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Comments Regarding the Mitigated Negative Declaration, Notice of Determination, & Initial Study
for the
Cypress Mountain Drive Bridge Replacement Project ED13-248/300432

Summary of Comments for the
"Mitigated Negative Declaration, Notice of Determination, & Initial Study"
for the
San Luis Obispo County Bridge #49C0033

This summary offers concise findings regarding the "EXHIBIT A Cypress Mountain Drive Bridge Replacement Project ED13-248/300432 Mitigated Negative Declaration, Notice of Determination, & Initial Study," hereinafter referred to simply as "**Document**", for the Federally funded Highway Bridge Replacement and Rehabilitation Program (HBRRP) bridge replacement of San Luis Obispo County Bridge No. 49C0033:

- The proposed project as offered within the **Document** is neither cost-effective to meet both current and future functional demands of Cypress Mountain Drive, nor results in minimizing environmental impacts to the greatest extent feasible.

- The **Document** misrepresents the proposed replacement bridge width "…would be widened to meet standard lane and shoulder width requirements." however as will be clearly demonstrated, the **Document** proposes a replacement bridge structure facility of increased width **that will result in an increase in capacity**. The existing width of the existing bridge structure is acceptable for traffic volumes up to 100 vehicles per day. The **Document** has misrepresented the existing average daily traffic to be: "…approximately 100 average daily trips…" whereas Caltrans documentation furnished as **EXHIBITS** attached to, and a part of these comments clearly indicate the present average daily traffic volume is **"25"** vehicles per day as of **"2010"** and a future average daily traffic of **"99"** in **"2034."** By widening the bridge's traffic lane and shoulder widths to the extent stated within the **Document**, **the capacity of the bridge structure will increase to 400 to 600 vehicles per day**. Therefore the project, as currently proposed unless modified, must be considered under California Code of Regulations, Title 14, Division 6, Chapter 3, Article 19, "Categorical Exemptions," Section 15300, more specifically Section 15302, "Replacement or Reconstruction," to have a significant effect on the environment and shall therefore not be exempt from the provisions of CEQA thereby requiring an Environmental Impact Report.

- The project as proposed results in a significant increase in capacity from the existing facility. Therefore the project will have a significant impact upon the environment. As such, the **Document** has failed to take under mandatory consideration to include possible alternative projects to the proposed project including but not limited to:

    - A no-build alternative.

    - A replacement structure of single lane width of approximate existing span length meeting the AASHTO design standards for roadways where the Average Daily Traffic is less than 100 vehicles per day for both existing and projected traffic volumes out 20 years.

- Preliminary estimated construction costs for such an alternative total approximately **$396,600** or a savings of **$654,400** from the current proposed project construction cost estimate of **$1,051,000**.

- **Based upon the preliminary estimated constructions cost of $396,600, "Total Participating Costs" for the HBRRP program would total "$678,300 or ONE MILLION, FOUR-HUNDRED SIXTY-TWO THOUSAND, THREE-HUNDRED FIFTY DOLLARS ($1,462,350) less than the "Total Participating Costs" of "$2,140,650" stated upon the latest "Exhibit 6-D HBRRP Scope/Cost/Schedule Change Request" document submitted by the County to Caltrans District 05 Local Assistance and approved by Caltrans District 05 Local Assistance.**

○ Consideration of simultaneous replacement of both Bridge 49C0033 and Bridge 49C0032 just 2,000 feet to the north east of Bridge 49C0033 of single lane width reinforced concrete structures of span lengths approximately equal to existing spans.

○ Replacement of the existing structure to a width no greater than twenty-two feet (22') with the County of San Luis Obispo responsible for construction costs over and above the construction costs for a single-lane replacement bridge facility.

○ Consideration of simultaneous replacement of both Bridge 49C0033 and Bridge 49C0032 just 2,000 feet to the north east of Bridge 49C0033 with replacement structures of widths no greater than twenty-two feet (22') with the County of San Luis Obispo responsible for construction costs over and above the construction costs for a single-lane replacement bridge facility.

○ Simultaneous replacement of two adjacent bridges of approximately sixty-two (62) years of age by a single contractor would be both cost effective and minimize environmental impacts to the greatest extent feasible. Furthermore, installation of conventionally reinforced concrete deck slab structures of single lane width at this time, will allow for the economical widening of these structures in the future to either twenty two feet (22') or twenty four feet (24') widths at such time in the future a roadway improvement project for Cypress Mountain Drive is performed to fully widen Cypress Mountain Drive to at least two-way dual 9-foot or 10-foot traffic lanes from Santa Rosa Creek Road to Klau Mine Road.

- Again, the **Document** misrepresents the proposed replacement bridge width "…would be widened to meet standard lane and shoulder width requirements." The proposed curb to curb bridge deck width of twenty-four feet (24') has been wrongfully established by the misuse of design tables intended to establish roadway and shoulder widths, and not bridge widths, for either new roadway construction, or roadway reconstruction projects. These design tables are found within the American Association of State Highway Officials (AASHTO) design

guideline/standard document titled **"A Policy on the Geometric Design of Highways and Streets", otherwise known as "The Green Book"**. This AASHTO document, and all other AASHTO documents included by reference, are the design guidelines/specifications Local Agencies are mandated to adhere to pursuant to the HBRRP program requirements as managed by Caltrans. These comments to the **Document** will clearly demonstrate the County of San Luis Obispo has wrongfully used Table 5-5 for local roads, and Table 6-5 for collector roads, both tables titled: "Maximum width of Traveled Way and Shoulders" within The Green Book to misrepresent greater bridge deck widths than allowed by AASHTO and thus HBRRP program requirements.

- Furthermore, there is an appearance the County of San Luis Obispo has purposefully misrepresented both Average Daily Traffic (ADT) and existing Design Speed values on HBRRP application documents signed by authorized County of San Luis Obispo personnel and submitted to the Caltrans District 05 Local Assistance Engineer. As it will be shown within these comments for the **Document**, thresholds of ADT and existing Design Speed values determine minimum roadway and roadway shoulder widths within Table 5-5 for local roads, and Table 6-5 for collector roads. Existing approach roadway width and ADT values determine respectively minimum required bridge roadway width and bridge shoulder widths within Table 5-6 for local roads, and within Table 6-6 for collector roads.

  The appearance of misrepresentation of ADT values submitted by the County of San Luis Obispo to the Caltrans District 05 Local Assistance Engineer is revealed by comparing ADT values submitted upon HBRRP application documents signed by authorized County of San Luis Obispo personal and submitted to the Caltrans District 05 Local Assistance Engineer representing an existing ADT of **"100"** and future ADT of **"160"** at **"Build-out"** (this value is supposed to be a year not more than 20 years into the future), whereas Caltrans Office of Maintenance and Investigations biennial Bridge Inspection Report (BIR) "Structure Inventory and Appraisal Reports" (SI&AR) represent in 2012 and 2014 an existing ADT of just **"25"** and a future ADT of **"99"** in the year **"2034"**. The County of San Luis Obispo is solely responsible for the submission of Average Daily Traffic data for both existing ADT and projected future ADT and the year of that projected ADT to Caltrans Office of Structure Maintenance and Investigations for incorporation into the BIR SI&AR.

  The appearance of a misrepresentation of Design Speed of the existing approach roadway submitted to the Caltrans District 05 Local Assistance Engineer is revealed by comparing existing substandard bridge approach roadway width, substandard approach roadway curve radii, pavement surface being unpaved, and the fact the Document stated a CDF response time to cover "4.9 miles" in approximate "15 minutes" clearly indicates the Design Speed in the vicinity of Bridge 49C0033 cannot be remotely closed to the represented "30 mph" value submitted to the Caltrans District 05 Local Assistance Engineer.

- Again, the **Document** misrepresents the proposed replacement bridge width "…would be widened to meet standard lane and shoulder width requirements." The proposed curb to curb bridge deck width of twenty-four feet (24') has been wrongfully established by the misuse of design tables intended to establish roadway and shoulder widths, and not bridge widths, for

either new roadway construction, or roadway reconstruction projects. These design tables are found

- The HBRRP program requirements demand that the Local Agency shall establish the replacement bridge width to meet minimum AASHTO design guidelines/standards unless there is justification to exceed those minimum AASHTO design guidelines/standards. These design guideline/standards are found within Table 5-6 for local roads, and Table 6-6 for collector roads, both tables titled: "**Maximum Clear Roadway Widths and Design Loadings for New and Reconstructed Bridges**" within The Green Book. These comments to the **Document** will clearly demonstrate the County of San Luis Obispo has failed to follow these minimum AASHTO design guidelines/standards.

- Correct application of the AASHTO design guideline/standards found within The Green Book requires the roadway widths for replacement bridge structures to meet the preexisting approach travelway width and tabulated shoulder widths as specified within Table 5-6 for local roads, and Table 6-6 for collector roads.

To repeat, the establishment of the minimum required deck width for the replacement bridge structure is required to be based upon the preexisting width of the existing approach roadway pursuant to Table 5-6 and Table 6-6 of The Green Book, and not the tabulated values for new or reconstructed roadway widths specified within Table 5-5 and Table 6-5 within The Green Book.

- Any increase over and above the minimum dimensions specified within Table 5-6 and Table 6-6 within The Green Book are required to be justified by the Local Agency. Reasons for increasing the minimum dimensions specified include but are not limited to:

    - If the existing design speed of the approach roadway justifies exceeding minimum AASHTO design guideline/standards, or,

    - If the projected Average Daily Traffic projected no more than 20 years into the future, pursuant to Table 5-6 and Table 6-6, and not Table 5-5 and 6-5, is expected to increase above a threshold that would require an increase in bridge deck width, or,

    - There is a proposed project to widen the approach roadway within the vicinity of the subject bridge either established within the current adopted General Plan, or listed as a capital improvement program project programed within the next ten years to bring the existing roadway up to current minimum AASHTO design guidelines/standards, or,

    - If there is a history of traffic accidents along the approach roadway in the vicinity of the replacement bridge that would justify widening of the approach roadway, or,

    - If the Local Agency can document any other legitimate justifiable cause to increase the replacement bridge deck width beyond the minimum AASHTO design guideline/specification requirements.

- If the Local Agency cannot justify the increased dimensions, pursuant to the HBRRP program requirements, the Local Agency shall be held responsible by Caltrans for all construction costs related in excess of the replacement bridge structure meeting the specified minimum AASHTO design guideline/specifications. The Commenter however, has yet to find a single HBRRP project throughout California where Caltrans has fulfilled their responsibilities.

- Based upon the facts presented directly above, the factual minimum replacement bridge deck width per AASHTO design guidelines/specifications for Bridge 49C0033 on Cypress Mountain Drive, based upon the following facts:

    - The existing approach roadway width, as specified upon Caltrans Office of Structure Maintenance and Investigations biennial Bridge Inspection Report (BIR) "Structure Inventory and Appraisal Report" (SI&AR) since at least 2008 is **"3.7 M"** or **12.1 feet**.

    - The existing design speed for the approach roadway, due to substandard curves, is no greater than **25 miles per hour**.

    - Per the latest Caltrans biennial Bridge Inspection Report's Structure Inventory and Appraisal Report, the existing Average Daily Traffic as of **"2010"** is **"25"** vehicles per day and the future projected Average Daily Traffic is **"99"** estimated to the year **"2034."** This estimated value of **"99"** vehicles per day, or an increase of 74 vehicles per day over a 24 year time period represents a 5.9% per year increase in traffic which is an unreasonable rate for rural mountainous roadways.

        - Per minimum AASHTO design guidelines/standards, if a roadway's Average Daily Traffic volume is 100 vehicles per day or less both currently and projected out no more than 20 years, then one-lane bridges "…**may be provided on single-lane roads and on two-lane roads where the designer finds that a one-lane bridge can operate effectively**."

    - A project does not exist to widen Cypress Mountain Drive either within the County of San Luis Obispo's current adopted General Plan, nor within the County of San Luis Obispo's current Capital Improvement Program for Fiscal Year 2015/2016 to 2019/2020 to current AASHTO design guidelines/standards.

    - California Highway Patrol Statewide Integrated Traffic Reporting System (SWITRS) data for all roadways in the unincorporated areas of San Luis Obispo County from January 1, 2001 to December 31, 2014 do not indicate one single record of a traffic accident having occurred on any portion of Cypress Mountain Drive.

    - Since at least January of 2008, during intermittent times of the year, the County of San Luis Obispo displays permanently placed Caltrans Type R11-4 signage proclaiming "ROAD CLOSED TO THRU TRAFFIC" both west of Bridge 49C0033 at the

intersection of Cypress Mountain Drive with Santa Rosa Creek Road, and east of Bridge 49C0033 at the intersection of Cypress Mountain Drive with Klau Mine Road.

- Therefore, based upon the facts immediately presented directly above, the mandatory minimum, cost-effective replacement bridge width need only meet the bridge width established per Table 6-6, **"Minimum Roadway Widths and Design Loadings for New and Reconstructed Bridges"** within The Green Book where:

  - Per Table 5-6 for local roads within The Green Book, for a "Design Volume (veh/day)" of "400 and under" the "Minimum Clear Roadway Width for Bridges" is established to be:

  Minimum Clear Roadway Width for Bridges = Traveled way + 2 ft (each side)

  - Therefore, the mandatory minimum, cost-effective replacement bridge width need only be no greater than:

  3.7 meters * 3.28 feet/meters = 12.1 feet plus 2 feet each side or 16 feet total width

A one-lane bridge sixteen feet (16') in width may be provided pursuant to The Green Book as Cypress Mountain Drive is essentially a one-lane roadway with Average Daily Traffic less than 100 vehicles per day both currently and projected 20 years into the future, there are no plans to widen the roadway within the next ten years, and such a one-lane bridge can function effectively based upon the safety performance of the preexisting fourteen foot wide timber bridge structure having been in service since 1953.

- The project presented within the **Document** proposes to increase the current span of the existing timber trestle bridge from approximately twenty-seven feet (27') to fifty-four feet (54') purportedly to increase the bridge soffit (bottom of bridge deck surface) to:

  "…improve the capacity of flow over that of the existing bridge as well as meet the Federal Highway Administration's (FHWA's) criteria of passing the 50-year flood and the 100-year flood."

  The independent hydrologic/hydraulic analysis included within these comments to the **Document** clearly demonstrates a thirty-foot (30') span between abutments is sufficient and cost-effective to allow the estimated 50-year and 100-year flows to pass beneath the replacement bridge structure with sufficient freeboard (clearance) beneath the replacement bridge soffit.

  - A conventionally reinforced 54-foot concrete slab bridge would require the construction of an intermediate bridge pier in the channel of Klau Creek.

  - A single 54-foot clear span would need to employ a post-tensioned concrete deck slab structure.

Therefore a thirty-foot (30') span between abutments would allow for a satisfactory clear span across Klau creek that is both cost-effective and minimizes environmental impacts to the greatest extent feasible.

- A series of documents received by the Commenter via the California Public Records Act clearly document from 2012 to 2014, the County of San Luis Obispo had submitted no less than three separate "Exhibit 6-D HBRRP Scope/Cost/Schedule Change Request" forms to the Caltrans District 05 Local Assistance Engineer requesting:
    - Increases in Preliminary Engineering reimbursements from:
        - An original request of **$144,000** prior to 2012 to:
        - A requested increased to **$294,000** in 2012 to:
        - A requested increased to **$484,700** in 2013 to:
        - A requested increased to **$586,700** in 2014:
    - Increases in Construction Engineering reimbursements from:
        - An original request of **$87,000** prior to 2012 to:
        - A requested increased to **$210,200** in 2014:
    - Increases in total estimated Construction Costs from:
        - An original request of **$576,000** prior to 2012 to:
        - A requested increased to **$1,051,000** in 2014:

As will be demonstrated throughout these comments to the **Document**, it is inexcusable for both the County of San Luis Obispo to exhaust such financial resources for such a simple project, as well as Caltrans District 05 to approve such unjustifiable increases in Preliminary Engineering and as yet to commence until construction proceeds, Construction Engineering reimbursable costs, as well as an unjustifiable increase in estimated construction costs that would result in a project that is neither cost-effective nor minimizes environmental impacts to the greatest extent feasible.

In conclusion to this "Summary of Comments," the Commenter is offering these comments to the **Document** as the Commenter is aware Local Agencies throughout California are wrongfully applying Table 5-5 for local roads, and Table 6-5 for collector roads that are intended solely for either the new construction or reconstruction of Local Agency local roads and collector roads, in order to justify wider bridge dimensions than justified. Such a misuse of The Green Book design guidelines/standards is resulting in multiple bridge replacement projects throughout California that are neither cost effective, nor minimize environmental impacts to the greatest extent feasible, and are resulting in the construction of replacement bridge structures that are capacity

increasing, thereby contradicting the environmental documents being issued to justify these bridge replacement projects.

One such additional project located within the County of San Luis Obispo is the HBRRP project to replace the existing Bridge 49C0143 on Branch Mill Road over Tar Springs Creek where the Draft Mitigated Negative Declaration, Notice of Determination, & Initial Study was wrongfully adopted by the San Luis Obispo County Board of Supervisors in October of 2013.

End of Summary of Comments

Commenter Introduction

The Commenter prefaces their remarks by stating as a former Structures Representative with the California Department of Transportation, the Commenter has participated in value analysis programs to achieve highway infrastructure project solutions that meet sophisticated demands over a broad spectrum of goals that result in "context sensitive" solutions. Such goals include but are not limited to: achieving solutions that are cost-effective, minimizing environmental impacts to the greatest extent feasible, and arriving at a solution that satisfies the term "context sensitive" solutions by meeting the expectations of the most important stakeholders of any project: the end users. These goals are not mutually exclusive. Cost-effective designs must meet mandatory minimum design specifications established by the Federally funded, California Department of Transportation managed, Highway Bridge Replacement and Rehabilitation Program, or "HBRRP." Cost-effective designs are based on multiple factors including but not limited to: projected traffic volumes, or Average Daily Traffic (ADT) in terms of vehicles per day estimated up to 20 years into the future; pre-existing approach roadway widths, shoulder widths, and roadway curvature which determine the roadway design speeds; and accident history in the vicinity of the bridge and approach roadway. Furthermore, the proposed bridge replacement project needs to consider either presently approved, or future development projects that could potentially lead to an increase in traffic volumes upon the roadways served by the bridge; or any proposed plans to either widen or realign the existing roadway in the foreseeable future either per the local agency's circulation element within their currently adopted general plan, or five-year capital improvement program, but no more than 10 years into the future.

Furthermore the Commenter has prepared "Project Study Reports," or PSRs' for the application to Caltrans District Local Assistance for funding by the Federal Highway Bridge Replacement and Rehabilitation Program. As a professionally licensed individual, it is incumbent upon the Commenter to be fully knowledgeable of the policies, rules, regulations, requirements, guidelines, standards, and procedures Local Agencies must follow to receive Federal funding under the Highway Bridge Replacement and Rehabilitation Program

Cost-effective solutions tend to result in reducing environmental impacts to the greatest extent feasible. Such solutions are achieved when a design alternative is selected that minimizes impacts to the environmentally sensitive areas in the immediate vicinity of the subject bridge structure as bridges are commonly employed to cross bodies of water immediately adjacent to environmentally sensitive areas, or ESAs. Therefore, the goal of minimizing environmental impacts is most often achieved by simply replacing the existing bridge along an alignment

approximate to the pre-existing alignment to the minimum width and span requirements as mandated by the Federal HBRRP program.

The comments following regarding the **Documen**t are separated into four parts:

- "Comments Regarding the Highway Bridge Replacement and Rehabilitation Program Requirements" from Page 11 to Page 44.
- "Comments Regarding Alternative Design" from Page 45 to Page 46.
- "Comments Regarding the **Document**" from Page 47 to Page 66.
- **EXHIBITS** from Page 67to Page 185.

End of Commenter Introduction

Comments Regarding the Highway Bridge Replacement and Rehabilitation Program Requirements

While any review of these comments regarding the **Document** may by-pass these comments regarding the HBRRP requirements, these comments furnish justification for the comments made regarding the **Document** that follow. Prior to commencing with comments specifically regarding the **Document**, it is necessary to preface those comments by first discussing fundamental policies, rules, regulations, requirements, guidelines, standards, and procedures Local Agencies must follow to receive Federal funding under the Highway Bridge Replacement and Rehabilitation Program. This discussion and comments regarding the contents of the **Document** are supplemented by **EXHBITS** that are attached to, are a part of, and follow these comments regarding the **Document**.

To begin, the policies and outline procedures for administering the Highway Bridge Replacement and Rehabilitation Program (HBRRP) in accordance with 23 U.S.C. 144, are found within Title 23 Code of Federal Regulations, Chapter I, Subchapter G, Part 650, Subpart D. The following link is offered to the U.S. Government Publishing Office's Electronic Code of Federal Regulations:

http://www.ecfr.gov/cgi-bin/text-idx?SID=dee40a677e5c872e29af6593fb4c4ed4&node=sp23.1.650.d&rgn=div6

Caltrans, through a document titled: "Joint Stewardship and Oversight Agreement between Caltrans and the Federal Highway Administration (FHWA)," has been delegated by the FHWA, multiple responsibilities for the administration of FHWA funded programs including the HBRRP. This agreement may be accessed at the following Caltrans website:

http://www.dot.ca.gov/hq/oppd/stewardship/

by clicking the link:

Joint Stewardship and Oversight Agreement executed October 14, 2010.

which will take one to the following web address:

http://www.dot.ca.gov/hq/oppd/stewardship/CA-Steward-Refinement-FINAL10142010.pdf

- **Page 1** to **PAGE 2** OF **EXHIBIT FHWA-1**, document the cover page and signatory page of the "Stewardship Agreement."

Further examination of this entire document at the above link will reveal the Federal Highway Administration has accepted the Caltrans Local Assistance Program Manual and Local Assistance Program Guidelines for the Caltrans administration and oversight of the HBRRP program. FHWA has decreed within the "Stewardship Agreement" Caltrans programs are accepted to be in conformance with Federal rules and regulations contained

within Title 23 Code of Federal Regulations, Chapter I, Subchapter G, Part 650, Subpart D.

With respect to the Federally funded Highway Bridge Replacement and Rehabilitation Program, at least six chapters from the Caltrans Local Assistance Program Manuals and Program Guidelines apply:

- Local Assistance Program Guidelines Chapter 6-Highway Bridge Replacement and Rehabilitation Program (HBRRP), a copy of which is available at the following link:

  http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g06hbrr.pdf

- Local Assistance Program Guidelines Chapter 20-Environmental Enhancement and Mitigation (EEM) Program, the home page which is available at the following link:

  http://dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm

- Local Assistance Procedures Manual-Chapter 6 – Environmental Procedures, a copy of which is available at the following link:

  http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch06-2013-03-14.pdf

- Local Assistance Procedures Manual-Chapter 10 Consultant Selection, a copy of which is available at the following link:

  http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch10.pdf

- Local Assistance Procedures Manual Chapter 11 Design Standards, a copy of which is available at the following link:

  http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch11-2012-10-05.pdf

- Local Assistance Procedures Manual Chapter 20 Deficiencies and Sanctions, a copy of which is available at the following link:

  http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch20-2013-05-08.pdf

These six documents in total are incorporated within these comments regarding the **Document** by reference, regardless of whether any specific references or quotes are extracted from any of these six documents.

With respect to Chapter Six of the Local Assistance Program Guidelines:

- Selected pages of **EXHIBIT CT-1** which are attached to, are a part of, and follow these comments, document specific pages from Chapter 6 of the Local Assistance Program Guidelines that Local Agencies are required to follow to receive Federal funding under the HBRRP program, and are offered for these comments on the **Document**:

- **Page 1** of **EXHIBIT CT-1** documents Page 6-1 from Chapter 6. Please note under the heading "6.1 Introduction," the last sentence within the fourth full paragraph states:

  "Since local agencies are financially accountable for meeting these requirements, it is essential that local agency decision-makers thoroughly understand these guidelines."

- **Page 2** of **EXHIBIT CT-1** documents Page 6-7 where under the subheading "6.2.2 Bridge Replacement," Item 2. states in full:

  "2. The Code of Federal Regulations (CFR) defines the replacement scope of work as follows:

  "23CFR650.403(1) Replacement. Total replacement of a structurally deficient or functionally obsolete bridge with a new facility constructed in the same general traffic corridor. A nominal amount of approach work, sufficient to connect the new facility to the existing roadway or to return the gradeline to an attainable touchdown point in accordance with good design practice is also eligible. <u>The replacement structure must meet the current geometric, construction and structural standards required for the types and volume of projected traffic on the facility over its design life</u>."

  Per AASHTO's "A Policy on the Geometric Design of Highways and Streets," 1994 edition, projected needs beyond 20 years are not practical. <u>Therefore, even though the design life of a new bridge may be 25 to 100 years, the HBRRP will only participate in the geometrics of bridge based on 20 year projected traffic needs.</u>"

Therefore, by the language: **<u>"…must meet…",</u>** this language is unequivocal that the HBRRP program will only fund bridge geometrics, including bridge width, that are based upon the 20 year projected traffic needs. By "projected" it is construed to mean a projection that is based upon an accurate determination of future average daily traffic based upon well established planning methods taking under account approved, proposed and potential development served by the subject roadway and bridge, including both general plans and specific plans that are applicable to the geographic region that includes the bridge and roadway under consideration.

- It is imperative at this time to interject from the Federal Highways Administration design guidelines documented upon **Page 3** of **EXHIBIT FHWA-3** where within the rectangle enclosed area it states in full:

  "(4) Bridge replacement projects should meet the AASHTO standards for new bridges with very few exceptions. In the case of bridges on low volume roads and streets, exceptions may be appropriate if the existing road will not be upgraded in the foreseeable future (10 years or more). "

Therefore bridges on local roads designated as "very low-volume" roads where the Average Daily Traffic, or ADT, is not expected to exceed 400 vehicles per day within the 20 year threshold or in the specific case for Bridge 49C0033, 100 vehicles per day, as established within Part 6.2.2, "Bridge Replacement," within Chapter 6 of the Caltrans Local Assistance Program Guideline, design exceptions to construct replacement bridges to widths less than the minimum AASHTO design standards are allowable for bridges that serve very low-volume roadways such as **Cypress Mountain Drive**, where widening of the adjacent approach roadways is not anticipated in the next 10 years. **EXHIBIT AASHTO-1** documents excerpts from the AASHTO guideline/standard "**Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)**" This document is an AASHTO design guideline/specification incorporated by reference by the AASHTO document "**A Policy on Geometric Design of Highways and Streets**," that pursuant to Chapter 11, "Design Standards," from the Caltrans Local Assistance Program Manual, is the mandatory design standard for "Geometric Standards for New and Reconstruction Projects (refer to **EXHIBIT CT-3**). This design guidelines/specification was specifically developed by AASHTO to address the design requirements for very low-volume roads and will be discussed further below.

- Continuing upon **Page 2** of **EXHIBIT CT-1**, under the subheading "6.2.2 Bridge Replacement," Item 4. states in full:

  "4. Even though a bridge may be eligible for replacement (SR ≤ 50), rehabilitation shall still be considered to ensure the most cost-effective solution is selected. When appropriate (determined by the local agency), a cost analysis should be included in the local agency's project file. The SR, by itself, shall not be the sole justification for bridge replacement."

Therefore this passage clearly documents bridge replacement projects shall: "**ENSURE THE MOST COST-EFFECTIVE SOLUTION REGARDLESS OF WHETHER THE PROJECT IS REHABILITATION OR REPLACEMENT**." By the language "**shall**" this requirement is unequivocally mandatory.

Furthermore it should be stated the Commenter of the **Document** has never experienced a HBRRP project where a Caltrans District Local Assistance Engineer required of any Local Agency to include a cost analysis within any Local Agency's project file, particularly where it is readily apparent the proposed and therefore constructed project was not cost-effective as the proposed project significantly exceeded minimum AASHTO design standards for the functional class, preexisting physical dimensions of the approach roadway, anticipated increase in traffic volumes out 20 years, and traffic accident history over a span of 5 to 10 years prior to programming the bridge for replacement or rehabilitation.

- **Page 3** of **EXHIBIT CT-1** documents Page 6-16 under the heading "6.3 Standards," where the first sentence within the first paragraph states:

  "Standards for local assistance projects are available in Chapter 11, "Design Standards," of the LAPM." (LAPM stands for "Local Assistance Program Manual).

  - Please momentarily direct your attention to **Page 2** of **EXHIBIT CT-3** documenting Page 11-3 within Chapter 11, "Design Standards" of the Local Assistance Program Manual that is again, available at the afore referenced link:

    http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch11-2012-10-05.pdf

    Please note under the heading "11.2 Statewide Design Standards for Local Assistance Projects" within the rectangle enclosed area it states in full:

    "The following statewide design standards are acceptable for design of local federal-aid projects both on and off the NHS (NHS stands for National Highway System).

    Locally funded projects <u>on the State Highway System</u> (SHS) <u>must</u> <u>be designed in association with SHS standards as defined in various Caltrans manuals.</u>

    Roadway and Appurtenances

    Geometric Standards for New and Reconstruction Projects

    <u>New and reconstruction projects</u> <u>shall</u> <u>be designed in accordance with American Association of State Highway and Transportation Officials (AASHTO) Standards as defined in the current edition of A Policy on</u>

Geometric Design of Highways and Streets (often referred to as the AASHTO Green Book)."

Therefore, it is imperative to note, while locally funded projects on the State Highway System **must** be designed pursuant to Caltrans design manuals, Federally funded Local Assistance projects for local roads and streets **shall** be designed in accordance with the AASHTO Green Book. By the term "**shall**", this mandate is unequivocal.

The following American Association of State Highway Transportation Officials, or AASHTO documents are incorporated within these comments of the **Document** by reference, regardless of whether any specific references or quotes are extracted from any of these three documents:

- Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400), 2001 Edition or later.
    - Excerpts from this document are included herein as **EXHIBIT AASHTO-1**.
- A Policy on Geometric Design of Highways and Streets, or, "The Green Book," 2011 6,th Edition or later.
    - Excerpts from this document are included herein as **EXHIBIT AASHTO-2**.
- Roadside Design Guide, 4th Edition 2001, or later.
    - Excerpts from this document are included herein as **EXHIBIT AASHTO-3**.
- Please momentarily direct your attention to the excerpts from the AASHTO design standard document, "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)," included within these comments of the Draft as **EXHIBIT AASHTO-1**.
    - The rectangle enclosed first paragraph at the top of **Page 2** of **EXHIBIT AASHTO-1** within "Foreword" states in part:

      "As highway designers, highway engineers strive to provide for the needs of highway users while maintaining the integrity of the environment. Unique combinations of design requirements that are often conflicting result in unique solutions to the design problems. The geometric design of very low-volume local roads presents a unique challenge because the very low traffic volumes and reduced frequency of crashes make designs normally applied on higher volume roads less cost-effective."

This passage cannot be allowed to be simply quoted without comment. The needs of the highway users must be met while maintaining the integrity of the environment. **The Document proposes a project that is not consistent with this mandate.**

- The first rectangle at the top of **Page 4** of **EXHIBIT AASHTO-1** within "CHAPTER 1 INTRODUCTION" enclosing the first paragraph, states in full:

  "This document presents geometric design guidelines for very low-volume local roads. The purpose of the guidelines is to help highway designers in selecting appropriate geometric designs for roads with low traffic volumes traveled by motorists who are generally familiar with the roadway and its geometrics. The design guidelines presented here may be used on very low-volume local roads in lieu of the applicable policies for design of local roads and streets presented in the AASHTO Policy on Geometric Design of Highways and Streets (1), commonly known as the Green Book."

The underlined passage directly above clearly establishes that for very low-volume roads with Average Daily Traffic (ADT) less than 400 (both current and out to the end of the planning period, per San Luis Obispo County's existing General Plan), as is the case for **Cypress Mountain Drive** where it will be clearly demonstrated the ADT will not exceed "100" vehicles per day by the year "2034," design guidelines contained within this design document can and should be used instead of the "Green Book" in order to achieve a cost-effective alternative that minimizes environmental impacts to the greatest extent feasible.

- The definition of "very low-volume local roads" is furnished within the second rectangle enclosed area upon **Page 4** of **EXHIBIT AASHTO-1**:

  "The guidelines presented in this document are applicable to very low volume local roads. Very low-volume local roads are defined as follows:

  A very low-volume local road is a road that is functionally classified as a local road and has a design average daily traffic volume of 400 vehicles per day or less"

As will be clearly documented below in numerous County of San Luis Obispo and California Department of Transportation Structures Maintenance and Investigations documents, Cypress Mountain Drive in the vicinity of the subject bridge replacement project meets the AASHTO definition of a "very low-volume" local road and in fact, is documented upon Page 704 of the Caltrans Office of Structure Maintenance and Investigations (OSM&I) October, 2014 Local Agency Bridge List to serve an Average Daily Traffic Volume of just 25 vehicles per day, as is documented upon EXHIBIT 2.

- The first rectangular enclosed area upon **Page 6** of **EXHIBIT AASHTO-1**documents the AASHTO Low-Volume Road definition for a "Rural Major Access Road", which in terms of functional classification, is similar to the Caltrans functional classification termed "09 Rural Major Collector" or "08 Rural Minor Collector" road.

    - Please direct your attention to **Page 1** of **EXHIBIT 6** documenting California Road System Map "8R" that indicates Cypress Mountain Road in the vicinity of Bridge 49C0033 is classified as a "Minor Collector" roadway by the yellow line with heavy black border lines.

    - Please note the key map of Google Earth Street View images upon **Page 2** of **EXHIBIT 6** and subsequent Google Earth Street Views at selected approximate post miles documented upon **Page 3** to **Page 6** of **EXHIBIT 6**.

        - Please note **Page 2** and **Page 4** of **EXHIBIT 6** document that at the intersection of Cypress Mountain Drive at Santa Rosa Creek Road, presumed to be Post Mile 0.0 for Cypress Mountain Road, a Caltrans standard Type R11-4 sign stating:

          "ROAD CLOSED TO THRU TRAFFIC"

          has been posted since at least the Google Earth Street View imagery date of "4/2012" and "1/2008" respectively.

        - Please note **Page 5** of **EXHIBIT 6** documents a Google Earth Street View at approximately Post Mile 0.77 on Cypress Mountain Road just westerly of the intersection with Reservoir Road. Please note the roadway surface is dirt and, based upon measurements from the Google Earth aerial view, the roadway width in the vicinity of the Google Earth Street View varies between approximately 12.6-feet to 15-feet in width indicating Cypress Mountain Drive in this area is essentially a one-lane road.

        - Please note **Page 6** of **EXHIBIT 6** documents that at the intersection of Cypress Mountain Drive at Klau Mine Road, or approximately Post Mile 6.57 for Cypress Mountain Road, a Caltrans standard Type R11-4 sign stating:

          "ROAD CLOSED TO THRU TRAFFIC"

          has been posted since at least the Google Earth Street View imagery date of "3/2012".

Therefore, although the functional classification of Cypress Mountain Drive, per California Road System Map "8R," as is documented upon Page 1 of EXHIBIT 6 is listed as a "Minor Collector," as has been clearly presented directly above:

- T**he Average Daily Traffic for Cypress Mountain Drive is established as "25"**

And, as will be presented below based upon the Document stating the response time from the California Department of Forestry and Fire Protection (Cal Fire) Las Tablas Fire Station "…is located approximately 4.9 miles from the project site and response time is approximately 15 minutes.":

- **The safe design speed along Cypress Mountain Drive is approximately 20 miles per hour throughout the entire course of Cypress Mountain Drive.**

Furthermore, as documented upon Page 3 to Page 6 of EXHIBIT 6, Cypress Mountain Drive is posted with Caltrans Type R11-4, "ROAD CLOSED TO THRU TRAFFIC" signage beyond the location of Bridge 49C0033 and there are extensive lengths of Cypress Mountain Road that should be classified as a one-lane rural mountainous local road. Therefore, Cypress Mountain Drive is functionally classified as a "minor collector" in name only and for all intentions and purposes more accurately meets the functional classification of a "local road."

- The bracketed area from the bottom of **Page 6** to the top of **Page 7** of **EXHIBIT AASHTO-1** documents the AASHTO Low-Volume Road definition for a "Rural Minor Access Road", which in terms of functional classification, is similar to the Caltrans functional classification termed "07 Rural Local" road.

It is imperative to note as stated immediately above, Cypress Mountain Road in the vicinity of the subject bridge replacement project meets the AASHTO functional classification definition for a "Rural Minor Access Road," and therefore the Caltrans functional classification definition for a "07 Rural Local Road" due to its low volume of 25 vehicles per day average daily traffic, existing substandard width and horizontal curves, and unpaved condition.

- The bracketed area from the bottom of **Page 8** to the top of **Page 9** of **EXHIBIT AASHTO-1** documents the AASHTO Low-Volume Road discussion regarding "Traffic Volumes". Please note the individual underlined passages, the first which states:

  "The projected average daily traffic volume (ADT) should be used as the basis for design. Usually, the year for which traffic is projected is about 20 years from the date of completion of construction, but may range from the current year to 20 years depending upon the nature of the improvement."

- Again, please momentarily redirect your attention to **EXHIBIT 2** documenting the Page 704 of the October 2014 Caltrans Office of Structure Maintenance and Investigations Local Agency Bridge List.

  - Please note the intersection of the rectangle areas enclosing the "ADT" for both Bridges 49C0032 and 49C0033 is indicated to be "**25**."

- Please direct your attention to **Page 10** of **EXHIBIT 1** documenting Page 25 of the **Document** Part 12. "TRANSPORTATION/CIRCULATION," where the underlined passage states:

  "Traffic along Cypress Mountain Drive is infrequent (approximately 100 average daily trips) and is currently used by nearby residents and visitors to the 7X Ranch, a youth camp located south of the project side."

- Please momentarily direct your attention to **Page 1** to **Page 4** of **EXHIBIT 3** documenting on February 26, 2015, as a result of a public records request the Commenter received Caltrans biennial Bridge Inspection Reports for Bridge 49C0033 from 2008 to 2014 from the County of San Luis Obispo. Please note for all four documents the rectangle areas at the middle of the left column and at the lower right column enclose:

  - National Bridge Inspection (NBI) Item "(29) AVERAGE DAILY TRAFFIC"
  - National Bridge Inspection (NBI) Item "(30) YEAR OF ADT"
  - National Bridge Inspection (NBI) Item "(109) TRUCK ADT"
  - National Bridge Inspection (NBI) Item "(114) FUTURE ADT"
  - National Bridge Inspection (NBI) Item "(115) YEAR OF FUTURE ADT"

It is imperative to note at this time that these values are supplied by the Local Agency, in this case the County of San Luis Obispo for Caltrans to input into the biennial Bridge Inspection Report's Structure Inventory and Appraisal Report pursuant to the Federal "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges" document. These values should represent as accurately as possible, true and existing traffic counts based upon either traffic count data or observational data over a representative period of time. Peak periods of traffic or one single day of high volume traffic should not be used to supply the "Average Daily Traffic" value. Furthermore, the projected "FUTURE ADT" and "YEAR OF FUTURE ADT" should represent as accurately as possible, projected future average daily traffic volumes based upon current

zoning and potential development along the roadway served by the subject bridge structure.

To readily grasp the significance of the repeated modifications to the identified NBI items from 2008 to 2014, a table is presented directly below summarizing the past recent data supplied by the County of San Luis Obispo to Caltrans Office of Structure Maintenance and Investigations:

DATE	(29) AVERAGE DAILY TRAFFIC	(39) YEAR OF ADT	(109) TRUCK ADT	(114) FUTURE ADT	(115) YEAR OF FUTURE ADT	AVG ANNUAL INCR %
7/24/2014	25	2010	5%	**99**	2034	**5.9%**
9/26/2012	25	2010	5%	**99**	2034	**5.9%**
9/8/2011	25	2010	5%	105	2028	**8.3%**
11/17/2008	68	1990	0%	105	2028	**1.1%**

- **The "AVG ANNUAL INCR % " i "" column presents the computed uniform average annual increase in ADT for Cypress Mountain Drive in the vicinity of Bridge 49C0033 based on the "CURRENT ADT", the "YEAR OF ADT," the "FUTURE ADT", and the "FUTURE ADT YEAR". The "i' value for each year's ADT data is back-calculated from the formula:**

FUTURE ADT = CURRENT ADT * (1 + i) ^ (future year – current year)

Where " i " is the average annual increase in the ADT to arrive at the specified ADT in the future year stated upon each and every single SI&AR report for Bridge 49C0033 as listed by the Caltrans Structures Maintenance and Investigations Local Agency Bridge List. " i " is simply calculated by:

i = [(FUTURE ADT / CURRENT ADT) ^ (1 / (future year – current year))] - 1

Please note within the far right column the only reasonable "AVERAGE ANNUAL INCREASE" in Average Daily Traffic was for the "11/17/2008" Structure Inventory and Appraisal Report. The Commenter is not familiar with commonly used average annual increases in Average Daily Traffic for planning purposes in San Luis Obispo County but it is clearly evident rates from "5.9%" to "8.3%" are simply unrealistically excessive.

Therefore, based upon the current ADT listed upon both the Office of Structure Maintenance and Investigations Local Agency Bridge List, and upon the latest biennial Bridge Inspection Report's Structure Inventory and Appraisal Report, the Average Daily

Traffic could not be remotely close to "…approximately 100 average daily drips…" and within the next 20 years out to at least "2034" the Average Daily Traffic cannot be expected to exceed the "100" vehicles per day threshold.

- Continuing from the above quote at the bottom of **Page 8** of **EXHIBIT AASHTO-1:**

  "Traffic volume growth rates on very low-volume local roads are generally modest, and some roads may experience future traffic volume decreases. However, the designer should be alert to the possibility of future development that might affect traffic volume growth, especially in or near urban areas."

Therefore, based upon the statements quoted directly above from Page 8 of EXHIBIT AASHTO-1, it is imperative the biennial Bridge Inspection Report (BIR) Structure Inventory and Appraisal Report (SI&AR) NBI Items (114), "FUTURE ADT," and (115), "YEAR OF FUTURE ADT" are accurately determined within reasonable means based upon either an observed growth rate for the area in consideration, or future development projects either approved or proposed, the circulation element of the current adopted general plan, a project listed in the latest County Capital Improvement Program, or a combination of all of these factors out to the end of the current planning period but no more than 20 years into the future. These ADT values should be accurately reported by the Local Agency upon the Caltrans Office of Structure Maintenance and Investigation's "Local Agency Bridge List" as well.

- **Page 1** to **Page 9** of **EXHIBIT 4** document on February 26, 2015, as a result of a public records request, the Commenter received "Field Review Forms," required of the County of San Luis Obispo to submit to the Caltrans District 05 Local Assistance Engineer pursuant to the Federally funded Highway Bridge Replacement and Rehabilitation Program. These documents will be referenced frequently within these comments regarding the **Document**.
  - At this time, please direct your attention to **Page 3** of **EXHIBIT 4** documenting Page 7-15, "Exhibit 7-C Roadway Data" that indicates preexisting, projected, and proposed roadway data including but not limited to Traffic Data and Geometric Data for the approach roadway served by the proposed bridge replacement.
    - Please direct your attention to the rectangle enclosed area directly below "1. TRAFFIC DATA" where the County of San Luis Obispo represented on or about "1/24/2011 represented:

"Current ADT **100** Year **2006** Future ADT **160** Year **Build-Out** DHV 16 Trucks 2%"

It is imperative to note at this point in these comments to the Document that these ADT values submitted by authorized County of San Luis Obispo personnel on HBRRP applications to the Caltrans District 05 Local Maintenance Engineer differ significantly from the ADT values listed upon the Caltrans Office of Structure Maintenance and Investigations biennial Bridge Inspection Report Structure Inventory and Appraisal Reports that are documented upon EXHIBIT 3.

From April to August of 2013, the Commenter attempted to call to the attention of both the Caltrans District 01 Local Assistance Engineer in Eureka, and the State of California Division of the Federal Highway Administration in Sacramento, that there is evidence of blatant misrepresentations of both the current ADT and future projected ADT by county public works agencies and county departments of transportation throughout California. Furthermore the Commenter stated to these two agencies there was an appearance the motive for the misrepresentations of those ADT figures was to falsely justify replacement bridge widths and approach roadway widths of greater widths than the required minimum widths pursuant to the mandatory AASHTO guidelines/standards. There is an appearance the motivation for such misrepresentations that the Commenter has determined are being committed throughout California, is to enable local agencies to receive a greater amount of funding for Preliminary Engineering and Construction Engineering based upon the 25%/15% reimbursement compensation for Preliminary Engineering/Construction Engineering costs based upon the estimated construction, or "CON" costs. On September 12, of 2012, the Commenter received a jointly signed letter of response from these organizations citing they saw no signs of fraud, waste, or abuse of the HBRRP program through misrepresentations of the projected ADT values. In September of 2012, a complaint was filed with the California State Attorney General's Bureau of State Audits regarding Caltrans Local Assistance failing to responsibly manage the Federally funded HBRRP program. In January of 2015, the Commenter received verbal notice by telephone (and not in writing) that the State Bureau of Audits had determined the issue was between the Federal Government and the local agencies and was therefore terminating their investigation of Caltrans. Again, the only reasonable explanation for such misrepresentations of the ADT appears to be to fraudulently justify increasing bridge structure's geometric dimensions, principally width of traveled way, in order to increase the estimated construction costs for HBRRP funding. In turn, the local agencies receive a larger allotment for Preliminary Engineering and Construction Costs based upon the 25% and 15% of the estimated construction cost for the project.

Therefore, both the passage:

"(approximately 100 average daily trips)"

as documented upon Page 10 of EXHIBIT 1, and the "Traffic Data" furnished by the County of San Luis Obispo to Caltrans District 05 Local Assistance documented upon Page 3 of EXHIBIT 4 are clearly not consistent with ADT values furnished by the County of San Luis Obispo to Caltrans Office of Structures Maintenance and Investigations that are clearly documented upon the biennial Structure Inventory and Appraisal Reports.

- Please direct your attention to **Page 5** of **EXHIBIT 1** documenting Page 6 of the **Document** where, within the polygon enclosed area encompassing the paragraph for "**Setting**," under Environmental Checklist Item "2. AGRICULTURAL RESOURCES,":

  "The Klau Creek bridge is located within a riparian habitat along Cypress Mountain Drive. The bridge is located in rural San Luis Obispo County and is located between lands zoned for agricultural and rural lands."

