00	$ 100,002
SUBTOTAL ENVIRONMENTAL MITIGATION				$ 214,978

Section 5B: LANDSCAPE AND IRRIGATION

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
SUBTOTAL LANDSCAPE AND IRRIGATION				$ -

Section 5C: NPDES

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
130100 Job Site Management	LS	1	$ 55,000	$ 55,000
130200 Prepare WPCP	LS	1	$ 4,900	$ 4,900
074023 Temporary Erosion Control	LS	1	$ 24,000	$ 24,000
130640 Temporary Fiber Roll	LF	1,000	$ 3.90	$ 3,900
130900 Temporary Concrete Washout Facility	LS	1	$ 9,000	$ 9,000
130620 Temporary Drainage Inlet Protection	EA	4	$ 350	$ 1,400
074041 Street Sweeping	LS	1	$ 95,000.00	$ 95,000
074042 Temporary Concrete Washout (Portable)	EA	60	$ 600.00	$ 36,000
SUPPLEMENTAL WORK FOR NPDES				
066595 Water Pollution Control Maintenance Sharing	LS	1	$ 12,000	$ 12,000
066596 Additional Water Pollution Control**	LS	1	$ 12,000	$ 12,000
SUBTOTAL NPDES (Without Supplemental Work)				$ 229,200

** Applies to all SWPPPs and those WPCPs with sediment controlor soli stabliization BMPs.*

*** Applies to both SWPPPs and WPCP projects.*

**** Applies only to project with SWPPPs.*

TOTAL ENVIRONMENTAL ITEMS	**$ 444,178**

Section 6: TRAFFIC ITEMS

Section 6A: Traffic Electrical

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
870112 Inductive Loop Detectors	LS	1	$ 48,000	$ 48,000
SUBTOTAL TRAFFIC ELECTRICAL				$ 48,000

Section 6B: Traffic Signing and Striping

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
120090 Construction Area Signs	LS	1	$ 45,000	$ 45,000
150710 Remove Traffic Stripe	LS	1	$ 120,000	$ 120,000
846020 Remove Painted Traffic Stripe (Temporary)	LF	142,600	$ 13.00	$ 1,853,800
820250 Remove Roadside Sign	EA	60	$ 145	$ 8,700
820840 Roadside Sign (One Post)	EA	40	$ 325	$ 13,000
820850 Roadside Sign (Two Post)	EA	20	$ 450	$ 9,000
820690 Furnish Sign Panels	SQFT	650	$ 30	$ 19,500
84XXXX Permanent Pavement Delineation	LS	1	$ 160,000	$ 160,000
SUBTOTAL TRAFFIC SIGNING AND STRIPING				$ 2,229,000

Section 6C: Stage Construction and Traffic Handling

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
120100 Traffic Control System	LS	1	$ 840,000	$ 840,000
120159 Temporary Pavement Delineation	LF	84,200	$ 0.40	$ 33,680
846030 Remove Temporary Striping	LF	84,200	$ 0.40	$ 33,680
129000 Temporary Railing (Type K)	LF	84,200	$ 20	$ 1,684,000
129100 Temp. Crash Cushion Module	EA	120	$ 300	$ 36,000
SUBTOTAL TRAFFIC SIGNING AND STRIPING				$ 2,627,360

TOTAL TRAFFIC ITEMS	**$ 4,904,360**

Section 7: DETOURS

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
120143 Temporary Pavement Delineation	LF	7,980	$ 1.35	$ 10,773
190101 Roadway Excavation	CY	9,576	$ 35.00	$ 335,160
260201 Class 2 Aggregate Base	CY	7,980	$ 65.00	$ 518,700
390132 Hot Mix Asphalt (Type A)	TON	3,232	$ 130.00	$ 420,147
TOTAL DETOURS				**$ 1,284,780**

SUBTOTAL SECTIONS 1-7 **$ 33,606,633**

Section 8: MINOR ITEMS

8C - Other Minor Itmes

Other Minor Items (% of subtotal sections 1-7)	3.0%	$	1,008,199.00
TOTAL MINOR ITEMS		**$**	**1,008,199.00**

Section 9: MOBILIZATION

Total Section 1-8	$	34,614,832
Percentage of Section 1-8		8%

TOTAL MOBILIZATION	**$**	**2,769,186.59**

Section 10: SUPPLEMENTAL WORK

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
066063 Traffic Management Plan - Public Information	LS	1	$ 50,000.00	$ 50,000
066090 Maintain Traffic	LS	1	$ 50,000.00	$ 50,000
066700 Partnering	LS	**1**	**$ 50,000.00**	$ 50,000
066920 Dispute Resolution Board	LS	**1**	**$ 7,500.00**	$ 7,500
TOTAL SUPPLEMENTAL WORK				**$ 157,500**