Furthermore, directly below this statement it is indicated lands served by the subject bridge are established as:

- **"Agricultural Preserve", and,**
- **"Under Williamson Act contract."**

A cursory census of parcels through the San Luis Obispo County GIS database available online confirms numerous parcels served by Cypress Mountain Drive are zoned as "Agricultural Preserve."

Furthermore, as California counties must either adhere to State of California Public Resources Code Sections 4251-4290, or establish local alternative standards as authorized by Section 4290 of the Public Resources Code, Cypress Mountain Drive, due to multiple locations being presently one-lane roadway of width less than sixteen feet (16') precludes any further development of parcels accessed by Cypress Mountain Drive. Furthermore, pursuant to the County of San Luis Obispo's current Capital Improvement Program for Fiscal Year 2015/2016 to Fiscal Year 2019/2020, "Appendix 10: Individual Project Information Sheets" available at the following website:

http://www.slocounty.ca.gov/Assets/GS/CIP/2015-16+CIP/Appendix10.pdf

Cypress Mountain Drive is not listed for widening. It is therefore clearly demonstrated future Average Daily Traffic out 20 years should not exceed 100 vehicles per day.

- Continuing from the above quote at the bottom of **Page 8** of **EXHIBIT AASHTO-1:**

  "If new development that would increase the traffic volume above 400 vehicles per day is anticipated on a local road within the period for which traffic volumes are projected, then Chapter 5 of the AASHTO *Policy on Geometric Design of Highways and Streets* (1) (ed. note: "The Green Book") should be used instead of the design guidelines presented here."

Therefore, even if ADT exceeds 400 vehicles per day, for local roads, Table 5-6 within the AASHTO document entitled: "AASHTO *Policy on Geometric Design of Highways and Streets*," as documented herein upon **Page 4** of **EXHIBIT AASHTO-2**, still applies.

- **Page 11** of **EXHIBIT AASHTO-1** documents excerpts from "Chapter 3 Design Philosophy"
  - Within the rectangle enclosed area upon **Page 11** of **EXHIBIT AASHTO-1** under the heading "Development of Design Guidelines Through Risk Assessment," it is stated in full:

    "Because it is derived from a formal risk assessment, the design philosophy recommended for very low-volume local roads is based fundamentally on safety concerns. Moreover, the philosophy focuses on direct comparison of known or expected safety benefits and system costs. This tradeoff implies that public funds spent to improve such roads in the name of safety should be spent only where there is likely to be an actual safety benefit in return. This, in turn, assures that highway funds expended for safety purposes on all highways (not just low-volume local roads) will be available for use where they are most needed (i.e., where meaningful safety benefits can reasonably be expected)."

Therefore, based upon this passage, it is incumbent upon professionally licensed civil engineers, who by their very professional licensure, are obligated to protect the life, health (i.e., safety), and public welfare (i.e, the efficient allocation of HBRRP funding), though the efficient design of bridge improvements that result in maximizing the benefit of limited

funding available through the HBRRP program to replace or rehabilitate the maximum number of potential bridges possible.

- Within the rectangle enclosed area at the bottom of **Page 13** of **EXHIBIT AASHTO-1** under the heading "Bridge Width" it states in full:

  "The key elements in selecting an appropriate bridge width <u>are the width of the adjacent roadway</u> (traveled way and shoulder widths) and, for existing locations, the safety performance of the existing bridge. Determination of bridge widths for newly constructed bridges and exiting bridges is discussed below."

Please note, "..the width of the adjacent roadway…" refers to the <u>existing roadway width</u> and <u>not the tabulated minimum roadway widths</u> as established in either Table 5-5 documented as Page 3 of EXHIBIT AASHTO-2, or Table 6-5 documented as Page 10 of EXHIBIT AASHTO-2.

- It is imperative at this time to reiterate from the Federal Highways Administration's "Application of Design Standards, Uniform Federal Accessibility Standards, and Bridges," as documented upon **Page 3** of **EXHIBIT FHWA-3** where within the rectangle enclosed area it states:

  "(4) Bridge replacement projects should meet the AASHTO standards for new bridges with very few exceptions. <u>In the case of bridges on low volume roads and streets, exceptions may be appropriate if the existing road will not be upgraded in the foreseeable future (10 years or more)</u>."

- Please note, the AAHSTO design guidelines/standards for "Minimum Roadway Widths and Design Loadings for <u>New and Reconstructed Bridges</u> are furnished within:

  - Table 5-6 documented as **Page 4** of **EXHIBIT AASHTO-2** for local roads, and

  - Table 6-6 documented as **Page 11** of **EXHIBIT AASHTO-2** for collector roads

  - Please note, regardless of whether the approach roadway is functionally classified as either a "local road", or a "minor collector," the minimum roadway width is:

    "Traveled way + 2 ft (each side)"

    Where "Traveled way" is the <u>existing approach roadway width</u> and not a tabulated value from either Table 5-5 or Table 6-5.

Again, as was stated previously, bridges on local roads designated as "very low-volume" roads where the Average Daily Traffic, or ADT, is not expected to exceed 400 vehicles per day within the 20 year threshold as established within Part 6.2.2, "Bridge Replacement," within Chapter 6 of the Caltrans Local Assistance Program Guideline, design exceptions to construct replacement bridges to widths **less than the minimum AASHTO design standards are allowable for bridges that serve very low-volume roadways** such as **Cypress Mountain Drive**, where widening of the adjacent approach roadways is not anticipated in the next 10 years and the Average Daily Traffic is not expected to exceed "100" by the year "2034".

- From the bottom of **Page 13** of **EXHIBIT AASHTO-1** to the top of **Page 14** of **EXHIBIT AASHTO-1**, under the heading "New Construction" with respect to the construction of new bridges on new roadways it is stated in part:

  - The first underlined sentence establishes the applicability of this section:

    "Newly constructed bridges are bridges on new roadways where there is no existing roadway or bridge in place."

  - The second underlined sentence establishes reference to AASHTO "Policy on Geometric Design of Highways and Streets," commonly referred to as "The Green Book," excerpts that are included herein as **EXHIBIT AASHTO-2**

  - The first full sentence, underlined at the top of **Page 14** of **EXHIBIT AASHTO-1** states:

    "Those criteria (Green Book) state that, for bridges on local roads with ADT of 400 veh/day or less, the bridge width should be equal to the width of the traveled way plus 0.6 m [2 ft.]."

Again, please note, "..the width of the traveled way…" pertains to: "…new roadways where there is no existing roadway or bridge in place." And therefore newly constructed bridges on new roadways should be constructed with widths meeting the minimum AASHTO design guidelines/standards for approach roadways as established within Table 5-5 documented as Page 3 of EXHIBIT AASHTO-2 for local roads, or Table 6-5 documented as Page 10 of EXHIBIT AASHTO-2 for minor collectors.

Therefore, the shoulder widths for replacement bridges serving very low-volume local roads, regardless of classification as a local road or collector road, where the projected ADT is not expected to exceed "400" within 20 years, need not be greater than two feet (2')

as clearly stated within both Table 5-6 for local roads documented as Page 4 of EXHIBIT AASHTO-2, and Table 6-6 for collector roads documented as Page 11 of EXHIBIT AASHTO-2.

- Additionally the second underlined sentence upon **Page 14** of **EXHIBIT AASHTO-1** states:

  "Bridge usage by trucks and recreational vehicles should also be considered in determining the appropriate width."

Since the National Bridge Inspection Item "(109) TRUCK ADT" is listed as "5%" for the 2011 to 2014 Structure Inventory and Appraisal Reports (SI&AR) documented upon Page 1 to Page 3 of EXHIBIT 3, and "0%" for the 2008 SI&AR documented upon Page 4 of EXHIBIT 3, justification for increased bridge deck width due to trucks and recreational vehicles is unwarranted.

- Finally the third underlined passages within the first full paragraph at the top of **Page 14** of **EXHIBIT AASHTO-1** states:

  "One-lane bridges may be provided on single-lane roads <u>and on two-lane roads with ADT less than 100 veh/day where the designer finds that a one-lane bridge can operate effectively</u>. The minimum width of a one-lane bridge should be 4.5 m [15 ft] unless the designer concludes that a narrower bridge can function effectively (e.g., based on the safety performance of similar bridges maintained by the same agency). Caution should be exercised in design of one-lane bridges wider than 4.9 m [16 ft.] to assure that drivers will not use them as two-lane structures."

Therefore even for <u>new bridges</u> on <u>new roadways</u> <u>were the ADT is 100 or less</u> the use of one-lane bridges is acceptable. As the Average Daily Traffic on Cypress Mountain Drive has been clearly represented to be "25" vehicles per day, and the projected Average Daily Traffic will not exceed "100" vehicles per day by the year "2034", <u>a cost-effective replacement bridge alterative that would minimize environmental impacts to the greatest extent feasible would be the construction of a single lane structure.</u>

- Within the rectangle enclosed area at the middle of **Page 14** of **EXHIBIT AASHTO-1**, under the heading "Existing Bridges" within the polygon enclosed area it is stated in full:

  "<u>Where an existing bridge needs replacement for structural reasons, but there is no evidence of a site-specific safety problem, the replacement bridge can be constructed with the same width as the existing bridge</u>; this criterion

applies to bridges that are reconstructed on the same alignment and bridges that are reconstructed on a more favorable alignment."

Therefore, this AASHTO document has clearly stated that bridges on very-low volume roads replaced for structural reasons may be replaced without a change in width.

- **Page 15** of **EXHIBIT AASHTO-1** documents "Exhibit 3. Maximum Side Friction Factor and Minimum Radius for Horizontal Curve Design on Higher Volume Roadways (1)".

  - The purpose for furnishing this document is to validate the pre-existing rural, mountainous roadway horizontal curvature, prevalent throughout Cypress Mountain Drive, where horizontal curve radii are consistently less than 100 feet does not allow for the safe negotiation of existing roadway curves beyond and above approximately 20 miles per hour.

  - Furthermore, **EXHIBIT 8** documenting California Highway Patrol Statewide Integrated Records System, or SWITRS, for the County of San Luis Obispo from 2000 to 2014 clearly indicates through an alphabetical sorting of the existing 13,500-plus traffic accidents reported in unincorporated areas of San Luis Obispo County for fifteen years, not one accident was reported anywhere throughout Cypress Mountain Drive.

Therefore the replacement bridge width cannot be increased on a basis of either design speed or past traffic accident history in the vicinity of Bridge 49C0033.

- **Page 16** of **EXHIBIT AASHTO-1** documents Page 30 of the AASHTO design guideline/standards for Low-Volume Local Roads (ADT ≤ 400), whereupon:

  - Directly under the heading "Existing Roads," the underlined passage states in full:

    "For improvement projects on existing very low-volume local roads, the existing horizontal curve geometry should generally be considered acceptable unless there is evidence of a site-specific safety problem related to horizontal curvature. The following guidelines reflect the results of the risk assessment for horizontal curves on existing roads:

  - Continuing enclosed within the first rectangle it is stated in full:

    "• For curves on very low-volume local roads with low speeds (design or estimated operating speed of 70 km/h [45 mph] or less), reconstruction without changing the existing curve geometry and cross section is acceptable if the nominal design speed of the curve is within 30 km/h or

20 mph of the design or operating speed, and if there is no clear evidence of a site specific safety problem associated with the curve."

- Continuing within the rectangle enclosed paragraph immediately below the two bulleted paragraphs, particularly the underlined sentences stating:

  "Evidence of a site-specific safety problem may be: a pattern of curve-related crashes (requiring at least 5 years, and preferably 10 years, of crash history);"

○ Temporarily interrupting, your attention is again requested to **Page 3** of **EXHIBIT 8** documenting the CHP logged accident history in the geographical vicinity of Bridge 49C0033 from January 1, 2001 to December 31 of 2014 where not one single traffic accident was documented by the CHP throughout the entire course of Cypress Mountain Drive.

○ Continuing from the underlined sentence above:

"…physical evidence of curve problems such as skid marks, scarred trees or utility poles, substantial edge rutting or encroachments, etc.;"

- Google Earth Street View is not available for the portion of Cypress Mountain Drive at the location of Bridge 49C0033 however the CHP SWITRS data clearly indicates there has not been one single traffic accident along the entire course of Cypress Mountain Drive over the past 14 years.

○ Continuing to the next underlined sentence with specific statements underlined for emphasis:

"Even with such evidence, curve improvements should focus on low-cost measures designed to control speeds, enhance curve tracking, or mitigate roadside encroachment severity. Except in rare circumstances, there are more cost-effective solutions to identified curve problems on very low-volume local roads than curve flattening and reconstruction. Design actions to correct such problems should emphasize such low-cost measures and should not emphasize or encourage more costly measures such as curve flattening."

○ Finally within the rectangle enclosed area at the bottom of **Page 16** of **EXHIBIT AASHTO-1** the paragraph states in full:

"Acceptable substitutes for curve reconstruction include measures to reduce speed in the curve (signing, rumble strips, pavement markings), measures to improve the roadside within the curve (clearing slopes, widening shoulder through curve), and measures to increase pavement friction within the curve. Reconstruction employing any or all of these measures should be

accompanied by appropriate before-and-after studies to monitor their effectiveness."

- Therefore, although the **Document** does not furnish any information pertaining to proposed approach roadway improvements, by the passages furnished above from the AASHTO document "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)", it has been clearly presented the scope of approach roadway should be extremely limited.

- Your attention is directed to Page 2 of the **Document** under the heading "A. PROJECT" where it is stated within the second full paragraph, in part:

  "The proposed bridge replacement activities would be limited to the bridge work and up to 400 feet of road approach work on either side of the bridge."

As will be demonstrated by **Page 14** of **EXHIBIT 5**, corrected estimated construction costs for "Approach Roadway" construction totaling **"361,000"** dollars represents **THIRTY FOUR POINT THREE PERCENT (34.3%)** of the estimated bridge replacement construction costs totaling **$1,051,000**. Excessive roadway approach improvements that are not cost-effective from a cost/benefit ratio standpoint, should be carefully scrutinized, particularly if the proposed approach roadway improvements significantly exceed the target Federal average of ten percent (10%) of the total estimated costs for the bridge replacement project which is the case for the Proposed Project stated within the Draft.

- The selected excerpts furnished within **EXHIBIT AASHTO-2** support the findings raised within the selected excerpts furnished within **EXHIBIT AASHTO-1** and will be further offered in discussions below regarding these comments on the **Document**.

- The selected excerpts furnished within **EXHIBIT AASHTO-3** support the use of a "Test Level 2" or "TL-2" bridge barrier rail in lieu of any proposed "Test Level 4" or "TL-4" proposed bridge barrier rail such as a "Type 732" concrete bridge barrier rail as proposed within "A. PROJECT," upon Page 2 of the **Document.** Pertinent excerpts within **EXHIBIT AASHTO-3** are either enclosed by rectangles, underlined or both in support of the proposed third alternative's proposed bridge barrier rail.

- Returning to Chapter 6 of the Local Assistance Program Guidelines, **Page 4** of **EXHIBIT CT-1** documents Page 6-17 under the heading "6.4.2 Approach Roadway Work," where the first sentence within the second full paragraph states:

  "Federal participation for approach roadway shall be limited to the minimum necessary to make the facility operable consistent with current design standards."

This Caltrans requirement is self-explanatory. Again, it is noted, by the use of the term "shall", this requirement is unequivocally mandatory. As has been clearly documented

above via EXHIBIT AASHTO-1 , EXHIBIT AASHTO-2 , and as referenced by EXHIBIT AASHTO-3 it is neither cost-effective nor necessary to improve the existing approach roadway "to make the facility operable consistent with current design standards" as the majority of the existing Cypress Mountain Drive in the vicinity of Bridge 49C0033 will remain an unpaved narrow one-lane road with no plans to improve Cypress Mountain Drive within 10 years to a facility "…consistent with current design standards."

- Please direct your attention momentarily to the following link to the Federal Highway Administration's "Additional Guidance on 23 CFR 650 D," for the Federal Highway Bridge Replacement and Rehabilitation Program at the following link:

  http://www.fhwa.dot.gov/bridge/0650dsup.cfm

- Please momentarily divert your attention to excerpts from **EXHIBIT FHWA-2** which are attached to, are a part of, and follow these comments. Upon **Page 3** of **EXHIBIT FHWA-2**, please note within the rectangle enclosed area, Part 5., "Use of Highway Bridge Replacement and Rehabilitation Program (HBRRP) Funds for Approach Roadway Construction (23 CFR 650.413)." states in full:

  "The FHWA is concerned that in some instances approach roadway costs associated with HBRRP projects are excessive to the point of not falling within the congressional intent for the program "to improve deficient bridges." States and local entities are encouraged to use other categories of funds for approach roadways and miscellaneous non-bridge items. Also the FHWA Division offices are directed to:

  a. **Review and revise policy relating to inclusion of approach roadway items in HBRRP projects to provide for more national uniformity in bridge program management and minimize approach roadway project costs. <u>This action should result in a nationwide average of no more than 10 percent.</u>**

  b. **Review the overall HBRRP where average bridge expenditures are not a high percentage of all HBRRP funds obligated and make appropriate changes to provide more national uniformity in bridge program management."**

- Please again direct your attention to the rectangle enclosed passage upon **Page 3** of **EXHIBIT FHWA-3** where it is stated in full:

  "(4) Bridge replacement projects should meet the AASHTO standards for new bridges with very few exceptions. In the case of bridges on low volume roads and streets, exceptions may be appropriate if the existing road will not be upgraded in the foreseeable future (10 years or more). "

Therefore per Federal Highway Administration guidelines, estimated costs for roadway approach work **should not exceed approximately TEN PERCENT of the total estimated construction costs**, and should not be increased in width to the minimum AASHTO design standards if the balance of the very low-volume road will not "…be upgraded in the foreseeable future (10 years or more)."

- Please direct your attention to **Page 5** of **EXHIBIT 4** documenting Page 7-17 "Exhibit 7-D Major Structure Data," where within the rectangle enclosed area the following data has been represented by the County of San Luis Obispo to Caltrans District 05 Local Assistance:

	Existing	Proposed	Minimum AASHTO Standards
Clear Width (curb to curb)	14'	26'	**22'**
Shoulder Width	Lt. Rt.	3' Lt. 3' Rt.	2' Lt. 2' Rt.
Total Br. Width	15'	28'-10"	24'-10"
Total Appr. Rdwy. Width		26' (10' lanes, 3' graded shoulders)	22' (9' lanes, 2' graded shoulders)

Please note that whereas the County of San Luis Obispo has misrepresented the "Minimum AASHTO Standards" for "Clear Width (curb to curb)" to be "22' ", by the documentation furnished above for Table 5-6 documented as Page 4 of EXHIBIT AASHTO-2 for local roads, and Table 6-6 documented as Page 11 of EXHIBIT AASHTO-2 for minor collectors the "Minimum AASHTO Standards" for "Clear Width (curb to curb)" are:

"Traveled way + 2 ft (each side)"

Where the "Traveled way" is the existing roadway width and not the "Minimum Width of Traveled Way and Shoulders" as specified within AASHTO Table 5-5 documented as Page 3 of EXHIBIT AASHTO-2 for local roads, and Table 6-5 documented as Page 10 of EXHIBIT AASHTO-2 for minor collectors. Therefore, the "Minimum AASHTO Standards" for "Clear Width (curb to curb) for the total replacement bridge deck with for Bridge 49C0033 with Average Daily Traffic projected out 20 years to not exceed "100" would be:

2-feet + "3.7 M" *3.28 feet/meter +2-feet = 16 feet

The proposed, excessive replacement bridge deck width dimension, whether twenty-six feet (26') as represented upon the HBRRP Application "Exhibit 7-D Major Structure Data," or twenty-four feet (24') as represented within the Document, or "28'-10" TOTAL BRIDGE

WIDTH" as represented upon "EXHIBIT 2 Advance Planning Study Cypress Mnt. Rd. Bridge Replacement," dimension and associated costs should not be participating by the Federal HBRRP program and the Local Agency, the County of San Luis Obispo should either be responsible for all construction costs in excess of the minimum AASHTO standards, or revise the project scope to meet minimum AASHTO standards.

- Please direct your attention to **EXHIBIT 5** documenting HBRRP application documents required of the County of San Luis Obispo to submit to the Caltrans District 05 Local Assistance Engineer. These documents were received by a public records request to the County of San Luis Obispo.

    - Please direct your attention to **Page 3**, **Page 8**, and **Page 14** of **EXHIBIT 5** documenting three successive submissions of "Exhibit 6-D HBRRP Scope/Cost/Schedule Change Request" forms by the County of San Luis Obispo to the Caltrans District 05 Local Assistance Engineer where the percentage of estimated "Approach Roadway" construction costs compared to the estimated "Total Cost" is:

Exhibit 6-D Date	Estimated Approach Roadway Costs	Estimated Total Costs	% of Approach Roadway Costs
1/11/2012	$ 86,000.00	$ 576,000.00	14.9%
1/15/2013	$ 86,000.00	$ 576,000.00	14.9%
2/20/2014	**$ 361,000.00**	$ 1,051,000.00	**34.3%**

Please note the Exhibit 6-D submitted on February 20, 2014, wrongfully attributed estimated unnecessary retaining wall costs of "$275,000" to "Construct" costs for estimated bridge construction costs. The appropriate placement of this unnecessary estimated cost should have been applied to the estimated "Approach Roadway" costs. Please note this correction results in the estimated approach roadway costs to represent THRTY-FOUR POINT THREE PERCENT (34.3%) to the estimated "Total Cost" for the bridge replacement project. This increase from 14.9% to 34.3% of the estimated "Total Cost" only due to the unnecessary increase in bridge construction scope that is neither cost-effective nor minimizes environmental impacts to the maximum extent feasible.

- Continuing from Chapter 6 of the Local Assistance Program Guidelines, **Page 5** of **EXHIBIT CT-1** documents Page 6-18 under the heading "6.4.3 Preliminary Engineering (PE) Costs," where the second paragraph states in full:

    "Federal participation of PE costs is limited to actual costs up to $75,000 or 25% of the estimated participating construction costs (excluding construction engineering and contingency), whichever is greater. Additional participation must be approved by the Office of Program Management (contact through the DLAE). Justification for exceeding PE costs limits includes difficult

environmental, seismic, hydraulic/scour issues, or other bridge technical problems. Complex project management issues may also be a justification."

As the alternative proposed project included within these comments on the Document clearly reveal, additional participation costs due to "difficult environmental" or "other bridge technical problems" would have been significantly reduced to the greatest extent feasible thereby reducing Preliminary Engineering (PE) Costs that have already been expended.

- Continuing from Page 6-18 under the heading "6.4.3 Preliminary Engineering (PE) Costs," the fourth paragraph states in full:

  "For exceptions to the above rules, local agencies must submit a justification in writing to the DLAE (in this case the Caltrans District 05 District Local Assistance Engineer). The DLAE will review the request, provide recommendations and forward to the Office of Program Management for Approval."

- Continuing from Page 6-18 under the heading "6.4.5 Construction Engineering Costs," the sole paragraph states in full:

  "HBRRP participation in Construction Engineering may not exceed 15% of the participating construction contract item costs, unless approved by the Office of Program Management Local agencies must contact the DLAE for assistance.

  Exceptions to this rule will be handled similar to PE cost exceptions as discussed in Section 6.4.3 on page 6-18."

Therefore, the Caltrans Chapter 6 Local Assistance Program Guidelines clearly delegates the responsibility to review and recommend exceptions to the 25% cap on Preliminary Engineering costs and the 15% cap on Construction Engineering costs to the Caltrans District Local Assistance Engineer.

The 25% supplemental funding by the HBRRP program is intended to reimburse local agencies for "Preliminary Engineering", or "PE" costs for preliminary design including but not limited to design, environmental studies and permitting, geotechnical and hydrologic/hydraulic studies.

The 15% supplemental funding by the HBRRP program is intended to reimburse local agencies for "Construction Engineering," or "CE" construction project management costs

including but not limited to day to day inspection, progress payment processing, materials testing, processing of contract change orders, and other contract management responsibilities.

It is readily apparent these reimbursement percentages may be abused by a local agencies by over-scoping their replacement projects in order to engender greater dollar amounts for PE and CE activities. As will be further explained below, the local agency is required by the HBRRP program guidelines to justify proposed replacement bridges that exceed the minimum, cost-effective requirements as established by AASHTO, or be required to pay the difference in costs. It is the Commenter's experience neither Caltrans nor the California Division of the Federal Highway Administration are holding local agencies to these mandates. By abusing the requirements of the HBRRP program, Local Agencies are extracting greater environmental impacts than either necessary or allowed.

- Continuing from Chapter 6 of the Local Assistance Program Guidelines, **Page 6** of **EXHIBIT CT-1** documents Page 6-21 where, under the heading "6.5.6 Exceeding AASHTO Standards," the first sentence within the only paragraph states:

  "Where proposed design solutions exceed AASHTO guidelines or standards, the associated extra costs <u>are generally not participating unless justified</u>."

First it is imperative to note this requirement solely references "AASHTO guidelines" and excludes reference to Caltrans design documents. This is consistent with the mandates quoted above from Chapter 11, "Design Standards" of the Local Assistance Procedures Manual (LAPM) under the heading "11.2 Statewide Design Standards for Local Assistance Projects" where AASHTO, and not Caltrans guidelines and standards are specified. Therefore, per this provision, **<u>a Local Agency must justify extra costs as a result of exceeding AASHTO guidelines or standards</u>**, or may be required to pay for the additional costs out of local road funds for designs that exceed minimum AASHTO guidelines or standards. **<u>It is the Commenter's experience neither Caltrans nor the California Division of the Federal Highway Administration are holding local agencies to this mandate.</u> The proposed alternative will clearly show the simultaneous replacement of both Bridge 49C0032 and 49C0033 under one contract with structures of similar span length as existing and of widths that meet minimum AASHTO design guidelines/standards as mandated by the HBRRP program, will result in the completion of replacing both 62 year old timber structures with approximately the same amount of funds required for replacing just Bridge 49C0033.**

By the violation of this requirement, the County of San Luis Obispo can still be held fully responsible for all aspects of the project as will be noted directly below, even if the County of San Luis Obispo's proposed project documents are approved by both the Caltrans District 01 Local Assistance Engineer and the Sacramento Headquarters Office of Program Management,. Therefore, if any local agency including the County of San Luis Obispo has either unknowingly or even purposefully constructed a replacement bridge that is not cost-effective by exceeding AASHTO guidelines and standards, any local agency including the County of San Luis Obispo may be exposed to liabilities that could result in the local agency having to expend local funds for any penalties associated for either unknowingly or even purposefully misrepresenting the need to construct a replacement bridge structure in excess of the established minimum AASHTO guidelines and standards.

- Please again direct your attention to **EXHIBIT 5** documenting three successive submissions of "Exhibit 6-D HBRRP Scope/Cost/Schedule Change Request" forms by the County of San Luis Obispo to the Caltrans District 05 Local Assistance Engineer. These documents were received by a public records request to the County of San Luis Obispo. The Exhibit 6-D is submitted to the Caltrans District Local Assistance Engineer whenever the Local Agency determines a need to change the scope (either increasing the scope or decreasing the scope), cost (either increasing the costs or decreasing the costs), or change in schedule in the delivery of the project.

    - Please direct your attention to **Page 1** of **EXHIBIT 5** where for the first Exhibit 6-D submitted on "1/11/2012," under the heading "1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):" it is stated:

      "PE cost has increased due to the following:
        - **The unanticipated presence of California Red-Legged Frogs**
        - **The difficulty in completing the topographic survey due to lack of documentation**
        - **The need to utilize a consultant to complete the technical studies for the environmental document**
        - **Complexity of the geology and geometry of the site"**

    - Please direct your attention to **Page 4** of **EXHIBIT 5** where for the "PE" the requested "Direct Costs" is listed as:

      "$294,000.000"

Please note that based upon the estimated "Total Cost", or "CON" of $576,000.00, $294,000.00 represents <u>FIFTY ONE PERCENT (51%)</u> of the estimated total cost of construction for the bridge replacement project as of January 11, 2012. It is inconceivable

Preliminary Engineering costs could ever possibly approach twenty five percent (25%) let alone FIFTY ONE PERCENT (51%) of the estimated total cost of construction of such a simplistic bridge replacement project.

- Please next direct your attention to **Page 6** of **EXHIBIT 5** where for the second Exhibit 6-D submitted on "1/15/2013," under the heading "1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):" it is stated:

  "THIS IS A REQUEST FOR A P.E. COST INCREASE AND SCHEDULE CHANGE ONLY.

  The County is requesting additional PE funds. The previous approved PE funding is $294,000 and the request is for $484,700. The estimated project construction cost (without contingencies and construction engineering) is $576,000.

  The primary reason for the PE Costs being higher than the guidelines of 25% is because the project is replacing a relatively small bridge in a site that has complex environmental issues, along with full hydraulic analysis, geotechnical studies and seismic design requirements. These studies all need to be completed, but since the bridge length is minimal (only 40-ft) at this site, the construction cost is low, which skews the PE percentages well over 25% of the construction costs.

  Since the previous request, projected PE costs has increased due to the following:
  - **Increased difficulty in placing a temporary detour road within environmental constraints**
  - **Unanticipated archeological site**
  - **Unanticipated research and field surveying required to establish Couty's historic existing right-of-way.**

  NOTE: this project is 100% federally funded by HBP and federal toll credits."

The last line is purposefully underlined as it clearly demonstrates the County of San Luis Obispo intends to devote Toll Credits to meet the required 11.47% Local Agency matching funds.

- Please direct your attention to **Page 9** of **EXHIBIT 5** where for the "PE" the requested "Direct Costs" is listed as:

  "$484,700.000"

  Please note that based upon the estimated "Total Cost", or "CON" of $576,000.00, $484,700.00 represents EIGHTY-FOUR POINT ONE PERCENT (84.1%) of the

estimated total cost of construction for the bridge replacement project as of January 15, 2013.

Further comments cannot proceed without again stating it is inconceivable Preliminary Engineering costs could ever possibly approach twenty five percent (25%) let alone <u>EIGHTY-FOUR POINT ONE PERCENT (84.1%)</u> of the estimated total cost of construction of such a simplistic bridge replacement project.

- Please next direct your attention to **Page 11** of **EXHIBIT 5** where for the third Exhibit 6-D submitted on "2/20/2014," under the heading "1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):" it is stated in part within the rectangle enclosed areas:

  "Preliminary Engineering costs have increased by $102,000 due to the following:

  Construction costs have increased by $475,000 due to the following:
  - **When the bridge was initially nominated for replacement it was assumed that the replacement bridge would be approximately 30 feet long. Due to the complex site topography and hydrology, the replacement bridge is currently designed at 54 feet long and a retaining wall is necessary.**
    <u>This is currently estimated to cost an additional $275,000 to construct."</u>

Please note the last statement is purposefully underlined as it is apparent the "…additional $275,000 to construct." pertains to the additional retaining wall that is only necessitated by the unnecessary proposed increase in the bridge deck elevation as will be demonstrated below based upon an independent hydrologic/hydraulic analysis conducted by the Commenter. Therefore, the additional $275,000 cost should be included in the "Approach Roadway" estimated cost and not the "Construct" as is the case documented upon Page 14 of EXHIBIT 5. Please note upon Page 14 of EXHIBIT 5 the "Approach Roadway" estimated cost is noted to the right of the "$86,000.00" entry to be increased by "$275,000" to total "361,000.00" while the "Construct" is noted to the right of the "$814,000.00 entry to be decreased by $275,000 to total "$539,000".

- Please next direct your attention to **Page 12** of **EXHIBIT 5** where for the third Exhibit 6-D submitted on "2/20/2014," under the continuation of heading "1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):" it is stated in full within the rectangle enclosed area:

  "Construction Engineering Costs have increased by $123,200 due to the following:
  - **The increase in Construction costs to 15% of the current CON value accounts for $70,650 of this additional money.**

- **The remaining $52,550 brings the Construction Engineering to 20% of the Construction costs.**
  This is typical for County projects due to construction staking and environmental monitoring requirements.

○ Please direct your attention to **Page 15** of **EXHIBIT 5** where for the "PE" the requested "Direct Costs" is listed as:

"$586,700.000"

Please note that based upon the estimated unnecessary inflated "Total Cost", or "CON" of $1,051,000.00, Preliminary Engineering costs of $586,700.00 represents FIFTY-FIVE POINT EIGHT PERCENT (55.8%) of the estimated total cost of construction for the bridge replacement project as of February 20, 2014.

○ Please again direct your attention to **Page 15** of **EXHIBIT 5** where for the "CE" the requested "Direct Costs" is listed as:

"$210,200.00"

Please note that based upon the estimated unnecessary inflated "Total Cost", or "CON" of $1,051,000.00, Construction Engineering costs of $210,200.00 represents TWENTY PERCENT (20%) of the estimated total cost of construction for the bridge replacement project as of February 20, 2014.

Again, further comments cannot proceed without first stating it is inconceivable Preliminary Engineering costs could ever possibly approach twenty five percent (25%) and Construction Engineering costs could ever possibly approach fifteen percent (15%) let alone FIFTY-FIVE POINT EIGHT PERCENT (55.8%) and TWENTY PERCENT (20%) respectively of the estimated total cost of construction of such a simplistic bridge replacement project whose construction duration is expected to be only FOUR MONTHS.

○ Please direct your attention to **Page 5**, **Page 10**, and **Page 16** of **EXHIBIT 5** where under the statement:

"I certify that his project is in compliance with Chapter 6 (HBRRP) of the *Local Assistance Program Guildelines.*"

The "Local Agency Project Manager" representing the County of San Luis Obispo has signed all three submissions of Exhibit 6-D to the Caltrans District 05 Local Assistance Engineer.

- Please again direct your attention to **Page 5**, **Page 10**, and **Page 16** of **EXHIBIT 5** where within the box with heading "For Caltrans use only:" for each and every submission by the County of San Luis Obispo the box is checked by the "DLAE or authorized staff":

  "I recommend approval. (Attach comments as needed.)"

It is readily apparent the Caltrans District 05 Local Assistance Engineer is failing to responsibly manage the fiscal expenditures for this project in complete violation of the "Stewardship Agreement" executed by the FHWA and Caltrans as documented upon EXHIBIT FHWA-1 and referred to above.

- Continuing from Chapter 6 of the Local Assistance Program Guidelines, **Page 7** of **EXHIBIT CT-1** documents Page 6-23 under the heading "6.5.12 Field Review Policy," where the second paragraph states in full:

  "For most projects off the NHS (National Highway System), field reviews are optional. <u>However, field reviews that include Caltrans participants are strongly recommended</u>. <u>Field reviews help ensure that cost-effective solutions are considered</u>, <u>that proposed work is federally reimbursable</u>, <u>and that environmental concerns are raised early in the project development process</u>."

  - At this time, please direct your attention to **Page 7** of **EXHIBIT 4** documenting the "FIELD REVIEW ATTENDANCE ROSTER" for a field review that took place on January 24, 2011.

    - Please representatives from both Caltrans District 05 Local Assistance and Environmental departments participated in the field review.

As it is clearly documented by Page 7 of EXHIBIT 4 that Caltrans personnel actively participated in a field review for the project. It is therefore incomprehensible how such a field review could take place without any individual from Caltrans not being cognizant of a project alternative that would have involved the simultaneous replacement of both 62 year old timber trestle bridges less than 2,000 feet apart from one another.

- Continuing from Chapter 6 of the Local Assistance Program Guidelines, **Page 8** of **EXHIBIT CT-1** documents Page 6-32, where within the rectangle area enclosing the heading "6.9 Roles and Responsibilities" under the subheading "6.9.1 Local Agency," it states in full:

  "The local agency is the project manager <u>and is responsible for all aspects of the project</u>."

"The local agency is accountable for how it spends federal funds on eligible projects. The local agency is responsible for following these program guidelines and the procedures in the LAPM (Local Assistance Program Manual)."

"The local agency is responsible for requesting Caltrans funding approval for certain participating costs identified in Exhibit 6-B, "HBRRP Special Cost Approval Checklist," page 6-51."

Section 6.9.1 clearly holds that the Local Agency, in this case the County of San Luis Obispo, is solely responsible and accountable for all of the County's actions of participation in the HBRRP program. Therefore, all responsibility for not adhering to the Federal accepted Caltrans requirements including unnecessary costs due to exceeding minimum AASHTO design guidelines/standards is placed solely upon the County of San Luis Obispo and not Caltrans or the California Division of the Federal Highway Administration.

- Continuing from Page 6-32 where within the rectangle area enclosing the subheading "6.9.2 Caltrans, District Local Assistance Engineer (DLAE)," it states in full:

  "The DLAE is the point of contact for all local assistance projects. Written communication (including email) from Caltrans to the local agency that provides official policy direction (including eligibility, scope, or funding decisions) to the local agency will be from the DLAE. Copies of all written correspondence and appropriate email will be kept in the DLAE project files.

  The DLAE is responsible for providing expertise in understanding these program guidelines and the federal process as documented in the LAPM and the LAPG.

  The DLAE is also responsible for ensuring that all "official" written (including e-mail) controversial correspondence to local agencies is "cc'd" to the Office of Program Management and the Office of Project Implementation. Controversial correspondence includes any denial of funds to a local agency or an action on the part of Caltrans that delays the construction authorization of a local HBRRP project.

  The DLAE is to coordinate all Caltrans internal activities for local assistance projects. The DLAE is pro-active in ensuring that local agencies are aware of HBRRP scoping issues and offering help to local agency to resolve those issues. The DLAE is to utilize the Office of Program Management, Office of Project Implementation, SLA, District geometricians, District Right of Way and environmental experts, and be familiar with the standards and AASHTO references identified in Chapter 11, "Design Standards," of the LAPM.

The DLAE is also responsible ensuring that local agencies are aware of all Caltrans services available to local agencies that can improve the quality and timely delivery of HBRRP projects.

For current names, addresses, and email addresses, see the DLAE website:"

With respect to the specific passages purposefully underlined above, it is the experience of the Commenter and as is clearly demonstrated by EXHIBIT 5, Caltrans neither holds its self to these responsibilities, nor does the California Division of the Federal Highway Administration hold Caltrans to these responsibilities.

- With respect to the specific passage quoted directly above:

  "The DLAE is also responsible ensuring that local agencies are aware of all Caltrans services available to local agencies that can improve the quality and timely delivery of HBRRP projects."

Your attention is directed to the following Caltrans link for Bridge Design Aids:

http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-design-aids/bda.html

- Upon this web page please note the link to the following document:
  - "SECTION 4 – Concrete Slabs (old)
    And subsequent subsection links to the following documents:
    - 4-10 Design of Standard Slab Bridge
    - 4-10 Attachment A – "Slab Details – Single Span"
    - 4-10 Attachment B – "Slab Details – Two Spans"
    - 4-10 Attachment C – "Slab Details – Three Spans"
    - 4-10 Attachment D – "Slab Details – Multi Span"
    - 4-10 Attachment E – "Standard Slab Bridge Support Design Data"
    - 4-10 Attachment F – "Standard Slab Bridge Support Design Data"
    - 4-10 Attachment G – "Slab Support Design Examples"

These tabular design aids have been developed for span lengths (L) ranging from 26 ft to 44 ft, and for multiple span configurations as shown in Attachments A through D.

If the Caltrans District Local Assistance Engineers ensured local agencies were aware of such design aids, many bridges serving a local agency's local roads and streets, including the subject bridge structure of this Document, could be effectively and efficiently designed by in-house local agency staff to current seismic standards and AASHTO HL93 loading without the need to contract for consultant engineering services for such designs.

End of

Comments Regarding the Highway Bridge Replacement and Rehabilitation Program Requirements

Comments Regarding Alternative Design

This proposed Alternative Design offered with these comments to the **Document** meets the mandatory minimum AASHTO design guidelines/standards by replacing the existing 14-foot wide by 27-foot span timber bridge structure with a 16-foot wide by 33-foot span with 30-foot clearance between abutment faces.

- **Page 1** of **EXHIBIT 9** graphically illustrates a proposed plan layout including what is believed to be the approximate positioning of the proposed 24-foot wide by 54-foot span concrete slab deck bridge along with the proposed siting of the alternative 16-foot wide by 33-foot span concrete slab deck span.
    - Please note a proposed routing of the traffic detour is indicated as well that appears to avoid permanent removal of significant trees.
- **Page 2** of **EXHIBIT 9** graphically illustrates an alternative elevation view.
    - Please note the design considers a spread footing as spread footings are a preferred foundation selection for both economy and intuitively is the optimal foundation selection for such a span and deck width.
- **Page 3** of **EXHIBIT 9** graphically illustrates an alternative typical section.
    - Please note the design considers a Type TL-2 bridge barrier railing system. A Type 732 bridge barrier rail is excessive for the design speeds of the approach roadway. Furthermore, due to unpaved road surfaces, tracking of fine material and dust could accumulate at the base of the barrier rail face causing weed vegetation growth and possible blockage of scupper drains there by resulting in increased maintenance demands over and above a Type TL-2 barrier rail.
- **Page 4** of **EXHIBIT 9** documents "ATTACHMENT A" from Caltrans Bridge Design Aids 410 previously referred on Page 36, above.
    - These Bridge Design Aids allow for the rapid, economical design of conventionally reinforced concrete slab bridges.
- **Page 5** of **EXHIBIT 9** illustrates a Type TL-2 bridge barrier rail installation.
- **Page 6** of **EXHIBIT 9** documents a cost estimate for the Alternative Design with cost comparisons to the current proposed project cost estimate from the latest Exhibit 6-D submitted to Caltrans District 05 Local Assistance on February 20, 2014 documented as **Page 11** to **Page 16** of **EXHIBIT 5**. Please note costs for:
    - Bridge Removal,

- Slope Protection,
- Channel Work, and
- Detour - Stage Construction

Were repeated from the latest submitted Exhibit 6-D document submitted to Caltrans District 05 Local Assistance documented as **Page 11** to **Page 16** of **EXHIBIT 5**.

- Please note estimated costs associated with "Approach Roadway" construction totaling:

  $82,036.00

  Which considers excavation of 2.5 feet of existing roadway 20 feet wide by 150 feet behind the Beginning of Bridge (BB) and 150 feet ahead of the End of Bridge (EB), placement and compaction of Roadway Embankment to 95% relative compaction, and placement of 0.75 feet of Class 3 Aggregate base to 95% compaction, results in an independent estimated cost of construction for the "Approach Roadway" construction that is 95.4% of the estimate generated by the County of San Luis Obispo.

- Please note the estimated "Construction Total" for a proposed one lane, 16-foot wide conventionally reinforced concrete slab bridge structure is:

  $396,552.00

- **Page 7** of **EXHIBIT 9** documents a copy of Page 6-50 Exhibit 6-A "Summary of HBRRP Participating Costs" completed based upon the cost estimate for the Alternative Design. Please note:

  - **The "Total Participating Cost" of "$678,300 is ONE MILLION, FOUR-HUNDRED SIXTY-TWO THOUSAND, THREE-HUNDRED FIFTY DOLLARS ($1,462,350) less than the "Total Participating Costs" of "$2,140,650" stated upon the latest "Exhibit 6-D HBRRP Scope/Cost/Schedule Change Request" document submitted by the County to Caltrans District 05 Local Assistance and approved by Caltrans District 05 Local Assistance.**

End of Comments Regarding Alternative Design

Commencement of Comments Regarding the Document

Response to Comments #s

Initial Study Summary – Environmental Checklist

- **Page 1** of **EXHIBIT 1** documents Page 1 of the **Document** titled: "Initial Study Summary – Environmental Checklist" indicating by checked boxes the "**Environmental Factors Potentially Affected**." Under "**Determination**," the box checked regarding "On the basis of this initial evaluation, the Environmental Coordinator finds that:

  "Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared."

A-1

As it has been stated previously and will continually be repeated, had the bridge replacement structure been proposed to be replaced by pragmatic minimum AASHTO design guidelines/standards consistent with the current use and projected use out to "2034," existing roadway width, design speed and traffic accident history, environmental impacts would be reduces to the greatest extent feasible. Furthermore, as proposed, the project results in a replacement structure that is capacity increasing and as such, the Document is incomplete at this time.

A-2

- Please direct your attention to **Page 4** of **EXHIBIT 1** documenting Page 5 of the **Document**. Please note the underlined passage that states:

  "The new bridge would be similar in size and height, but would be widened to meet standard lane and shoulder width requirements."

  - As was discussed above within the section titled: Comments Regarding the HBRRP Requirements," this statement is without merit. As has been previously represented above:

    - The Average Daily Traffic has been listed upon the Office of Structure Maintenance and Investigations October, 2014 Local Agency Bridge List as "**25**" as documented upon **EXHIBIT 2**. However, under "12. TRANSPORTATION/CIRCULATION," of the **Document**, as documented upon **Page 10** of **EXHIBIT 1**, within the first paragraph titled "Setting," it states parenthetically:

      "….(Traffic along Cypress is infrequent (approximately 100 average daily trips)…"

A-3

Therefore it is clearly documented the Document clearly misrepresents the existing actual Average Daily Traffic as it is clearly documented both upon EXHIBIT 2 as well as Page 1 to Page 4 of EXHIBIT 3 the current Average Daily Traffic is "25" and the projected

increase in Average Daily Traffic in 2034 is represented to be "99" which reflects an unreasonable 5.9% average annual increase in Average Daily Traffic from 2010 to 2034 to achieve such a traffic volume.

- The design speed along the roadway served by Bridge 49C0033 has been shown by the statement under "**7. HAZARDS & HAZARDOUS MATERIALS**":

  "**Setting.** The project is located in a "very high" Fire Hazard Severity Zone (SLO County, 2007); however, Cal Fire's Las Tablas Station is located approximately 4.9 miles from the project site and response time is approximately 15 minutes. Klau Creek Bridge is not in a dam inundation zone (SLO County, 2009) and is not located in an airport safety zone."

  to be approximately 20 miles per hour (4.9 miles * 60 minutes per hour / 15 minutes)

This statement validates the existing alignment of the approach roadway before and after the subject bridge is composed of substandard horizontal curves with reduced design speeds of less than 25 miles per hour. A-3

- As has been previously stated above, the third underlined passage within the first full paragraph at the top of **Page 14** of **EXHIBIT AASHTO-1** states:

  "One-lane bridges may be provided on single-lane roads and on two-lane roads with ADT less than 100 veh/day where the designer finds that a one-lane bridge can operate effectively. The minimum width of a one-lane bridge should be 4.5 m [15 ft] unless the designer concludes that a narrower bridge can function effectively (e.g., based on the safety performance of similar bridges maintained by the same agency). Caution should be exercised in design of one-lane bridges wider than 4.9 m [16 ft.] to assure that drivers will not use them as two-lane structures."

Therefore even for new bridges on new roadways where the ADT is 100 or less the use of a one-lane bridges is acceptable. As the Average Daily Traffic on Cypress Mountain Drive has been clearly represented to be "25", a cost-effective replacement bridge alterative that would minimize environmental impacts to the greatest extent feasible and meets minimum AASHTO design guidelines/standards would be the construction of a single lane, sixteen foot (16') wide bridge structure. A-4

- Please direct your attention to the discussion offered previously within the "**Comments Regarding the Highway Bridge Replacement and Rehabilitation Program Requirements"** section of these comments for the **Document** regarding **Page 1** to **Page 6** of **EXHIBIT 6**. A-1

Therefore, as has been demonstrated above, while California Road System Map "8R," and the San Luis Obispo Circulation Element of the currently adopted General Plan have listed Cypress Mount Road as a "Minor Collector," as has been clearly presented directly above, the Average Daily Traffic for Cypress Mountain Drive is established as "25", the safe design speed along Cypress Mountain Drive is approximately 20 miles per hour throughout the entire course of Cypress Mountain Drive, and Cypress Mountain Drive is posted with Caltrans Type R11-4, "ROAD CLOSED TO THRU TRAFFIC" since at least 2008, Cypress Mountain Drive is functionally classified as a "minor collector" in name only and <u>for all intentions and purposes more accurately meets the functional classification of a "local road" and not a "collector road."</u>

- Table 5-6 for local roads, documented upon **Page 4** of **EXHIBIT AASHTO-2**, and Table 6-6 for collector roads, documented upon documented upon **Page 11** of **EXHIBIT AASHTO-2**, both titled: "Minimum Clear Roadway Widths and Design Loadings for New and Reconstructed Bridges" clearly indicate for a roadway where the ADT is "under 400," the "Minimum Clear Roadway Width For Bridges" is listed as:

  "Traveled way + 2 ft (each side)"

  <u>regardless of whether the roadway is functionally classified as either a local road or a collector roadway</u>.

A-1, A-5

Again, it is noted "Traveled way" is the existing roadway width and not the "Minimum Width of Traveled Way and Shoulders," as specified within Table 5-6 for local roads, documented upon Page 3 of EXHIBIT AASHTO-2, and Table 6-6 for collector roads, documented upon documented upon Page 10 of EXHIBIT AASHTO-2.

- Again, please momentarily redirect your attention to **Page 1** to **Page 4** of **EXHIBIT 3** whereupon every Structure Inventory and Appraisal Report states for National Bridge Inspection Item "(32) APPROACH ROADWAY WIDTH (W/SHOULSERS)" is specified to be:

  "3.7 M"

Therefore pursuant to either Table 5-6 or Table 6-6, the minimum replacement bridge deck is specified as:

2-feet plus 3.7 meters * 3.28 feet per meter plus 2-feet or <u>16-feet</u>

Therefore, whereas it is represented within the **Document**, **"The new bridge would be similar in size and height, but would be widened to meet standard lane and shoulder width requirements.",** the proposed bridge is neither similar in size and height as the preexisting bridge, nor does the proposed widened bridge meet "standard lane and shoulder width requirements." per the mandatory FHWA HBRRP requirements as documented upon **Page 2** of **EXHIBIT CT-3**:

> **"New and reconstruction projects shall be designed in accordance with American Association of State Highway and Transportation Officials (AASHTO) Standards as defined in the current edition of A Policy on Geometric Design of Highways and Streets (often referred to as the AASHTO Green Book)."**

Again, as documented upon **Page 2** of **EXHIBIT CT-1**, under the subheading "6.2.2 Bridge Replacement," Item 4. states in full: A-5, A-6

> **"4. Even though a bridge may be eligible for replacement (SR ≤ 50), rehabilitation shall still be considered to ensure the most cost-effective solution is selected. When appropriate (determined by the local agency), a cost analysis should be included in the local agency's project file. The SR, by itself, shall not be the sole justification for bridge replacement."**

And, pursuant to the Caltrans HBRRP program requirements, from Chapter 6 of the Local Assistance Program Guidelines, **Page 6** of **EXHIBIT CT-1** documenting Page 6-21 where, under the heading "6.5.6 Exceeding AASHTO Standards," the first sentence within the only paragraph states:

> **"Where proposed design solutions exceed AASHTO guidelines or standards, the associated extra costs are generally not participating unless justified."**

As it has been clearly documented and commented within these comments regarding the Document, the replacement bridge width as currently proposed does not meet the minimum AASHTO requirements and is therefore not cost-effective. The associated extra costs involved to construct a bridge of a width that is essentially "wider than the preexisting roadway" is without merit unless the County of San Luis Obispo is willing to pay the associated extra costs for such an unnecessary bridge deck width. A-6

- Please note that for the proposed twenty four foot (24') wide bridge deck consisting of two ten foot (10') wide lanes and two, two foot (2') wide shoulders, such a proposed approach roadway geometrics, per footnote "a" within Table 5-5, the proposed bridge deck width and therefore approach roadway widened to meet the bridge width would be for a facility serving an ADT of:

  "400 to 600 veh/day"

A-2, A-3

"Therefore it is clearly documented within these comments for the Document that the Document proposes a project that would result in the replacement of an existing bridge structure facility with a new bridge structure <u>of increased width that will result in an increase in capacity significantly beyond and above the capacity of the present facility</u>, particularly with respect to both the present demands of the existing facility and projected increase in traffic volumes out 20 years into the future. Therefore the project, as currently proposed, must be considered under California Code of Regulations, Title 14, Division 6, Chapter 3, Article 19, "Categorical Exemptions," Section 15300, more specifically Section 15302, "Replacement or Reconstruction," to have a significant effect on the environment and shall therefore not be exempt from the provisions of CEQA.

Therefore, unless the Document is revised to propose a bridge deck width and approach roadway width consistent with Table 5-6, and Table 6-6 to meet current and projected ADT out 20 years of "25," and existing design speed no greater than "25" miles per hour, the bridge deck width and approach roadway widening necessary to meet the proposed deck width as proposed <u>is capacity increasing</u>. Therefore, upon Page 1 of the Document under "DETERMINATION," the box stating:

A-7

"The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IPACT REPORT is require."

should be checked.

- **Page 2** of **EXHIBIT 1** documents Page 2 of the **Document**.

  - Please note the first sentence within the enclosed box at the top of the page states:

    "The County's environmental review process incorporates all of the requirements for completing the Initial Study as required by the California Environmental Quality Act (CEQA) and the CEQA Guidelines."

A-2

Therefore, as discussed directly above for Page 1 of the Document, this statement has been clearly found to be a misrepresentation of fact as the County's environmental review has clearly failed to incorporate all of the requirements for completing the Initial Study as required by the California Environmental Quality Act. The proposed replacement bridge width will result in an increase in capacity that is clearly not demanded of the preexisting roadway projected no more than 20 years into the future, by the existing roadway geometrics, design speed, lack of any accident history, and posting of Caltrans Type R-11 "ROAD CLOSED TO THRU TRAFFIC" signage.

- Continuing upon **Page 2** of **EXHIBIT 1**, please note within the rectangle enclosed area at the beginning of the second paragraph under the heading "A. PROJECT," where it states in full:

  "The existing one-span timber bridge on stone masonry abutments was built in 1953. The existing bridge has a clear deck width of 14 feet, which is non-standard for a two-lane facility. The proposed bridge replacement will generally follow the existing alignment and will clear span approximately 54 feet over Klau Creek. The proposed bridge replacement structure would be a concrete slab bridge with a clear deck width of 24 feet in order to accommodate 10-foot travel lanes and 2-foot shoulders."

  A-2

  - Regarding the first passage:

    "The existing one-span timber bridge on stone masonry abutments was built in 1953."

    The existing bridge on stone masonry abutments has existed since 1953 without any mention in the **Document** of having been washed out in nearly 62 years of service.

  - Continuing, the passage further states:

    "The existing bridge has a clear deck width of 14 feet, …"

Therefore the existing bridge with a preexisting deck width of just 14 feet has been in service since 1953 and per the California Highway Patrol SWITRS data furnished upon EXHIBIT 8, there has not been a single reported traffic accident on Cypress Mountain Drive for fifteen years from 2000 to 2014.

  - Continuing, the balance of the above passage states in part:

    "…which is non-standard for a two-lane facility."

however it is clearly evident citing Cypress Mountain Drive as a "two-lane facility" is a misrepresentation of fact as from both the Google Earth Street View screen captures documented as Page 3 to Page 6 of EXHIBIT 6, and as documented within EXHIBIT 3 the Structure Inventory and Appraisal Reports clearly state the roadway width to be "3.7 M" or approximately 12 feet, Cypress Mountain Drive is primarily a one-lane dirt road facility with intermittent turnouts to facilitate the passing of vehicles. Such an existing physical roadway cannot be considered a "two-lane facility."

- Continuing, the passage further states:

  "The proposed bridge replacement will generally follow the existing alignment and will clear span approximately 54 feet over Klau Creek."

The proposed increase in span length from the current approximately 27 feet to the proposed 54 feet will be clearly shown below in comments regarding "14. WATER & HYDROLOGY", based upon an independent hydrologic/hydraulic analysis to be unnecessary, not cost-effective, and not minimized environmental impacts to the greatest extent feasible.

A-6

- Continuing, the passage further states:

  "The proposed bridge replacement structure would be a concrete slab bridge with a clear deck width of 24 feet in order to accommodate 10-foot travel lanes and 2-foot shoulders."

As has been clearly documented above, such a bridge deck overall width is inconsistent with the AASHTO standards for the replacement of existing bridge structures for <u>existing roadway geometrics including preexisting roadway width</u> and design speed. Therefore the proposed bridge width is not cost-effective, is capacity increasing, and will not minimize environmental impacts to the greatest extent feasible.

- Continuing upon **Page 2** of **EXHIBIT 1**, please note within the first rectangle enclosed area within the third paragraph under the heading "A. PROJECT," where it states:

  "…and guard rail installation, retaining wall construction…"

- With respect to **"….and guard rail installation…"**, your attention is directed to **EXHIBIT AASHTO-3** clearly documenting <u>approach guard rails</u> for a replacement bridge structure on a roadway such as Cypress Mountain Drive is unnecessary from a cost/benefit ratio standpoint.

- With respect to **"…, retaining wall construction…"**, your attention is directed to the comments regarding "14. WATER & HYDROLOGY", offered below that document based upon an independent hydrologic/hydraulic analysis it is not necessary to increase the bridge soffit elevation necessitating the construction of the proposed retaining wall.

○ Continuing upon **Page 2** of **EXHIBIT 1**, please note within the second rectangle enclosed area within the third paragraph under the heading "A. PROJECT," where it states:

"It is anticipated that several trees within the riparian area will need to be removed to accommodate the construction of the new bridge as well as the temporary detour."

A-6

As has been clearly documented previously above, the proposed project is neither cost-effective, is capacity increasing, and does not minimize environmental impacts to the greatest extent feasible. As will be clearly presented below, replacement of the preexisting bridge structure with an acceptable 16-foot wide, one-lane bridge would meet minimum AASHTO design guideline/specifications, not be capacity increasing, and result in minimizing environmental impacts to the greatest extent feasible.

● **Page 3** of **EXHIBIT 1** documents Page 4 of the **Document** where under "C. ENVIRONMENTAL ANALYSIS" it states:

"During the Initial Study process, at least one issue was identified as having a potentially significant environmental effects (see following Initial Study). Those potentially significant items associated with the proposed uses can be minimized to less than significant levels."

A-2

As has been previously documented above, <u>the proposed project is capacity increasing</u> and both the Initial Study and the proposed Mitigated Negative Declaration fails to address this matter. Therefore the project, as currently proposed unless modified, must be considered under California Code of Regulations, Title 14, Division 6, Chapter 3, Article 19, "Categorical Exemptions," Section 15300, more specifically Section 15302, "Replacement or Reconstruction," to have a significant effect on the environment and shall therefore not be exempt from the provisions of CEQA thereby requiring an Environmental Impact Report.

Comments Regarding Individual Environmental Checklist Items

- **Page 4** of **EXHIBIT 1** documents Page 5 of the **Document's** Environmental Checklist Item "1. AESTHETICS".
    - Please note within the first rectangle enclosed area within the second paragraph it states:

      "Impact. The project would not introduce a new type of roadway feature to the setting. The project would replace an existing bridge with a similar bridge in the same location. The new bridge would be similar in size and height, but would be widened to meet standard lane and shoulder width requirements."

        - With respect to the statement:

          "The project would not introduce a new type of roadway feature to the setting."

Such a statement is a misrepresentation as the adjacent approach roadway is being unnecessarily widened to accommodate an unnecessary wider bridge structure that is not required based upon either the existing roadway width, current or future Average Daily Traffic, design speed, traffic accident history, or any plans to widen the existing roadway within ten years.

B-1

- Continuing:

  "The project would replace an existing bridge with a similar bridge in the same location."

The proposed replacement bridge is neither of similar width nor span, nor in the same location as the proposed bridge is of an unnecessary width, span, and increased elevation necessitating an unnecessary retaining wall structure and unnecessary removal of existing trees and riparian habitat along and adjacent to the existing roadway.

- Finally:

  "The new bridge would be similar in size and height, but would be widened to meet standard lane and shoulder width requirements."

As has been previously presented above, the replacement bridge is neither similar in size, nor height, nor span length as was not mentioned in the statement quoted above. Furthermore, as has been clearly demonstrated above, the proposed bridge does not meet but rather exceeds "standard lane and shoulder width requirements" for replacement bridges as established by AASHTO in either Table 5-6 or Table 6-6.

- Please note within the second rectangle enclosed area within the third paragraph states:

  "Various species of trees that may be impacted by project activities (i.e., trimmed or removed) include white alder, foothill pine, western sycamore, coast live oak, valley oak, and California bay laurel. These species are common throughout the project area. Removal of these trees would not represent significant visual impacts; however, mitigation measures required for biological impacts, including habitat restoration and tree replacement, would provide a co-benefit and further reduce visual impacts."

These impacts would be wholly and completely eliminated or at least minimized to the greatest extent feasible if the replacement bridge was sized to meet cost-effective requirements as established by AASTHTO. B-2

- Please note within the third rectangle enclosed area within the fourth paragraph states:

  "Mitigation/Conclusion. Visual impacts as a result of tree removal activities would be mitigated through habitat restoration activities outlined in the Habitat Mitigation and Monitoring Report prepared for the project (Appendix A). No additional visual mitigation measures are anticipated.

Again, these impacts would be wholly and completely eliminated or at least minimized to the greatest extent feasible if the replacement bridge was sized to meet cost-effective requirements as established by AASTHTO.

- Please note for Environmental Checklist Item "1. AESTHETICS" not a single box is checked under the heading **"Impact can & will be mitigated"** with respect to removal of trees to facilitate the unnecessary widened bridge structure and detour which is mentioned as a mitigation measure. B-3

Therefore the Environmental Checklist Item "1. AESTHETICS" is in error. Additionally, as the detour is a temporary structure, the detour should be routed so as to eliminate <u>any</u> permanent removal of any trees whatsoever. B-4

- **Page 5** of **EXHIBIT 1** documents Page 6 of the **Document's** Environmental Checklist Item "2. AGRICULTURAL RESOURCES".

  - Please refer to the comments previously made on <u>Page 18</u> above for the statements within the polygon enclosed area encompassing the paragraph for "**Setting**." B-5

  - Continuing, please note the underlined statement within the "Impact" paragraph that states:

    "A temporary bridge will be placed upstream of the new bridge…"

Please note such a statement is inconsistent with other statements within the **Document** indicating the temporary bridge detour will be located "easterly" or downstream of the new bridge. B-5

- With respect to Environmental Checklist Item "4. BIOLOGICAL RESOURCES" from Page 10 to Page 16 of the **Document**:

  - With respect to categories:

    - b) Reduce the extent, diversity or quality of native or other important vegetation?,

    and,

    - c) Impact wetland or riparian habitat?

B-6/A-4

Both categories b) and c) would be reduced to the maximum extent feasible by replacement of the existing bridge with a single lane, 16-foot wide bridge of span length 30-feet.

‘

  - Please direct your attention to **Page 6** of **EXHIBIT 1** documenting Page 11 of the **Document's** Environmental Checklist Item "4. BIOLOGICAL RESOURCES". Please note the rectangle enclosed third paragraph enclosing the first paragraph for "Setting" where it states in full:

    "Setting. A Natural Environment Study (NES) and Biological Assessment were completed for the proposed project in April 2014 (Rincon Consultants 2014a and b) pursuant to requirements under the National Environmental Policy Act (NEPA). These documents were referenced as a part of this initial study."

B-7

It should be noted herein that such an extensive, exhaustive study for what should be a simple bridge replacement project should not have been required had the County properly followed the requirements of the Federally funded Highway Bridge Replacement and Rehabilitation Program pursuant to AASHTO design guideline/standards.

  - Please direct your attention to **Page 7** of **EXHIBIT 1** documenting Page 13 of the **Document's** Environmental Checklist Item "4. BIOLOGICAL RESOURCES". Please note the rectangle enclosed third paragraph from the top of the page that states in full:

    "The bridge replacement activities will result in a less constricted, more open creek channel. The abutments will be placed further back on the bank of Klau Creek to accommodate the flows of Klau Creek and eliminate the need for extensive rock slope protection within the creek. Thus, the abutments of the new bridge will no longer be located below OHWM and/or within

A-6

USACE jurisdictional areas. The streambed and riverine habitat will be enhanced and restored as a result of the structure being moved out of the low-flow channel. Based on this habitat enhancement, the functional value of the project site will increase as a result of project activities."

- With respect to the underlined passage:

  "The bridge replacement activities will result in a less constricted, more open creek channel.

Your attention is directed to the comments regarding "14. WATER & HYDROLOGY", below, that document based upon an independent hydrologic/hydraulic analysis the preexisting channel constructed for the preexisting bridge was properly sized to adequately convey the 100-year storm event without endangering the bridge structure as is evidenced by the structure remaining in satisfactory service for nearly 62 years.

- With respect to the underlined passage:

  The abutments will be placed further back on the bank of Klau Creek to accommodate the flows of Klau Creek and eliminate the need for extensive rock slope protection within the creek.

A-6

Again, your attention is directed to the comments regarding "14. WATER & HYDROLOGY", below that demonstrate based upon an independent hydrologic/hydraulic analysis, neither is it necessary to increase the existing channel width between bridge abutments, nor is "extensive rock slope protection" warranted as flow velocities for the 100-year event would not exceed 13 feet per second.

The photographs from the biennial Bridge Inspection Report dated "09/08/2011" indicate broken pieces of flat concrete slab material was previously placed downstream of Abutment 2, Right, to reduce the effects of scour directly behind and downstream from the abutment.

The first page of the "07/24/2014" biennial Bridge Inspection Report states with respect to the substructure:

"The main area of concern for this bridge remains at Abutment 2 left. See below for details and recommendations that have been previously reported.

The mortar joints for the masonry type abutment section along the left side of Abutment 2 continue to exhibit distress (see archived photos). The joints do not appear tight and exhibit cracks varying form small to heavy as described below. The bearing and retaining strength of Abutment 2 left is unknown, but appears somewhat compromised along a length of approximately 5 feet by the condition of the masonry section described."

The comments quoted above have been repeated since the "11/17/2008" thereby clearly indicating the condition of Abutment 2 has not deteriorated further since 2008.

- With respect to the underlined passage:

  the abutments of the new bridge will no longer be located below OHWM and/or within USACE jurisdictional areas

A-6

Your attention is directed to the comments regarding "14. WATER & HYDROLOGY", below, that document based upon an independent hydrologic/hydraulic analysis flow depths for the 100-year event would not encroach within 2 feet of a bridge soffit located 8 feet above the channel elevation represented to be 1127.1 feet. (1140.9 feet minus 13.8 feet equals 1127.1 feet).

- With respect to the final underlined passage:

  The streambed and riverine habitat will be enhanced and restored as a result of the structure being moved out of the low-flow channel. Based on this habitat enhancement, the functional value of the project site will increase as a result of project activities."

- Please again direct your attention to **Page 7** of **EXHIBIT 1** documenting Page 13 of the **Document's** Environmental Checklist Item "4. BIOLOGICAL RESOURCES". Please note the rectangle enclosed fifth paragraph from the top of the page that states in full:

  "A Habitat Mitigation and Monitoring Plan has been prepared and includes specific measures for restoration and revegetation of all disturbed areas. The Plan includes protection measures, standards for revegetation, a monitoring program to ensure proper implementation and maintenance of restored areas, and performance criteria to determine success (Appendix A)."

B-11

Again, as stated above for "Setting," it should be noted herein that such an extensive, exhaustive biological study and subsequent "Habitat Mitigation and Monitoring Plan" for what should be a simple bridge replacement project should not have been required had the

County properly followed the requirements of the Federally funded Highway Bridge Replacement and Rehabilitation Program pursuant to AASHTO design guidelines/standards. B-11

There is a far greater detrimental environmental impact by unnecessarily widening the bridge beyond minimum AASHTO standards than maintaining the status quo of existing channel restriction at the preexisting bridge location. As the independent hydrologic/hydraulic analysis clearly indicates, the original siting of the timber bridge and separation of abutments have allowed the nearly 62 year old structure to remain in satisfactory service without any history of replacement or damage due to high water flows as the Local Agency Bridge List indicates construction in "1953". B-8

- Please direct your attention to **Page 8** and **Page 9** of **EXHIBIT 1** documenting Page 14 and Page 16 of the **Document's** Environmental Checklist Item "4. BIOLOGICAL RESOURCES".

  - Please note the first rectangle enclosed area upon **Page 8** of **EXHIBIT 1** enclosing mitigation measure "[BR-7]" which states in full:

    [**BR-7]** Raw cement, concrete or washings thereof, **asphalt**, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from project-related activities, shall be prevented from contaminating the soil and/or entering Klau Creek. B-9

So far as the Commenter is aware, there are no plans to improve the existing dirt road surface by placement of aggregate base and asphalt pavement.

  - Continuing upon **Page 8** of **EXHIBIT 1** please note the second rectangle enclosed area enclosing mitigation measure "[BR-8]" which states in full:

    [BR-8] Upon completion of construction activities, **any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least amount of disturbance to the jurisdictional areas**. Alteration of the jurisdictional areas shall be minimized to the maximum extent possible; any imported materials shall be removed from the stream bed upon completion of the project.

It is understood a temporary bridge structure is to be constructed so temporary obstructions to flows within the bed, bank and channel should be nonexistent. Furthermore, a provision should be incorporated within mitigation measure [BR-8] establishing that "Ground surfaces should be restored to preexisting contours." Such B-10

conditions can be effectively achieved if geotextile fabric is placed upon the preexisting ground surface prior to the temporary placement of earthen materials for temporary roadway approaches to temporary bridge structures.

B-10

- Continuing upon **Page 8** of **EXHIBIT 1** please note the third rectangle enclosed area enclosing mitigation measures "[BR-10]" and "[BR-11]" which state in full:

  [BR-10] The Habitat Mitigation and Monitoring Plan (HMMP) prepared for the project provides for a 1:1 restoration ratio for temporary impacts and a 3:1 enhancement ratio for permanent impacts. The HMMP identifies the specific mitigation areas. The HMMP will be implemented immediately following project completion. The project HMMP shall utilize native riparian plant species that currently occur in the project area. All trees with a diameter at breast height DBH of four (4) inches or greater will be replaced at a 3:1 ratio, except for trees 24-inches or greater, which will be replaced at a 10:1 ratio.

  [BR-11] To minimize impacts to the mixed riparian habitat, removal of mixed riparian habitat shall be limited to the minimum necessary to complete the project.

B-11

Again, as stated above for "Setting," with respect to mitigation measures "[BR-10]" and "[BR-11]" it should be noted herein that such an extensive, exhaustive biological study and subsequent "Habitat Mitigation and Monitoring Plan" for what should be a simple bridge replacement project should not have been required had the County properly followed the requirements of the Federally funded Highway Bridge Replacement and Rehabilitation Program pursuant to AASHTO standards.

- Proceeding to **Page 9** of **EXHIBIT 1** please note the rectangle enclosed area enclosing mitigation measures "[BR-22]" and "[BR-23]" which state in full:

  "**[BR-22]** If feasible, removal of trees will be scheduled to occur in the fall and winter (between September 1 and February 14), after fledging and before the initiation of the nesting season.

  [BR-23] If construction activities are scheduled to occur during the nesting season (February 15 through August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist throughout all areas of potentially suitable and accessible habitats within 200 feet of any proposed construction activities. The pre-construction nesting bird survey will be performed no more than two weeks prior to construction to determine the presence/absence of nesting birds within the project area."

B-12

Tree removal would be minimized or outright eliminated by constructing the replacement bridge structure to the minimum geometric dimensions as required by AASHTO design guidelines/standards the County is required to follow under the Federally funded HBRRP program.

- Continuing upon **Page 9** of **EXHIBIT 1** please note the rectangle enclosed area enclosing mitigation measure "[BR-24]" which states in full:

  [BR-24] **Caltrans shall be immediately notified** if any nesting bird species protected under federal law [including the MBTA] are observed during surveys. Caltrans shall coordinate with USFWS regarding appropriate avoidance measures and the County shall coordinate with CDFW regarding appropriate avoidance measures. Work activities shall be avoided within 100 feet of active passerine nests and 200 feet of active raptor nests until young birds have fledged and left the nest(s). Readily visible exclusion zones shall be established in areas where nests must be avoided. Nests, eggs, or young of birds covered by the MBTA and California Fish and Game Code would not be moved or disturbed until the end of the nesting season or until young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time.

B-12

Based upon this mitigation measure, one cannot help wonder if Caltrans is to be placed in charge of such responsibilities, then why is Caltrans District 05 Local Assistance not demanding the County construct the replacement bridge structure to the mandatory minimum AASHTO standards in the first place thereby eliminating any need for removal of preexisting trees?

- **Page 10** of **EXHIBIT 1** documents Page 25 of the **Document** regarding Environmental Checklist Item "12. "TRANSPORTATION/CIRCULATION," where the underlined passage states:

  "Traffic along Cypress Mountain Drive is infrequent (approximately 100 average daily trips) and is currently used by nearby residents and visitors to the 7X Ranch, a youth camp located south of the project side."

A-3

Please note the misrepresentation "…approximately 100 average daily trips..." has been previously addressed. No further comment is necessary.

  - Please direct your attention to the bottom of **Page 10** of **EXHIBIT 1** where the last sentence at the bottom of Page 25 within the "Impact" paragraph states:

A-1

"The proposed project activities would be temporary, lasting approximately four months."

A-1

Please note the construction period could be further reduced by reducing the bridge dimensions to the minimum dimensions established by AASHTO standards.

- **Page 11** to **Page 12** of **EXHIBIT 1** document Page 27 and Page 28 of the **Document** regarding Environmental Checklist Item "14. "WATER & HYDROLOGY". Please note the rectangle enclosed first paragraph at the top of **Page 12** of **EXHIBIT 1** where it is stated in full:

  "The construction of the proposed bridge will improve the capacity of flow over that of the existing bridge as well as meet the Federal Highway Administration's (FHWA's) criteria of passing the 50-year flood and the 100-year flood. The proposed bridge will have a soffit elevation of approximately 1140.90, which would be roughly 13.8 feet above the current creek thalweg."

B-13

The Commenter on February 24, 2015, submitted a public records request to the County of San Luis Obispo requesting a copy of the hydrologic/hydraulic study performed for the bridge replacement project. As of the completion and submittal of these comments, the Commenter has yet to receive a copy of the requested hydrologic/hydraulic study.

  - Please direct your attention to **Page 1** and **Page 2** of **EXHIBIT 7** documenting respectively, County of San Luis Obispo Department of Public Works "AVERAGE ANNUAL RAINFALL," Drawing No. "H-1," and "Figure 819.2C Regional Flood Frequency Equations" from "CHAPTER 810 HYDROLOGY," from the Caltrans Highway Design Manual.

    - Please note per **Page 1** of **EXHIBIT 7** the maximum average annual precipitation for the drainage area upstream from Bridge 49C0033 is **"42" inches**.

    - Delineation of the Klau Creek watershed upstream of Bridge 49C0033 has determined the drainage area encompasses 5.7 square miles.

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    - By application of the Regional Flood Frequency Equations for the Central Coast regions, the following stormwater runoff flows are calculated:

	∫	A [sq. miles]	P [inches]	H	Q_n [cfs]
Q_2	0.006	5.7	42	2.09	180
Q_5	0.118	5.7	42	2.09	480
Q_{10}	0.583	5.7	42	2.09	720
Q_{25}	2.91	5.7	42	2.09	1,060
Q_{50}	8.2	5.7	42	2.09	**1,360**
Q_{100}	19.7	5.7	42	2.09	**1,660**

- The Commenter employed the EPA Stormwater Management Model (EPA SWMM) to evaluate hydraulic water surface elevations within the Klau Creek stream channel at the Bridge 48C0033 crossing. **Page 3** of **EXHIBIT 7** is a screen shot of the EPA SWMM model employing five subcatchments.

- **Page 4** to **Page 6** of **EXHIBIT 7** document the initial approximated Klau Creek channel cross section considering a 30-foot clear deck span with a 1.5:1 rock slope embankment into the channel. This approximate channel section was employed prior to receipt of the 2008 to 2014 Bridge Inspection Reports that clarified the pre-existing channel cross section.

  - **Page 5** of **EXHIBIT 7** graphically indicates the 100-year event results in an approximate flow depth of just over 6 feet.

  - **Page 6** of **EXHIBIT 7** graphically indicates the 100-year event results in an approximate flow velocity of approximately between 12 and 13 feet per second.

- **Page 7** to **Page 9** of **EXHIBIT 7** document the adjusted existing Klau Creek channel cross section based upon the photos contained within the 2008 to 2014 Bridge Inspection Reports.

  - **Page 5** of **EXHIBIT 7** graphically indicates the 100-year event results in an approximate flow depth of just over 6 feet.

  - **Page 6** of **EXHIBIT 7** graphically indicates the 100-year event results in an approximate flow velocity of approximately 11 feet per second.

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The existing height between the Kalu Creek channel flow line and the bottom of the existing timber bridge girders is not presently known by the Commenter. It is disconcerting the County of San Luis Obispo has not made all technical studies for the project, particularly the hydrologic/hydraulic study readily available at their website. As has been previously stated, the Commenter has submitted a public records request for the project hydrologic/hydraulic study however the document may not be received until after the March 2, 2015 5 pm deadline to submit comments.

If the existing height between the bottom of the timber bridge girders and the Klau Creek channel flow line elevation currently exceeds 8-feet, there should be no objection to constructing the replacement concrete slab bridge with a soffit elevation no greater than the existing elevation of the bottom of the existing timber bridge girders.

If the existing height between the bottom of the timber bridge girders and the Klau Creek channel flow line is currently less than 8-feet above the existing Klau Creek channel flow line, then the replacement concrete slab bridge should be constructed with a soffit elevation no less than 8 feet above the Klau Creek channel flow line elevation.

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This independent hydrologic/hydraulic analysis has clearly demonstrated the passage enclosed by rectangle at the top of Page 12 of EXHIBIT 1 documenting Page 28 of the Document where it states in part:

> **"The proposed bridge will have a soffit elevation of approximately 1140.90, which would be roughly 13.8 feet above the current creek thalweg."**

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is without merit. To establish a 13.8 foot clearance between the bridge soffit and the Kalu Creek channel flow line is excessively unnecessary and therefore should be abandoned. As the independent hydrological/hydraulic analysis has clearly demonstrated, increasing the span from 27 feet to 30 feet and that increasing the bridge span to 54 feet is neither necessary nor cost-effective and does not minimize environmental impacts to the greatest extent feasible.

- **Page 13** of **EXHIBIT 1** documents Page 29 of the **Document** regarding Environmental Checklist Item "15. "LAND USE". With respect to "Land Use" it is imperative to repeat that parcels served by Cypress Mountain Drive via Bridge 49C0033 are generally either:
  - **"Agricultural Preserve", or,**
  - **"Under Williamson Act contract."**

A cursory census of parcels through the San Luis Obispo County GIS database available online confirmed numerous parcels served by Cypress Mountain Drive are zoned as "Agricultural Preserve."

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Furthermore, as California counties must either adhere to State of California Public Resources Code Sections 4251-4290, or establish local alternative standards as authorized by Section 4290 of the Public Resources Code, Cypress Mountain Drive, due to multiple locations being presently substandard, one-lane roadway with respect to emergency vehicle access, any further development of parcels accessed by Cypress Mountain Drive should be restricted until such time Cypress Mountain Drive is widened in its entirety. Therefore it is therefore clearly demonstrated future Average Daily Traffic out 20 years should not exceed 100 vehicles per day.

- **Page 14** of **EXHIBIT 1** documents Page 31 of the **Document** regarding "Exhibit A – Initial Study References and Agency Contacts."

It is incomprehensible the box for "CA Department of Transportation" was not checked as an agency contact as the California Department of Transportation (Caltrans) Division of Local Assistance has been delegated full responsibility by the FHWA to manage the HBRRP program through which this project is to be 88.53% funded.

- **Page 15** to **Page 16** of **EXHIBIT 1** document Page 32 and Page 33 of the **Document** regarding "…specific information and/or reference materials have been considered as a part of the Initial Study".

It is imperative to note that not one document is referenced from either the Caltrans Local Assistance Procedures Manual, nor the Caltrans Local Assistance Program Guidelines, including but not limited to:

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  - Local Assistance Program Guidelines Chapter 20-Environmental Enhancement and Mitigation (EEM) Program, the home page which is available at the following link:

    http://dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm

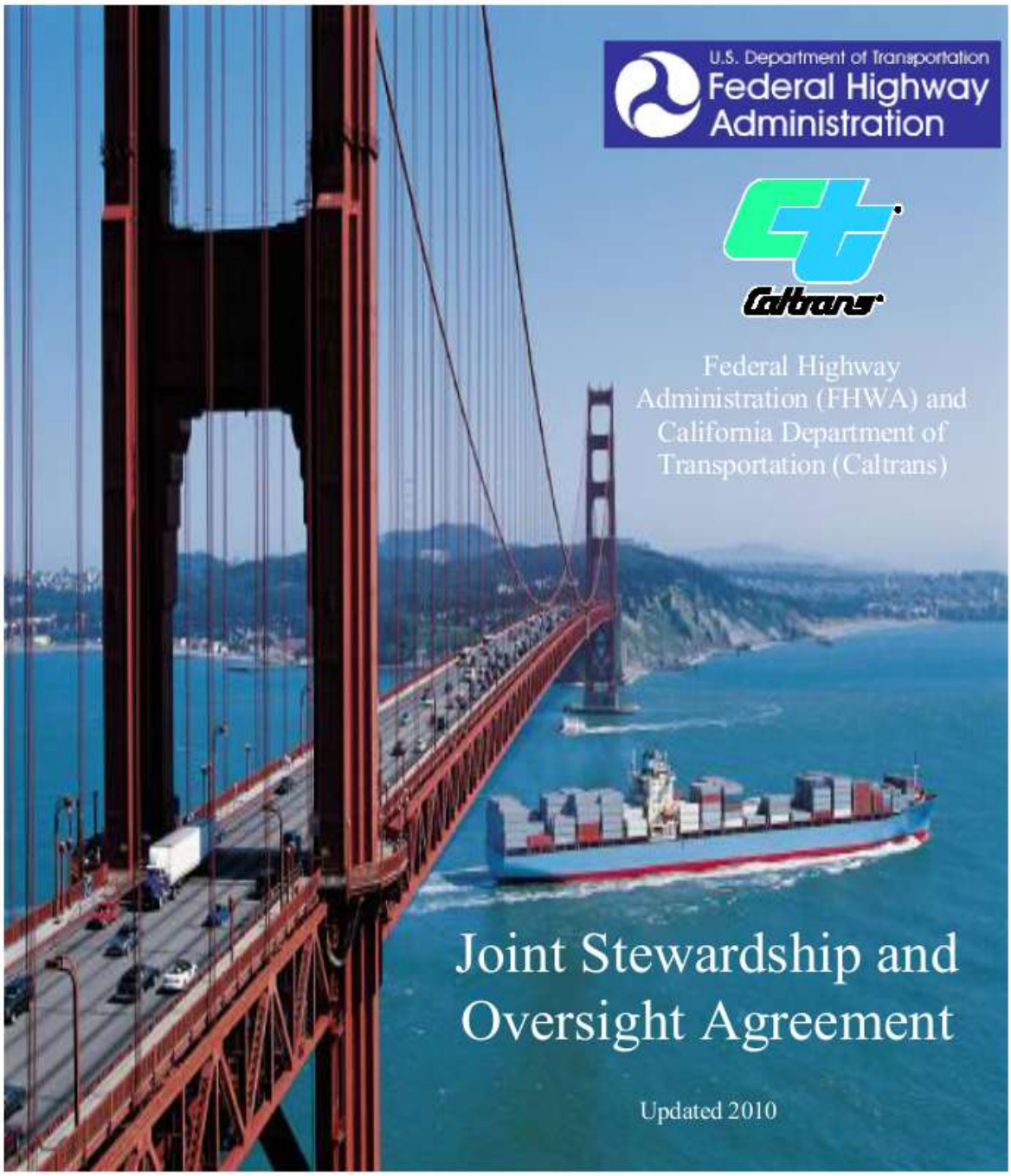
  - Local Assistance Procedures Manual-Chapter 6 – Environmental Procedures, a copy of which is available at the following link:

    http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/ch06-2013-03-14.pdf

End Comments regarding the Document

EXHIBITS

ALL EXHIBITS IMMEDIATELY FOLLOW IN THE ORDER LISTED


U.S. Department of Transportation
Federal Highway Administration
Caltrans
Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans)
Joint Stewardship and Oversight Agreement
Updated 2010

EXECUTION OF DOCUMENT

The FHWA and Caltrans enter into this Agreement to carry out their respective responsibilities with mutual cooperation and collaboration. This Agreement does not relieve either party from accountability for compliance with federal laws and regulations of the FAHP. Signatures on this Agreement by the FHWA and Caltrans acknowledge the assignment of responsibilities for stewardship and oversight under the provisions of SAFETEA-LU.

Cindy McKim

10/14/10

Cindy McKim, Director
California Department of Transportation

Date

Walter C. Waidelich Jr., Division Administrator
Federal Highway Administration

10/14/10

Date

Additional Guidance on 23 CFR 650 D

Formerly Federal-aid Policy Guide Non-Regulatory Supplement NS 23 CFR, Part 650 D,
September 30, 1992, Transmittal 5
See Order 1321.1C FHWA Directives Management

1. **New and Major Reconstruction of Bridges**. The FHWA established a "10-year rule" for determining a bridge's eligibility for HBRRP funding after construction or major reconstruction has taken place. The rule prevents a bridge from remaining in a deficient classification after major reconstruction and thereby affecting the bridge fund apportionments to a State.
   a. **New and Major Reconstruction of Bridges-Interpretation of the 10-Year Rule (23 CFR 650.405)**. A bridge improvement would be subject to the 10-year rule if it is classed as rehabilitation or replacement under 23 CFR 650.405(b) irrespective of the funding used. Conversely, a bridge improvement would not be subject to the 10-year rule if it cannot be classed as rehabilitation or replacement under one of the 23 CFR 650.405(b) definitions. Such an improvement would not be eligible for HBRRP funding although it may be eligible for other Federal-aid funding.
   b. **New or Major Reconstruction of Bridges Built to Less than AASHTO Standards (23 CFR 650.413)**. Bridges in the NBI with a date of construction or date of major reconstruction (NBI Item 27) within the past 10 years will not be considered a deficient bridge, will not be eligible for HBRRP funds and will not be used to apportion HBRRP funds. For example, a date of 1976 will be used for the determination until the end of 1985. Eligibility for HBRRP funding:
      1. The definition of major reconstruction should be developed by the region and division offices in consultation with the States.
      2. The 10-year criteria in which a bridge will not be eligible for HBRRP funding applies to bridges replaced or reconstructed with any Federal-aid funds, with all State or local funds, private funds, or any combination thereof.
      3. To be eligible for funding, the bridge must be of the current HBRRP selection list. Any bridge constructed or reconstructed in the past 10 years will not appear on this list. This will apply whether or not Item 13, Bridge Description, is coded as a temporary structure.
      4. Any State request to use HBRRP funds for a bridge not on the selection list should be fully documented and justified to indicate that additional deficiencies have developed through some natural or unforeseen phenomenon. Bridges removed from the selection list because of the 10-year criteria but with Federal-aid

Events

- Earthquake Planning and Response Tools Webinar #2: Risks due to Earthquake DAmage to Roadway Systems (REDARS)
  Webinar
  Wednesday, March 19, 2014
  1:30 - 3:00 pm (EST)
- View all Upcoming Events

Contacts

- **Tom Everett**
  Office of Bridges and Structures
  202-366-4675
  E-mail Tom
- **Everett Matias**
  Office of Bridges and Structures
  202-366-6712
  E-mail Everett

4. **HBRRP Program Funding Policy on Closed Bridges (23 CFR 650.413)**. The FHWA has developed a funding policy for closed bridges. The HBRRP funds can only be used to replace or to rehabilitate bridges which are significantly important and are unsafe. Bridges out of service (closed) prior to the establishment of the Special Bridge Replacement Program (December 31, 1970) are not eligible for the HBRRP and were removed from the National Bridge Inventory. Bridges taken out of service after December 31, 1970, are also not eligible unless the State highway agency has made reasonable progress in scheduling the rehabilitation or replacement of the facility, thus indicating that the bridge was of significant importance.
5. **Use of Highway Bridge Replacement and Rehabilitation Program (HBRRP) Funds for Approach Roadway Construction (23 CFR 650.413)**. The FHWA is concerned that in some instances approach roadway costs associated with HBRRP projects are excessive to the point of not falling within the congressional intent for the program "to improve deficient bridges." States and local entities are encouraged to use other categories of funds for approach roadways and miscellaneous non-bridge items. Also the FHWA Division offices are directed to:
    a. Review and revise policy relating to inclusion of approach roadway items in HBRRP projects to provide for more national uniformity in bridge program management and minimize approach roadway project costs. This action should result in a nationwide average of no more than 10 percent.
    b. Review the overall HBRRP where average bridge expenditures are not a high percentage of all HBRRP funds obligated and make appropriate changes to provide more national uniformity in bridge program management.
6. **Purchase and Installation of Bridge Load Posting Signs with Highway Bridge Replacement and Rehabilitation Program Funds (23 CFR 650.413)**. The FHWA has determined that it is consistent with the purpose of the HBRRP to allow the use of bridge program funds to purchase and install load posting signs to protect the public until such bridges can be replaced or rehabilitated. Therefore, the initial set of load posting signs immediately adjacent to the bridge is considered eligible for HBRRP funds.
7. **Highway Bridge Replacement and Rehabilitation Program - Historic Bridges (23 CFR 650.413)**. The FHWA has determined that it is consistent with the purpose of the HBRRP to allow the use of bridge program apportioned funds to inventory bridges for historic significance.
8. **Highway Bridge Replacement and Rehabilitation Program Funding of Bridge Inspections (23 CFR 650.413)**. The FHWA has determined that it is consistent with the purpose of the HBRRP to allow the use of bridge program funds for the biennial continued inspection of bridges.
9. **Highway Bridge Replacement and Rehabilitation Program (23 CFR 650.409)**. The National Bridge Inventory will be used for preparing the selection list of bridges both on and off of Federal-aid highways. Highway bridges considered structurally deficient or functionally obsolete and with a sufficiency rating of 80 or less will be used for the selection list. Those bridges appearing on the list with a sufficiency rating of less than 50.0 will be eligible for replacement or rehabilitation while those with a sufficiency rating of 80.0 or less will be eligible for rehabilitation. To be considered for the classification of deficient bridge, a structure must be of bridge length, and had not been constructed or had major reconstruction within the past 10 years.
    a. **General Qualifications**: In order to be considered for either the structurally deficient or functionally obsolete classification a highway bridge must meet the following:

Structurally Deficient -

1. A condition rating of 4 or less for
    - Item 58 - Deck; or
    - Item 59 - Superstructures; or
    - Item 60 - Substructures; or
    - Item 62 - Culvert and Retaining Walls.(1) or
2. An appraisal rating of 2 or less for
    - Item 67 - Structural Condition; or
    - Item 71 - Waterway Adequacy.(2)

Functionally Obsolete -

1. An appraisal rating of 3 or less for

Context Sensitive Solutions

Design Awards

Design Standards

Interstate System

Utility Program

Value Engineering

Application of Design Standards, Uniform Federal Accessibility Standards, and Bridges

Contact information was updated by Vertical Clearance Memo on 4/15/09.

Formerly Federal-Aid Policy Guide Non-Regulatory Supplement, NS CFR 23 625
March 1, 2005, Transmittal 33
See Order 1321.1C FHWA Directives Management

This supplement includes information on application of design standards, uniform federal accessibility standards, and bridges

1. **National Highway System**. Section 109(c) of Title 23, United States Code (U.S.C.), provides that design and construction standards for new construction and reconstruction on the National Highway System (NHS), and for resurfacing, restoring, and rehabilitating multi-lane limited access highways on the NHS, shall be those approved by the Secretary in cooperation with the State highway departments. In a similar manner, 23 U.S.C. 109(b) provides standards for the Interstate system. The term "multi-lane limited access highway" in 23 U.S.C. 109(c) means Interstate or other freeway with full control of access. Standards for the design and construction of all projects on the NHS, including the Interstate system, are applicable to any proposed improvement regardless of the funding source (Federal, State, local or private). The standards are for the National Highway System, rather than for Federal-aid projects on that system. Deviations from the standards must have approved design exceptions.

   a. **Interstate System Projects**. In accordance with 23 U.S.C. 109(b), the current AASHTO Interstate standards and policies as incorporated in 23 CFR 625 are applicable. Those standards apply whether or not the State has chosen to use the exemption provisions of 23 U.S.C. 106(b). Also, there is no authority under the ISTEA to develop FHWA approved individual State 3R standards for Interstate projects.

   b. **Non-Interstate System Projects**

      (1) New construction and reconstruction: In accordance with 23 U.S.C. 109(c), the current AASHTO standards and policies as incorporated in 23 CFR 625 are applicable to new construction and reconstruction. In addition to the Interstate system, the NHS consists of other principal arterials, including non-Interstate freeways. Therefore, those parts of the AASHTO Policy on Geometric Design of Highways and Streets (Green Book) applicable to highways classified as principal arterials, including non-Interstate freeways, must be used. Generally, the criteria in the Green Book functional

Contact

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based on recognized traffic engineering practice and accepted State policy, and be in accordance with the Manual on Uniform Traffic Control Devices.