Section 11: STATE FURNISHED MATERIALS AND EXPENSES

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
066105 RE Office	LS	1	$ 60,000.00	$ 60,000
066062A COZEEP Expenses	LS	1	$ 400,000.00	$ 400,000
TOTAL STATE FURNISHED MATERIALS AND EXPENSES				**$ 460,000**

Section 12: TIME-RELATED OVERHEAD

Estimated Time-Releated Overhead (TRO) Percentage (0% to 10%) * = **10.0%**
Per Construction Contract Standards Guide (4/25/16)
Only include bid items (sections 1-8) $34,614,832

Item Code and Item Name	*Unit*	*Quantity*	*Unit Cost*	*Cost*
070018 Time-Related Overhead	WD	200	$ 17,307.42	$ 3,461,483
TOTAL TIME-RELATED OVERHEAD				**$ 3,461,483**

Section 13: CONTINGENCY

(Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-11	$ 38,001,519	x	**15%**	
TOTAL CONTINGENCY				**$ 5,700,228**

VA Study Summary Report – Preliminary Findings

D-9 SR 14 Rosamond Mojave Pavement Rehabilitation

09-KER-14
PN 96000025;
(PM R4.7-R12.6)

A Value Analysis (VA) study, sponsored by Caltrans District 9 and facilitated by Value Management Strategies, Inc., was conducted for SR 14 Rosamond Mojave Pavement Rehabilitation located in Kern County, California. The VA study was conducted January 16-19, 2018 in District 9 offices, Bishop, CA. This *VA Study Summary Report – Preliminary Findings* provides an overview of the project, key findings, and the alternatives developed by the VA team.

Note to reviewer: This is a summary of the VA study results. Please contact the DVAC if you would like a copy of the entire Preliminary VA Study Report with the detailed VA alternatives.

PROJECT SUMMARY

This 16.9-mile project, from approximately 1.5 miles south of Dawn Road to approximately ¼ mile north of Silver Queen Road, proposes pavement rehabilitation for on-/off-ramps and adjacent shoulders. In addition, this project recommends upgrading metal beam guardrail (MBGR), traffic loop detectors, and some other appurtenances and facilities within the project limits.

The project proposes the following:

- Place CRCP in the #2 lane in both directions.
- Selective slab replacement in the #1 lane in both directions (probably 12 feet long) and approximately 270 slabs in the southbound lane and approximately 390 slabs in the northbound lane.
- Outside shoulders rehabilitated to 0.6-foot depth.
- Inside shoulder increased from 5 to 7 feet, 0.6 foot deep (for detour of traffic).
- Rehabilitate the ramps at Dawn Road, Backus Road, and Silver Queen Road overcrossings.

Total project costs for all elements of the project are currently estimated at $39,376,000. The construction time was estimated to be 12 months.

PROJECT PURPOSE AND NEED

The existing pavement has experienced distress in the form of 3rd stage cracking and corner breaks that are beyond reasonable maintenance. The purpose of the project is to rehabilitate the roadway to a good state of maintenance and serviceability.

VA STUDY TIMING

The VA study was conducted during the PA&ED phase of project development which is to be completed in July 2018. The project is scheduled for Ready to List (RTL) in January 2020.

VA STUDY OBJECTIVES

The objective of the VA study was to identify value-improving alternatives to the baseline concept that will reduce cost and time while maintaining or improving performance.

KEY PROJECT ISSUES

The items listed below are the key drivers, constraints, or issues being addressed by the project and considered during this VA study to identify possible improvements.

- Traffic management during construction that will minimize delays for motorists
- Cost of rapid strength concrete (RSC)

EVALUATION OF BASELINE CONCEPT

During the course of the VA study, a number of analytical tools and techniques were applied to develop a better understanding of the baseline concept. A major component of this analysis was Value Metrics which seeks to assess the elements of cost, performance, time, and risk as they relate to project value. These elements required a deeper level of analysis, the results of which are detailed in the *Project Analysis* section of this report. The key performance attributes identified for the project are listed in the table, "Performance Attributes."

Performance Attributes
Roadway Operations
Maintainability
Ride Quality
Environmental Impacts
Construction Impacts

Below is a summary of the major observations and conclusions identified during the evaluation of the baseline design concept which led the VA team to develop the alternatives and recommendations presented in this report.