6. **Bridges**

a. **Bridge Widths**. It is FHWA policy that the criteria contained in 23 CFR 625 apply in determining the width of all bridges to be constructed, reconstructed, or rehabilitated on the NHS. Exceptions may be provided on a project basis per 23 CFR 625 and within the delegated authority provided by FHWA Order M 1100.1. For rehabilitated bridges the provisions in 23 CFR 625 dealing with 3R projects may be applied. These provisions allow for flexibility in determining what geometric criteria are to be applied to 3R projects, including bridge widths other than full construction or reconstruction standards. Appropriate deck widths for rehabilitated bridges are to be determined on the basis that 3R projects must be designed and constructed in a manner that will enhance highway safety.

b. **Treatment of Existing Bridges on 3R/4R, Bridge Replacement, and Bridge Rehabilitation Projects**

(1) On each project, a determination must be made as to whether an existing bridge should remain in place, be rehabilitated, or replaced. This decision should be based on an assessment of the bridge's structural and functional adequacy for the type and volume of projected traffic over its design life.

(2) The AASHTO design standards list minimum clear roadway widths for existing bridges to remain in place. Any exception to these standards should take into consideration the accident history, future traffic use, and general physical features of the bridge approach roadway as permitted in 23 CFR 625. When a decision is made to retain a bridge, the bridge rail should be evaluated to determine if it can adequately contain and redirect vehicles without snagging, penetrating, or vaulting. Consideration should be given to upgrading structurally inadequate or functionally obsolete bridge rail. The evaluation should be based upon criteria similar to that shown in NCHRP Report 239, "Multiple-Service-Level Highway Bridge Railing Selection Procedures." Guidance concerning width, rail and geometric criteria tradeoffs, and the effects on safety are contained in NCHRP's research Digest 98 and Report 203 both entitled, "Safety at Narrow Bridges." Appropriate traffic control devices should be installed where the clear roadway width is less than the approach roadway width.

(3) Rehabilitated bridges should be designed to at least the minimum AASHTO standards for new and reconstructed bridges. Exceptions to these standards may be approved based upon individual site evaluations; however, the rehabilitated bridges should, as a minimum, have at least an H15 load capacity and have an expected service life of 15 years or more. Bridges on the Interstate System, however, should have an HS-20 load capacity. Bridge rehabilitation projects must include correction of all major structural and

safety defects. Substandard bridge rail should be upgraded to current standards and "safety" curbs which can cause vehicles to vault the rail should be eliminated. Exceptions may be considered on a case-by-case basis where safety can be adequately enhanced but cost-effective considerations prevent full widening or full upgrading of the bridge rail.

(4) Bridge replacement projects should meet the AASHTO standards for new bridges with very few exceptions. In the case of bridges on low volume roads and streets, exceptions may be appropriate if the existing road will not be upgraded in the foreseeable future (10 years or more).

(5) On all projects involving bridges, the approach guardrail should be evaluated and upgraded to current standards. Approach guardrail, if warranted, must be properly anchored to the bridge. The transition between the approach guardrail and the bridge rail should be smooth and of sufficient strength (i.e., reduced post spacing) to prevent snags and vehicle pocketing.

(6) Bridges which have been strengthened, replaced, or rehabilitated to eliminate deficiencies are to be reclassified as non-deficient in the bridge inventory. Those existing bridges for which FHWA has approved an exception to the AASHTO standards are also to be reclassified as non-deficient since it was determined that the bridge is adequate for the type and volume of projected traffic over its remaining design life. If exceptions were granted as a temporary measure because of a scheduled future replacement project, the bridge may remain classified as deficient.

c. **Bridge Rails**. Bridge railing designs used for new and reconstructed bridges on the NHS shall have been successfully crash tested in accordance with NCHRP 350 criteria (or equivalents).

7. **Vertical Clearance on the Interstate System**

a. It must be emphasized that the integrity of the Interstate System for national defense purposes be maintained to meet AASHTO Policy as stated in *A Policy on Design Standards - Interstate System*, incorporated by reference in 23 CFR 625. On Interstate sections in rural areas, the clear height of structures shall be not less than 4.9 meters (16 feet) over the entire roadway width, including the usable width of shoulder. On Interstate sections in urban areas, the 4.9-meter (16-foot) clearance shall apply to a single routing. On other Interstate urban routes, the clear height of structures shall be not less than 4.3 meters (14 feet). Design exceptions must be approved whenever these criteria are not met.

b. The FHWA has agreed that all exceptions to the 4.9-meter (16-foot) vertical clearance standard for the rural Interstate and the single routing in urban areas will be coordinated with the Military Traffic Management Command Transportation Engineering

CHAPTER 6 HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM (HBRRP)

6.1 INTRODUCTION

The HBRRP is a safety program that provides federal-aid to local agencies to replace and rehabilitate deficient locally owned public highway bridges. This Chapter explains the reimbursable scopes of work, eligibility requirements, how to apply for HBRRP funding, and the general programming process.

This program is funded by Federal Highway Administration (FHWA) authorized by United State Code (USC) Title 23, Section 144. The total California apportionment is split 45% for federally identified deficient on State Highway System bridges and 55% for deficient off State Highway System bridges. The average annual apportionment available to local agencies (off State Highway System bridges) is about $160 million. This program is subject to Obligational Authority (OA) limits. See Chapter 2, "Financing the Federal-Aid Highway Program," Section 2.2, of the *Local Assistance Program Guidelines* (LAPG) for information regarding OA.

The allocation of HBRRP funds to local agency projects is managed through a 10-year programming plan. This multi-year plan is available for download from the HBRRP website. The multi-year plan provides the HBRRP lump sum dollar amounts in the Federal Statewide Transportation Improvement Program (FSTIP). See Chapter 2, "Financing the Federal-Aid Highway Program," Section 2.3 of the LAPG for information regarding what type of HBRRP projects may use the HBRRP lump sum item in the FSTIP.

The HBRRP has many statutory, regulatory, and policy limitations on how HBRRP funds can be spent on bridge projects. The purpose of these rules is to ensure that federal bridge funds are dedicated to solving bridge safety problems. Since local agencies are financially accountable for meeting these requirements, it is essential that local agency decision-makers thoroughly understand these guidelines.

Local agencies assume full liability for the safety of their bridges and eligibility of participating costs of their projects.

6.1.1 GLOSSARY

The purpose of this Section is to provide an easy reference for common terms used in implementing the HBRRP.

AASHTO: American Association of State Highway and Transportation Officials

ADT: Average Daily Traffic.

CFR: Code of Federal Regulations. The CFR are not legislated statutes but do have the force of law.

6.2.2 BRIDGE REPLACEMENT

1. Bridges must be rated SD or FO with the SR ≤ 50 to be eligible candidates for replacement.

2. The Code of Federal Regulations (CFR) defines the replacement scope of work as follows:

   "23CFR650.403(1) Replacement. Total replacement of a structurally deficient or functionally obsolete bridge with a new facility constructed in the same general traffic corridor. A nominal amount of approach work, sufficient to connect the new facility to the existing roadway or to return the gradeline to an attainable touchdown point in accordance with good design practice is also eligible. The replacement structure must meet the current geometric, construction and structural standards required for the types and volume of projected traffic on the facility over its design life."

   Per AASHTO's "A Policy on the Geometric Design of Highways and Streets," 1994 edition, projected needs beyond 20 years are not practical. Therefore, even though the design life of a new bridge may be 25 to 100 years, the HBRRP will only participate in the geometrics of bridge based on 20 year projected traffic needs.

3. Increases in lane capacity on bridge replacement projects require Caltrans funding approval. See Section 6.2.1 on page 6-5, item (2) for approval requirements.

4. Even though a bridge may be eligible for replacement (SR ≤ 50), rehabilitation shall still be considered to ensure the most cost-effective solution is selected. When appropriate (determined by the local agency), a cost analysis should be included in the local agency's project file. The SR, by itself, shall not be the sole justification for bridge replacement.

6.2.3 BRIDGE PAINTING

The purpose of this program is to help local agencies fund eligible bridge painting projects as a stand-alone scope of work when the local agency does not wish to rehabilitate or replace a subject bridge.

1. Bridges may be on the EBL, rated SD or FO with SR ≤ 80. If State Surface Transportation Program (STP) funds are available, bridges off the EBL may be programmed. Contact the DLAE to see if STP funds are available. For more discussion about STP funded bridge projects see Section 6.5.16 on page 6-24.

2. The Paint Condition Index (PCI) for a bridge must be 65 or less or SLA must provide concurrence for a bridge painting project to participate in the HBRRP. The PCI is available from the bridge inventory listing from the HBRRP website:

   www.dot.ca.gov/hq/LocalPrograms/hbrr99/hbrr99a.htm#ebl

3. Minor rehabilitation of corroded structural members is an eligible participating cost. The cost of the rehabilitation effort should not exceed 10 to 15 percent of the cost of the

9. The "High Cost" funds will be allocated to a project based on a percentage of the unfunded project needs divided by the sum of all unmet "High Cost" local assistance HBRRP project needs statewide.

10. "High Cost" funds will only be available in the Federal Fiscal Year (FFY) for which they are allocated. If funds are not obligated within that time period, the "High Cost" funds shall revert back to the local assistance statewide HBRRP balance.

11. On an annual basis beginning in February 2002, Caltrans (through the DLAE) will solicit candidate "High Cost" projects from local agencies that need funding in the next FFY beginning in October 2002. The Office of Program Management will notify the DLAEs which projects and how much "High Cost" funds have been allocated. Caltrans may allow "High Cost" funds to be obligated prior to the new FFY if sufficient OA exists in the current FFY. Detailed instructions will be provided when the distribution of "High Cost" HBRRP funds are made available to local agencies.

12. If a local agency does not wish to delay their project needing "High Cost" funds, the local agency must use Advance Construction (AC) in order to preserve the HBRRP 80% reimbursement rate. See Sections 1 and 2 of Chapter 3, "Project Authorization," of the LAPM for AC and underfunding policy. Local agencies using advance construction shall understand that neither Caltrans nor FHWA can guarantee that future federal funds will be made available to convert AC into HBRRP federal funds. For additional discussion on AC, see Chapter 2, "Financing the Federal-Aid Highway Program," of the LAPG.

13. Local agencies may apply for "High Cost" funds each year for the same projects to allow the conversion of all AC to HBRRP funds. The federal-aid project closure or "final voucher" does not occur until all AC has been converted to federal funds.

6.3 STANDARDS

Standards for local assistance projects are available in Chapter 11, "Design Standards," of the LAPM. Note that the bridge inspection ratings must never be used as design criteria for meeting AASHTO standards. See Section 6.12 on page 6-34. The minimum ratings triggering HBRRP eligibility do not necessarily reflect good design practice established by AASHTO in the *"A Policy on Geometric Design of Highways and Streets."*

The primary intent of the HBRRP is to remove bridges from the EBL through rehabilitation or replacement. On rare occasions local standards or design exceptions appear to compromise the intent of the HBRRP. For this reason, local agencies as a condition for HBRRP funding on all rehabilitation and replacement projects (see Sections 6.2.1 and 6.2.2, page 6-5), shall ensure the scope of work will result in a bridge that will not be rated FO or SD and that the SR will be greater than 80. Local standards or design exceptions processed under Chapter 11, "Design Standards," of the LAPM do not provide exemption to this requirement. Exceptions based on cost-effectiveness or in the public interest of historic structures must be approved by the Office of Program Management (contact the DLAE for help).

SLA is available to estimate revised bridge ratings based on proposed rehabilitation strategies upon request by local agencies.

See Chapter 12, "Plans, Specifications and Estimate," Section 12.6, of the LAPM regarding the appropriate use of Metric/English Caltrans Standard Plans.

6.3.1 DESIGN EXCEPTIONS

See Chapter 11, "Design Standards," of the LAPM for design standards and design exception process. Local agencies take full responsibility and liability for meeting design standards and approving design exceptions.

6.4 PARTICIPATING COST LIMITS

To ensure the purpose of the HBRRP is being fulfilled by local agency projects, certain costs and types of work have limits. These limits apply to all projects funded under this Chapter. See Exhibit 6-B, "HBRRP Special Cost Approval Checklist," page 6-53 for a summary of participating costs that require specific Office of Program Management approval (contact the DLAE for help).

6.4.1 MAXIMUM HBRRP FUNDS ON ONE PROJECT

Up to $10 million of Federal (HBRRP or STP) funds may be programmed (reserved) on any one project under this Chapter. Local agencies requiring more than $10 million (HBRRP only) may apply for special funding under "High Cost Bridge Projects," Section 6.2.11 on page 6-14.

6.4.2 APPROACH ROADWAY WORK

The following quote from the CFR identifies work that is not eligible for participation under the HBRRP:

"23CFR650.405(2)(c) Ineligible work. Except as otherwise prescribed by the Administrator, the costs of long approach fills, causeways, connecting roadways, interchanges, ramps, and other extensive earth structures, when constructed beyond the attainable touchdown point, are not eligible under the bridge program."

Federal participation for approach roadway shall be limited to the minimum necessary to make the facility operable consistent with current design standards. The approach roadway length is measured from the bridge abutment to the touchdown on the existing roadway alignment. The approach length from each abutment in excess of 60M (200ft) (on federal-aid system) and 120M (400ft) (off federal-aid system) requires advance approval by the Office of Program Management (contact the DLAE for help). See additional discussion for exceptions to these rules in Section 6.13.8 on page 6-40. This Section applies to all funds (STP and HBRRP) programmed for projects under this Chapter.

6.4.3 PRELIMINARY ENGINEERING (PE) COSTS

See Section 3.1, Chapter 3, "Project Authorization," of the LAPM for eligible participating work. HBRRP funds may not be used for general feasibility or general transportation corridor planning studies even if federally deficient bridges are on a corridor being studied for improvement. HBRRP participation in PE is for the development of specific HBRRP projects where the local agency is required to deliver a construction project.

Federal participation of PE costs is limited to actual costs up to $75,000 or 25% of the estimated participating construction cost (excluding construction engineering and contingency), whichever is greater. Additional participation must be approved by the Office of Program Management (contact through the DLAE). Justification for exceeding PE cost limits includes difficult environmental, seismic, hydraulic/scour issues, or other bridge technical problems. Complex project management issues may also be a justification.

HBRRP participation in consultant contract management and quality assurance costs shall not exceed 15% of a consultant's total charges.

For exceptions to the above rules, local agencies must submit a justification in writing to the DLAE. The DLAE will review the request, provide recommendations and forward to the Office of Program Management for approval.

The DLAE will work with the various technical units within the Caltrans to form a recommendation. Technical bridge design issues shall be submitted to SLA for comment. Environmental issues shall be forwarded to the District environmental reviewer for comment. Final funding approval will come from the Office of Program Management.

6.4.4 CONTINGENCY INCLUDING SUPPLEMENTARY WORK COSTS

HBRRP participation in Contingency and Supplementary Work in the planning phase of a project should not exceed 25% of the participating construction contract item costs. Contingency and Supplementary Work in the final engineer's estimate should not be less than $5,000 nor exceed 10% of the participating construction contract item costs, unless approved by the Office of Program Management (contact the DLAE for help).

Exceptions to this rule will be handled similar to PE cost exceptions as discussed in the previous Section.

6.4.5 CONSTRUCTION ENGINEERING COSTS

HBRRP participation in Construction Engineering may not exceed 15% of the participating construction contract item costs, unless approved by the Office of Program Management Local agencies must contact the DLAE for assistance.

Exceptions to this rule will be handled similar to PE cost exceptions as discussed in Section 6.4.3 on page 6-18.

6.5.6 EXCEEDING AASHTO STANDARDS

Where proposed design solutions exceed AASHTO guidelines or standards, the associated extra costs are generally not participating unless justified. Minimum standards may be exceeded based on intermodal transportation considerations, serviceability issues, and good geometric design practice. The decisions and background information driving the design requirements in these cases must be documented in the local agency's project file for future Caltrans review. See Section 6.13.1 and Section 6.13.2 beginning on page 6-36 regarding the establishment of bridge geometrics.

6.5.7 UNUSUAL ARCHITECTURAL TREATMENTS

Unusual architectural treatments (decorative fascia, tile work, architectural lighting, exotic bridge railing, belvederes etc.,) are generally not participating. Location, public input, availability of funds, and cost-effectiveness play a role in the determination of HBRRP participation.

Local agencies shall notify the DLAE to request HBRRP participation of unusual architectural treatments. (The DLAE will work with the Office of Program Management to determine HBRRP participation.)

Generally, special treatments should not exceed 5% of the total construction contract item cost. Local agencies are required to justify unusual architectural treatments in their project files for future Caltrans program review.

See Section 6.13.7 on page 6-40 for information related to non bridge items.

6.5.8 ENVIRONMENTAL MITIGATION

Federal funds (including HBRRP funds) cannot be used to reimburse local agencies for costs associated with excessive, non-practical mitigation. The Caltrans District environmental reviewer is responsible for advising local agencies and the DLAE when proposed mitigation is excessive and/or if any of their mitigation will not be reimbursed by FHWA.

Federal funds (including HBRRP funds) may be used for:

1. Mitigation that is accomplished within the scope of the project.

2. Plant establishment and monitoring up to two years and possibly longer to allow for the permanent establishment of plants. The funding of plant establishment may be accomplished using an escrow account. Plant establishment and monitoring longer than two years must be approved by the District environmental reviewer.

3. Other participating mitigation may be required and must be documented in the NEPA documents and be approved by FHWA.

Proposed work outside these examples requires Office of Program Management funding approval (contact the DLAE for help). The local agency is responsible for requesting Caltrans approval.

6.5.12 FIELD REVIEW POLICY

See Chapter 7, "Field Review," of the LAPM for Field Review requirements and policies relating to optional and mandatory field reviews.

For most projects off the NHS, field reviews are optional. However, field reviews that include Caltrans participants are strongly recommended. Field reviews help ensure that cost-effective solutions are considered, that proposed work is federally reimbursable, and that environmental concerns are raised early in the project development process.

Federal PE funds may be authorized prior to the field review to facilitate the proper scoping of projects by consultants. Caltrans (The Office of Program Management) may limit federal funds authorized for PE until the scope of work is reasonably defined.

Local agencies requesting optional cursory PS&E reviews are encouraged to have field reviews with Caltrans (including SLA) involvement. See Section 6.7.2 on page 6-27 regarding PS&E reviews.

6.5.13 CONSTRUCTION QUALITY ASSURANCE

See Chapter 2, "Roles and Responsibilities," Section 2.6 of the LAPM for information.

Local agencies may ask the DLAE for construction quality assurance assistance. The DLAE may decline the request for assistance or provide limited assistance depending on available staff resources.

Local agencies that are contracting for construction engineering services may request Caltrans involvement in the consultant selection process. Caltrans engineers are available to help ensure that qualified consultants are selected at reasonable costs.

In cases where the DLAE becomes aware that a project under construction is not being adequately administered by a local agency, increased Caltrans involvement will be required.

The decision for "required" oversight by Caltrans will be on a case-by-case basis. The decision for construction oversight will be made by the Office of Program Management and the Office of Project Implementation based on recommendations from the DLAE.

6.5.14 MINIMUM BRIDGE LENGTH

Bridges must have a span of at least 6.1 M (20 ft) to be considered for inspection and inclusion in the NBI. If a bridge is not in the NBI, the bridge cannot be rated SD, FO, or have a SR making the bridge eligible for HBRRP funds. Following is a more precise definition of a bridge from the CFR which includes dealing with multi box or pipe culverts:

12. When construction is complete, the requirements of Chapter 17, "Project Completion," of the LAPM must be met to receive final reimbursement.

6.9 ROLES AND RESPONSIBILITIES

6.9.1 LOCAL AGENCY

The local agency is the project manager and is responsible for all aspects of the project.

The local agency is accountable for how it spends federal funds on eligible projects. The local agency is responsible for following these program guidelines and the procedures in the LAPM.

The local agency is responsible for requesting Caltrans funding approval for certain participating costs identified in Exhibit 6-B, "HBRRP Special Cost Approval Checklist," page 6-51.

6.9.2 CALTRANS, DISTRICT LOCAL ASSISTANCE ENGINEER (DLAE)

The DLAE is the point of contact for all local assistance projects. Written communication (including email) from Caltrans to the local agency that provides official policy direction (including eligibility, scope, or funding decisions) to the local agency will be from the DLAE. Copies of all written correspondence and appropriate email will be kept in the DLAE project files.

The DLAE is responsible for providing expertise in understanding these program guidelines and the federal process as documented in the LAPM and the LAPG.

The DLAE is also responsible for ensuring that all "official" written (including e-mail) controversial correspondence to local agencies is "cc'd" to the Office of Program Management and the Office of Project Implementation. Controversial correspondence includes any denial of funds to a local agency or an action on the part of Caltrans that delays the construction authorization of a local HBRRP project.

The DLAE is to coordinate all Caltrans internal activities for local assistance projects. The DLAE is pro-active in ensuring that local agencies are aware of HBRRP scoping issues and offering help to local agency to resolve those issues. The DLAE is to utilize the Office of Program Management, Office of Project Implementation, SLA, District geometricians, District Right of Way and environmental experts, and be familiar with the standards and AASHTO references identified in Chapter 11, "Design Standards," of the LAPM.

The DLAE is also responsible ensuring that local agencies are aware of all Caltrans services available to local agencies that can improve the quality and timely delivery of HBRRP projects.

For current names, addresses, and email addresses, see the DLAE website:

CONSULTANT SELECTION GUIDEBOOK

Procedures for Selecting Consultants for FHWA Federal-Aid Projects and State Funded Projects

STATE OF CALIFORNIA
Department of Transportation
Division of Local Assistance
Office of Procedures Development

January 2002 (revised)

STATE OF CALIFORNIA–BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF LOCAL ASSISTANCE
1120 N STREET
P. O. BOX 942874 MS 1
SACRAMENTO, CA 94274-0001
PHONE (916) 653-1776
FAX (916) 654-3048

May 2001

Representatives of California Local Government:

This Guidebook provides an overview of procedures for consultant selection. The local agencies that intend to request federal and state funds for reimbursement of consultant services shall follow specific selection and contracting procedures. These procedures ensure that the consultant's professional qualifications meet the needs of the services to be performed, the payment method is appropriate, and the cost is fair and reasonable to the public agency. Please note also that local agencies cannot be reimbursed with federal or state funds for consultant selection costs incurred prior to an authorization to proceed.

More comprehensive and detailed explanations of consultant selection and contracting procedures are provided in the *Local Assistance Procedures Manual,* Chapter 10, available on the Internet at the following website: www.dot.ca.gov/hq/LocalPrograms/.

For further assistance, contact your Caltrans District Local Assistance Engineer listed on page 29 of this Guidebook.

Sincerely,

TERRY L. ABBOTT
Acting Chief
Division of Local Assistance

CHAPTER 10 CONSULTANT SELECTION

CONTENTS

SECTION/SUBJECT — PAGE NUMBER

For contracts with no UDBE contract goal, Exhibit 10-O2 shall be included in the proposal package and provided by each proposer. The purpose of including this form is to capture all DBE participation, including UDBE participation that was acquired through normal contracting procedures (i.e., no goal was placed on the contract).

Reporting DBE (including UDBE) Final Utilization (Contracts with or without goals)

Upon completion of the contract, regardless of whether UDBE or other DBE participation is obtained, a summary of the UDBE and DBE final utilization shall be prepared, certified correct, and submitted on the form "Final Report-Utilization of Disadvantaged Business Enterprise (DBE), First-Tier Subcontractors" (Exhibit 17-F, of the LAPM) or equivalent by the contractor to the local agency showing total dollars paid to each subcontractor and supplier whether UDBE, DBE, or non-DBE. Exhibit 17-F is reviewed by the local agency and certified as complete and accurate.

The local agency must send the original, plus one copy of the completed Exhibit 17-F with the final invoice to the DLAE within thirty (30) days after completion of the contract.

ESTIMATED COST OF CONSULTANT WORK

An independent cost estimate is needed for consultant contracts (required for contracts over $100,000) to ensure that consultant services are obtained at a fair and reasonable price. The estimate is prepared in advance, so the local agency's negotiating team has a detailed cost analysis of the project to evaluate the reasonableness of the consultant's cost proposal. The estimate, which is specifically for the use of the local agency's negotiating team, is to be kept confidential.

A good cost estimate can be prepared only if the scope of work is defined clearly. The scope of work must include a list of the products or services which the consultant is required to deliver, and a time schedule of when they must be delivered.

It should be stressed that all work to be derived from the consultant services (i.e., preliminary design, environmental, final design) must be clearly identified in the solicitation of consultant services (i.e., RFQ, RFP) and included in the cost estimate. The addition of work to the original scope by amendment should be avoided whenever possible.

The cost estimate must include a breakdown of:

- Direct labor costs
- Indirect costs
- General and administrative costs
- Other direct costs such as equipment and materials
- Subcontractor costs
- Net fee or profit

If more than one project or phase of work is to be developed within the consultant contract, separate cost estimates are required for each project or phase of work. Separate cost estimates are required for each milestone and portion of the work expected to be subcontracted.

DETERMINE TYPE OF CONTRACT

The type of contract must be specified. Four types are permitted depending on the scope of services to be performed.

- Actual Cost-Plus-Fixed Fee
- Cost Per Unit of Work
- Specific Rates of Compensation
- Lump Sum

ACTUAL COST-PLUS-FIXED FEE

The consultant is reimbursed for actual costs incurred and receives an additional predetermined amount as a fixed fee. The determination of the amount of the fixed fee shall take into account the size, complexity, duration, and degree of risk involved in the work. The fixed fee is not adjustable during the life of the contract unless there is a significant change in the scope of the work; in which case the fee may be renegotiated.

This method of payment is appropriate when the extent, scope, complexity, character, or duration of work cannot be precisely predicted. Fixed fees apply to the total direct and indirect costs. Fixed fees over fifteen (15) percent must be justified and documented in the files prior to commencement of work. (See Exhibit 10-H "Sample Cost Proposal" form and Exhibit 10-E "Sample Payment Clauses" form in this chapter.)

COST PER UNIT OF WORK

The consultant is paid based on the work performed such as: per plan sheet, report, etc. This method of payment is appropriate when the cost per unit of work can be determined with reasonable accuracy in advance; but the extent of the work is indefinite. Contract payment provisions must specify what is included in the price to be paid for each item.

SPECIFIC RATES OF COMPENSATION

The consultant is paid at an agreed and supported specific fixed hourly, daily rate, weekly or monthly, for each class of employee engaged directly in the work. Such rates of pay include the consultant's estimated costs and net fee (profit). The specific rates of compensation, except for an individual acting as a sole proprietor, are to include an hourly breakdown, direct salary costs, salary additives, indirect costs, and net fee.
Other direct costs may be set forth as an element of the specific rate or may be included as independent cost items. This type of contract is used for on-call contracts and is considered only when none of the other three contract types can be used. It is used only for emergency work when the tasks are relatively minor, or for equipment (such as material testing equipment), and vehicles.

LUMP SUM

The consultant performs the services stated in the agreement for an agreed amount as compensation. It is appropriateonly if the extent, scope, complexity, character, duration, and risk of the work have been sufficiently defined; to permit fair compensation to be determined and evaluated by all parties during negotiations.

Chapter 11 Design Standards

Contents

The 3R work is generally regarded as heavy, nonroutine maintenance work designed to preserve and extend the roadway service life for at least ten years as well as upgrading to enhance safety where reasonable. It differs from new construction or reconstruction in that it does not comtemplate capacity improvements, major realignment or major upgrading of geometric features or standards. However, the work may include selective improvements to highway geometry and other roadway features including safety appurtenances, and still be considered 3R work (please refer to Design Information Bulletin 79-02 available at the following website: http://www.dot.ca.gov/hq/oppd/dib/dibprg.htm).

11.2 Statewide Design Standards for Local Assistance Projects

The following statewide design standards are acceptable for design of local federal-aid projects both on and off the NHS.

Locally funded projects on the State Highway System (SHS) must be designed in accordance with SHS standards as defined in various Caltrans manuals.

Roadway and Appurtenances

Geometric Standards for New and Reconstruction Projects

New and reconstruction projects shall be designed in accordance with American Association of State Highway and Transportation Officials (AASHTO) Standards as defined in the current edition of *A Policy on Geometric Design of Highways and Streets* (often referred to as the *AASHTO Green book*).

The Federal Highway Administration (FHWA) has designated twelve (12) geometric controlling criteria with a primary importance for safety in the selection of design standards. These criteria are:

- Design Speed
- Lane Width
- Shoulder Width
- Bridge Width
- Horizontal Alignment
- Vertical Alignment
- Grades
- Stopping Sight Distance
- Cross Slopes
- Superelevation
- Horizontal Clearance
- Vertical Clearance

The FHWA has indicated that any deviations from these geometric controlling criteria requires formal approval. Such deviations from the above criteria requires that a local agency obtains design exception approval in accordance with the procedures described in Section 11.4, "Design Exceptions," in this chapter.

Geometric Standards for 3R Projects

The minimum standards for geometric design of local federal-aid resurfacing, restoration and rehabilitation (3R) projects, are shown in Tables 1 through 10 of Exhibit 11-A, "Geometric Standards for Local 3R Projects" (see DIB 79-02 for geometric standards for 3R projects on National Highway System). Designs using better than minimum standards should be used when feasible especially in areas of high traffic volume; when design speeds exceed 50 mph; and when significant truck volumes are expected.

Initial Study Summary – Environmental Checklist

SAN LUIS OBISPO COUNTY DEPARTMENT OF PLANNING AND BUILDING
976 OSOS STREET • ROOM 200 • SAN LUIS OBISPO • CALIFORNIA 93408 • (805) 781-5600

(ver 5.3)

Project Title & No. Cypress Mountain Drive at Klau Creek Bridge Replacement Project, ED13-248, 300432

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The proposed project could have a "Potentially Significant Impact" for at least one of the environmental factors checked below. Please refer to the attached pages for discussion on mitigation measures or project revisions to either reduce these impacts to less than significant levels or require further study.

☐ Aesthetics	☐ Geology and Soils	☐ Recreation
☐ Agricultural Resources	☒ Hazards/Hazardous Materials	☐ Transportation/Circulation
☒ Air Quality	☐ Noise	☐ Wastewater
☒ Biological Resources	☐ Population/Housing	☒ Water /Hydrology
☐ Cultural Resources	☐ Public Services/Utilities	☐ Land Use

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation, the Environmental Coordinator finds that:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Katie Drexhage			1/20/15
Prepared by (Print)	Signature		Date
Rob Fitzroy		Ellen Carroll, Environmental Coordinator	1/20/15
Reviewed by (Print)	Signature	(for)	Date

Project Environmental Analysis

The County's environmental review process incorporates all of the requirements for completing the Initial Study as required by the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The Initial Study includes staff's on-site inspection of the project site and surroundings and a detailed review of the information in the file for the project. In addition, available background information is reviewed for each project. Relevant information regarding soil types and characteristics, geologic information, significant vegetation and/or wildlife resources, water availability, wastewater disposal services, existing land uses and surrounding land use categories and other information relevant to the environmental review process are evaluated for each project. Exhibit A includes the references used, as well as the agencies or groups that were contacted as a part of the Initial Study. The County Planning Department uses the checklist to summarize the results of the research accomplished during the initial environmental review of the project.

Persons, agencies or organizations interested in obtaining more information regarding the environmental review process for a project should contact the County of San Luis Obispo Planning Department, 976 Osos Street, Rm. 200, San Luis Obispo, CA, 93408-2040 or call (805) 781-5600.

A. PROJECT

DESCRIPTION: The County of San Luis Obispo Department of Public Works (County) is proposing to replace a structurally deficient bridge on Cypress Mountain Drive at Klau Creek (Bridge No. 49C-0033). The project is located in the Adelaida subarea of the North County planning area in Supervisorial District 1 (see Figure 1).

The existing one-span timber bridge on stone masonry abutments was built in 1953. The existing bridge has a clear deck width of 14 feet, which is non-standard for a two-lane facility. The proposed bridge replacement will generally follow the existing alignment and will clear span approximately 54 feet over Klau Creek. The proposed bridge replacement structure would be a concrete slab bridge with a clear deck width of 24 feet in order to accommodate 10-foot travel lanes and 2-foot shoulders. Concrete barriers with tubular hand railing and guard rail end treatments will be installed. The proposed bridge replacement activities would be limited to the bridge work and up to 400 feet of road approach work on either side of the bridge. Right-of-way acquisition for temporary and permanent easements onto private properties will be required to accommodate the proposed construction activities. Three proposed staging areas have been identified, two on the existing road approaches on either end of the bridge and one directly adjacent to the project site. Construction equipment will access the site from the existing road.

Activities associated with construction of the new bridge will consist of clearing and grubbing, demolition of the existing bridge, excavation and placement of concrete abutments and cast-in-drilled hole pile foundations, false work installation and removal, placement of reinforced concrete slab, barrier and guard rail installation, retaining wall construction, culvert replacement with rock slope protection (RSP), and habitat and bank restoration. A temporary crossing through the creek on the east side of the existing bridge will be required to allow access for residents until construction of the new bridge is completed to prevent complete closure of the road. Occasional temporary road closures will be required during working hours to facilitate the work. It is anticipated that several trees within the riparian area will need to be removed to accommodate the construction of the new bridge as well as the temporary detour. Work in the channel will be required for the removal of the existing bridge, placement of the temporary creek crossing, and installation and removal of the false work. A temporary creek diversion will likely be required to convey flows through the project site. The creek diversion will include temporary cofferdams at the upstream and downstream ends of the project to isolate the work area. The project will result in approximately 1 acre of total disturbance. To implement the project, the County of San Luis Obispo Department of Public Works will be required to obtain permits from the California Department of Fish and Wildlife, Regional Water Quality Control Board, and U.S. Army Corps of Engineers.

EXISTING USES: Undeveloped, bridge

SURROUNDING LAND USE CATEGORIES AND USES:

North: Agriculture; undeveloped	*East:* Rural Lands; undeveloped
South: Rural Lands; undeveloped	*West:* Agriculture; undeveloped

C. ENVIRONMENTAL ANALYSIS

During the Initial Study process, at least one issue was identified as having a potentially significant environmental effects (see following Initial Study). Those potentially significant items associated with the proposed uses can be minimized to less than significant levels.

COUNTY OF SAN LUIS OBISPO
INITIAL STUDY CHECKLIST

1. AESTHETICS *Will the project:*	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
a) Create an aesthetically incompatible site open to public view?	☐	☐	☒	☐
b) Introduce a use within a scenic view open to public view?	☐	☐	☒	☐
c) Change the visual character of an area?	☐	☐	☒	☐
d) Create glare or night lighting, which may affect surrounding areas?	☐	☐	☐	☒
e) Impact unique geological or physical features?	☐	☐	☒	☐
f) Other: _____	☐	☐	☐	☐

Setting. The Cypress Mountain Drive at Klau Creek Bridge is located on Cypress Mountain Drive in rural San Luis Obispo County. The project site is in a very sparsely populated, mountainous area approximately 12 miles west of Paso Robles, 8 miles south of Lake Nacimiento, 10 miles east of Cambria, and 11 miles north of Cayucos. The bridge is located over Klau Creek in the northern Santa Lucia Range. Klau Creek is a perennial stream with water typically present throughout the year, except in extremely dry years. The project site is visible only from Cypress Mountain Drive in the vicinity of the bridge.

Impact. The project would not introduce a new type of roadway feature to the setting. The project would replace an existing bridge with a similar bridge in the same location. The new bridge would be similar in size and height, but would be widened to meet standard lane and shoulder width requirements. No Scenic Resources such as unique or outstanding trees, rock outcrops, historic buildings or other structures would be affected. No noise barriers, signage, or significant landform changes would result from the project. The project would not result in unsightly conditions or expose unsightly areas that are now screened from public view. Therefore, impacts to compatibility, scenic views, and unique physical features would be less than significant. In addition, no lighting is proposed for this project. The project will not result in impacts as a result of lighting or glare.

Various species of trees that may be impacted by project activities (i.e., trimmed or removed) include white alder, foothill pine, western sycamore, coast live oak, valley oak, and California bay laurel. These species are common throughout the project area. Removal of these trees would not represent significant visual impacts; however, mitigation measures required for biological impacts, including habitat restoration and tree replacement, would provide a co-benefit and further reduce visual impacts.

Mitigation/Conclusion. Visual impacts as a result of tree removal activities would be mitigated through habitat restoration activities outlined in the Habitat Mitigation and Monitoring Report prepared for the project (Appendix A). No additional visual mitigation measures are anticipated.

2. AGRICULTURAL RESOURCES *Will the project:*	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
a) *Convert prime agricultural land, per NRCS soil classification, to non-agricultural use?*	☐	☐	☒	☐
b) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use?*	☐	☐	☒	☐
c) *Impair agricultural use of other property or result in conversion to other uses?*	☐	☐	☒	☐
d) *Conflict with existing zoning for agricultural use, or Williamson Act program?*	☐	☐	☒	☐
e) *Other:* _____	☐	☐	☐	☐

Setting. The Klau Creek Bridge is located within a riparian habitat along Cypress Mountain Drive. The bridge is located in rural San Luis Obispo County and is located between lands zoned for agriculture and rural lands.

Land Use Category: Agriculture, Rural Lands

State Classification: Not prime farmland

Historic/Existing Commercial Crops: None

In Agricultural Preserve? Yes

Under Williamson Act contract? Yes

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), has mapped one soil series within the project vicinity (SCS 1984):

Los Osos-Lodo complex (50 - 75 % slope).

Los Osos. This very steeply sloping fine loamy soil is considered not well drained. The soil has moderate erodibility and moderate shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, shallow depth to bedrock, slow percolation. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Lodo. This steeply to very steeply sloping fine loamy soil is considered very poorly drained. The soil has moderate erodibility and moderate shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, shallow depth to bedrock. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Impact. The soil within the project area is not irrigated and therefore, not considered prime farmland. The agricultural land surrounding the project site is not actively used for row-crops or vines. The fields are grazed by cattle. A temporary bridge will be placed upstream of the new bridge to allow for farm equipment and residential access across the creek prior to and after daily construction activities that could result in airborne dust (airborne dust control measures are discussed further in the Hazards and Hazardous Materials section). The project site will be closed to through traffic during daily construction activities that could result in airborne dust between the hours of 7 a.m. and 9 p.m. on weekdays, and between 8 a.m. and 5 p.m. on Saturdays and Sundays. The project will not impact prime farmland or any property that is currently row-crops, vines, or other active agricultural uses. Coordination with surrounding landowners and residents regarding road closures will occur through County public

fall under the category of rare, threatened or endangered, as described in this section.

Setting. A Natural Environment Study (NES) and Biological Assessment were completed for the proposed project in April 2014 (Rincon Consultants 2014a and b) pursuant to requirements under the National Environmental Policy Act (NEPA). These documents were referenced as a part of this initial study. The following are existing elements on the proposed project relating to potential biological concerns:

On-site Vegetation: Mixed riparian forest habitat occurs in the relative center of the project site and is adjacent to Klau Creek. The dominant tree species observed within this community include valley oak (*Quercus lobata*), California bay laurel (*Umbellularia californica*), western sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*). Several shrub and vine species were observed in this community including: California coffeeberry (*Frangula californica*), California rose (*Rosa californica*), western poison oak (*Toxicodendron diversilobum*), and California blackberry (*Rubus ursinus*).

Most of the upland areas on the project site are composed of foothill woodland. This vegetation community occurs beyond the mixed riparian community, excluding Cypress Mountain Drive. The dominant tree species observed within this community include coast live oak (*Quercus agrifolia*), valley oak, and foothill pine (*Pinus sabiniana*). The trees are not very densely distributed and moderate amounts of understory typically surround each individual. The foothill woodland community onsite does not constitute a valley oak woodland type, which is recognized as a sensitive community.

The areas mapped as ruderal/developed on the project site include all of the paved or otherwise disturbed areas onsite that are associated with Cypress Mountain Drive. Non-native weedy species are the dominant plants that occur within this community including various brome grasses (*Bromus* spp.) and Italian thistle (*Carduus pycnocephalus*).

Name and distance from blue line creek(s): Klau Creek mapped as a dashed-blue line stream on the Cypress Mountain, California USGS 7.5-minute topographic quadrangle.

Habitat(s): Three terrestrial vegetation communities were identified on-site during the field survey including: mixed riparian, foothill woodland, and ruderal/developed. Habitat classification was based on the classification systems provided in *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009) and *Preliminary Descriptions of the Terrestrial Communities of California* (Holland 1986).

Jurisdictional Waters. A delineation of jurisdictional waters and riparian habitats was prepared for the project to determine the location, type, and areal extent of waters, including wetlands, and riparian habitats within the project site that would likely be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) (Rincon Consultants 2013).

No evidence of jurisdictional wetlands was observed during the site visit. Other waters subject to USACE and RWQCB jurisdiction within the project site are confined to Klau Creek.

Regional Species and Habitats of Concern: The California Natural Diversity Database (CNDDB) and review of the U.S. Fish and Wildlife (USFWS) Species List identified 14 sensitive plant species, one sensitive plant community and 9 sensitive wildlife taxa that have documented occurrences within a five-mile radius of the proposed project. Because the plant species and taxa lists are regional, an analysis of the range and habitat preferences of those species was conducted to identify which sensitive plant and wildlife species have the potential to occur on or around the project site.

No state or federally listed, proposed, candidate, or otherwise sensitive plant species were identified within the project site during field surveys. The project site contains suitable habitat for Eastwood's larkspur. A larkspur species (*Delphinium parryi*) was identified on the project site during field surveys conducted in May and August of 2011 but could not be identified beyond the species level. Eastwood's larkspur is considered by California Rare Plant Rank (CRPR) to be moderately threatened in California. An additional survey was conducted during April of 2013 to confirm whether or not

Nesting birds are protected by the Migratory Bird Treaty Act (MBTA). Various bird species, including southwestern willow flycatchers and least Bell's vireos may be disturbed and/or abandon nests if present on the existing bridge and/or nearby trees during construction activities. Preconstruction surveys would avoid and minimize impacts to southwestern willow flycatchers and least Bell's vireos and nesting birds.

The project could introduce potentially hazardous materials into the area in the form of fuel in construction equipment. A spill and clean-up kit will be stored onsite at all times. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 20 meters from any riparian habitat or water body. Prior to the onset of work, the County will ensure that the contractor has prepared a plan to allow a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

The bridge replacement activities will result in a less constricted, more open creek channel. The abutments will be placed further back on the bank of Klau Creek to accommodate the flows of Klau Creek and eliminate the need for extensive rock slope protection within the creek. Thus, the abutments of the new bridge will no longer be located below OHWM and/or within USACE jurisdictional areas. The streambed and riverine habitat will be enhanced and restored as a result of the structure being moved out of the low-flow channel. Based on this habitat enhancement, the functional value of the project site will increase as a result of project activities.

Appropriate project timing and site dewatering would minimize potential adverse effects to these species and would reduce temporary impacts to their habitats. With the implementation of avoidance and minimization measures such as preconstruction surveys and dewatering activities, this project will have minimal, temporary effect on listed and sensitive species and their habitat. No adverse cumulative effects on biological resources are anticipated to occur as a result of this project.

A Habitat Mitigation and Monitoring Plan has been prepared and includes specific measures for restoration and revegetation of all disturbed areas. The Plan includes protection measures, standards for revegetation, a monitoring program to ensure proper implementation and maintenance of restored areas, and performance criteria to determine success (Appendix A).

Mitigation/Conclusion. The following mitigation measures are required in order to ensure that impacts to biological resources remain less than significant.

[BR-1] Prior to construction, the County shall obtain authorization pursuant to Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers, Section 401 Water Quality Certification from the Regional Water Quality Control Board, and a Streambed Alteration Agreement from the CDFW for project-related impacts that will occur in areas under the jurisdiction of these regulatory agencies.

[BR-2] Access routes, staging, and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and construction areas outside of jurisdictional areas to the maximum extent feasible.

[BR-3] To control sedimentation during and after project implementation, appropriate best management practices shall be implemented to minimize adverse effects on jurisdictional areas in the vicinity of the project.

[BR-4] In-stream work shall take place between May 1 and November 1 in any given year, when water levels in the creek are lowest.

[BR-5] During construction, litter and/or construction debris shall be picked up daily and properly disposed of at an appropriate site.

[BR-6] All project-generated debris, building materials, and rubbish shall be removed from Klau Creek and from areas where such materials could be washed into the creek.

[BR-7] Raw cement, concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from project-related activities, shall be prevented from contaminating the soil and/or entering Klau Creek.

[BR-8] Upon completion of construction activities, any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least amount of disturbance to the jurisdictional areas. Alteration of the jurisdictional areas shall be minimized to the maximum extent possible; any imported materials shall be removed from the stream bed upon completion of the project.

[BR-9] All refueling, maintenance, and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). If it is not possible to stage vehicles at least 60 feet from riparian habitat, then spill prevention BMPs must be in place and/or be onsite and readily accessbile. The monitor shall ensure that contamination of suitable habitat does not occur during such operations. Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should an accidental spill occur.

[BR-10] The Habitat Mitigation and Monitoring Plan (HMMP) prepared for the project provides for a 1:1 restoration ratio for temporary impacts and a 3:1 enhancement ratio for permanent impacts. The HMMP identifies the specific mitigation areas. The HMMP will be implemented immediately following project completion. The project HMMP shall utilize native riparian plant species that currently occur in the project area. All trees with a diameter at breast height DBH of four (4) inches or greater will be replaced at a 3:1 ratio, except for trees 24-inches or greater, which will be replaced at a 10:1 ratio.

[BR-11] To minimize impacts to the mixed riparian habitat, removal of mixed riparian habitat shall be limited to the minimum necessary to complete the project.

[BR-12] The spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site shall be removed and properly disposed.

[BR-21] If any southwestern willow flycatchers or least Bell's vireo are found during preconstruction surveys, Caltrans shall be notified immediately for authorization to continue to work. Work shall not continue without approval from the USFWS.

[BR-22] If feasible, removal of trees will be scheduled to occur in the fall and winter (between September 1 and February 14), after fledging and before the initiation of the nesting season.

[BR-23] If construction activities are scheduled to occur during the nesting season (February 15 through August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist throughout all areas of potentially suitable and accessible habitats within 200 feet of any proposed construction activities. The pre-construction nesting bird survey will be performed no more than two weeks prior to construction to determine the presence/absence of nesting birds within the project area.

[BR-24] Caltrans shall be immediately notified if any nesting bird species protected under federal law [including the MBTA] are observed during surveys. Caltrans shall coordinate with USFWS regarding appropriate avoidance measures and the County shall coordinate with CDFW regarding appropriate avoidance measures. Work activities shall be avoided within 100 feet of active passerine nests and 200 feet of active raptor nests until young birds have fledged and left the nest(s). Readily visible exclusion zones shall be established in areas where nests must be avoided. Nests, eggs, or young of birds covered by the MBTA and California Fish and Game Code would not be moved or disturbed until the end of the nesting season or until young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time.

[BR-25] If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system.

5. CULTURAL RESOURCES

Will the project:	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
a) Disturb archaeological resources?	☐	☐	☒	☐
b) Disturb historical resources?	☐	☐	☐	☒
c) Disturb paleontological resources?	☐	☐	☐	☒
d) Other: _____	☐	☐	☐	☐

Setting. The project is located in an area historically occupied by the Obispeno Chumash and Salinan. No historic structures are present. The project is within 300 feet of a blue line creek.

Impact. Applied Earthworks conducted an archaeological survey of the project area and discovered a prehistoric chert quarry with associated lithic scatter within the Area of Potential Effects of the

12. TRANSPORTATION/CIRCULATION *Will the project:*	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
a) Increase vehicle trips to local or areawide circulation system?	☐	☐	☒	☐
b) Reduce existing "Level of Service" on public roadway(s)?	☐	☐	☒	☐
c) Create unsafe conditions on public roadways (e.g., limited access, design features, sight distance, slow vehicles)?	☐	☐	☐	☒
d) Provide for adequate emergency access?	☐	☐	☐	☒
e) Conflict with an established measure of effectiveness for the performance of the circulation system considering all modes of transportation (e.g. LOS, mass transit, etc.)?	☐	☐	☒	☐
f) Conflict with an applicable congestion management program?	☐	☐	☒	☐
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
h) Result in a change in air traffic patterns that may result in substantial safety risks?	☐	☐	☒	☐
i) Other: _____	☐	☐	☐	☐

Setting. The Cypress Mountain Drive Bridge is located on Cypress Mountain Road, which is lightly traveled road operating at acceptable levels. Cypress Mountain Road is considered a Collector road according to the Adelaida Planning Area Circulation Map. Traffic along Cypress Mountain Drive is infrequent (approximately 100 average daily trips) and is currently used by nearby residents and visitors to the 7X Ranch, a youth camp located south of the project site. The proposed project would involve replacing a bridge that is considered structurally deficient.

Impact. Project activities would result in a minor, temporary increase in roadway traffic at the bridge sites due to worker trips. Worker trips would include ten to twenty trips per day over a four month period, which would not affect any of the roadway capacities or levels of service. Off-street parking has been designated near the site for worker vehicles to avoid disruption of roadway operations during project activities. Project activities would include construction of a temporary crossing through the creek on the east site of the existing bridge until construction of the new bridge is complete. Although through traffic would only be permitted after daily construction activities that could result in airborne dust have ceased, the temporary crossing would be available for emergency access. During construction activities that could result in airborne dust, traffic on either side of the bridge will be rerouted using an approved detour plan. Notification to nearby residents would occur ahead of any road closures. The proposed project activities would be temporary, lasting approximately four months.

14. WATER & HYDROLOGY *Will the project:*	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
d) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff?	☐	☐	☒	☐
e) Change rates of soil absorption, or amount or direction of surface runoff?	☐	☐	☐	☒
f) Change the drainage patterns where substantial on- or off-site sedimentation/ erosion or flooding may occur?	☐	☐	☒	☐
g) Involve activities within the 100-year flood zone?	☐	☐	☐	☒
QUANTITY				
h) Change the quantity or movement of available surface or ground water?	☐	☐	☐	☒
i) Adversely affect community water service provider?	☐	☐	☐	☒
j) Expose people to a risk of loss, injury or death involving flooding (e.g., dam failure,etc.), or inundation by seiche, tsunami or mudflow?	☐	☐	☐	☒
k) Other: _____	☐	☐	☐	☐

Setting. Water quality within Klau Creek may be impacted by proposed construction activities including implementation of the creek diversion and dewatering plan and removal of the existing bridge. As discussed above under Hazards and Hazardous Materials, the Project will temporarily introduce potentially hazardous materials into the area in the form of fuel in construction equipment. However, a spill and clean-up kit will be stored onsite at all times and all fueling and maintenance of vehicles and other equipment and staging areas will occur at least 20 meters from any riparian habitat or water body. Measures to control dust will be implemented as well (HM-1 – HM-9).

The topography of the project is gently rolling The closest creek from the proposed project is on site. As described in the NRCS Soil Survey, the soil surface is considered to have moderate erodibility.

Temporary and permanent erosion control measures will be implemented during and after construction activities are complete (BR-3 & BR-10). Other measures to protect water quality include obtaining regulatory permits prior to construction, limiting access routes and construction areas to the minimum area necessary, staging a minimum of 60 feet from the waterway, and preventing construction-related materials from washing into the creek (BR-1, -2, -6, -7, & -9).

The construction of the proposed bridge will improve the capacity of flow over that of the existing bridge as well as meet the Federal Highway Administration's (FHWA's) criteria of passing the 50-year flood and the 100-year flood. The proposed bridge will have a soffit elevation of approximately 1140.90, which would be roughly 13.8 feet above the current creek thalweg.

Projects involving more than one acre of disturbance are subject to preparing a Storm Water Pollution Prevention Plan (SWPPP) to minimize on-site sedimentation and erosion. When work is done in the rainy season, the County's Land Use Ordinance requires that temporary erosion and sedimentation measures to be installed.

DRAINAGE – The following relates to the project's drainage aspects:

Within the 100-year Flood Hazard designation? No

Closest creek? Klau Creek runs through the project site Distance? On site

Soil drainage characteristics: Well drained

SEDIMENTATION AND EROSION – Soil type, area of disturbance, and slopes are key aspects to analyzing potential sedimentation and erosion issues. The project's soil types and descriptions are listed in the previous Agriculture section under "Setting". As described in the NRCS Soil Survey, the project's soil erodibility is as follows:

Soil erodibility: Moderate

A sedimentation and erosion control plan is required for all construction and grading projects (LUO Sec. 22.52.120, CZLUO Sec. 23.05.036) to minimize these impacts. When required, the plan is prepared by a civil engineer to address both temporary and long-term sedimentation and erosion impacts.

Impact – Water Quality/Hydrology

With regards to project impacts on water quality the following conditions apply:

- ✓ The project will be disturbing 1 acre and will be required to prepare a SWPPP, which will be implemented during construction;
- ✓ The project will be subject to standard County requirements for drainage, sedimentation and erosion control for construction and permanent use;
- ✓ The project is not on highly erodible soils, nor on moderate to steep slopes;
- ✓ The project is not within a 100-year Flood Hazard designation;
- ✓ Stockpiles will be properly managed during construction to avoid material loss due to erosion;
- ✓ All hazardous materials and/or wastes will be properly stored on-site, which include secondary containment should spills or leaks occur;

The project could result in water quality impacts through dewatering activities, the discharge of sediments during construction, or the accidental spill of petroleum-based fuels or lubricants. The project will not affect groundwater levels. Dewatering and diversion activities would be localized and are not anticipated to impact groundwater in Las Tablas Creek watershed since most of the water would be returned to the stream via the proposed diversion.

Mitigation/Conclusion. Degradation to water quality within Klau Creek before and during construction activities would be mitigated by the implementation of a dewatering and diversion plan, mitigation and monitoring plan, best management practices to prevent erosion/sedimentation, and the County is required to obtain a permit from the Regional Water Quality Control Board prior to commencement of site disturbance (Mitigation Measures BR-1, BR-3, BR-4, and BR-6 through BR-9).

Based on the discussion above and implementation of all recommended mitigation measures, all onsite, off-site, direct, in-direct, and cumulative hydrology and water quality impacts associated with the proposed project are less than significant.

15. LAND USE *Will the project:*	Inconsistent	Potentially Inconsistent	Consistent	Not Applicable
a) ***Be potentially inconsistent with land use, policy/regulation (e.g., general plan [County Land Use Element and Ordinance], local coastal plan, specific plan, Clean Air Plan, etc.) adopted to avoid or mitigate for environmental effects?***	☐	☐	☒	☐
b) ***Be potentially inconsistent with any habitat or community conservation plan?***	☐	☐	☐	☒
c) ***Be potentially inconsistent with adopted agency environmental plans or policies with jurisdiction over the project?***	☐	☐	☒	☐
d) ***Be potentially incompatible with surrounding land uses?***	☐	☐	☒	☐
e) ***Other:*** _____	☐	☐	☐	☐

Setting/Impact. Surrounding uses are identified on Page 2 of the Initial Study. The proposed project was reviewed for consistency with policy and/or regulatory documents relating to the environment and appropriate land use (e.g., County Land Use Ordinance, Local Coastal Plan, etc.). Referrals were sent to outside agencies to review for policy consistencies (e.g., APCD, Agricultural Commissioner, Environmental Health, etc.). The project was found to be consistent with these policies (refer also to Exhibit A on reference documents used).

The project is not within or adjacent to a Habitat Conservation Plan area. The project is consistent or compatible with the surrounding uses as summarized on page 2 of this Initial Study.

Mitigation/Conclusion. No inconsistencies were identified and therefore no additional measures above what will already be required were determined necessary.

16. MANDATORY FINDINGS OF SIGNIFICANCE *Will the project:*	Potentially Significant	Impact can & will be mitigated	Insignificant Impact	Not Applicable
a) ***Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major***				

Exhibit A - Initial Study References and Agency Contacts

The County Planning Department has contacted various agencies for their comments on the proposed project. With respect to the subject application, the following have been contacted (marked with an ☒) and when a response was made, it is either attached or in the application file:

Contacted	Agency	Response
☐	County Public Works Department	**Not Applicable**
☒	County Environmental Health Division	**Not Applicable**
☒	County Agricultural Commissioner's Office	**None**
☐	County Airport Manager	**Not Applicable**
☐	Airport Land Use Commission	**Not Applicable**
☒	Air Pollution Control District	**Not Applicable**
☐	County Sheriff's Department	**Not Applicable**
☒	Regional Water Quality Control Board	**None**
☐	CA Coastal Commission	**Not Applicable**
☒	CA Department of Fish and Wildlife	**None**
☐	CA Department of Forestry (Cal Fire)	**Not Applicable**
☐	CA Department of Transportation	**Not Applicable**
☐	Community Services District	**Not Applicable**
☒	Other Army Corps of Engineers (San Francisco)	**None**
☐	Other _____	**Not Applicable**

*** "No comment" or "No concerns"-type responses are usually not attached*

The following checked ("☒") reference materials have been used in the environmental review for the proposed project and are hereby incorporated by reference into the Initial Study. The following information is available at the County Planning and Building Department.

☒ Project File for the Subject Application

County documents

- ☐ Coastal Plan Policies
- ☐ Framework for Planning (Coastal/Inland)
- ☒ General Plan (Inland/Coastal), includes all maps/elements; more pertinent elements:
  - ☒ Agriculture Element
  - ☒ Conservation & Open Space Element
  - ☐ Economic Element
  - ☐ Housing Element
  - ☒ Noise Element
  - ☐ Parks & Recreation Element/Project List
  - ☒ Safety Element
- ☐ Land Use Ordinance (Inland/Coastal)
- ☐ Building and Construction Ordinance
- ☐ Public Facilities Fee Ordinance
- ☐ Real Property Division Ordinance
- ☐ Affordable Housing Fund
- ☐ Airport Land Use Plan
- ☐ Energy Wise Plan
- ☐ Area Plan
  and Update EIR
- ☐ Design Plan
- ☐ Specific Plan
- ☐ Annual Resource Summary Report
- ☐ Circulation Study

Other documents

- ☒ Clean Air Plan/APCD Handbook
- ☒ Regional Transportation Plan
- ☒ Uniform Fire Code
- ☒ Water Quality Control Plan (Central Coast Basin – Region 3)
- ☒ Archaeological Resources Map
- ☒ Area of Critical Concerns Map
- ☐ Special Biological Importance Map
- ☒ CA Natural Species Diversity Database
- ☒ Fire Hazard Severity Map
- ☒ Flood Hazard Maps
- ☒ Natural Resources Conservation Service Soil Survey for SLO County
- ☒ GIS mapping layers (e.g., habitat, streams, contours, etc.)
- ☐ Other

In addition, the following project specific information and/or reference materials have been considered as a part of the Initial Study:

Applied Earthworks. 2014. Archaeological Evaluation Report for CA-SLO-2745 (P-42-002745) Cypress Mountain Drive Bridge Replacement Project, San Luis Obispo County, California. April 2014.

CAL FIRE, San Luis Obispo County Fire Department. Fire Stations. March 2012. Accessed online: http://www.calfireslo.org/operationsstations.html

California Air Pollution Control Officers Association. 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA). January 2008.

California Environmental Protection Agency (CalEPA). 2010. Climate Action Team Biennial Report. Final Report. April 2010.

Fugro Consultants, Inc. 2013. Foundation Report Cypress Mountain Drive Bridge Replacement Over Klau Creek (Bridge No. 49C-0033) Federal Aid No. BRLO-5949(127) San Luis Obispo County, California. Prepared for San Luis Obispo County. 56 pp.

Holland, R.F., 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game. Sacramento, California.

Padre Associates, Inc. 2013. Report of Findings, Soil Assessment Activities, Klau Creek Bridge Replacement Project, Cypress Mountain Drive, Paso Robles, San Luis Obispo County, California. Prepared for San Luis Obispo County Public Works Department. 60 pp.

Padre Associates, Inc. 2014. Soil Management Requirements Report, Klau Creek Bridge Replacement Project, Cypress Mountain Drive, Paso Robles, San Luis Obispo County, California. Prepared for San Luis Obispo County Public Works Department. 48 pp.

Rincon Consultants, Inc. 2013. Delineation of Jurisdictional Waters and Riparian Habitats, Cypress Mountain Drive at Klau Creek Highway Bridge Replacement Project. November 2013.

Rincon Consultants, Inc. 2014a. Cypress Mountain Drive at Klau Creek Highway Bridge Replacement Project Natural Environment Study. April 2014. 132 pp.

Rincon Consultants, Inc. 2014b. Cypress Mountain Drive at Klau Creek Highway Bridge Replacement Project Biological Assessment. April 2014. 66 pp.

San Luis Obispo Air Pollution Control District. 2012. CEQA Air Quality Handbook: A Guide for Assessing the Impacts for Projects Subject to CEQA Review. April 2012.

San Luis Obispo, County of, Sheriff's Office. SLO County Sheriff's Offices. March 2012. Accessed online: http://www.slosheriff.org/_Contact/Department.aspx

San Luis Obispo, County of. General Plan, Natural Hazard Maps, Fire Hazard Severity Map, November 2007. Accessed online: http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Natural_Hazard_Maps.htm

San Luis Obispo, County of. General Plan, Natural Hazard Maps, Dam Failure Inundation Areas, April 2009. Accessed online:

http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Natural_Hazard_Maps.htm

San Luis Obispo, County of. General Plan, Natural Hazard Maps, Earthquake Hazards Map April 2009. Accessed online: http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Natural_Hazard_Maps.htm

San Luis Obispo, County of. General Plan, Natural Hazard Maps, FEMA-FIRM Flood Hazard Map, August 2008. Accessed online: http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Natural_Hazard_Maps.htm

Sawyer, J. et al. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press. Sacramento, California.

West Coast Safety Consultants. 2011a. Asbestos Inspection – Klau Creek Bridge, Cypress Mountain Drive, Paso Robles, California. 2 pp.

West Coast Safety Consultants. 2011b. Lead Inspection – Klau Creek Bridge, Cypress Mountain Drive, Paso Robles, California. 6 pp.

Structure Maintenance & Investigations

EXHIBIT 2
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SM&I

Local Agency Bridge List

October, 2014

San Luis Obispo County

District 05

County of San Luis Obispo

Bridge Number	Feature Intersected	Facility Carried	Loation	NBI Bridge	SD/FO	Suff Rating	Health Index	PCI	Year Built	ADT	Lanes	Road Width	Length	On/Off Federal Aid System	On/Off NHS Highway	Permit Rating
49C0017	BRANCH OF LAS TABLAS CRK	CYPRESS MT DR	0.2 MI NW OF KLAU	NBI Bridge		74.4	94.89		1950	25	2	5.5	17	Off	Off	OOOOO
49C0029	LAS TABLAS CREEK	KLAU MINE RD	2.7 MI SW ADELAIDA	NBI Bridge		72.1	100		1940	93	2	6.7	9	Off	Off	OOOOO
49C0032	KLAU CREEK	CYPRESS MT DR	1.6 MI SW OF KLAU	NBI Bridge		59.4	94.24		1953	25	1	3.9	9	Off	Off	GGGGG
49C0033	KLAU CREEK	CYPRESS MT DR	1.9 MI SW KLAU	NBI Bridge	SD	28.4	95.77		1953	25	1	4.3	9	Off	Off	XXXXX
49C0037	JACK CREEK	DOVER CANYON RD	1.3 MI SW OF VINEYARD DR	NBI Bridge	SD	19.2	51.84		1920	151	1	4.8	19	Off	Off	XXXXX
49C0048	ESTRELLA RIVER	ESTRELLA ROAD	AT ESTRELLA RD	NBI Bridge		97.7	99.63		1978	249	2	8.5	92	On	Off	PPPPP
49C0052	HUER HUERO CREEK	RIVER ROAD	1.5 MI S WELLONA AVE	NBI Bridge		78.1	99.41		1950	269	2	6.1	30	Off	Off	PPPPP
49C0063	HUER HUERO CREEK	CRESTON RD	0.1 MI S GENESEO RD	NBI Bridge		91.0	99.97		1960	1731	2	9.2	56	On	Off	PPPPP
49C0070	CHOLAME CREEK	CHOLAME VALLEY RD	1.4 MI NW SR 46	NBI Bridge		76.3	93.81		1948	130	2	6.2	24	Off	Off	PPPPP
49C0073	CHOLAME CREEK	BITTERWATER ROAD	WEST OF SH 46	NBI Bridge		99.8	100		1979	112	2	9.8	42	On	Off	PPPPP
49C0084	STENNER CREEK	STENNER CREEK RD	0.05 MI N SR 1	NBI Bridge		90.6	100		1959	150	2	8.5	12	Off	Off	PPPPP
49C0085	STENNER CREEK	STENNER CREEK RD	1.25 MI N SR 1	NBI Bridge	FO	57.8	63.86	50	1970	150	1	3.8	13	Off	Off	PPPPP
49C0087	TORO CREEK	TORO CREEK RD	0.3 MI E SR 1	NBI Bridge		65.5	95.34		1951	247	2	6.1	16	Off	Off	GGGGG
49C0093	OLD CREEK	SNTA RTA OLD CR RD	0.3 MI E CYPRESS MTN DR	NBI Bridge	SD	68.1	93.46		1940	249	2	6.7	32	Off	Off	OOOOO
49C0094	VILLA CREEK	VILLA CREEK RD	1.8 MI N SR 1	NBI Bridge		82.0	95.76		1957	100	2	6.1	18	Off	Off	GGGGG
49C0097	SANTA ROSA CREEK	BURTON RD	0.15 MI S MAIN ST CAMBRI	NBI Bridge		55.5	98.58		1968	4125	2	8.5	37	Off	Off	OXXXX
49C0098	SANTA ROSA CREEK	WINDSOR BLVD	200' SOUTH OF SR 1	NBI Bridge		61.0	98.89		1963	3416	2	8.6	37	Off	Off	PPPPP
49C0103	SAN SIMEON CREEK	SAN SIMEON CRK RD	5.7 MI E OF SR 1	NBI Bridge	FO	71.1	95.62		1964	670	1	4.9	24	Off	Off	PPPPP
49C0105	E BR SAN LUIS OBISPO CRK	BUCKLEY RD	0.5 MI S HIGUERA ST	NBI Bridge		52.3	91.31		1915	4717	2	8.6	8	Off	Off	XXXXX
49C0106	E BR SAN LUIS OBISPO CRK	BUCKLEY ROAD	1.5 MI E OF US 101	NBI Bridge		78.9	93.02	50	1956	4396	2	8.5	25	On	Off	PPPPP
49C0112	PISMO CREEK	ORMONDE RD	0.1 MI E PRICE CANYON RD	NBI Bridge		96.8	100		1978	590	2	8.5	42	Off	Off	PPPPP
49C0113	WEST CORRAL DE PIEDRA CR	ORCUTT ROAD	0.25 MI SE BIDDLE ROAD	NBI Bridge	FO	73.4	97.46		1949	2438	2	7.3	10	On	Off	PPPPP
49C0119	ARROYO GRANDE CREEK	TROUT FARM RD	6.9 MI N OF SR 101	NBI Bridge		75.7	73.14	75	1964	100	2	7.3	42	Off	Off	XXXXX
49C0121	ARROYO GRANDE CREEK	HI MOUNTAIN RD	1.5 MI E LOPEZ CYN RD	NBI Bridge	FO	60.1	74.67		1965	50	2	7.4	17	Off	Off	XXXXX
49C0122	SAUCELITO CREEK	HI MOUNTAIN RD	2.5 MI E LOPEZ CANYON RD	NBI Bridge	FO	74.9	99.53		1966	487	2	6.0	14	Off	Off	PPPPP

STRUCTURE INVENTORY AND APPRAISAL REPORT

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********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **49C0033**
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 079 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- KLAU CREEK
(7) FACILITY CARRIED- CYPRESS MT DR
(9) LOCATION- 1.9 MI SW KLAU
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 35 DEG 37 MIN 00.92 SEC
(17) LONGITUDE 120 DEG 54 MIN 54.49 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- WOOD OR TIMBER
TYPE- STRINGER/MULTI-BEAM OR GDR CODE 702
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- TIMBER CODE 8
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- TIMBER CODE 7
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1953
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 01 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 25
(30) YEAR OF ADT 2010 (109) TRUCK ADT 5 %
(19) BYPASS, DETOUR LENGTH 43 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 8.5 M
(49) STRUCTURE LENGTH 8.8 M
(50) CURB OR SIDEWALK: LEFT 0.1 M RIGHT 0.1 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 4.3 M
(52) DECK WIDTH OUT TO OUT 4.7 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 3.7 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 15 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 4.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 28.4
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 95.8
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR COLLECTOR RURAL 08
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 1 LANE, 2 WAY 3
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
(22) OWNER- COUNTY HIGHWAY AGENCY 02
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

********** CONDITION ********** CODE

(58) DECK 7
(59) SUPERSTRUCTURE 7
(60) SUBSTRUCTURE 3
(61) CHANNEL & CHANNEL PROTECTION 6
(62) CULVERTS N

********** LOAD RATING AND POSTING ********** CODE

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
(64) OPERATING RATING- 31.1
(65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
(66) INVENTORY RATING- 22.4
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 3
(68) DECK GEOMETRY 6
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 8
(72) APPROACH ROADWAY ALIGNMENT 4
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- REPLACE FOR DEFICIENC CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 8.8 M
(94) BRIDGE IMPROVEMENT COST $95,128
(95) ROADWAY IMPROVEMENT COST $19,026
(96) TOTAL PROJECT COST $159,816
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 99
(115) YEAR OF FUTURE ADT 2034

********** INSPECTIONS **********

(90) INSPECTION DATE 04/14 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C)

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49C0033/AAAH/29433

STRUCTURE INVENTORY AND APPRAISAL REPORT

EXHIBIT 3 PAGE 2 OF 4

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	49C0033
(5)	INVENTORY ROUTE(ON/UNDER)- ON	140000000
(2)	HIGHWAY AGENCY DISTRICT	05
(3)	COUNTY CODE 079 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED-	KLAU CREEK
(7)	FACILITY CARRIED-	CYPRESS MT RD
(9)	LOCATION-	1.9 MI SW KLAU
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	35 DEG 37 MIN 01.2 SEC
(17)	LONGITUDE	120 DEG 54 MIN 54 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL-	WOOD OR TIMBER
	TYPE- STRINGER/MULTI-BEAM OR GDR CODE	702
(44)	STRUCTURE TYPE APPR:MATERIAL-	OTHER/NA
	TYPE- OTHER/NA CODE	000
(45)	NUMBER OF SPANS IN MAIN UNIT	1
(46)	NUMBER OF APPROACH SPANS	0
(107)	DECK STRUCTURE TYPE- TIMBER CODE	8
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- TIMBER CODE	7
B)	TYPE OF MEMBRANE- NONE CODE	0
C)	TYPE OF DECK PROTECTION- NONE CODE	0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1953
(106)	YEAR RECONSTRUCTED	0000
(42)	TYPE OF SERVICE: ON- HIGHWAY	1
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 01 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	25
(30)	YEAR OF ADT 2010 (109) TRUCK ADT	5 %
(19)	BYPASS, DETOUR LENGTH	43 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	8.5 M
(49)	STRUCTURE LENGTH	8.8 M
(50)	CURB OR SIDEWALK: LEFT 0.1 M	RIGHT 0.1 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	4.3 M
(52)	DECK WIDTH OUT TO OUT	4.7 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	3.7 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 15 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	4.3 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	99.99 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NO CONTROL CODE	0
(111)	PIER PROTECTION- CODE	
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

****

SUFFICIENCY RATING =	28.4
STATUS	STRUCTURALLY DEFICIENT
HEALTH INDEX	95.8
PAINT CONDITION INDEX =	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MINOR COLLECTOR RURAL	08
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 1 LANE, 2 WAY	3
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- COUNTY HIGHWAY AGENCY	02
(22)	OWNER- COUNTY HIGHWAY AGENCY	02
(37)	HISTORICAL SIGNIFICANCE- NOT ELIGIBLE	5

********** CONDITION ********** CODE

(58)	DECK	7
(59)	SUPERSTRUCTURE	7
(60)	SUBSTRUCTURE	3
(61)	CHANNEL & CHANNEL PROTECTION	6
(62)	CULVERTS	N

********* LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- UNKNOWN	0
(63)	OPERATING RATING METHOD- ALLOWABLE STRESS	2
(64)	OPERATING RATING-	31.1
(65)	INVENTORY RATING METHOD- ALLOWABLE STRESS	2
(66)	INVENTORY RATING-	22.4
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	3
(68)	DECK GEOMETRY	6
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	8
(72)	APPROACH ROADWAY ALIGNMENT	4
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	U

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- REPLACE FOR DEFICIENC CODE	31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	8.8 M
(94)	BRIDGE IMPROVEMENT COST	$95,128
(95)	ROADWAY IMPROVEMENT COST	$19,026
(96)	TOTAL PROJECT COST	$159,816
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2010
(114)	FUTURE ADT	99
(115)	YEAR OF FUTURE ADT	2034

********** INSPECTIONS **********

(90)	INSPECTION DATE 05/12 (91) FREQUENCY	24 MO
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE
A)	FRACTURE CRIT DETAIL- NO	MO A)
B)	UNDERWATER INSP- NO	MO B)
C)	OTHER SPECIAL INSP- NO	MO C)

Printed on: Wednesday 09/26/2012 03:26 PM

49C0033/AAAG/24461

STRUCTURE INVENTORY AND APPRAISAL REPORT

	********** IDENTIFICATION **********	
(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	49C0033
(5)	INVENTORY ROUTE(ON/UNDER)- ON	140000000
(2)	HIGHWAY AGENCY DISTRICT	05
(3)	COUNTY CODE 079 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED-	KLAU CREEK
(7)	FACILITY CARRIED-	CYPRESS MT RD
(9)	LOCATION-	1.9 MI SW KLAU
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	35 DEG 37 MIN 01.2 SEC
(17)	LONGITUDE	120 DEG 54 MIN 54 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	
	******** STRUCTURE TYPE AND MATERIAL *********	
(43)	STRUCTURE TYPE MAIN:MATERIAL-	WOOD OR TIMBER
	TYPE- STRINGER/MULTI-BEAM OR GDR	CODE 702
(44)	STRUCTURE TYPE APPR:MATERIAL-	OTHER/NA
	TYPE- OTHER/NA	CODE 000
(45)	NUMBER OF SPANS IN MAIN UNIT	1
(46)	NUMBER OF APPROACH SPANS	0
(107)	DECK STRUCTURE TYPE- TIMBER	CODE 8
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- TIMBER	CODE 7
B)	TYPE OF MEMBRANE- NONE	CODE 0
C)	TYPE OF DECK PROTECTION- NONE	CODE 0
	********** AGE AND SERVICE **********	
(27)	YEAR BUILT	1953
(106)	YEAR RECONSTRUCTED	0000
(42)	TYPE OF SERVICE: ON- HIGHWAY	1
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 01 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	25
(30)	YEAR OF ADT 2010 (109) TRUCK ADT	5 %
(19)	BYPASS, DETOUR LENGTH	43 KM
	********** GEOMETRIC DATA **********	
(48)	LENGTH OF MAXIMUM SPAN	8.5 M
(49)	STRUCTURE LENGTH	8.8 M
(50)	CURB OR SIDEWALK: LEFT 0.1 M	RIGHT 0.1 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	4.3 M
(52)	DECK WIDTH OUT TO OUT	4.7 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	3.7 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 15 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	4.3 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	99.99 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M
	********** NAVIGATION DATA **********	
(38)	NAVIGATION CONTROL- NO CONTROL	CODE 0
(111)	PIER PROTECTION-	CODE
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

	**********	
	SUFFICIENCY RATING =	28.4
	STATUS	STRUCTURALLY DEFICIENT
	HEALTH INDEX	95.8
	PAINT CONDITION INDEX =	N/A
	********** CLASSIFICATION **********	CODE
(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MINOR COLLECTOR RURAL	08
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 1 LANE, 2 WAY	3
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- COUNTY HIGHWAY AGENCY	02
(22)	OWNER- COUNTY HIGHWAY AGENCY	02
(37)	HISTORICAL SIGNIFICANCE- NOT ELIGIBLE	5
	********** CONDITION **********	CODE
(58)	DECK	7
(59)	SUPERSTRUCTURE	7
(60)	SUBSTRUCTURE	3
(61)	CHANNEL & CHANNEL PROTECTION	6
(62)	CULVERTS	N
	********** LOAD RATING AND POSTING **********	CODE
(31)	DESIGN LOAD- UNKNOWN	0
(63)	OPERATING RATING METHOD- ALLOWABLE STRESS	2
(64)	OPERATING RATING-	31.1
(65)	INVENTORY RATING METHOD- ALLOWABLE STRESS	2
(66)	INVENTORY RATING-	22.4
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	
	********** APPRAISAL **********	CODE
(67)	STRUCTURAL EVALUATION	3
(68)	DECK GEOMETRY	6
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	8
(72)	APPROACH ROADWAY ALIGNMENT	4
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	U
	********** PROPOSED IMPROVEMENTS **********	
(75)	TYPE OF WORK- REPLACE FOR DEFICIENC	CODE 31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	8.8 M
(94)	BRIDGE IMPROVEMENT COST	$95,128
(95)	ROADWAY IMPROVEMENT COST	$19,026
(96)	TOTAL PROJECT COST	$159,816
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2010
(114)	FUTURE ADT	105
(115)	YEAR OF FUTURE ADT	2028
	********** INSPECTIONS **********	
(90)	INSPECTION DATE 02/11 (91) FREQUENCY	24 MO
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE
A)	FRACTURE CRIT DETAIL- NO	MO A)
B)	UNDERWATER INSP- NO	MO B)
C)	OTHER SPECIAL INSP- NO	MO C)

Printed on: Thursday 09/08/2011 02:02 PM

STRUCTURE INVENTORY AND APPRAISAL REPORT

EXHIBIT 3 PAGE 4 OF 4

```
********** IDENTIFICATION **********
(1) STATE NAME- CALIFORNIA                          069
(8) STRUCTURE NUMBER                                49C0033
(5) INVENTORY ROUTE(ON/UNDER)-    ON          140000000
(2) HIGHWAY AGENCY DISTRICT                         05
(3) COUNTY CODE    079      (4) PLACE CODE    00000
(6) FEATURE INTERSECTED-                      KLAU CREEK
(7) FACILITY CARRIED-                      CYPRESS MT RD
(9) LOCATION-                             1.9 MI SW KLAU
(11) MILEPOINT/KILOMETERPOINT                       0
(12) BASE HIGHWAY NETWORK-  NOT ON NET              0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE                  35 DEG 37 MIN 01.2 SEC
(17) LONGITUDE                 120 DEG 54 MIN 54 SEC
(98) BORDER BRIDGE STATE CODE        % SHARE        %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********
(43) STRUCTURE TYPE MAIN:MATERIAL-    WOOD OR TIMBER
     TYPE-   STRINGER/MULTI-BEAM OR GDR CODE   702
(44) STRUCTURE TYPE APPR:MATERIAL-
     TYPE-                                CODE
(45) NUMBER OF SPANS IN MAIN UNIT                   1
(46) NUMBER OF APPROACH SPANS                       0
(107) DECK STRUCTURE TYPE-    TIMBER          CODE 8
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
  A) TYPE OF WEARING SURFACE-   TIMBER        CODE 7
  B) TYPE OF MEMBRANE- NONE                   CODE 0
  C) TYPE OF DECK PROTECTION-   NONE           CODE 0

********** AGE AND SERVICE **********
(27) YEAR BUILT                                  1953
(106) YEAR RECONSTRUCTED                         0000
(42) TYPE OF SERVICE: ON-    HIGHWAY               1
                      UNDER- WATERWAY              5
(28) LANES:ON STRUCTURE    01   UNDER STRUCTURE   00
(29) AVERAGE DAILY TRAFFIC                       68
(30) YEAR OF ADT       1990   (109) TRUCK ADT     0 %
(19) BYPASS, DETOUR LENGTH                     43 KM

********** GEOMETRIC DATA **********
(48) LENGTH OF MAXIMUM SPAN                    8.5 M
(49) STRUCTURE LENGTH                          8.8 M
(50) CURB OR SIDEWALK:      LEFT 0.1 M   RIGHT 0.1 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB         4.3 M
(52) DECK WIDTH OUT TO OUT                     4.7 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)      3.7 M
(33) BRIDGE MEDIAN-    NO MEDIAN                 0
(34) SKEW    15 DEG   (35) STRUCTURE FLARED     NO
(10) INVENTORY ROUTE MIN VERT CLEAR           99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR         4.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY          99.99 M
(54) MIN VERT UNDERCLEAR REF-   NOT H/RR      0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR      0.0 M
(56) MIN LAT UNDERCLEAR LT                    0.0 M

********** NAVIGATION DATA **********
(38) NAVIGATION CONTROL-   NO CONTROL      CODE 0
(111) PIER PROTECTION-                    CODE
(39) NAVIGATION VERTICAL CLEARANCE            0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR       M
(40) NAVIGATION HORIZONTAL CLEARANCE          0.0 M

**********
     SUFFICIENCY RATING =          22.7
     STATUS        STRUCTURALLY DEFICIENT
     HEALTH INDEX                  95.8
     PAINT CONDITION INDEX =       N/A

********** CLASSIFICATION ********** CODE
(112) NBIS BRIDGE LENGTH-  YES                      Y
(104) HIGHWAY SYSTEM- NOT ON NHS                    0
(26) FUNCTIONAL CLASS- MINOR COLLECTOR RURAL        08
(100) DEFENSE HIGHWAY-  NOT STRAHNET                0
(101) PARALLEL STRUCTURE-  NONE EXISTS              N
(102) DIRECTION OF TRAFFIC-  1 LANE, 2 WAY          3
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY-  NOT APPLICABLE                0
(110) DESIGNATED NATIONAL NETWORK -  NOT ON NET     0
(20) TOLL-  ON FREE ROAD                            3
(21) MAINTAIN-  COUNTY HIGHWAY AGENCY               02
(22) OWNER-  COUNTY HIGHWAY AGENCY                  02
(37) HISTORICAL SIGNIFICANCE-   NOT ELIGIBLE       5

********** CONDITION ********** CODE
(58) DECK                                           7
(59) SUPERSTRUCTURE                                 7
(60) SUBSTRUCTURE                                   3
(61) CHANNEL & CHANNEL PROTECTION                   6
(62) CULVERTS                                       N

********* LOAD RATING AND POSTING ********* CODE
(31) DESIGN LOAD-   OTHER OR UNKNOWN                0
(63) OPERATING RATING METHOD-  ALLOWABLE STRESS     2
(64) OPERATING RATING-                           26.3
(65) INVENTORY RATING METHOD-  ALLOWABLE STRESS     2
(66) INVENTORY RATING-                           18.1
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS  5
(41) STRUCTURE OPEN, POSTED OR CLOSED-              A
     DESCRIPTION-  OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE
(67) STRUCTURAL EVALUATION                          3
(68) DECK GEOMETRY                                  6
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL         N
(71) WATER ADEQUACY                                 8
(72) APPROACH ROADWAY ALIGNMENT                     4
(36) TRAFFIC SAFETY FEATURES                     0000
(113) SCOUR CRITICAL BRIDGES                        U

********** PROPOSED IMPROVEMENTS **********
(75) TYPE OF WORK-                          CODE
(76) LENGTH OF STRUCTURE IMPROVEMENT                M
(94) BRIDGE IMPROVEMENT COST
(95) ROADWAY IMPROVEMENT COST
(96) TOTAL PROJECT COST
(97) YEAR OF IMPROVEMENT COST ESTIMATE
(114) FUTURE ADT                                  105
(115) YEAR OF FUTURE ADT                         2028

********** INSPECTIONS **********
(90) INSPECTION DATE   09/08 (91) FREQUENCY    24  MO
(92) CRITICAL FEATURE INSPECTION:      (93) CFI DATE
  A) FRACTURE CRIT DETAIL-    NO      MO  A)
  B) UNDERWATER INSP-         NO      MO  B)
  C) OTHER SPECIAL INSP-      NO      MO  C)
```

Printed on: Monday 11/17/2008 12:24 PM

FIELD REVIEW FORM

Local Agency: County of San Luis Obispo
Project Number: BRLO-5949(127)
Project Name: Cypress Mountain Drive at Klau Creek Bridge Replacement
Field Review Date:
Locator (Dst/Co/Rte/PM/Agncy): 05-SLO-0-CR
Bridge No.: 49C0033

1. PROJECT LIMITS: Cypress Mountain Drive Bridge about 2 miles south of Klau Mine Rd

Net Length: 0.1 miles

2. WORK DESCRIPTION: Replace the existing one-span timber stringer bridge with a timber plank deck on stone masonry abutments with a concrete bridge

ITS project or element: Yes ☐ No ☒ If yes, is it a Major ITS ☐ or a Minor ITS ☐

3. PROGRAMMING DATA — FTIP (MPO/RTPA): SLOCOG — FY: 11 — Page:
Amendment No.: 1 — FTIP PPNO: n/a — FHWA Approval Date:
Federal Funds: $981,000 — Phases: PE ☒ R/W ☐ Const ☒
Air Basin: _____ (CMAQ only)

4. FUNCTIONAL CLASSIFICATION:

URBAN ☐		RURAL ☒	
Principal Arterial:	☐	Principal Arterial:	☐
Minor Arterial:	☐	Minor Arterial:	☐
Collector:	☐	Major Collector:	☐
Local::	☐	Minor Collector:	☒
		Rural Local:	☐

5. STEWARDSHIP CATEGORY
FHWA Full Oversight (Stewardship): Yes ☐ No ☒
State-Authorized (Stewardship): Yes ☐ No ☒
(a) DLAE oversight: Yes ☒ No ☐
(b) District Construction oversight: Yes ☐ No ☒
ITS project or element requiring FHWA oversight per stewardship: Yes ☐ No ☐

6. CALTRANS ENCROACHMENT PERMIT Is it required? Yes ☐ No ☒

7. COST ESTIMATE BREAKDOWN (Including Structures)

		$1,000's	Fed. Participation	
PE	Environmental Process	$60.00	Yes ☒	No ☐
	Design	$84.00	Yes ☒	No ☐
	System Manager/Integrator		Yes ☐	No ☐
CONST	Const. Contract	$720.00	Yes ☒	No ☐
	Const. Engineer.	$87.00	Yes ☒	No ☐
R/W	Preliminary R/W Work	$10.00	Yes ☐	No ☐
	Acquisition:		Yes ☐	No ☐
	(No. of Parcels ____)		Yes ☐	No ☐
	(Easements ____)	$20.00	Yes ☐	No ☐
	(Right of Entry ____)		Yes ☐	No ☐
	RAP (No. Families)		Yes ☐	No ☐
	RAP (No. Bus. ___)		Yes ☐	No ☐
	Utilities (Exclude if included in contract items)		Yes ☐	No ☐
	TOTAL COST	$981.00		

7a. Value Engineering Analysis Required? Yes ☐ No ☒
(Yes, if total project costs are
$25M or more on the Federal-aid System, or
$20M or more for bridges)

8. PROPOSED FUNDING

		Total Cost				
Grand Total		$981,000				
Federal Program	#1 HBRR	$981,000	Fed.	$981,000	Reimb. Ratio	100%
(Name/App. Code)	#2	$	Fed.	$	Reimb. Ratio	
Matching Funds Breakdown	Local:			$		%
	State:			$		%
	Other:			$		%

State Highway Funds? Yes ☐ Source ____ No ☒
State CMAQ/RSTP Match Eligible Yes ☐ No ☒ Partial ☐
Is the Project Underfunded? (Fed $ < Allowed Reimb.) Yes ☐ No ☒

9. PROJECT ADMINISTRATION

		Agency	Consultant	State
PE	Environ Process	County		
	Design	County		
	System Man./Integ.			
R/W	All Work	County		
CONST ENGR	Contract	County		
CONSTRUCTION	Contract	Contractor		
MAINTENANCE		County		

Will Caltrans be requested to review PS&E? Yes ☒ No ☐

10. SCHEDULES: PROPOSED ADVERTISEMENT DATE 1/2014
Other critical dates: ____

11. PROJECT MANAGER'S CONCURRENCE

Local Entity: County of San Luis Obispo Date: 1/24/11
Signature & Title: [signature], Project Manager Phone No. 805-781-4995
Is field review required? Yes ☒ No ☐

Caltrans (District): District 5, Local Assistance Date: 1/24/2011
Signature & Title: Tamara Mo

12. LIST OF ATTACHMENTS (Include all appropriate attachments if field review is required. See the "[ ]" notation for minimum required attachments for non-NHS projects)
☒ Field Review Attendance Roster or Contacts Roster
☒ Vicinity Map (Required for Construction Type Projects)

IF APPLICABLE (Complete as required depending on type of work involved)
☐ Roadway Data Sheets [Req'd for Roadway projects]
☐ Typical Roadway Geometric Section(s) [Req'd for Roadway projects]
☒ Major Structure Data Sheet [Req'd for HBRR]
☐ Railroad Grade Crossing Data Sheet
☐ Signal Warrants
☐ Collision Diagram

ROADWAY DATA

1. TRAFFIC DATA

Current ADT 100 Year 2006 Future ADT 160 Year Build-Out DHV 16 Trucks 2%
Terrain (Check One) ☐ Flat ☒ Rolling ☐ Mountainous
Design Speed 30 mph
Proposed Speed Zone ☐ Yes mph _____ ☒ No

2. GEOMETRIC INFORMATION

ROADWAY SECTION

Facility	Year Constr.	Min. Curve Radius	Thru Traffic Lanes			Shoulders		Median Width
			No. of Lanes	Total Width	Type	Each Width Lt/Rt	Type	
Exist.	1953		2	14'	graded	n/a		
Prop.	2014		2	20'	HMA	3'/3'	Graded	
Min. Stds. selected: AASHTO ☐ 3R ☐ Local ☒			2	20'	HMA	3'/3'	Graded	
	N/E Contig. Sect.							
	S/W Contig Sect.							

Remarks (If design standard exception is being sought, cite standard and explain fully how it varies):

_____

_____

3. DEFICIENCIES OF EXISTING FACILITY (Mark appropriate one(s))

☐ Pavement Surface
☐ Alignment
☐ Crossfall
☐ Pavement Structure
☐ Drainage
☒ Bridge
☐ Safety (Attach collision diagram or other documentation)
☐ Federal Americans w/ Disabilities Act (ADA), State or Local accessibility requirements
☐ Other (describe below)

Remarks _____

_____

4. TRAFFIC SIGNALS ☐ Yes ☐ New (attach warrants) ☐ Modified ☒ No

5. MAJOR STRUCTURES Structure No.(s) 49C0033 (attach structure data sheet)

6. OTHER TRANSPORTATION FACILITIES (Name)

☒ None _____
☐ Railroad _____ (attach railroad data sheet)
☐ Airports _____ (attach airport data sheet)
☐ Transit _____
☐ Bicycle _____

7. AGENCIES AFFECTED

Utilities [mark appropriate one(s)] ☐ Telephone ☐ Electrical ☐ Gas
☐ Water ☐ Irrigation
☐ Other ☐ Sanitary

Major Utility Adjustment: _____

High Risk Facilities: _____

Other: _____

Remarks: _____

(Attachment to Field Review Form)

MAJOR STRUCTURE DATA

(Attach a separate sheet for each structure)

Project Number BRLO-5949(127)

Bridge Name (facility crossed) Cypress Mountain Drive at Klau Creek Bridge

State Br. No. 49C-0033 Date Constructed 1953 Historical Bridge Inv. Category 5

Road Name Cypress Mountain Drive Location 2 miles south of Klau Mine Road

STRUCTURE DATA

	Existing	Proposed	Minimum AASHTO Standards
Structure Type	Timber	Concrete	N/A
Structure Length	28'	TBD	N/A
Spans (No. & Length)	1	1	N/A
Clear Width (curb to curb)	14'	26'	22'
Shoulder Width	Lt Rt	3' Lt 3' Rt	2' Lt 2' Rt
Sidewalks or bikeway width	Lt Rt	Lt Rt	Lt Rt
Total Br. Width	15'	28'-10"	24'-10"
Total Appr. Rdwy. Width		26' (10' lanes, 3' graded shoulders)	22' (9' lanes, 2' graded shoulders)

1. Preliminary Engineering by County
2. Design by County
3. Foundation Investigation by Consultant
4. Hydrology Study by County

Detour, Stage construction, or Close Road Stage Construction

Length of Detour _____

Resident Engineer for Bridge Work: ☒ Agency ☐ Consultant (On Retainer as City/County Engineer)

Responsible Local Official _____

Discuss any special conditions; for example, federal ADA, state or local accessibility requirements, or proposed design exceptions.