The project proposes to rehabilitate the roadway pavement structural section by placing continuously reinforced concrete pavement (CRCP) in the #2 lane in both directions and selective slab replacement in the #1 lane in both directions. This will provide a roadway that will have a smooth surface and minimize future maintenance. The high cost of RSC and CRCP are the highest costs of the project and became areas for potential improvement.

VA ALTERNATIVES

The VA team developed 5 alternatives for improvement of the project. The following are the alternatives identified, along with their associated potential initial cost and/or life-cycle cost (LCC) savings, potential change in schedule, performance change, and a brief discussion of each. Please note that because the cost data depicted below represent *savings*, a number in parentheses represents a cost *increase*.

Alternative No. and Description	Initial Cost Savings	LCC Savings	Change in Schedule	Change in Performance
1.1 Divert southbound traffic onto northbound roadway, rehabilitate southbound side, return southbound traffic to southbound side, and then rehabilitate northbound side with detour crossovers	**$1,230,000**	**---**	**-1.5 months**	**No change**

This VA alternative proposes to stage the project as follows: Divert traffic onto the northbound roadway, rehabilitate the southbound side, shift traffic back to the southbound side, and rehabilitate the northbound side. A crossover would be constructed at either end to allow access. The main benefit of this concept would be to reduce construction time. There would also be savings in traffic management costs. There would be access concerns during construction because Dawn Road does not have access to Sierra Highway. Would have to study the traffic volumes to determine if detours are needed at the ramps of these interchanges. There is a concern that diverted northbound and southbound traffic will be too close to each other on the diverted lane.

1.2 Divert northbound traffic to the southbound side using detour crossovers, complete northbound work, shift traffic to the northbound side, and complete the southbound work	**($550,000)**	**---**	**No change**	**+8 %**

This VA alternative proposes to divert northbound traffic to the southbound side using detour crossovers, complete the northbound work, shift traffic back to the northbound side, and construct the southbound work. The main benefit of this concept would be to reduce the potential for incidents because traffic is separated from construction activities. There would be access concerns during construction because Dawn Road does not have access to Sierra Highway. Would have to study the traffic volumes to determine if detours are needed at the ramps of these interchanges. There is a concern that diverted northbound and southbound traffic will be too close to each other on the diverted lane.

1.3 Crack and seat the existing pavement and place a HMA overlay in lieu of CRCP for all lanes	**$7,780,000**	**---**	**-3 months**	**-10 %**

This VA alternative proposes to use HMA Type A (HMA-A) for pavement rehabilitation in lieu of placing CRCP in the #2 lane and replacement of slabs in the #1 lane. This concept proposes to crack,

seat, and overlay all lanes with HMA-A. The proposed CRCP in the baseline concept would be eliminated. The expected depth of the HMA-A would 0.75 foot. There would be slab replacements with PCC under the three bridges in the project limits (Silver Queen Road, Backus Road, and Dawn Road), which is needed to maintain existing vertical clearance. This alternative concept would increase the project footprint, which may have more potential for environmental impacts. Detour crossovers would not be needed.

1.4 Eliminate CRCP from the #2 lane and replace with HMA	**$8,530,000**	**---**	**-3 months**	**-20 %**

This VA alternative proposes to use HMA-A in place of CRCP in the #2 lanes in both directions. The slab replacements in the #1 lane will also be done with HMA-A in lieu of RSC. The main benefit of this alternative is reduced construction costs and construction time. There would likely be minimal impact to the environment if this concept were implemented. However, there are some drawbacks that include degraded aesthetics, degraded ride quality, and Increased maintenance because HMA-A does not last as long as CRCP.