_____

_____

ESTIMATED STRUCTURE AND RELATED COSTS:

Bridge Cost		Federally Participating Yes	No
Construct Bridge	$339,000	☒	☐
Bridge Removal	$10,000	☒	☐
Slope Protection	$35,000	☒	☐
Channel Work	$18,000	☒	☐
Detour - Stage Construction	$35,000	☒	☐

Approach Roadway	$86,000	☒	☐
Preliminary Engineering	$144,000	☒	☐
Construction Engineering	$87,000	☒	☐
Right of Way Costs	$30,000	☒	☐
Utility Relocation	n/a	☐	☐
Mobilization	$53,000	☒	☐
Total	$981,000		

Type of HBRR funds: Check one (Major type if more than one)

- ☐ Seismic/Voluntary (88.53% Fed. Share)
- ☐ Rehabilitation (80%)
- ☒ Replacement (88.53%)
- ☐ Railing (88.53%)
- ☐ Painting (88.53%)
- ☐ Painting (80%)
- ☐ Special (80%)
- ☐ Low Water Xing (80%)

Summarize HBRR funded costs of above estimate: (HBRR Federal-aid + local match for HBRR only)

Indicate the estimated date for Federal-aid Authorization & Obligation or Check the box:

		Date:	
Prelim. Eng.	$144,000	3/2011	☐ Not needed for this project
Right of Way	$30,000	1/2013	☐ Not needed for this project
Construction.	$807,000	1/2014	☐ Not needed for this project
Total	$981,000		

VALUE ENGINEERING ANALYSIS

Required (Yes, if total project costs for bridge are $20M or more) ☐ Yes ☒ No

Remarks _____

******* The following must be attached if the project is funded by the HBRR Program:**

1. Plan view of proposed improvements.
2. Typical Section.

******* The following is recommended:**

1. Right of way map to determine whether right of way acquisition or construction easements are necessary.

(Attachment to Field Review Form)

FIELD REVIEW ATTENDANCE ROSTER

Date: JANUARY 24, 2011

Project No./Name: BRLO-5949(127) - Cypress Mountain Drive at Klau Creek Bridge (49C0033)

Project Location: Cypress Mountain Drive Klau Creek Bridge

	Name (Please Print)	(Organization)	(Phone Number)
1.	TAMMY MAR	CALTRANS - LOCAL ASSISTANCE	(805) 542-4605
2.	Kelly Sypolt	County of SLO PW	(805) 781-5256
3.	KATIE DERRYBERRY	" " " "	" " -4969
4.	Cathy Stettler	Caltrans EW	805-549-3797
5.	Cori Marsalek	County SLO PW	805-781-4995
6.	ROBERT ZEROFF	CA-SLA	916 337-8873
7.	TOM EDELL	CT-510	549-3019
8.			
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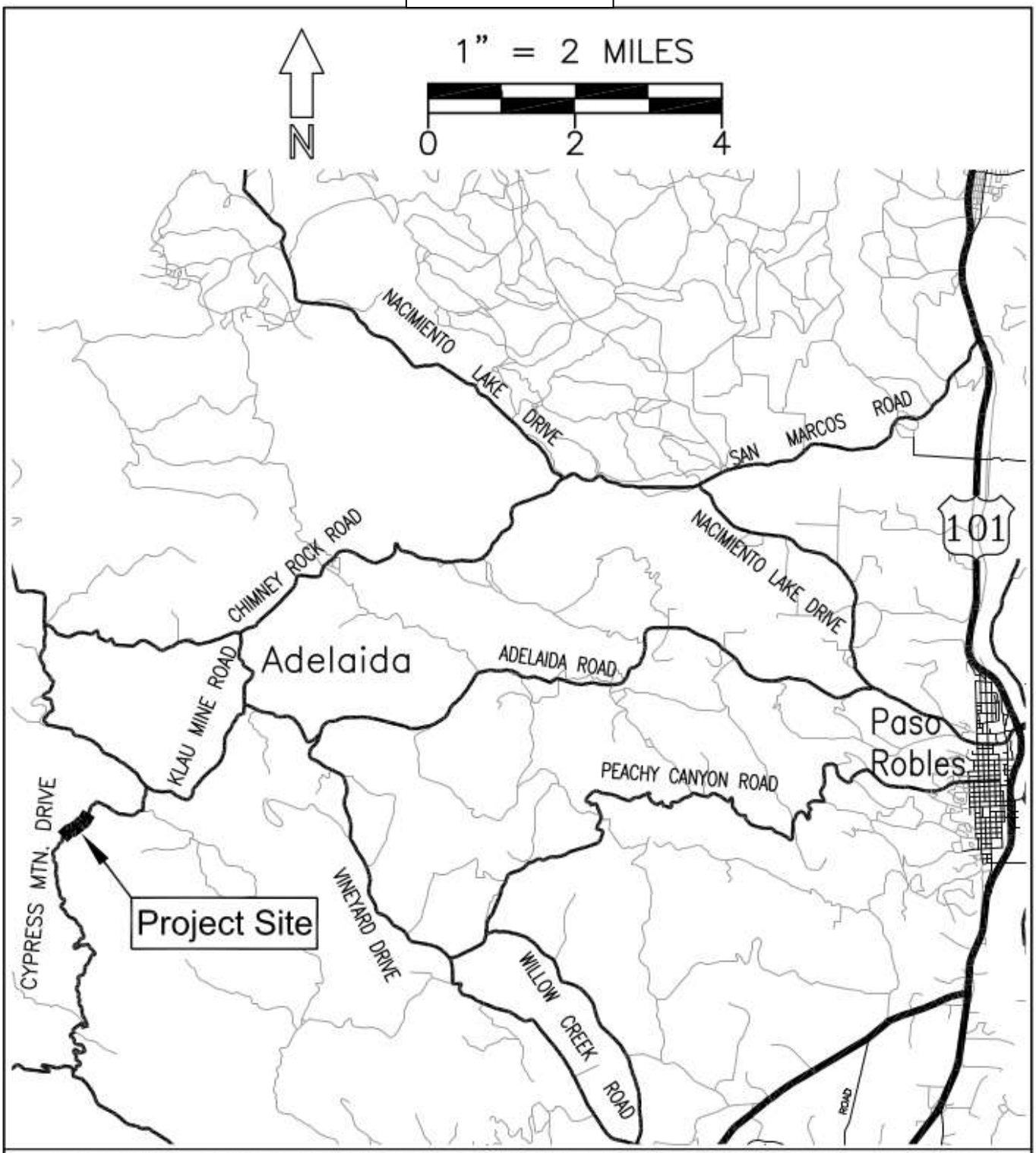


SAN LUIS OBISPO COUNTY PUBLIC WORKS DEPT. CONTRACT No. 300432

CYPRESS MOUNTAIN ROAD BRIDGE AT KLAU CREEK BRIDGE REPLACEMENT (BRIDGE NO. 49C-0033)

VICINITY MAP

ADELAIDA

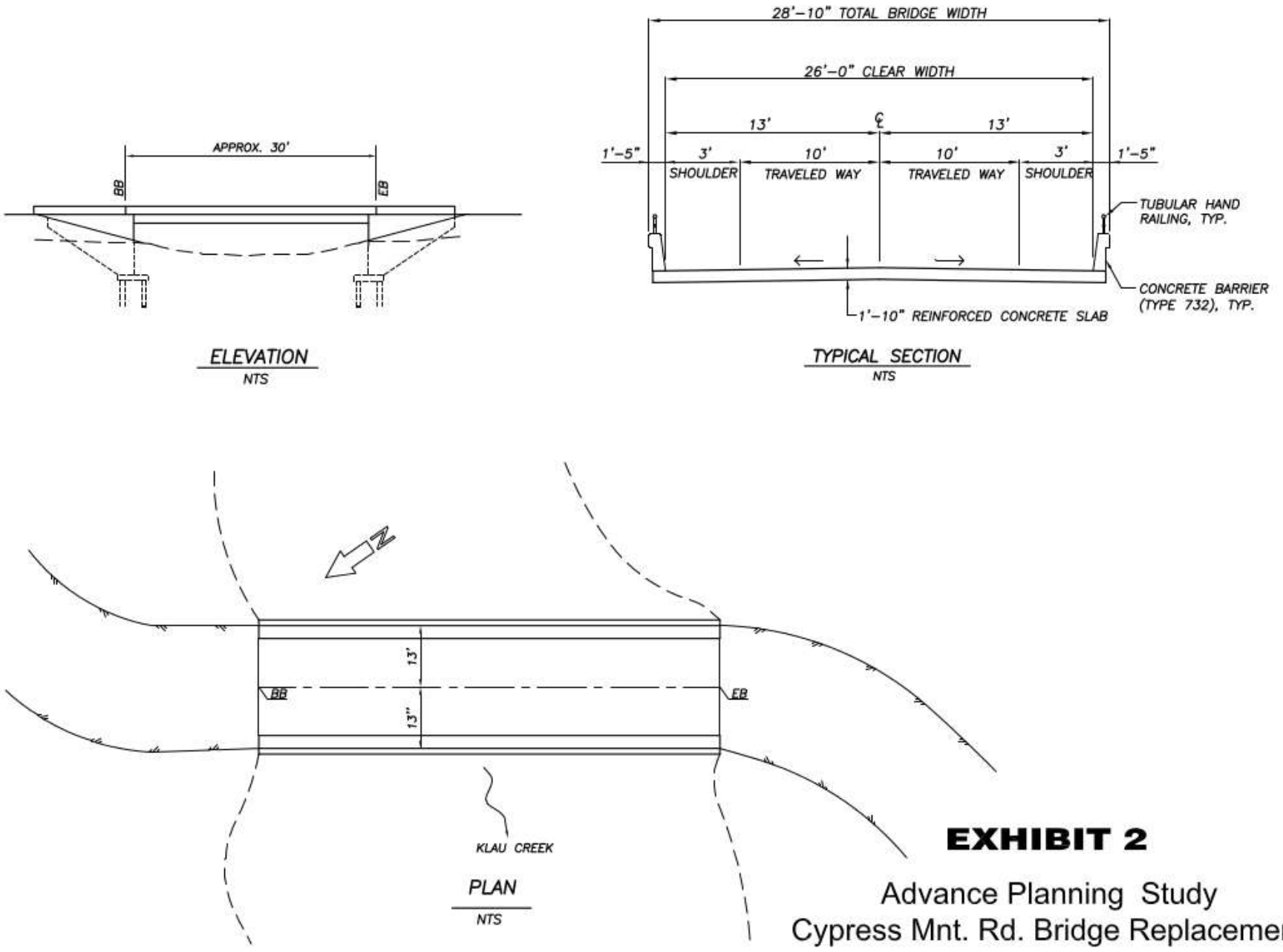


EXHIBIT 6-D HBRRP SCOPE/COST/SCHEDULE CHANGE REQUEST

See Section 6.7.1, Chapter 6 of the LAPG for information about this form.

State Bridge No.	49C-0033 Local Bridge No. 5263-B3
Project Number	BRLO-5949(127) (Caltrans to provide project number for new projects)
Responsible Agency	SAN LUIS OBISPO COUNTY - DEPT. OF PUBLIC WORKS
Project Location	CYPRESS MOUNTAIN DRIVE AT KLAU CREEK
Project Limits	CYPRESS MOUNTAIN DRIVE BRIDGE AT KLAU CREEK, 1.9 MILES SW OF KLAU ROAD, SAN LUIS OBISPO COUNTY, CA
Type of Work	BRIDGE REPLACEMENT
Work Description	REPLACEMENT OF TIMBER BRIDGE WITH CONCRETE BRIDGE

1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):

PE cost has increased due to the following:

- The unanticipated presence of California Red-Legged Frogs
- The difficulty in completing the topographic survey due to lack of documentation
- The need to utilize a consultant to complete the technical studies for the environmental document
- Complexity of the geology and geometry of the site

2. If this is a request for scope change (not cost or schedule) please prepare a new or revised Exhibit 6-A "HBRRP Application/Scope Definition Form." Will a revised Exhibit 6-A be submitted?

☐ Yes ☐ No ☒ Not Applicable

3. If the answer to the above question is "Yes," please skip to the signoff on this form and submit this form with the Exhibit 6-A package.

4. Identify and justify "betterments" that are HBRP participating but are not related to the major deficiencies of this bridge. Attach additional pages as needed.

None

5. Refer to Exhibit 6-D. Identify and justify specific items requiring Caltrans funding approval. Attach additional pages as needed.

PE phase requires additional funds and will exceed guideline of 25% of CON.

6. Other comments (identify non-HBRRP participating work):

N/A

Estimated Construction Costs:

Exclude Contingencies, Supplementary Work, and Construction Engineering

	HBRRP Participating	NOT HBRRP Participating
Construct	$339,000.00	$0.00
Bridge Removal	$10,000.00	$0.00
Slope Protection	$35,000.00	$0.00
Channel Work	$18,000.00	$0.00
Detour – Stage Construction	$35,000.00	$0.00
Approach Roadway	$86,000.00	$0.00
Utility Relocation	$0.00	$0.00
Mobilization	$53,000.00	$0.00
Total	**$576,000.00**	**$0.00**

Total Cost	**$576,000.00**

*Items that are not HBBRP participating could be participating through other federal programs. See the LAPG for other eligibility requirements of other programs. Local agencies that are unsure which project costs are HBRRP participating should contact the DLAE/SLA for resolution.

Not that the total of the HBRRP participating costs should carry over into the construction line (direct costs) on the next page.

Summary of HBRRP Participating Costs

Please indicate the HBRRP total participating (eligible for reimbursement) costs for this project. Based on the amounts below and the federal reimbursement rate, Caltrans will program (reserve) the HBRRP funds needed for this project. Other federal funds (RSTP, TEA, etc.) needed for this project should be shown in the Field Review form Exhibit 7-B from Chapter 7 of the LAPM.

Target dates represent a commitment by the local agency when the project will need HBRRP funding. Failure to meet target dates may cause funds to be reprogrammed to other projects by other local agencies. The reprogramming of HBRRP funds is at the discretion of Caltrans.

PE = Preliminary Engineering (Total not to exceed the greater of $75 K or 25% of CON and consultant contract management and quality assurance not to exceed 15% of consultant costs).
R/W = Right of Way
CE = Construction Engineering (Not to exceed 15% of CON).
CON = Construction
Cont = Contingency (including supplement work) not to exceed 25% (preliminary estimate) nor 10% of CON for final design $5 K min.

Enter CE Rate: 15%

Enter Contingency Rate: 25%

	Direct Costs		Indirect Costs*		HBRRP Participating $**	Target Dates
PE	$294,000.00	+	0.00	=	$294,000.00	3/1/2012
R/W					$30,000.00	06/2013
CON	$576,000.00					
CE	$87,000.00		0.00			
Cont	$144,000.00					
Subtotal	$807,000.00	+	0.00	=	$807,000.00	01/2015
			Total Participating Cost		$1,131,000.00	
Enter Fed. Match Rate: 100%			HBRRP Requested		$1,131,000.00	

* See Chapter 5, "Accounting/Invoices," of the LAPM for approval of indirect costs.

** Participating costs exclude ineligible work items. Please review the HBRR Program Guidelines for reimbursable scopes of work and program cost limits. Other federal funds will be shown in the Field Review form, Exhibit 7-B, Chapter 7, "Field Review," of the LAPM.

Caltrans, please notify this agency to confirm this project has been programmed in the HBRRP Multi-Year Plan. I understand that reimbursable work shall not commence until a request for

authorization (E76) has been processed by Caltrans and a notice to proceed has been received by this agency.

I certify that this project is in compliance with Chapter 6 (HBRRP) of the *Local Assistance Program Guidelines*.

Two (2) copies plus one original of this application (with attachments) will be included in the transmittal package to the DLAE.

Local Agency Project Manager — Date 1/11/12

Attachments (only if Question 3 is answered "No"):
1) Exhibit 6-B, LAPG, HBRRP Special Cost Approval Checklist
2) ☐ Other: _____
3) Request for Authorization is included in this application package for expedited processing?
   ☐ Yes ☒ No

Thank you for assembling the application package. Please send this package to your District Local Assistance Engineer to start the programming process. Please e-mail your suggestions to improve this form to eric.bost@dot.ca.gov or shannon.mlcoch@dot.ca.gov.

For Caltrans use only:

I have reviewed this application for completeness and have forwarded copies to the Office of Program Management and SLA.

☒ I recommend approval. (Attach comments as needed.)
☐ I do not recommend approval for the following reasons: See attached memo/e-mail to the Office of Program Management.
☐ I request SLA review of this application for the following reasons: (Attach memo/e-mail justifying increased Caltrans oversight).

Tammy Mon — DLAE or authorized staff — Date 1/11/12

EXHIBIT 6-D HBRRP SCOPE/COST/SCHEDULE CHANGE REQUEST

See Section 6.7.1, Chapter 6 of the LAPG for information about this form.

State Bridge No.	49C0033	Local Bridge No.	C.R. 5263, Bridge 3
Project Number	BRLO5949(127)	(Caltrans to provide project number for new projects)	
Responsible Agency	County of San Luis Obispo – Public Works Department		
Project Location	Cypress Mountain Road at Klau Creek		
Project Limits	Cypress Mountain Road Bridge at Klau Creek, 1.9 miles SW of Klau Road, San Luis Obispo County, California		
Type of Work	HBP - Bridge Replacement		
Work Description	Replacement of timber bridge with a concrete bridge		

1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):

THIS IS A REQUEST FOR A P.E. COST INCREASE AND SCHEDULE CHANGE, ONLY.

The County is requesting additional PE funds. The previous approved PE funding is $294,000 and this request is for $484,700. The estimated project construction cost (without contingencies and construction engineering) is $576,000.

The primary reason for the PE costs being higher than the guideline of 25% is because the project is replacing a relatively small bridge in a site that has complex environmental issues, along with full hydraulic analysis, geotechnical studies and seismic design requirements. These studies all need to be completed, but since the bridge length is minimal (only 40-ft) at this site, the construction cost is low, which skews the PE percentages well over 25% of the construction costs.

Since the previous request, projected PE cost has increased due to the following:

- Increased difficulty in placing a temporary detour road within environmental constraints.
- Unanticipated archaeological site.
- Unanticipated research and field surveying required to establish County's historic existing right-of-way.

NOTE: this project is 100% federally funded by HBP and federal toll credits.

V:_PROJECTS\WBS 300432 - Cypress Mountain Drive at Klau Creek\Caltrans\Preliminary Engineering\Additional Request for PE 01-2012\EXHIBIT 6D 2ND COST REQUEST - KCT 1-10-13.doc

If this is a request for scope change (not cost or schedule) please prepare a new or revised Exhibit 6-A "HBRRP Application/Scope Definition Form." Will a revised Exhibit 6-A be submitted?

COST AND SCHEUDLE CHANGE ONLY. ☐ Yes ☐ No ☒ Not Applicable

2. If the answer to the above question is "Yes," please skip to the signoff on this form and submit this form with the Exhibit 6-A package.

3. Identify and justify "betterments" that are HBRP participating but are not related to the major deficiencies of this bridge. Attach additional pages as needed.

N/A. No change.

4. Refer to Exhibit 6-B. Identify and justify specific items requiring Caltrans funding approval. Attach additional pages as needed.

N/A. No change.

5. Other comments (identify non-HBRRP participating work):

N/A. No change.

Estimated Construction Costs:

Exclude Contingencies, Supplementary Work, and Construction Engineering

	HBRRP Participating	NOT HBRRP Participating
Construct	339,000	
Bridge Removal	10,000	
Slope Protection	35,000	
Channel Work	18,000	
Detour – Stage Construction	35,000	
Approach Roadway	86,000	
Utility Relocation	0	
Mobilization	53,000	
Total	**576,000**	

Total Cost **576,000**

*Items that are not HBBRP participating could be participating through other federal programs. See the LAPG for other eligibility requirements of other programs. Local agencies that are unsure which project costs are HBRRP participating should contact the DLAE/SLA for resolution.

Not that the total of the HBRRP participating costs should carry over into the construction line (direct costs) on the next page.

Summary of HBRRP Participating Costs

Please indicate the HBRRP total participating (eligible for reimbursement) costs for this project. Based on the amounts below and the federal reimbursement rate., Caltrans will program (reserve) the HBRRP funds needed for this project. Other federal funds (RSTP, TEA, etc.) needed for this project should be shown in the Field Review form Exhibit 7-B from Chapter 7 of the LAPM.

Target dates represent a commitment by the local agency when the project will need HBRRP funding. Failure to meet target dates may cause funds to be reprogrammed to other projects by other local agencies. The reprogramming of HBRRP funds is at the discretion of Caltrans.

PE = Preliminary Engineering (Total not to exceed the greater of $75 K or 25% of CON and consultant contract management and quality assurance not to exceed 15% of consultant costs).
R/W = Right of Way
CE = Construction Engineering (Not to exceed 15% of CON).
CON = Construction
Cont = Contingency (including supplement work) not to exceed 25% (preliminary estimate) nor 10% of CON for final design $5 K min.

Enter CE Rate: 15%

Enter Contingency Rate: 25%

	Direct Costs		Indirect Costs*		HBRRP Participating $**	RFA Target Dates
PE	484,700	+		=	484,700	3/1/2012
R/W					30,000	10/2013
CON	576,000					
CE	87,000					
Cont	144,000					
Subtotal	807,000	+		=	807,000	1/2015
			Total Participating Cost			
Enter Fed. Match Rate:	100%		HBRRP Requested		1,321,700	

* See Chapter 5, "Accounting/Invoices," of the LAPM for approval of indirect costs.

** Participating costs exclude ineligible work items. Please review the HBRR Program Guidelines for reimbursable scopes of work and program cost limits. Other federal funds will be shown in the Field Review form, Exhibit 7-B, Chapter 7, "Field Review," of the LAPM.

Caltrans, please notify this agency to confirm this project has been programmed in the HBRRP Multi-Year Plan. I understand that reimbursable work shall not commence until a request for authorization (E76) has been processed by Caltrans and a notice to proceed has been received by this agency.

I certify that this project is in compliance with Chapter 6 (HBRRP) of the *Local Assistance Program Guidelines*.

Two (2) copies plus one original of this application (with attachments) will be included in the transmittal package to the DLAE.

1/15/13

Kidd C. Immel
Local Agency Project Manager
(805) 781-5981, kimmel@co.slo.ca.us

Attachments (only if Question 3 is answered "No"):
1) Exhibit 6-B, LAPG, HBRRP Special Cost Approval Checklist
2) ☐ Other:
3) Request for Authorization is included in this application package for expedited processing?
   ☐ Yes ☒ No

Thank you for assembling the application package. Please send this package to your District Local Assistance Engineer to start the programming process. Please e-mail your suggestions to improve this form to eric.bost@dot.ca.gov or shannon.mlcoch@dot.ca.gov.

For Caltrans use only:

I have reviewed this application for completeness and have forwarded copies to the Office of Program Management and SLA.

☒ I recommend approval. (Attach comments as needed.)
☐ I do not recommend approval for the following reasons: See attached memo/e-mail to the Office of Program Management.
☐ I request SLA review of this application for the following reasons: (Attach memo/e-mail justifying increased Caltrans oversight).

DLAE or authorized staff — Date: 1/15/13

EXHIBIT 6-D HBRRP SCOPE/COST/SCHEDULE CHANGE REQUEST

See Section 6.7.1, Chapter 6 of the LAPG for information about this form.

State Bridge No.	49C-0033 Local Bridge No. 5263-B3
Project Number	BRLO-5949(127) (Caltrans to provide project number for new projects)
Responsible Agency	SAN LUIS OBISPO COUNTY - DEPT. OF PUBLIC WORKS
Project Location	CYPRESS MOUNTAIN DRIVE AT KLAU CREEK
Project Limits	CYPRESS MOUNTAIN DRIVE BRIDGE AT KLAU CREEK, 1.9 MILES SW OF KLAU ROAD, SAN LUIS OBISPO COUNTY, CA
Type of Work	BRIDGE REPLACEMENT
Work Description	REPLACEMENT OF TIMBER BRIDGE WITH CONCRETE BRIDGE

1. Describe reason for Scope/Cost/Schedule Change (or attach separate pages):

Preliminary Engineering costs have increased by $102,000 due to the following:

- The site is located downstream of an abandoned mercury mine. Sampling of the soil for contamination cost approximately $20,000. Additional work to create a Soil Management Requirements Report and an Occupational Hazard Assessment for inclusion in the contract special provisions is estimated at approximately $12,000. County costs for consultant contract management, quality assurance, and additional coordination with Caltrans are estimated to cost approximately $10,000.
- Additional work to modify the BA and NES for the presence of mercury is estimated at approximately $10,000.
- Additional work to create a Traffic Memo is estimated at approximately $5,000. A Traffic Memo is necessary because there is a potential that the County will need to close the road during active soil disturbance due to the presence of mercury contaminated soil.
- Due to the site constraints and topography, a retaining wall is necessary. It is currently estimate to cost an additional $30,000 for design of the retaining wall and an additional $15,000 for the additional plan sheet.

Construction costs have increased by $475,000 due to the following:

- When the bridge was initially nominated for replacement it was assumed that the replacement bridge would be approximately 30 feet long. Due to the complex site topography and hydrology, the replacement bridge is currently designed at 54 feet long and a retaining wall is necessary. This is currently estimated to cost an additional $275,000 to construct.
- The presence of mercury contaminated soil will result in requirements for stockpiling, sampling, and disposal of material, air monitoring by a certified industrial hygienist, wash facilities for equipment, and additional personal protection equipment. This is currently estimated to cost an additional $200,000 (20% of construction).

Construction Engineering Costs have increased by $123,200 due to the following:

- The increase in Construction costs to 15% of the current CON value accounts for $70,650 of this additional money.
- The remaining $52,550 brings the Construction Engineering to 20% of the Construction costs. This is typical for County projects due to construction staking and environmental monitoring requirements.

2. If this is a request for scope change (not cost or schedule) please prepare a new or revised Exhibit 6-A "HBRRP Application/Scope Definition Form." Will a revised Exhibit 6-A be submitted?

☐ Yes ☐ No ☒ Not Applicable

3. If the answer to the above question is "Yes," please skip to the signoff on this form and submit this form with the Exhibit 6-A package.

4. Identify and justify "betterments" that are HBRP participating but are not related to the major deficiencies of this bridge. Attach additional pages as needed.

None

5. Refer to Exhibit 6-D. Identify and justify specific items requiring Caltrans funding approval. Attach additional pages as needed.

PE cost increase to $586,700 (56% of CON).

CE cost increase to $210,200 (20% of CON).

6. Other comments (identify non-HBRRP participating work):

N/A

Estimated Construction Costs:

Exclude Contingencies, Supplementary Work, and Construction Engineering

	HBRRP Participating	NOT HBRRP Participating	
Construct	$814,000.00	$539,000.00	$0.00
Bridge Removal	$10,000.00		$0.00
Slope Protection	$35,000.00		$0.00
Channel Work	$18,000.00		$0.00
Detour – Stage Construction	$35,000.00		$0.00
Approach Roadway	$86,000.00	$361,000.00	$0.00
Utility Relocation	$0.00		$0.00
Mobilization	$53,000.00		$0.00
Total	**$1,051,000.00**		**$0.00**
		Total Cost	**$1,051,000.00**

*Items that are not HBBRP participating could be participating through other federal programs. See the LAPG for other eligibility requirements of other programs. Local agencies that are unsure which project costs are HBRRP participating should contact the DLAE/SLA for resolution.

Not that the total of the HBRRP participating costs should carry over into the construction line (direct costs) on the next page.

Summary of HBRRP Participating Costs

Please indicate the HBRRP total participating (eligible for reimbursement) costs for this project. Based on the amounts below and the federal reimbursement rate, Caltrans will program (reserve) the HBRRP funds needed for this project. Other federal funds (RSTP, TEA, etc.) needed for this project should be shown in the Field Review form Exhibit 7-B from Chapter 7 of the LAPM.

Target dates represent a commitment by the local agency when the project will need HBRRP funding. Failure to meet target dates may cause funds to be reprogrammed to other projects by other local agencies. The reprogramming of HBRRP funds is at the discretion of Caltrans.

PE = Preliminary Engineering (Total not to exceed the greater of $75 K or 25% of CON and consultant contract management and quality assurance not to exceed 15% of consultant costs).
R/W = Right of Way
CE = Construction Engineering (Not to exceed 15% of CON).
CON = Construction
Cont = Contingency (including supplement work) not to exceed 25% (preliminary estimate) nor 10% of CON for final design $5 K min.

Enter CE Rate: 20%

Enter Contingency Rate: 25%

	Direct Costs		Indirect Costs*		HBRRP Participating $**	Target Dates
PE	$586,700.00	+	0.00	=	$586,700.00	3/1/2012
R/W					$30,000.00	01/2015
CON	$1,051,000.00					
CE	$210,200.00		0.00			
Cont	**$262,750.00**					
Subtotal	$1,523,950.00	+	0.00	=	$1,523,950.00	01/2016
			Total Participating Cost		$2,140,650.00	
Enter Fed. Match Rate: 100%			HBRRP Requested		$2,140,650.00	

* See Chapter 5, "Accounting/Invoices," of the LAPM for approval of indirect costs.

** Participating costs exclude ineligible work items. Please review the HBRR Program Guidelines for reimbursable scopes of work and program cost limits. Other federal funds will be shown in the Field Review form, Exhibit 7-B, Chapter 7, "Field Review," of the LAPM.

Caltrans, please notify this agency to confirm this project has been programmed in the HBRRP Multi-Year Plan. I understand that reimbursable work shall not commence until a request for

authorization (E76) has been processed by Caltrans and a notice to proceed has been received by this agency.

I certify that this project is in compliance with Chapter 6 (HBRRP) of the *Local Assistance Program Guidelines*.

Two (2) copies plus one original of this application (with attachments) will be included in the transmittal package to the DLAE.

Local Agency Project Manager — Date: 2/20/14

Attachments (only if Question 3 is answered "No"):
1) Exhibit 6-B, LAPG, HBRRP Special Cost Approval Checklist
2) ☐ Other: ____
3) Request for Authorization is included in this application package for expedited processing?
   ☐ Yes ☒ No

Thank you for assembling the application package. Please send this package to your District Local Assistance Engineer to start the programming process. Please e-mail your suggestions to improve this form to eric.bost@dot.ca.gov or shannon.mlcoch@dot.ca.gov.

For Caltrans use only:

I have reviewed this application for completeness and have forwarded copies to the Office of Program Management and SLA.

☒ I recommend approval. (Attach comments as needed.)
☐ I do not recommend approval for the following reasons: See attached memo/e-mail to the Office of Program Management.
☐ I request SLA review of this application for the following reasons: (Attach memo/e-mail justifying increased Caltrans oversight).

DLAE or authorized staff — Date: 2-20-14

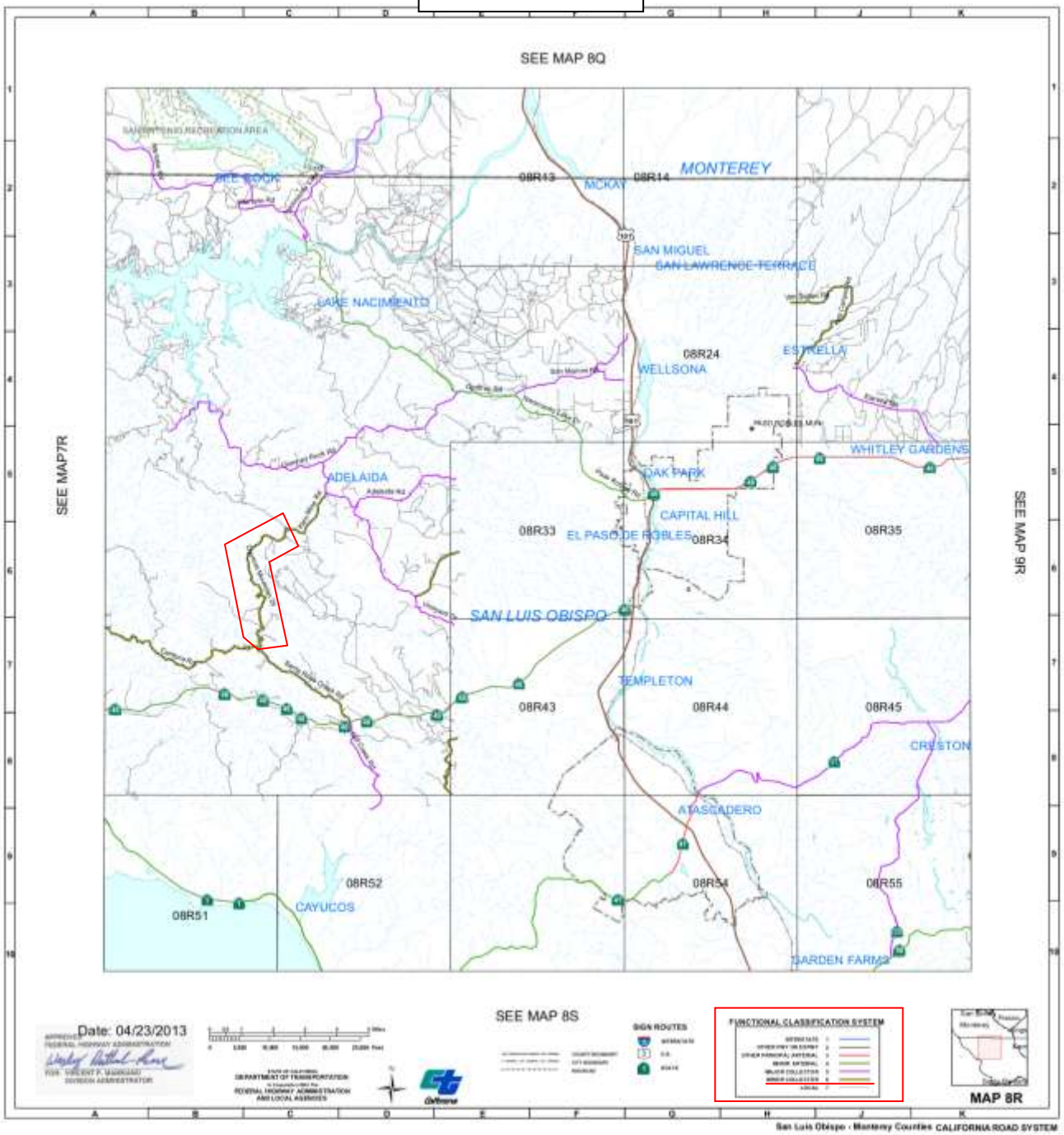
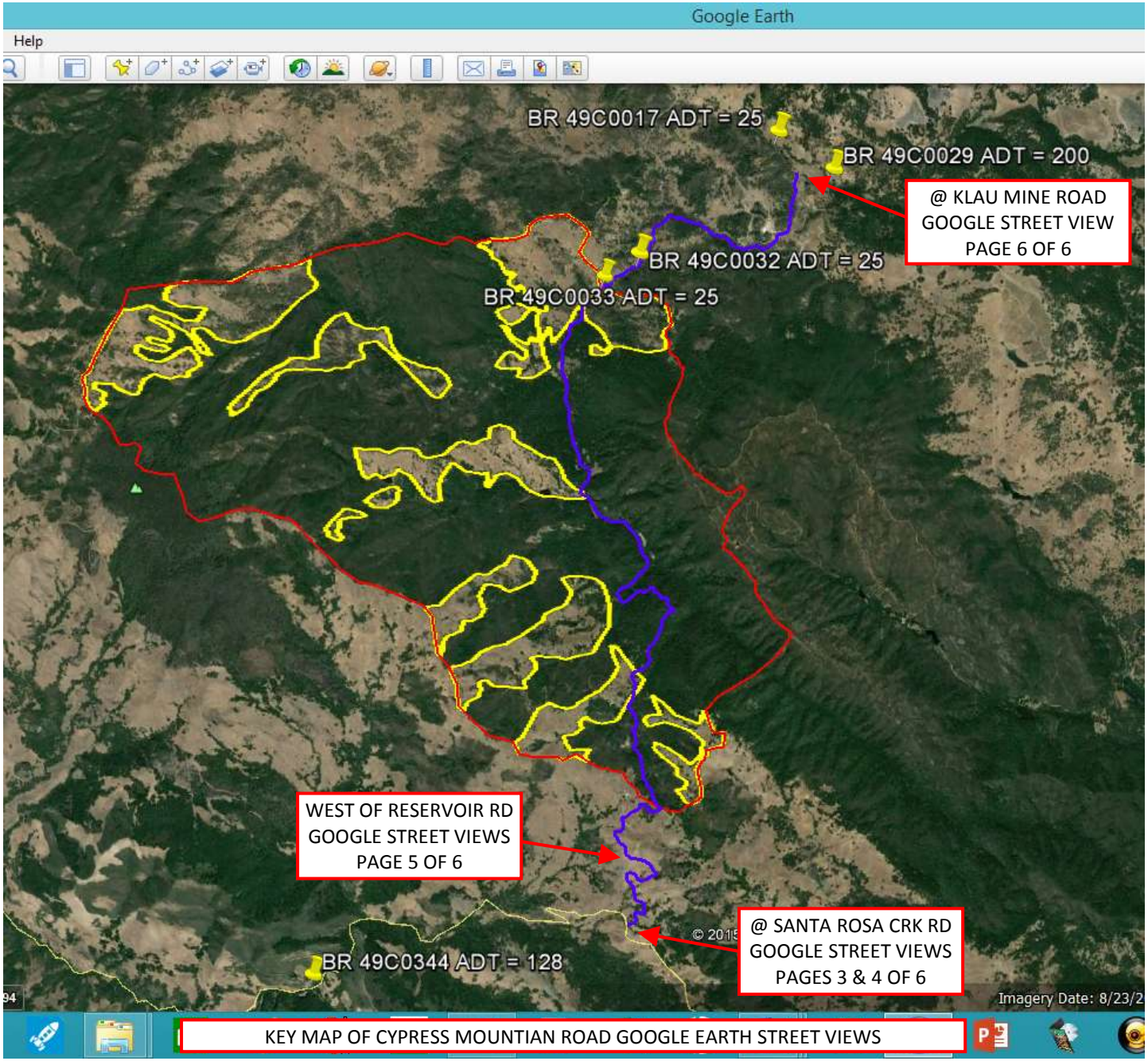
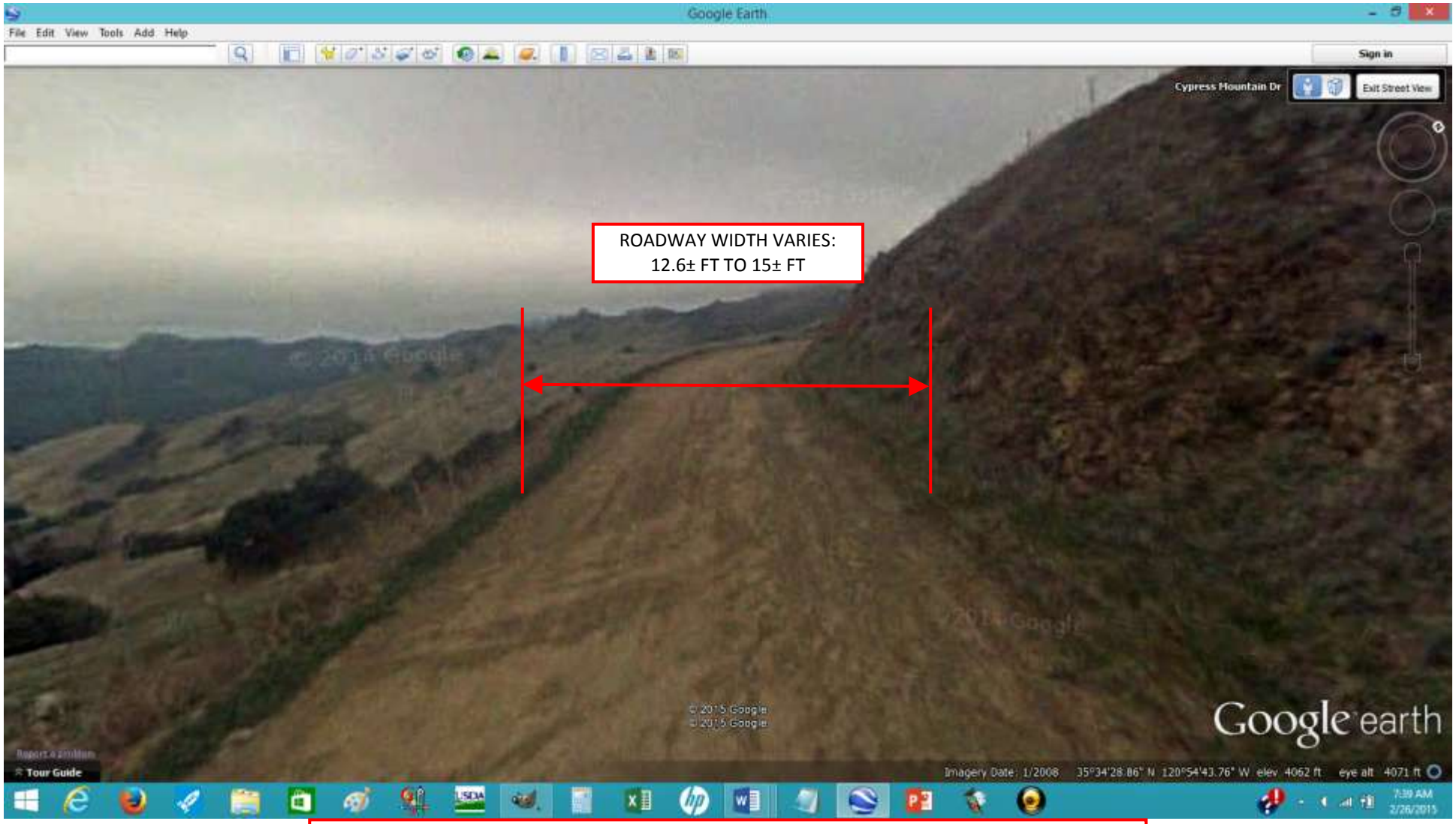

SEE MAP 8Q
SEE MAP7R
SEE MAP 9R
SEE MAP 8S
MONTEREY
MCKAY
SAN MIGUEL
SAN LAWRENCE TERRACE
LAKE NACIMIENTO
WELLSONA
ESTRELLA
WHITLEY GARDENS
OAK PARK
ADELAIDA
CAPITAL HILL
EL PASO DE ROBLES
SAN LUIS OBISPO
TEMPLETON
CRESTON
ATASCADERO
CAYUCOS
GARDEN FARMS
08R13
08R14
08R24
08R33
08R34
08R35
08R43
08R44
08R45
08R51
08R52
08R54
08R55
Date: 04/23/2013
SIGN ROUTES
FUNCTIONAL CLASSIFICATION SYSTEM
MAP 8R
San Luis Obispo - Monterey Counties CALIFORNIA ROAD SYSTEM

EXHIBIT 6
PAGE 2 OF 6

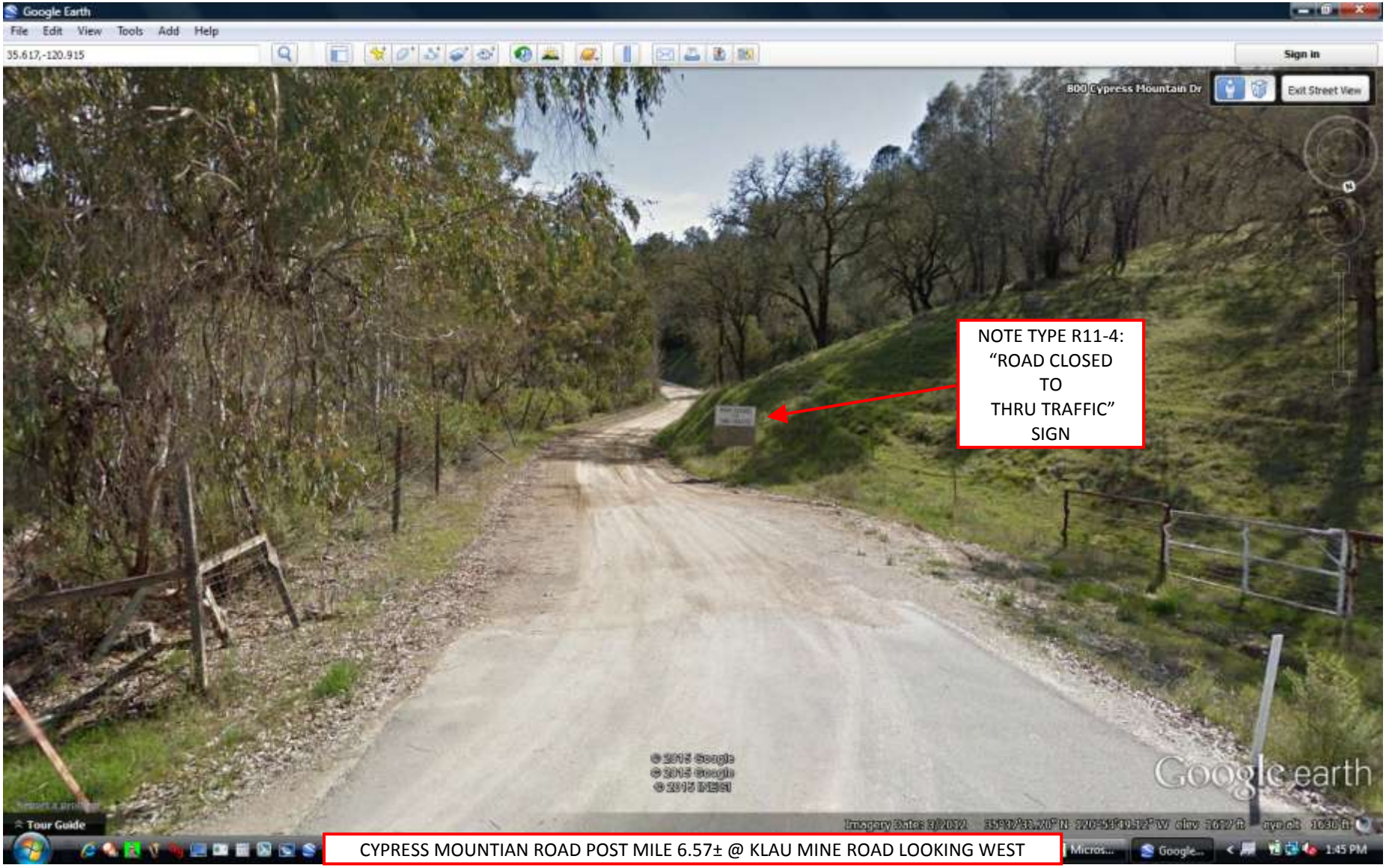


CYPRESS MOUNTIAN ROAD POST MILE 0.0 @ SANTA ROSA CREEK ROAD LOOKING EAST

CYPRESS MOUNTIAN ROAD POST MILE 0.0 @ SANTA ROSA CREEK ROAD LOOKING EAST

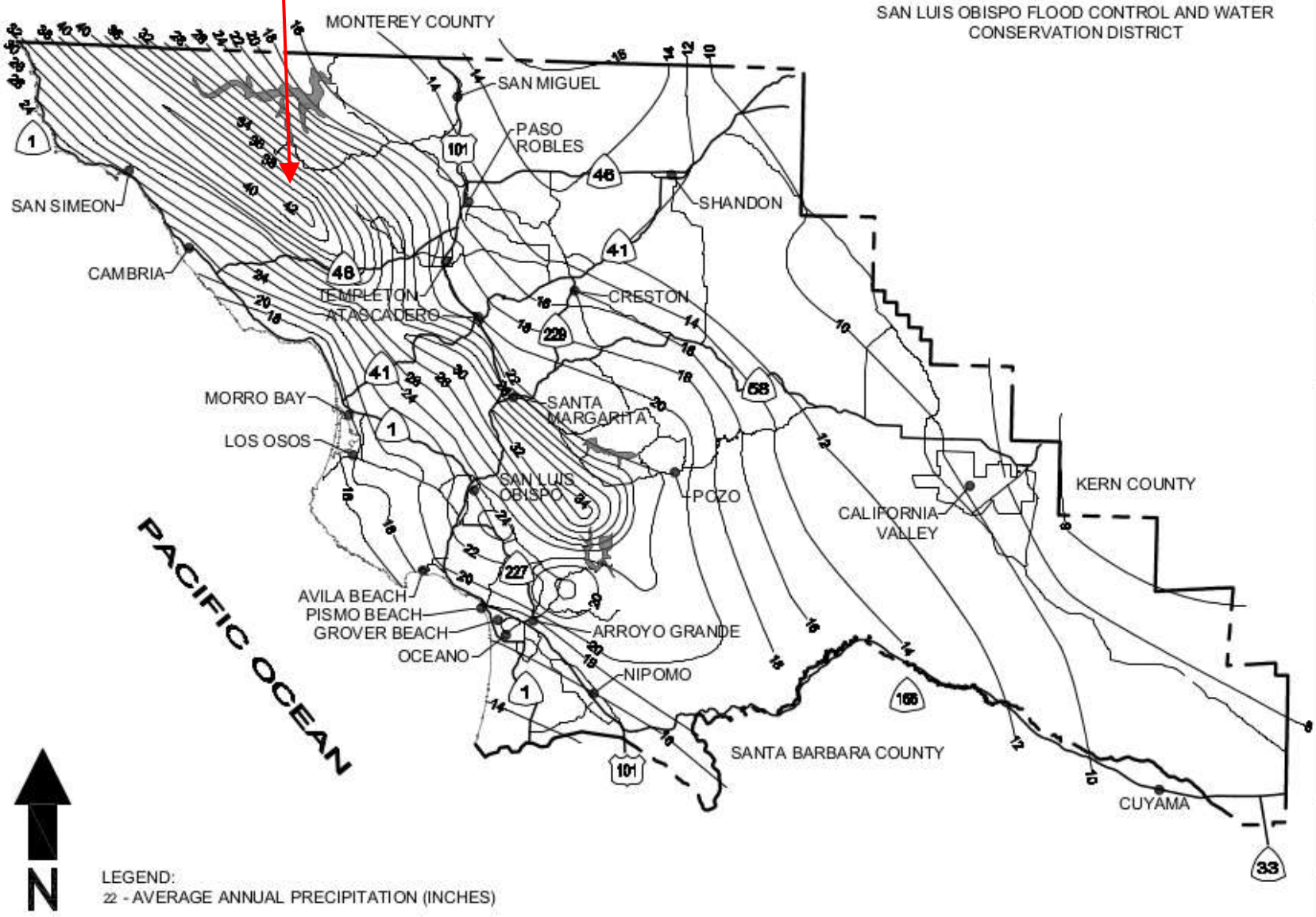


CYPRESS MOUNTIAN ROAD POST MILE 0.77± WEST OF RESERVIOR ROAD LOOKING NORTH-EAST



CYPRESS MOUNTIAN ROAD POST MILE 6.57± @ KLAU MINE ROAD LOOKING WEST

MAXIMUM AVERAGE ANNUAL PRECIPITAION FOR BRIDGE 49C0033 42 INCHES



SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

AVERAGE ANNUAL RAINFALL

Scale: NTS
Issued: Aug. 2006
Drawing No: H-1
Sheet No: 1 OF 1

Revisions

Description	Approved	Date
Description	Approved	Date

Figure 819.2C
Regional Flood-Frequency Equations

NORTH COAST REGION[2]

Q_2	$=3.52$	$A^{0.90}$	$P^{0.89}$	$H^{-0.87}$
Q_5	$=5.04$	$A^{0.88}$	$P^{0.91}$	$H^{-0.35}$
Q_{10}	$=6.21$	$A^{0.88}$	$P^{0.93}$	$H^{-0.27}$
Q_{25}	$=7.64$	$A^{0.87}$	$P^{0.94}$	$H^{-0.17}$
Q_{50}	$=8.57$	$A^{0.87}$	$P^{0.96}$	$H^{-0.08}$
Q_{100}	$=9.23$	$A^{0.87}$	$P^{0.97}$	

SIERRA REGION

Q_2	$=0.24$	$A^{0.88}$	$P^{1.58}$	$H^{-0.80}$
Q_5	$=1.20$	$A^{0.82}$	$P^{1.37}$	$H^{-0.64}$
Q_{10}	$=2.63$	$A^{0.80}$	$P^{1.25}$	$H^{-0.58}$
Q_{25}	$=6.55$	$A^{0.79}$	$P^{1.12}$	$H^{-0.52}$
Q_{50}	$=10.4$	$A^{0.78}$	$P^{1.06}$	$H^{-0.48}$
Q_{100}	$=15.7$	$A^{0.77}$	$P^{1.02}$	$H^{-0.43}$

NORTHEAST REGION[3,4]

Q_2	$=22$	$A^{0.40}$
Q_5	$=46$	$A^{0.45}$
Q_{10}	$=61$	$A^{0.49}$
Q_{25}	$=84$	$A^{0.54}$
Q_{50}	$=103$	$A^{0.57}$
Q_{100}	$=125$	$A^{0.59}$

CENTRAL COAST REGION

Q_2	$=0.0061$	$A^{0.92}$	$P^{2.54}$	$H^{-1.10}$
Q_5	$=0.118$	$A^{0.91}$	$P^{1.95}$	$H^{-0.79}$
Q_{10}	$=0.583$	$A^{0.90}$	$P^{1.61}$	$H^{-0.64}$
Q_{25}	$=2.91$	$A^{0.89}$	$P^{1.26}$	$H^{-0.50}$
Q_{50}	$=8.20$	$A^{0.89}$	$P^{1.03}$	$H^{-0.41}$
Q_{100}	$=19.7$	$A^{0.88}$	$P^{0.84}$	$H^{-0.33}$

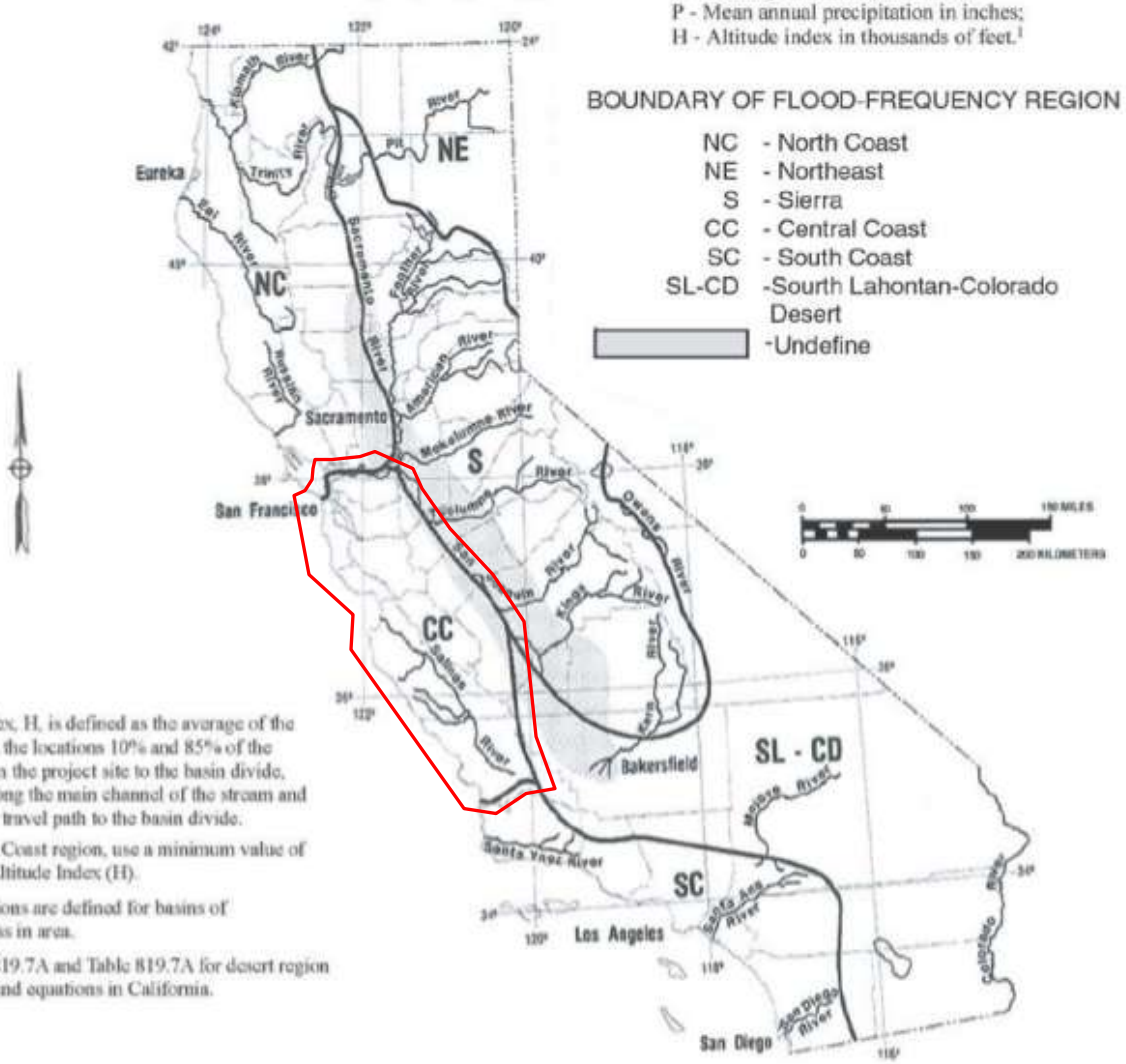
SOUTH LAHONTAN-COLORADO DESERT REGION[3,4]

Q_2	$=7.3$	$A^{0.30}$
Q_5	$=53.0$	$A^{0.44}$
Q_{10}	$=150$	$A^{0.53}$
Q_{25}	$=410.0$	$A^{0.63}$
Q_{50}	$=700.0$	$A^{0.68}$
Q_{100}	$=1080.0$	$A^{0.71}$

SOUTH COAST REGION

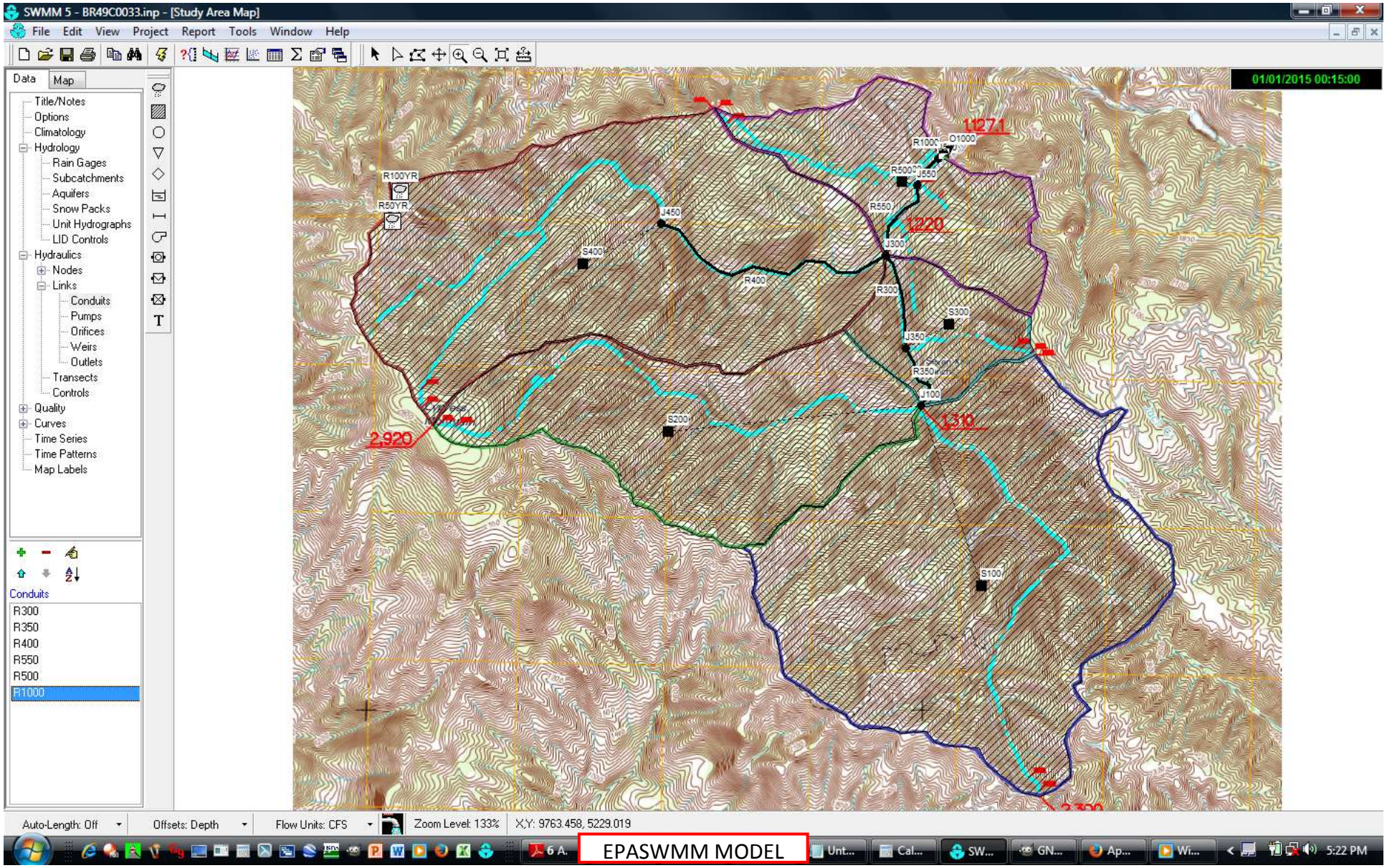
Q_2	$=0.14$	$A^{0.72}$	$P^{1.62}$
Q_5	$=0.40$	$A^{0.77}$	$P^{1.69}$
Q_{10}	$=0.63$	$A^{0.79}$	$P^{1.75}$
Q_{25}	$=1.10$	$A^{0.81}$	$P^{1.81}$
Q_{50}	$=1.50$	$A^{0.82}$	$P^{1.85}$
Q_{100}	$=1.95$	$A^{0.83}$	$P^{1.87}$

Q - Peak discharge in CFS, subscript indicates recurrence interval, in years;
A - Drainage area in square miles;
P - Mean annual precipitation in inches;
H - Altitude index in thousands of feet.[1]



NOTES:

1. Altitude Index, H, is defined as the average of the elevations at the locations 10% and 85% of the distance from the project site to the basin divide, measured along the main channel of the stream and the overland travel path to the basin divide.
2. In the North Coast region, use a minimum value of 1.0 for the Altitude Index (H).
3. These equations are defined for basins of 25 mi^2 or less in area.
4. See Figure 819.7A and Table 819.7A for desert region delineation and equations in California.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File Edit View Project Report Tools Window Help
Data Map
Title/Notes
Options
Climatology
Hydrology
Rain Gages
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Aquifers
Snow Packs
Unit Hydrographs
LID Controls
Hydraulics
Nodes
Links
Conduits
Pumps
Orifices
Weirs
Outlets
Transects
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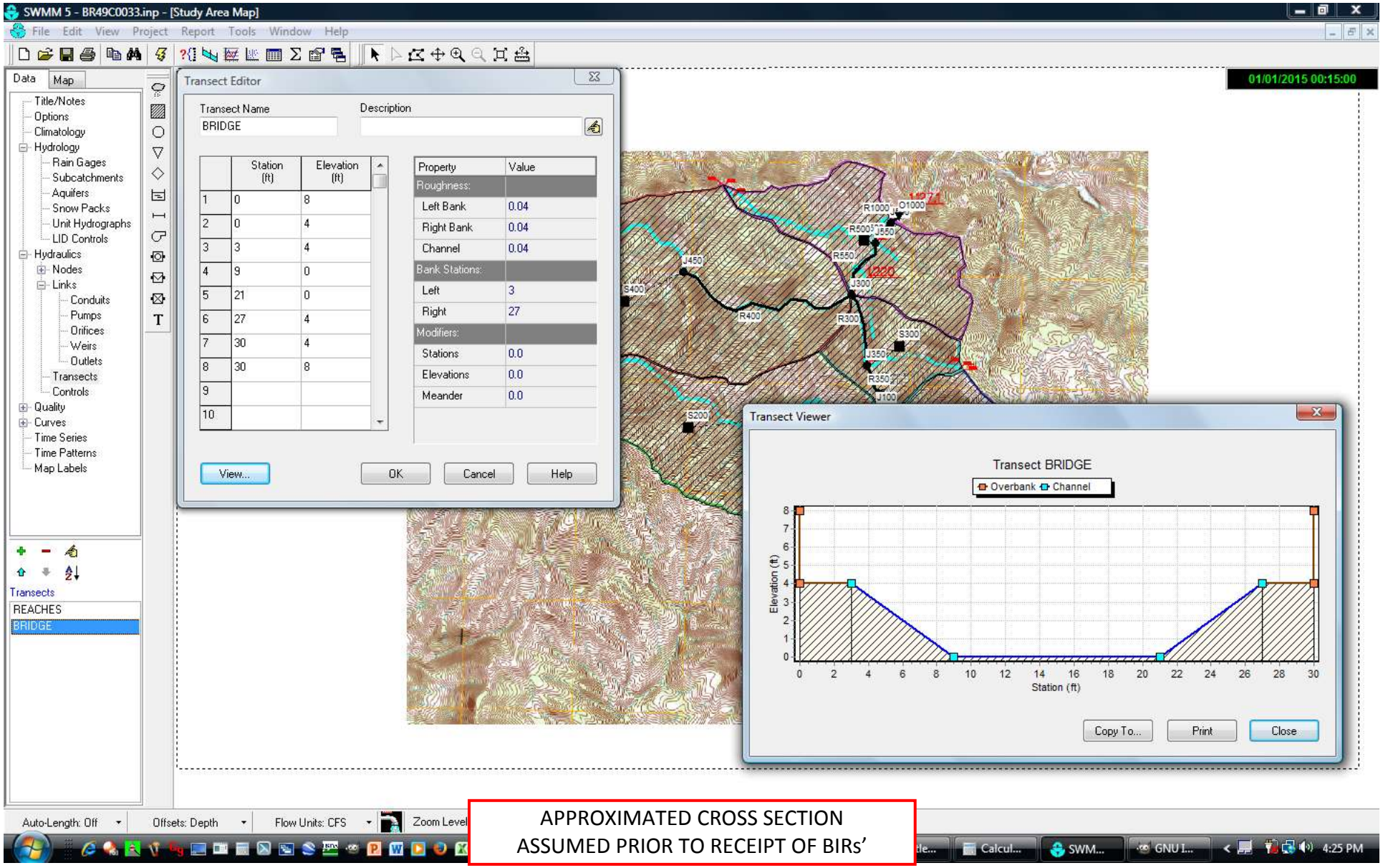
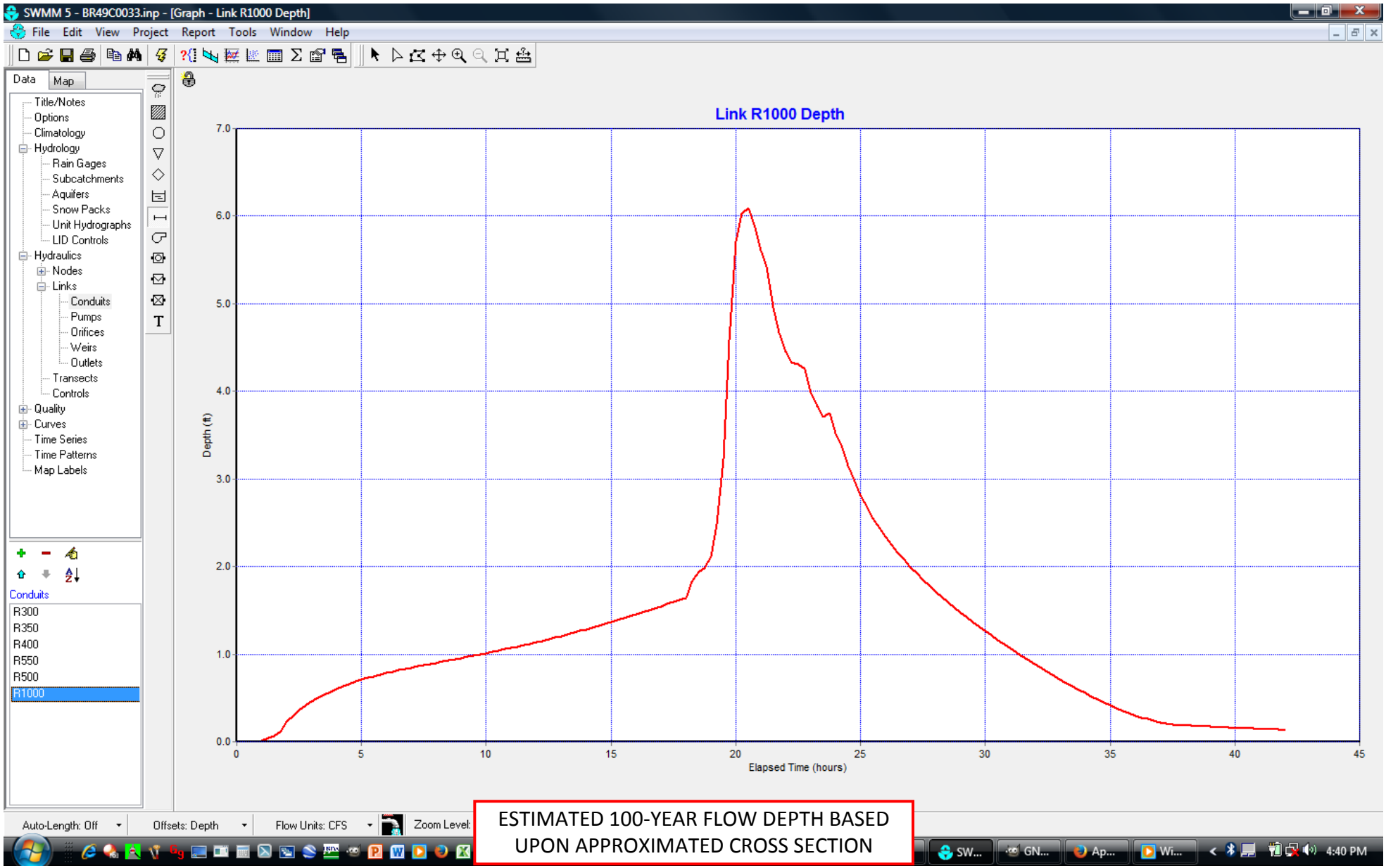
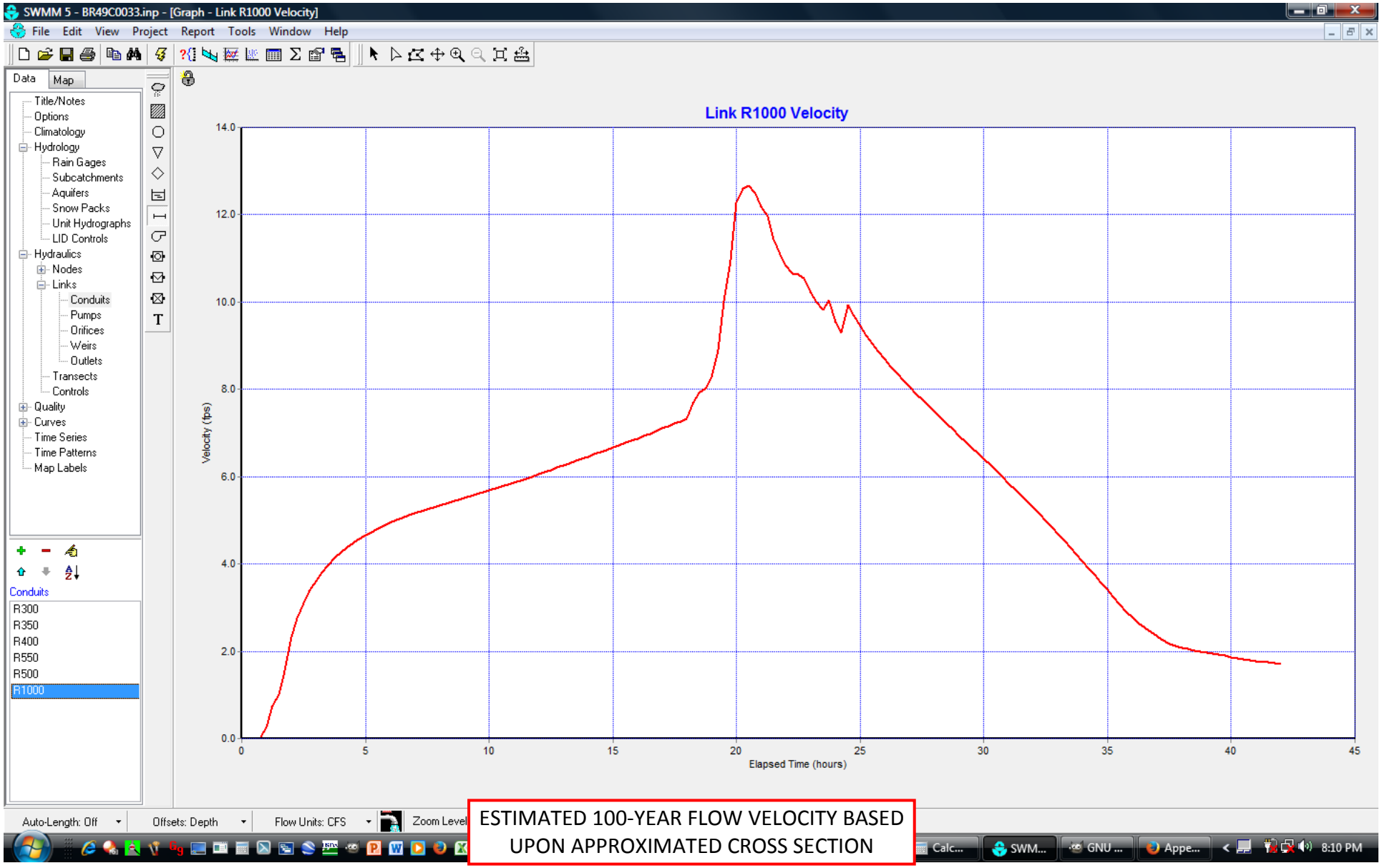


APPROXIMATED CROSS SECTION
ASSUMED PRIOR TO RECEIPT OF BIRs'



ESTIMATED 100-YEAR FLOW DEPTH BASED UPON APPROXIMATED CROSS SECTION



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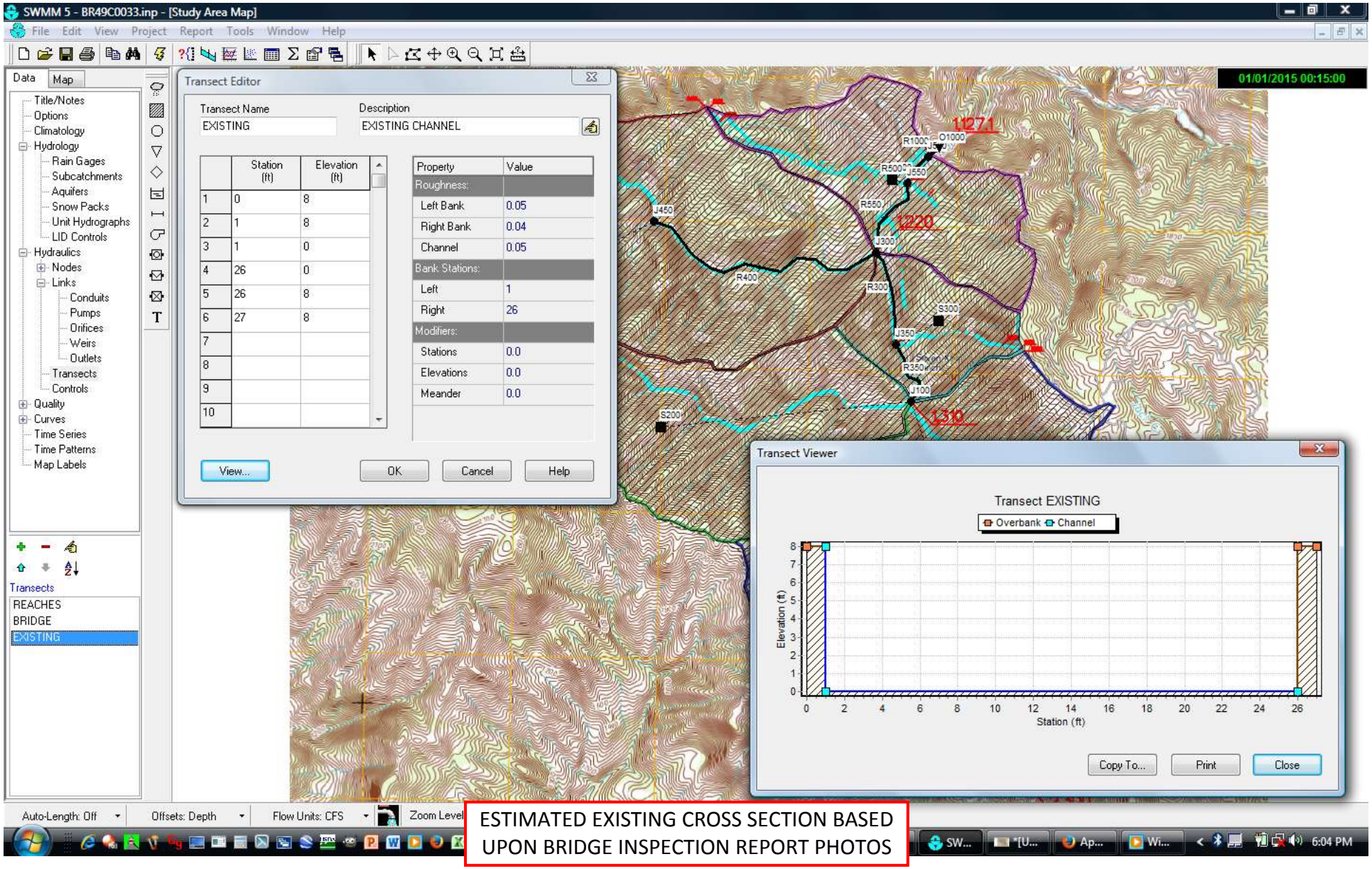
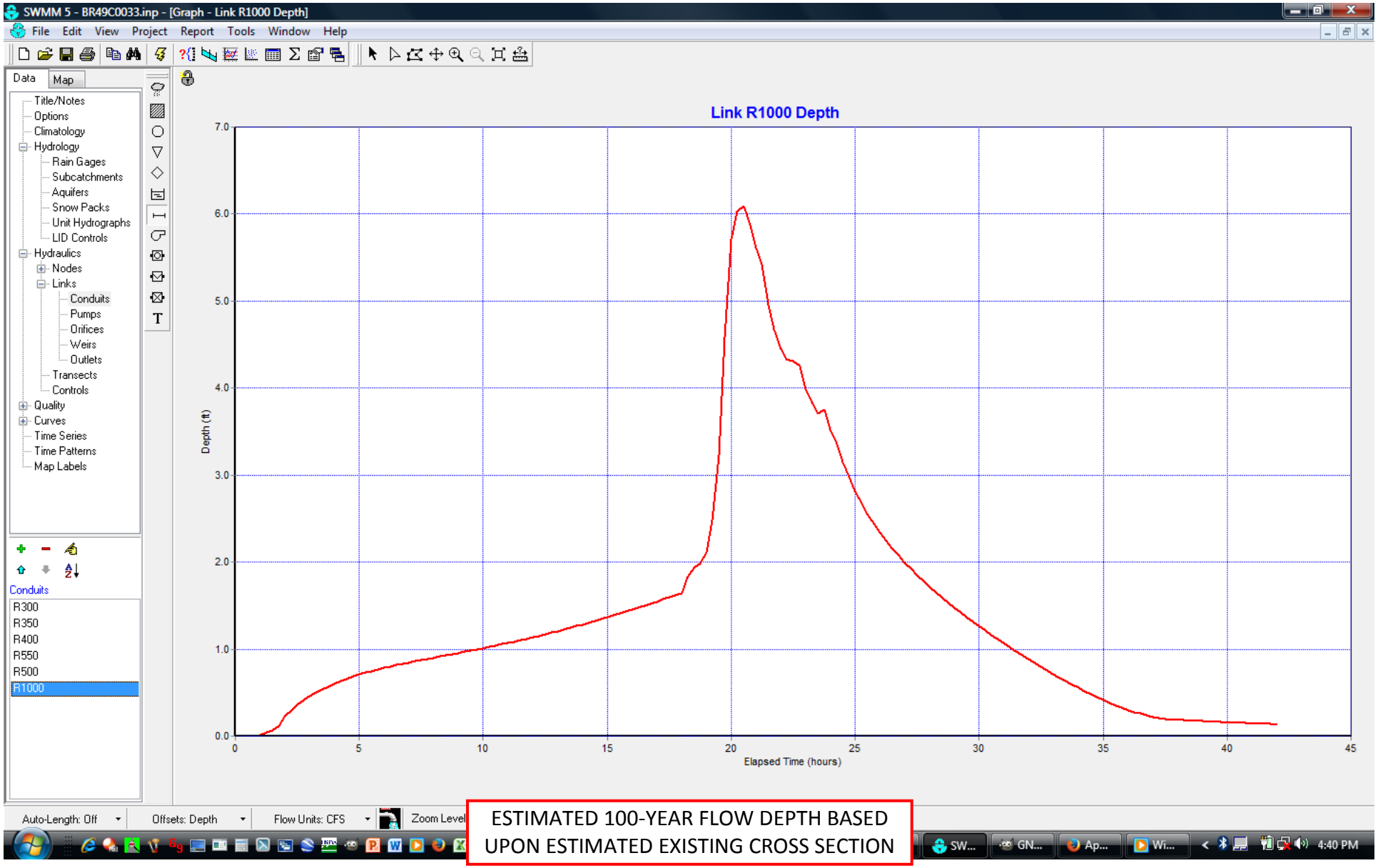
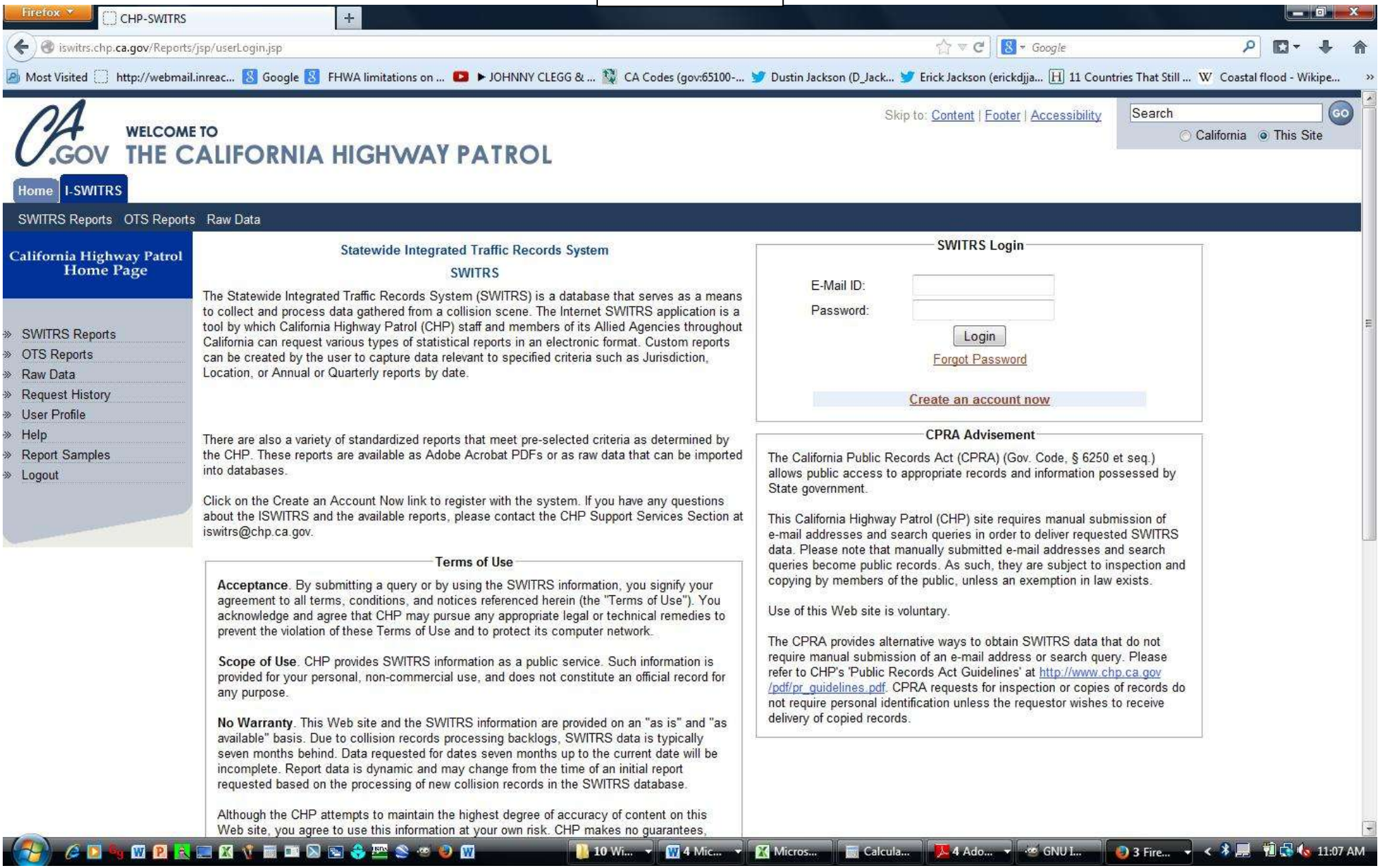


ESTIMATED EXISTING CROSS SECTION BASED UPON BRIDGE INSPECTION REPORT PHOTOS



ESTIMATED 100-YEAR FLOW DEPTH BASED UPON ESTIMATED EXISTING CROSS SECTION

ESTIMATED 100-YEAR FLOW VELOCITY BASED UPON ESTIMATED EXISTING CROSS SECTION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Dustin Jackson (D_Jack...
Erick Jackson (erickdjja...
11 Countries That Still ...
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Skip to: Content | Footer | Accessibility
Search
GO
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Home
I-SWITRS
SWITRS Reports
OTS Reports
Raw Data
California Highway Patrol Home Page
SWITRS Reports
OTS Reports
Raw Data
Request History
User Profile
Help
Report Samples
Logout
Statewide Integrated Traffic Records System
SWITRS
The Statewide Integrated Traffic Records System (SWITRS) is a database that serves as a means to collect and process data gathered from a collision scene. The Internet SWITRS application is a tool by which California Highway Patrol (CHP) staff and members of its Allied Agencies throughout California can request various types of statistical reports in an electronic format. Custom reports can be created by the user to capture data relevant to specified criteria such as Jurisdiction, Location, or Annual or Quarterly reports by date.
There are also a variety of standardized reports that meet pre-selected criteria as determined by the CHP. These reports are available as Adobe Acrobat PDFs or as raw data that can be imported into databases.
Click on the Create an Account Now link to register with the system. If you have any questions about the ISWITRS and the available reports, please contact the CHP Support Services Section at iswitrs@chp.ca.gov.
Terms of Use
Acceptance. By submitting a query or by using the SWITRS information, you signify your agreement to all terms, conditions, and notices referenced herein (the "Terms of Use"). You acknowledge and agree that CHP may pursue any appropriate legal or technical remedies to prevent the violation of these Terms of Use and to protect its computer network.
Scope of Use. CHP provides SWITRS information as a public service. Such information is provided for your personal, non-commercial use, and does not constitute an official record for any purpose.
No Warranty. This Web site and the SWITRS information are provided on an "as is" and "as available" basis. Due to collision records processing backlogs, SWITRS data is typically seven months behind. Data requested for dates seven months up to the current date will be incomplete. Report data is dynamic and may change from the time of an initial report requested based on the processing of new collision records in the SWITRS database.
Although the CHP attempts to maintain the highest degree of accuracy of content on this Web site, you agree to use this information at your own risk. CHP makes no guarantees,
SWITRS Login
E-Mail ID:
Password:
Login
Forgot Password
Create an account now
CPRA Advisement
The California Public Records Act (CPRA) (Gov. Code, § 6250 et seq.) allows public access to appropriate records and information possessed by State government.
This California Highway Patrol (CHP) site requires manual submission of e-mail addresses and search queries in order to deliver requested SWITRS data. Please note that manually submitted e-mail addresses and search queries become public records. As such, they are subject to inspection and copying by members of the public, unless an exemption in law exists.
Use of this Web site is voluntary.
The CPRA provides alternative ways to obtain SWITRS data that do not require manual submission of an e-mail address or search query. Please refer to CHP's 'Public Records Act Guidelines' at http://www.chp.ca.gov/pdf/pr_guidelines.pdf. CPRA requests for inspection or copies of records do not require personal identification unless the requestor wishes to receive delivery of copied records.
10 Wi...
4 Mic...
Micros...
Calcula...
4 Ado...
GNU I...
3 Fire...
11:07 AM

Douglas P Jackson (djackson@northcoast.com) - Tue, 02/24/15 12:13:25 -0800

Show Full Headers | **Print** | **Close Printer View**

From: <SWITRS@chp.ca.gov>
To: <djackson@tidepool.com>
Subject: I-SWITRS Report Request - ID #76830
Date: Tue 02/24/15 12:03 PM

I-SWITRS has received and processed your Raw Data Report request for the following criteria:

Report Type:	Raw Data
Jurisdiction:	San Luis Obispo
Reporting Period:	01/01/2000 - 12/31/2014
Lat/Long:	Yes
Header:	Yes

NOTE: Raw data files are in Comma-Separated Value file format (CSV) and contain large amounts of records (100,000+). If you have a problem opening the data files with your default spreadsheet application, you can view them with a text editor.

Please click on the following link to download your report:

ftp://iswitrs.chp.ca.gov/pub/9109569335605363463.zip

You have 30-days from the date of this email for file download. Adobe PDF reports will require the latest version of Adobe Acrobat Reader to view. Raw data files are zipped and will require an extraction utility to open and view its contents. If you need assistance, please refer to the I-SWITRS online help. Should you have data errors or other issues with the provided reports, please contact I-SWITRS customer support. Thank you for your continuing efforts to improve roadway safety.

If you have questions regarding this, please contact I-SWITRS customer support. Thank you for your continuing efforts to improve roadway safety.