2.0 Use PCC in lieu of RSC for slab replacement in the #1 lane	**$1,060,000**	**---**	**No change**	**+7 %**

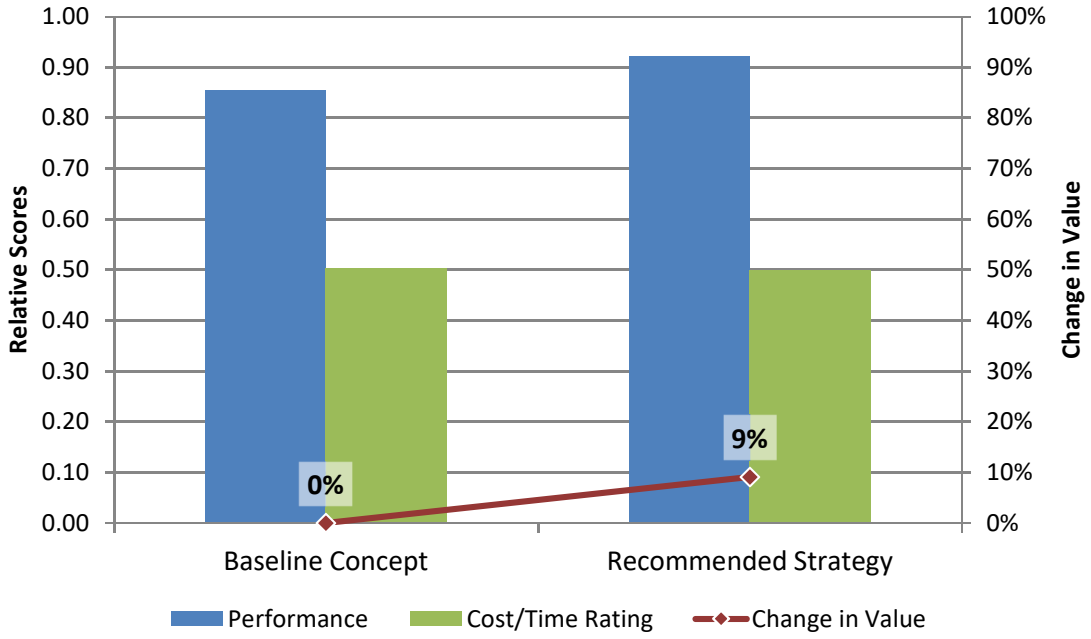
The alternative proposes to use PCC in the #1 lane in both directions in lieu of RSC. The main benefit of this alternative is to provide a pavement structural section that will last much longer than RSC. The expected life of RSC is approximately 10 to 12 years; PCC can last up to 40 years. PCC would take longer to cure to provide optimal pavement strength. With a pavement that lasts longer with minimal future maintenance, roadway operations and ride quality would be improved.

VA STUDY RESULTS

The main benefit of the VA team's Recommended Strategy (Alternatives 1.2 & 2.0) would be to reduce construction costs by $510,000 and improve maintainability. The use of portland cement concrete (PCC) in lieu of RSC for slab replacement will extend the pavement life. Experience has shown that RSC will last approximately 10 to 12 years before it starts to degrade, while PCC will last approximately 40 years.

A summary of the VA strategies (combinations of VA alternatives) is provided in the following chart and table. This chart illustrates the relative trade-offs between performance (shown by the blue columns) versus cost and schedule (shown by the green columns). The red value line indicates the net % change in total value relative to the baseline concept. Please refer to the *Project Analysis* section of this report for additional details on this analysis.

Comparison of Value - Baseline Concept and VA Strategies



Summary of VA Strategies

Strategy Description	Initial Cost Savings	LCC Savings	Change in Schedule	Change in Performance	Value Change
Recommended VA Strategy 1.2, 2.0	$510,000	---	No change	+8 %	+9 %

VA TEAM

VA Study Team

Name	Organization	Title
Scott Egan	Caltrans District 9	Roadway Design
Hin Hartanto	Caltrans District 9	Roadway Construction
Dave Batchelder	Caltrans District 9	Maintenance Supervisor
John Fox	Caltrans District 9	District Maintenance Engineer
Katie Rodriguez	Caltrans District 9	Environmental
Lianne Talbot	Caltrans District 9	Traffic Operations
Fred Kolano	Value Management Strategies, Inc.	VA Study Team Leader

Key Project Contacts

Name	Organization	Title
Dennee Alcala	Caltrans District 9	Project Manager
Jeremy Milos	Caltrans District 9	District 9 VA Coordinator
Robert Hogan	Caltrans District 6	Material
Ryan Dermody	Caltrans District 9	Deputy District Director - Planning
Brian Wesling	Caltrans District 9	Deputy District Director - Project Development
Terry Erlwein	Caltrans District 9	Deputy District Director - Maintenance
Brent Green	Caltrans District 9	District Director

Sign-in Sheet

EA: 09-36740 (0916000025)

PA&ED% Constructability Review for Rosamond-Mojave Rehab

Date: June 6, 2018
Time: 10:30 - 11:30 AM
Location: Mt. Whitney VTC

Caltrans

	Name	Signature	Division/Agency	Phone Number
1	Brian Werling		Engineering	630
2	Angie Calloway		ENV	2424
3	JED ERDPKN		TRAFFIC	711
4	BEN DOWNARD		ENV.	657
5	Trevor Pratt		Env	3021
6	Brad Rockwell		Design	5251
7	Lianne Talbot		Traffic	650
8	MATTHEW COKE		ENV/SW	714
9	John Fox		MTCE	x707
10	Tennee Alala		PPM	767
11	Dave Batchelder	moved in	MTCE	
12	ROB SANCHEZ		STORMWATER	760-872-0656
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