California Highway Patrol
Support Services Section
iswitrs@chp.ca.gov
(916) 843-4230

Douglas P Jackson (djackson@northcoast.com) - Tue, 02/24/15 12:13:25 -0800

SAN LUIS OBISPO COUNTY 2000 TO 2014 CHP SWITRS TRAFFIC ACCIDENT HISTORY ALPHABETICALLY ARRANGED FOR "CYPRESS MOUNTAIN DRIVE"

CASE_ID	ACCIDENT_YEAR	PROC_DATE	JURIS	COLLISION_DATE	COLLISION_TIME	OFFICER_ID	DAY_OF_WEEK	CHP_SHIFT	POPULATION	CNTY_CITY_LOC	CHP_BEAT_TYPE	BEAT_NUMBER	PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER_1	STATE_HWY_IND	TOW_AWAY	COLLISION_SEVERITY	NUMBER_KILLED	NUMBER_INJURED	PARTY_COUNT	PRIMARY_COLL_FACTOR	PCF_CODE_OF_VIOL
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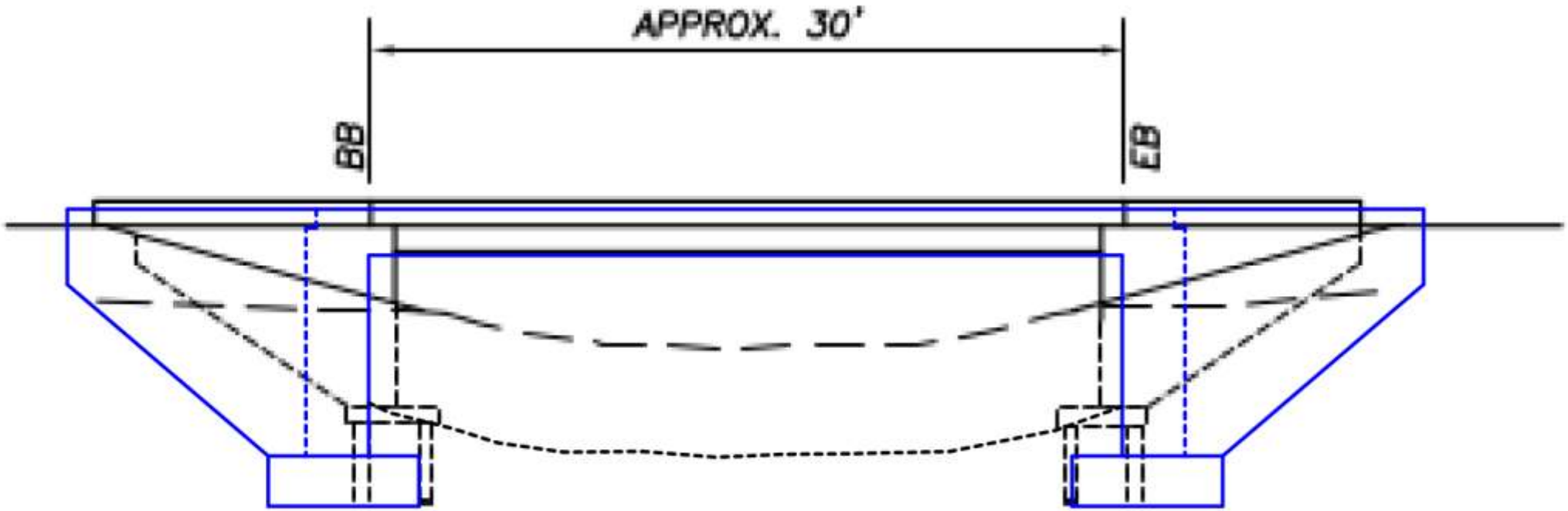
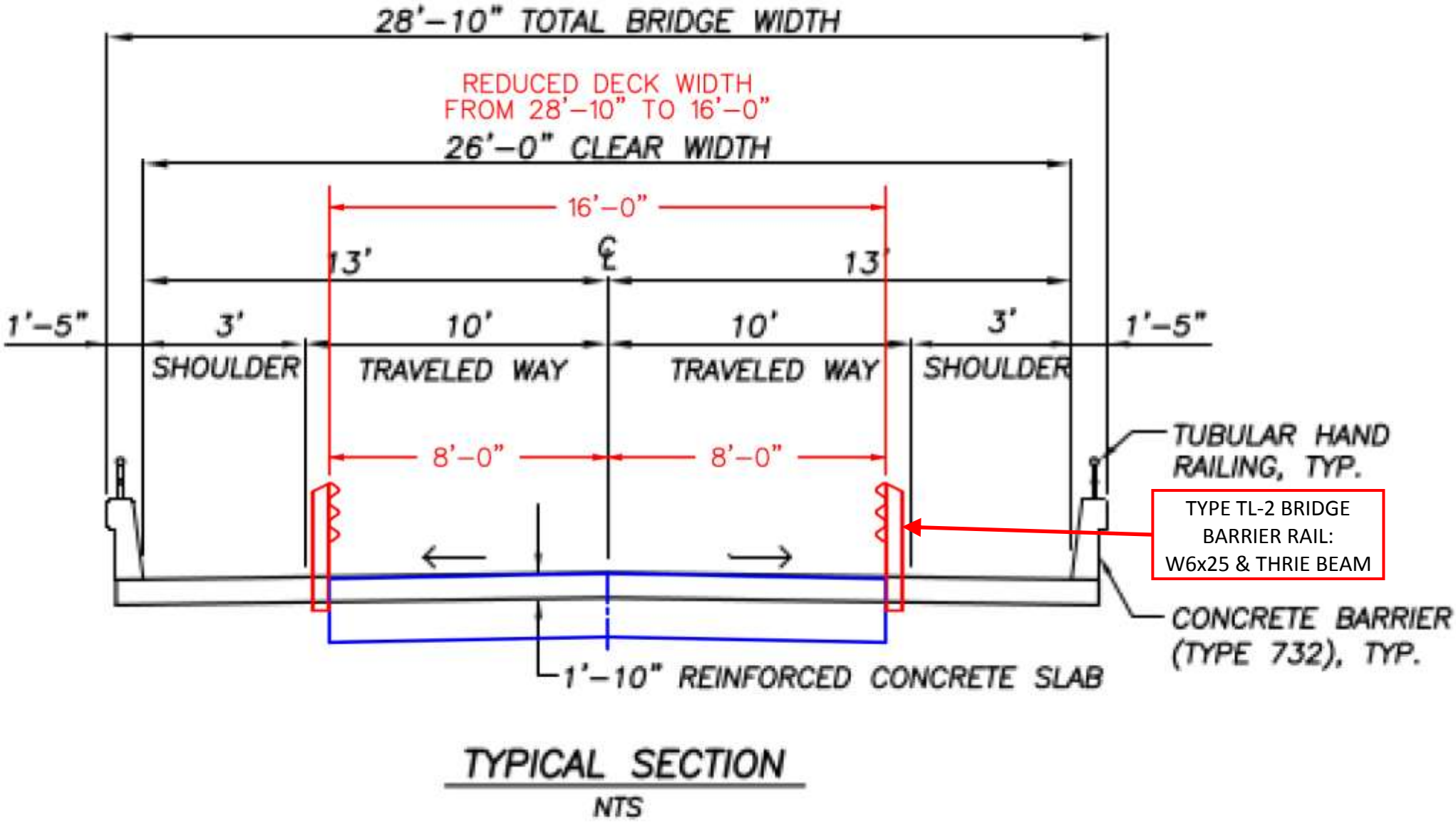
3210625	2007	20071108	9745	20070604	1535	15144	1	2	9	4000	5	5	DAFFODIL AV	JUNIPER AV	57	N	N	A	N	N	0	0	0	1	A	-
5169655	2011	20121001	9745	20110420	2045	10522	3	2	9	4000	5	5	DALE AV	EWING AV	0		Y	B	N	N	0	0	0	1	A	-
243686	2002	20020927	9745	20020607	1845	8065	5	2	9	4000	5	5	DALE AV	HETRICK AV	1056	W	N	A	N	N	4	0	1	2	A	-
3181053	2007	20071001	9745	20070508	2105	14662	2	2	9	4000	4	51	DALE AV	LOS BERROS RD	0		Y	A	N	Y	0	0	0	1	A	-
5099985	2011	20120629	9745	20110216	1430	14543	3	2	9	4000	4	51	DALE AV	LOS BERROS RD	13	S	N	B	N	Y	0	0	0	2	A	-
5753645	2012	20140304	9745	20120806	1830	17541	1	2	9	4000	5	5	DALE AV	LOS BERROS RD	10	S	N	A	N	Y	0	0	0	2	A	-
9.74501E+18	2001	20011102	9745	20010826	600	13854	7	1	9	4000	5	5	DANA	BEECHNUT	221	E	N	A	N	N	0	0	0	2	A	C
9.74501E+18	2001	20010511	9745	20010212	2300	13937	1	3	9	4000	5	5	DANA FOOTHILL	TEFFT	1056	N	N	C	N	Y	3	0	1	1	A	C
6084417	2013	20140828	9745	20130521	1040	11277	2	1	9	4000	5	5	DANA FOOTHILL RD	E TEFFT ST	160	S	N	A	N	N	0	0	0	1	A	-


Cypress Mountain Dr
ALTERNATIVE
15-FT x 30-FT
PROPOSED
24-FT x 54-FT
POTENTIAL DETOUR ROUTE
TO MINIMIZE
ENVIRONMENTAL IMPACTS
ALTERNATE DESIGN – 16-FT WIDE SLAB DECK BY 30-FT SPAN

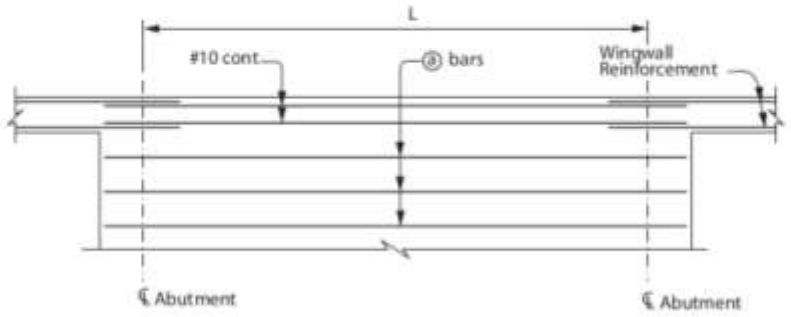


ELEVATION

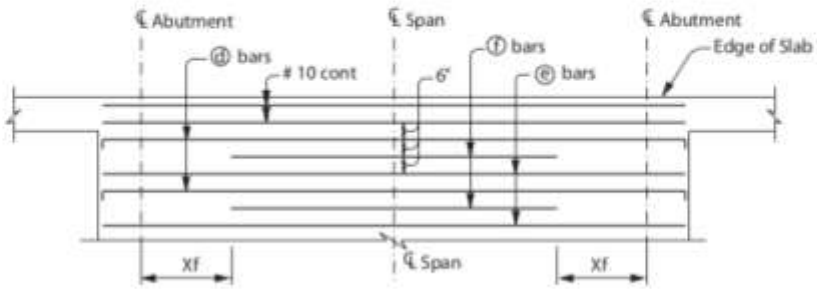
NTS



TYPICAL SECTION
NTS



REINFORCEMENT - TOP OF SLAB



REINFORCEMENT - BOTTOM OF SLAB

L=Length of Span			16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'	38'	40'	42'	44'
REINFORCEMENT	Top of Slab(1)	ⓓ bars Size	#4	#4	#4	#4	#4	#4	#5	#5	#5	#5	#5	#5	#5	#5	#5
		ⓓ bars Spacing	15"	15"	15"	12"	12"	12"	15"	15"	15"	15"	15"	12"	12"	12"	12"
	Bottom of Slab	ⓓ bars Size	#8	#8	#8	#8	#8	#8	#9	#9	#9	#9	#10	#10	#10	#10	#10
		ⓓ bars Length	Continuous with a standard hook at each end														
		ⓔ bars Size	#7	#7	#8	#8	#8	#8	#8	#9	#9	#9	#9	#9	#10	#10	#10
		ⓔ bars Length	Continuous without hooks														
		ⓕ bars Size	#7	#7	#7	#7	#8	#8	#8	#8	#8	#9	#9	#9	#9	#9	#9
		ⓕ bars Length	12.0'	13.0'	15.0'	16.0'	17.0'	19.0'	20.0'	21.0'	23.0'	24.0'	25.0'	27.0'	28.0'	30.0'	31.0'
		ⓕ bars Xf	2.0'	2.5'	2.5'	3.0'	3.5'	3.5'	4.0'	4.5'	4.5'	5.0'	5.5'	5.5'	6.0'	6.0'	6.5'
Distribution Steel spacing			11"	11"	11"	11"	11"	11"	11"	11"	11"	10"	10"	10"	10"	10"	10"
T=Thickness of Slab(2)			12½"	13½"	14½"	15½"	16½"	17½"	18½"	19½"	20½"	21½"	22"	23"	24½"	26½"	28"
Approximate quantities per foot of width		Concrete (ft³)	18.2	21.9	26.0	30.4	35.1	40.1	45.5	51.2	57.2	63.6	68.8	75.7	84.7	96.1	106.2
		Steel (lbs)	114	126	149	168	191	204	244	275	293	325	368	405	450	473	493
Camber at Mid-Span			.02'	.02'	.03'	.04'	.04'	.05'	.06'	.07'	.09'	.10'	.12'	.13'	.14'	.14'	.15'

Notes
(1) - For transverse reinforcement in the top of slab use the same bar size and spacing as the ⓐ bars.
(2) Add ½" for corrosion protection and adjust concrete quantity.
(3) Live Loading: HL93 and P15 design load.

SLAB DETAILS - SINGLE SPAN

CYPRESS MTN DR BR 49C0033 ALTERNATE DESIGN - 30-FT SPAN

ESTIMATED COST OF ALTERNATE DESIGN

EXHIBIT 9
PAGE 6 OF 7

Project No.:
Description: CYPRESS MTN DR ALTERNATE 16-FT SLABx30-FT SPAN
Contract No.

Date: 2/28/2015
By: DPJ
Check:

ITEM NO.	ITEM CODE		ITEM DESCRIPTION	UNIT	ALTERNATE DESIGN QUANTITY	UNIT PRICE	ALTERNATE DESIGN TOTAL	CONTRACTOR'S BID: AS BID QUANTITY	CONTRACTOR'S BID: CONTRACTOR TOTAL
1	71301		Temporary Fence	LF	0	$ 4.00	$ -		
2	74016		Construction Site Management	LS	1	$ 15,000.00	$ 15,000.00		
3	74019		Prepare Water Pollution Control Program	LS	1	$ 2,000.00	$ 2,000.00		
4	74029		Temporary Silt Fence	LF	340	$ 4.00	$ 1,360.00		
5	74032		Temporary Concrete Washout Facility	LS	1	$ 500.00	$ 500.00		
6	120050		Construct Detour(County Furnished Flatcar)	LS	1	$ 20,000.00	$ 35,000.00		
7	120090		Construction Area Signs	EA	8	$ 175.00	$ 1,400.00		
8	120120		Type III Barricade	EA	6	$ 102.00	$ 612.00		
9	150605		Remove Fence	LF	340	$ 4.00	$ 1,360.00		
10	150805		Bridge Removal	LS	1	$ 15,000.00	$ 10,000.00		
11	160101		Clearing and Grubbing	LS	1	$ 5,000.00	$ 5,000.00		
12	190101		Roadway Excavation	CY	670	$ 20.00	$ 13,400.00		
13	190151		Channel Excavation	CY	120	$ 150.00	$ 18,000.00		
14	190167		Remove Unsuitable Material	CY	50	$ 20.00	$ 1,000.00		
15	192003	F	Structure Excavation (Bridge)	CY	190	$ 40.00	$ 7,600.00		
16	192007	F	STRUCTURE EXCAVATION (BRIDGE) (CHANNEL)	CY	40	$ 60.00	$ 2,400.00		
17	193003	F	Structure Backfill (Bridge)	CY	100	$ 60.00	$ 6,000.00		
18	193010	F	Structure Backfill (Unsuitable Excavation)	CY	50	$ 40.00	$ 2,000.00		
19	198050		Embankment	CY	470	$ 40.00	$ 18,800.00		
20	203016	S	Erosion Control (Type D)	LS	1	$ 3,500.00	$ 3,500.00		
21	260301		Class 3 Aggregate Base	CY	230	$ 64.00	$ 14,720.00		
22	390130		Hot Mix Asphalt	Ton	220	$ -	$ -		
23	490745	S	Furnish Piling (Class 140)(Alternative W)	LF	0	$ -	$ -		
24	490746	S	Drive Piling (Class 140) (Alternative W)	EA	0	$ -	$ -		
25	510053	F	Structural Concrete, Bridge	CY	91	$ 1,350.00	$ 122,850.00		
26	520102	S-F	Bar Reinforcing Steel	Lbs	9720	$ 1.25	$ 12,150.00		
27	721007		Rock Slope Protection (1/2 ton, Method B)	Ton	97	$ 360.00	$ 35,000.00		
28	800005		Fence (Type BW, Special)	LF	0	$ 7.00	$ -		
29	810110		Survey Monumnet	EA	3	$ -	$ -		
30	832003	S	Metal Beam Guard Railing	LF	200	$ 100.00	$ 20,000.00		
31	839541	S	Transition Railing (Type WB)	LF	0	$ 145.00	$ -		
32	839553	S	End Section	EA	0	$ 215.00	$ -		
33	839585	S	Alternative Flared Terminal Section	EA	0	$ 2,675.00	$ -		
34	839738	S	W6 STEEL POST & THRIE BEAM	LF	108	$ 100.00	$ 10,800.00		
35	999990	S	Mobilization ADJUSTED = 10% OF SUBTOTAL ABOVE	LS	1	$ 36,100.00	$ 36,100.00		
			SUBTOTAL				$ 396,552.00		

			ESTIMATED
CONSTRUCTION TOTAL	**$ 396,552.00**		1,051,000.00
TOTAL CONSTRUCTION COST REDUCTION:	**$ 654,448.00**	62.3%	REDUCTION

TOTAL OTHER-SHARED 50% W/ BRIDGE & APPROACH	30,232.00		
TOTAL CONSTRUCT BRIDGE	162,900.00	178,016.00	814,000.00
TOTAL BRIDGE REMOVAL	10,000.00	10,000.00	10,000.00
TOTAL SLOPE PROTECTION	35,000.00	35,000.00	35,000.00
TOTAL CHANNEL WORK	18,000.00	18,000.00	18,000.00
TOTAL DETOUR	35,000.00	35,000.00	35,000.00
TOTAL APPROACH ROADWAY	66,920.00	82,036.00	86,000.00
TOTAL UTILITY RELOCATION	0.00	0.00	0.00
TOTAL MOBILIZATION	36,100.00	36,100.00	53,000.00
TOTAL CONSTRUCTION	394,152.00	394,152.00	1,051,000.00

		24-FT WIDTH:	PER EX. 6-D:
Field Engineering	15%	$ 59,500.00	$ 157,650.00
Preliminary Engineering	25.0%	$ 99,200.00	$ 220,133.00
Total Combined Reduced Field Engineering and Preliminary Engineering:		$ 158,700.00	$ 377,783.00

Total Combined Reduced Field Engineering and Preliminary Engineering Cost Reduction: **$ 219,083.00**

Total Combined Construction, Reduced Field Engineering, and Preliminary Engineering Cost Savings: **$ 873,531.00**

BRIDGE 49C003 16-FT WIDTHX30- FOOT SLAB DECK WITH TYPE TL-2 BARRIER RAIL

Summary of HBRRP Participating Costs

Please indicate the HBRRP total participating (eligible for reimbursement) costs for this project. Based on the amounts below and the federal reimbursement rate, Caltrans will program (reserve) the HBRRP funds needed for this project. Other federal funds (RSTP, TEA, etc.) needed for this project should be shown in the Field Review form Exhibit 7-B from Chapter 7 of the LAPM.

Target dates represent a commitment by the local agency when the project will need HBRRP funding. Failure to meet target dates may cause funds to be reprogrammed to other projects by other local agencies. The reprogramming of HBRRP funds is at the discretion of Caltrans.

PE = Preliminary Engineering (Total not to exceed the greater of $75 K or 25% of CON and consultant contract management and quality assurance not to exceed 15% of consultant costs).
R/W = Right of Way
CE = Construction Engineering (Not to exceed 15% of CON).
CON = Construction
Cont = Contingency (including supplement work) not to exceed 25% (preliminary estimate) nor 10% of CON for final design $5 K min.

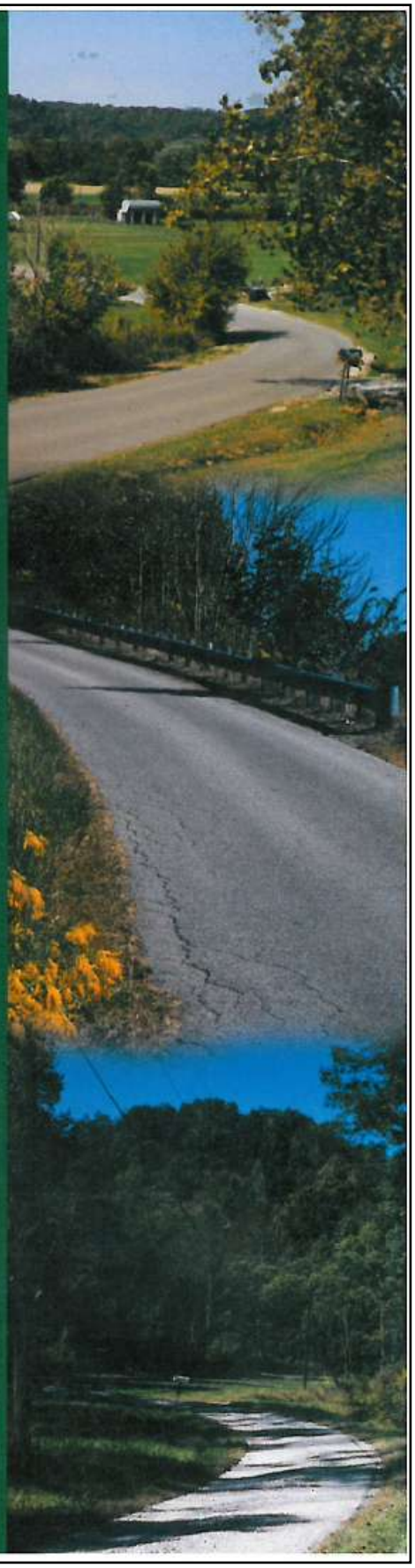
Enter CE Rate: 15%

Enter Contingency Rate: 25%

	Direct Costs		Indirect Costs*		HBRRP Participating $**	Target Dates
PE	99,200	+	14,900	=	114,100	
R/W					0.00	
CON	396,600					
CE	59,500		8,900			
Cont	99,200					
Subtotal	555,300	+	8,900	=	564,200	
			Total Participating Cost		678,300	
Enter Fed. Match Rate:	88.53%		HBRRP Requested		600,500	

* See Chapter 5, "Accounting/Invoices," of the LAPM for approval of indirect costs.

** Participating costs exclude ineligible work items. Please review the HBRR Program Guidelines for reimbursable scopes of work and program cost limits. Other federal funds will be shown in the Field Review form, Exhibit 7-B, Chapter 7, "Field Review," of the LAPM.



American Association of
State Highway and
Transportation Officials

Guidelines for

Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)

2001

CHAPTER 1
INTRODUCTION

This document presents geometric design guidelines for very low-volume local roads. The purpose of the guidelines is to help highway designers in selecting appropriate geometric designs for roads with low traffic volumes traveled by motorists who are generally familiar with the roadway and its geometrics. The design guidelines presented here may be used on very low-volume local roads in lieu of the applicable policies for design of local roads and streets presented in AASHTO *Policy on Geometric Design of Highways and Streets* (**1**), commonly known as the Green Book.

This chapter defines very low-volume local roads, describes the scope of the design guidelines, explains the relationship of the guidelines to other AASHTO policies, and presents the organization of the remainder of this document.

DEFINITION OF VERY LOW-VOLUME LOCAL ROADS

The guidelines presented in this document are applicable to very low-volume local roads. Very low-volume local roads are defined as follows:

> A *very low-volume local road* is a road that is functionally classified as a local road and has a design average daily traffic volume of 400 vehicles per day or less.

The preceding statement clarifies that the functional classification of a road is a key element of the definition of a very low-volume local road. A local road is a road whose primary function is to provide access to residences, farms, businesses, or other abutting property, rather than to serve through traffic. Although some through traffic may occasionally use a local road, through traffic service is not its primary purpose. The term local road is used here to refer to the functional classification of the road and is not intended to imply that the road is necessarily under the jurisdiction of a local or municipal unit of government. Administrative arrangements for operation of the highway system vary widely and, in different parts of the United States, roads that are functionally classified as local roads may be under Federal, state, or local control.

The guidelines presented in this document may also be applied in the design of roads that are functionally classified as collectors, so long as the road has a design average daily traffic volume of 400 vehicles per day or less and primarily serves drivers who are familiar with the roadway. There are roads in some states that, because of their length and position in the road network, are functionally classified as collectors, even though they serve very low volumes of primarily local or repeat drivers. Collector roads, by their nature, serve more through traffic than local roads; however, much of that through traffic consists of familiar drivers moving between local roads and arterials. The risk assessment on which the design guidelines are based is applicable to any roadway with design average daily traffic volume of 400 vehicles per day or less that serves primarily familiar drivers. Therefore, throughout the remainder of this document, when reference

Rural Roads

- rural major access roads
- rural minor access roads
- rural industrial/commercial access roads
- rural agricultural access roads
- rural recreational and scenic roads
- rural resource recovery roads

Urban Roads

- urban major access streets
- urban residential streets
- urban industrial/commercial access streets

Each of these functional subclasses is defined below.

Rural Major Access Roads

Rural major access roads serve a dual function of providing access to abutting properties as well as providing through or connecting service between other local roads or higher type facilities. In rural areas, major access roads may have significant local continuity and may operate at relatively high speeds. Because of the possibility of through traffic, there may be a meaningful segment of traffic that includes unfamiliar drivers. Major access roads may thus, in some respects, function like collector or even minor arterial roads, particularly since even arterials often carry low traffic volumes in rural areas. Major access roads are usually paved, but may be unpaved in some rural areas. As discussed in Chapter 1, the design guidelines for very low-volume local roads may also be applied to some collector roads that primarily serve familiar drivers. Such collector roads should be treated as major access roads for purposes of these guidelines.

Rural Minor Access Roads

Rural minor access roads serve almost exclusively to provide access to adjacent property. Many of these roads are cul-de-sacs or loop roads with no through continuity. The length of minor access roads is typically short. Because their sole function is to provide access, such roads are used predominantly by familiar drivers.

Minor access roads generally serve residential or other non-commercial land uses. Speeds are generally low for the local environment, given the purpose of the road and short trip lengths. As noted above, many minor access roads end in cul-de-sacs or dead ends, thus limiting the opportunity for high travel speeds. Minor access roads are frequently narrow, and in some rural areas may function as one-lane roads. Minor access roads can be either paved or unpaved. Traffic is largely composed of passenger vehicles or other smaller vehicle types. However, such roads need to be accessible to school buses, fire trucks, other emergency vehicles, and maintenance

vehicles such as snow plows and garbage trucks. Access roads serving commercial or industrial land uses are classified separately.

Rural Industrial/Commercial Access Roads

Industrial or commercial access roads serve developments that may generate a significant proportion of truck or other heavy vehicle traffic. The primary or sole function of such roads is generally to provide access from a factory or another commercial land use to the local or regional highway network. Typical industrial/commercial access roads are very short, and in many cases they do not serve any through traffic. Industrial/commercial access roads may be either paved or unpaved. Such roads are classified separately from minor access roads, which they otherwise resemble, because consideration of trucks and other heavy vehicles is important in their design.

Rural Agricultural Access Roads

Certain roads in rural areas serve primarily to provide access to fields and farming operations. Vehicle types that use such roads include combines, tractors, trucks that haul agricultural products, and other large and slow-moving vehicles with unique operating characteristics. The driving population generally consists of repeat users who are familiar with the road and its characteristics. Such roads are often unpaved.

Consideration of the unique vehicle types that use agricultural access roads is important in their design. For purposes of these guidelines, rural agricultural access roads consist of roads that are used regularly or seasonally for access to farms by agricultural equipment, such as combines, that are wider than a typical 2.6-m [8.5-ft] truck. Roads that provide frequent access to farms for conventional trucks, but not for wider equipment, should be treated as rural commercial/industrial access roads. Roads that provide access to farms but are used only occasionally by conventional trucks and are not used by wider equipment, should be treated as either rural major access or rural minor access roads depending upon the function and characteristics of the road.

Rural Recreational and Scenic Roads

Recreational and scenic roads serve specialized land uses, including parks, tourist attractions, and recreation facilities, such as campsite or boat-launch ramps, and are found primarily in rural areas. Traffic is open to the general public, and their users are more likely than users of other functional subclasses of local roads to consist of unfamiliar drivers. Recreational and scenic roads do not generally carry significant volumes of truck traffic, but do serve recreational vehicles including motor homes, campers, and passenger cars pulling boats and other trailers. In many cases, these roads may carry highly seasonal traffic volumes. Recreational and scenic roads may accommodate a wide range in speeds and trip lengths may be fairly long. Such roads can be either paved or unpaved.

Other Urban Facilities

Urban agricultural access roads, recreational and scenic roads, and resource recovery roads are rare, but where they occur, they should be designed like their rural counterparts.

Roads that Meet the Definition of More than One Functional Subclass

Some roads meet the definition of more than one of the functional subclasses defined above. For example, a given road might be considered both a rural minor access road and a rural agricultural access road. Another road might be considered both a rural major access road and a recreational and scenic road. In such cases, the road should be evaluated using the design guidelines applicable to each functional class, as presented in Chapter 4, and the higher of the applicable design guidelines should be applied.

DESIGN SPEED/OPERATING SPEED

Speed has always been a primary defining variable in the development and presentation of geometric design criteria. Current AASHTO policy specifies design criteria in increments of 10 km/h [5 mph]. Designers select a design speed which is appropriate for the roadway and is used to correlate the various features of the design. The selected design speed should realistically represent actual or anticipated operating speeds and conditions on the roadway being designed.

Several of the design guidelines presented in Chapter 4 differ as a function of speed, as follows:

- Low speed—0 to 70 km/h [0 to 45 mph]
- High speed—more than 70 km/h [45 mph]

TRAFFIC VOLUMES

The projected average daily traffic volume (ADT) should be used as the basis for design. Usually, the year for which traffic is projected is about 20 years from the date of completion of construction, but may range from the current year to 20 years depending upon the nature of the improvement. Where traffic volumes vary substantially from season to season, design should be based on the ADT during the peak season. Traffic volume growth rates on very low-volume local roads are generally modest, and some roads may experience future traffic volume decreases. However, the designer should be alert to the possibility of future development that might affect traffic volume growth, especially in or near urban areas. If new development that would increase the traffic volume above 400 vehicles per day is anticipated on a local road within the period for which traffic volumes are projected, then Chapter 5 of the AASHTO *Policy on Geometric Design of Highways and Streets* (1) should be used instead of the design guidelines presented here. Where future development is uncertain, a project with a projected volume of 400 vehicles per day

or less may be designed in accordance with the design guidelines presented in Chapter 4, but the basis for this decision should be documented.

Traffic volumes on very low-volume roads are stratified into three levels for purposes of the design guidelines in Chapter 4. The volume ranges are:

- 100 vehicles per day or less
- 100 to 250 vehicles per day
- 250 to 400 vehicles per day

DEVELOPMENT OF DESIGN GUIDELINES THROUGH RISK ASSESSMENT

The risk assessment by Neuman (**3**) recommends that design criteria for very low-volume local roads should be based on tradeoffs between two factors:

- demonstrable differences in construction and maintenance costs
- estimated impacts on traffic crash frequency or severity

This approach highlights safety and cost (and hence, cost-effectiveness in a more direct sense) as the only appropriate basis for defining minimum design criteria or values for these unique facilities. Other factors such as level of service, travel time savings, and driver comfort and convenience are not considered of sufficient importance for very low-volume local roads to influence their fundamental design criteria.

Because it is derived from a formal risk assessment, the design philosophy recommended for very low-volume local roads is based fundamentally on safety concerns. Moreover, the philosophy focuses on direct comparison of known or expected safety benefits and system costs. This tradeoff implies that public funds spent to improve such roads in the name of safety should be spent only where there is likely to be an actual safety benefit in return. This, in turn, assures that highway funds expended for safety purposes on all highways (not just low-volume local roads) will be available for use where they are most needed (i.e., where meaningful safety benefits can reasonably be expected).

Risk Assessment Approach

The risk assessment represents a comparison between crash risk for very low-volume local roads designed in accordance with the guidelines presented in Chapter 4 of this document and roads designed in accordance with Chapter 5 of the AASHTO *Policy on Geometric Design of Highways and Streets* (**1**). The guidelines concerning threshold or acceptable risk levels for new construction of very low-volume local roads used by Neuman (**3**) were:

- For urban or low-speed facilities, an acceptable safety risk is represented by an action or proposed action that is expected to result in no more than one additional traffic crash per kilometer of roadway every 6 to 10 years. This is equivalent to one additional traffic crash per mile of roadway every 4 to 6 years.
- For rural or high-speed facilities, an acceptable safety risk is represented by an action or proposed action that is expected to result in no more than one additional traffic crash per kilometer of roadway every 10 to 15 years. This is equivalent to one additional traffic crash per mile of roadway every 6 to 9 years.

These risk assessment thresholds for rural and urban roadways are consistent with those used to evaluate roadway widths in NCHRP Report 362 (**5**), which was the basis for the current lane and shoulder width design values for rural highways in the AASHTO *Policy on Geometric Design of Highways and Streets* (**1**). Although NCHRP Report 362 considers roadways with

Development density	Metric	US Customary
	Total roadway width (m)	Total roadway width (ft)
Low	6.1 to 8.5	20 to 28
Medium	8.5 to 10.3	28 to 34
Note: Low development density represents 2.0 or fewer dwelling units per acre; medium development density represents 2.1 to 6.0 dwelling units per acre.		

Exhibit 2. Guidelines for Total Roadway Width for New Construction of Urban Residential Streets

The lower end of the range of residential street widths in the ITE guidelines presented in Exhibit 2 are applicable to subdivision streets with sufficient off-street parking (e.g., driveways and garages) so that on-street parking is used only occasionally by visitors and delivery vehicles. The higher end of the range of street widths is applicable where there is frequent parking on one side of the street. On streets with frequent parking on both sides of the street, street widths greater than those shown in Exhibit 2 may be appropriate.

Design criteria for curbs and sidewalks on very low-volume urban roads and streets should be determined based on local policies and published guidelines for compliance with the Americans with Disabilities Act (ADA).

Existing Roads

The cross section widths of existing roads need not be modified except in those cases where there is evidence of a site-specific safety problem. Chapter 3 discusses the types of evidence of a site-specific safety problem that might be considered. When a site-specific safety problem that can be mitigated by a wider roadway is identified, the cross section for the portion of the roadway with the identified safety problem should be widened to at least the total roadway widths presented above for new construction.

BRIDGE WIDTH

The key elements in selecting an appropriate bridge width are the width of the adjacent roadway (traveled way and shoulder widths) and, for existing locations, the safety performance of the existing bridge. Determination of bridge widths for newly constructed bridges and existing bridges is addressed below.

New Construction

Newly constructed bridges are bridges on new roadways where there is no existing roadway or bridge in place. The widths of newly constructed bridges should generally be selected in

accordance with the bridge width criteria for local roads in Chapter 5 of the AASHTO *Policy on Geometric Design of Highways and Streets* (1). Those criteria state that, for bridges on local roads with ADT of 400 veh/day or less, the bridge width should be equal to the width of the traveled way plus 0.6 m [2 ft]. However, when the entire roadway width (traveled way plus shoulders) is paved, the bridge width should be equal to the total roadway width. Bridge width should be measured between the inside faces of the bridge rail or guardrail. Bridges greater than 30 m [100 ft] in length should be evaluated individually to determine the appropriate bridge width. Bridge usage by trucks and recreational vehicles should also be considered in determining the appropriate width.

One-lane bridges may be provided on single-lane roads and on two-lane roads with ADT less than 100 veh/day where the designer finds that a one-lane bridge can operate effectively. The minimum width of a one-lane bridge should be 4.5 m [15 ft] unless the designer concludes that a narrower bridge can function effectively (e.g., based on the safety performance of similar bridges maintained by the same agency). Caution should be exercised in design of one-lane bridges wider than 4.9 m [16 ft] to assure that drivers will not use them as two-lane structures. Simultaneous arrival of two or more opposing vehicles at a one-lane bridge should be rare, given the low traffic volumes, but one-lane bridges should have intervisible pull-offs at each end where drivers can wait for traffic on the bridge to clear.

Existing Bridges

Existing bridges can remain in place without widening unless there is evidence of a site-specific safety problem related to the width of the bridge. As described in Chapter 3, evidence of a site-specific safety problem may include not only crash history but also other indications such as skid marks, damage to bridge rail or guardrail, and concerns raised by police or local residents. Where an existing bridge needs replacement for structural reasons, but there is no evidence of a site-specific safety problem, the replacement bridge can be constructed with the same width as the existing bridge; this criterion applies to bridges that are reconstructed on the same alignment and bridges that are reconstructed on a more favorable alignment.

HORIZONTAL ALIGNMENT

For balance in roadway design, all geometric elements should, as far as economically practical, be designed to provide safe, continuous operation at a speed likely to be observed under the general conditions for that roadway. For the most part, this is done through the use of design speed as the overall control. In the design of roadway curves, it is necessary to establish proper relation between design speed and curvature and also their joint relations with superelevation and side friction. Although these relations stem from the laws of physics, the actual values for use in design depend on practical limits and factors determined more or less empirically over the range of variables involved.

A key parameter that represents the friction demand for a vehicle traversing a horizontal curve is the side friction factor, which can be estimated as:

Metric

Design speed (km/h)	Maximum design side friction factor, f_{max}	Minimum radius (m), R_{min} Max. superelevation rate (%), e_{max} 4	6	8	10	12
20	0.180	15	15	10	10	10
30	0.170	35	30	30	25	25
40	0.170	60	55	50	45	45
50	0.160	100	90	80	75	70
60	0.150	150	135	125	115	105
70	0.140	215	195	175	160	150
80	0.140	280	250	230	210	195
90	0.130	375	335	305	275	255
100	0.120	490	435	395	360	330

US Customary

Design speed (mph)	Maximum design side friction factor, f_{max}	Minimum radius (ft), R_{min} Max. superelevation rate (%), e_{max} 4	6	8	10	12
15	0.175	70	65	60	55	50
20	0.170	125	115	105	100	90
25	0.165	205	185	170	160	145
30	0.160	300	275	250	230	215
35	0.155	420	380	350	320	300
40	0.150	565	510	465	430	395
45	0.145	730	660	600	555	510
50	0.140	930	835	760	695	645
55	0.130	1190	1065	965	880	810
60	0.120	1505	1340	1205	1095	1005

Exhibit 3. Maximum Side Friction Factor and Minimum Radius for Horizontal Curve Design on Higher Volume Roadways (1)

Exhibit 4 presents the values of f_{max} and R_{min} used in design of higher volume low-speed urban streets, as specified in Chapter 3 of the AASHTO *Policy on Geometric Design of Highways and Streets* (1). These criteria are applicable to urban streets with design speeds of 70 km/h [45 mph] or less. Superelevation rates greater than 6 percent are not recommended for such streets because higher rates would be inappropriate for low-speed operation.

Existing Roads

For improvement projects on existing very low-volume local roads, the existing horizontal curve geometry should generally be considered acceptable unless there is evidence of a site-specific safety problem related to horizontal curvature. The following guidelines reflect the results of the risk assessment for horizontal curves on existing roads:

- For curves on very low-volume local roads with low speeds (design or estimated operating speed of 70 km/h [45 mph] or less), reconstruction without changing the existing curve geometry and cross section is acceptable if the nominal design speed of the curve is within 30 km/h or 20 mph of the design or operating speed, and if there is no clear evidence of a site-specific safety problem associated with the curve.
- For curves on very low-volume local roads with higher speeds (design or estimated operating speed greater than 70 km/h [45 mph]), reconstruction without changing the existing curve geometry and cross section is acceptable if the nominal design speed of the curve is within 20 km/h or 10 mph of the design or operating speed, and if there is no clear evidence of a site-specific safety problem associated with the curve.

Evidence of a site-specific safety problem may be: a pattern of curve-related crashes (requiring at least 5 years, and preferably 10 years, of crash history); physical evidence of curve problems such as skid marks, scarred trees or utility poles, substantial edge rutting or encroachments, etc.; a history of complaints from residents and/or local police; or measured or known speeds substantially higher (e.g., 30 km/h or 20 mph higher) than the intended design speed. Even with such evidence, curve improvements should focus on low-cost measures designed to control speeds, enhance curve tracking, or mitigate roadside encroachment severity. Except in rare circumstances, there are more cost-effective solutions to identified curve problems on very low-volume local roads than curve flattening and reconstruction. Design actions to correct such problems should emphasize such low-cost measures and should not emphasize or encourage more costly measures such as curve flattening.

Acceptable substitutes for curve reconstruction include measures to reduce speed in the curve (signing, rumble strips, pavement markings), measures to improve the roadside within the curve (clearing slopes, widening shoulder through curve), and measures to increase pavement friction within the curve. Reconstruction employing any or all of these measures should be accompanied by appropriate before-and-after studies to monitor their effectiveness.

STOPPING SIGHT DISTANCE

Sight distance is the length of roadway ahead visible to the driver. The available sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to avoid colliding with a stationary object in its path. On higher volume highways, sight distance at every point on the highway should be at least that needed for a poorly performing driver or a poorly equipped vehicle to stop within the available sight distance. The object normally considered in stopping sight distance design is a stopped vehicle in the roadway. On local roads with extremely low traffic volumes, on which stopped vehicles would rarely be

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A Policy on Geometric Design of Highways and Streets

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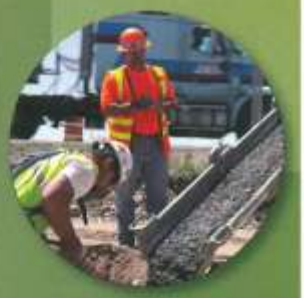

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5 Local Roads and Streets

5.1 INTRODUCTION

This chapter presents guidance on the application of geometric design criteria to facilities functionally classified as local roads and streets. The chapter is subdivided into sections on rural, urban, and special-purpose local roads.

A local road or street serves primarily to provide access to farms, residences, businesses, or other abutting properties. Although local roads and streets may be planned, constructed, and operated with the predominant function of providing access to adjacent property for a variety of users, some local roads and streets serve a limited amount of through traffic. On these roads the through traffic is local in nature and extent rather than regional, intrastate, or interstate. Such roads properly include geometric design and traffic control features more typical of collectors and arterials.

Local roads and streets constitute a high proportion of the roadway mileage in the United States. The traffic volume generated by the abutting land uses are largely short trips or a relatively small part of longer trips where the local road connects with major streets or highways of higher classifications. Because of the relatively low traffic volumes and the extensive roadway mileage, design criteria for local roads and streets are of a comparatively low order as a matter of practicality. However, to provide traffic mobility and safety—together with the essential economy in construction, maintenance, and operation—they should be planned, located, and designed to be suitable for predictable traffic operations and should be consistent with the development and culture abutting the right-of-way.

In constrained or unusual conditions, it may not be practical to meet the design criteria presented in this chapter. In such cases, the goal should be to obtain the best practical alignment, grade, sight distance, and drainage that are consistent with terrain, development (present and anticipated), safety, and available funds.

Drainage, both on the pavement itself and from the sides and subsurface, is an important design consideration. Inadequate drainage can lead to high maintenance costs and adverse operational conditions. In snow regions, roadways should be designed so that there is sufficient storage space for plowed snow and proper drainage for melting conditions.

Table 5-5. Minimum Width of Traveled Way and Shoulders

Metric					U.S. Customary				
Design Speed (km/h)	Minimum Width of Traveled Way (m) for Specified Design Volume (veh/day)				Design Speed (mph)	Minimum Width of Traveled Way (ft) for Specified Design Volume (veh/day)			
	under 400	400 to 1500	1500 to 2000	over 2000		under 400	400 to 1500	1500 to 2000	over 2000
20	5.4	6.0[a]	6.0	6.6	15	18	20[a]	20	22
30	5.4	6.0[a]	6.6	7.2[b]	20	18	20[a]	22	24[b]
40	5.4	6.0[a]	6.6	7.2[b]	25	18	20[a]	22	24[b]
50	5.4	6.0[a]	6.6	7.2[b]	30	18	20[a]	22	24[b]
60	5.4	6.0[a]	6.6	7.2[b]	40	18	20[a]	22	24[b]
70	6.0	6.6	6.6	7.2[b]	45	20	22	22	24[b]
80	6.0	6.6	6.6	7.2[b]	50	20	22	22	24[b]
90	6.6	6.6	7.2[b]	7.2[b]	55	22	22	24[b]	24[b]
100	6.6	6.6	7.2[b]	7.2[b]	60	22	22	24[b]	24[b]
					65	22	22	24[b]	24[b]
All speeds	Width of graded shoulder on each side of the road (m)				All speeds	Width of graded shoulder on each side of the road (ft)			
	0.6	1.5[a,c]	1.8	2.4		2	5[a,c]	6	8

[a] For roads in mountainous terrain with design volume of 400 to 600 veh/day, use 5.4-m [18-ft] traveled way width and 0.6-m [2-ft] shoulder width.

[b] Where the width of the traveled way is shown as 7.2 m [24 ft], the width may remain at 6.6 m [22 ft] on reconstructed highways where there is no crash pattern suggesting the need for widening.

[c] May be adjusted to achieve a minimum roadway width of 9 m [30 ft] for design speeds greater than 60 km/h [40 mph].

Right-of-Way Width

Providing right-of-way widths that accommodate construction, adequate drainage, and proper maintenance of a highway is a very important part of the overall design. Wide rights-of-way permit the construction of gentle slopes, resulting in reduced crash severity potential and providing for easier and more economical maintenance. The procurement of sufficient right-of-way at the time of the initial construction permits the widening of the roadway and the widening and strengthening of the pavement at a reasonable cost as traffic volumes increase.

In developed areas, it may be necessary to limit the right-of-way width. However, the right-of-way width should not be less than that needed to accommodate all the elements of the design cross sections, utilities, and appropriate border areas.

Medians

Medians are generally not provided for local rural roads. For additional information on medians, see Section 5.3 on "Local Urban Streets."

Bicycle/Pedestrian Facilities

Many local roadways are sufficient to accommodate bicycle traffic. Where special facilities for bicycles are desired, they should be in accordance with AASHTO's *Guide for the Development of Bicycle Facilities* (*2*).

Sidewalks are not normally found along local rural roads. However, for areas where the designer desires to accommodate pedestrians, additional design guidance can be found in Section 4.17.1 on "Sidewalks," and in AASHTO's *Guide for the Planning, Design, and Operation of Pedestrian Facilities* (*5*).

5.2.3 Structures

New and Reconstructed Structures

The design of bridges, culverts, walls, tunnels, and other structures should be in accordance with the current *AASHTO LRFD Bridge Design Specifications* (*8*). Except as otherwise indicated in this chapter and in Chapter 4, the dimensional design of structures should also be in accordance with Reference (*8*).

The minimum design loading for new bridges on local rural roads should be the HL-93 design vehicle live loads.

The minimum clear roadway widths for new and reconstructed bridges should be as given in Table 5-6. For general discussion of structure widths, see Chapter 10.

Table 5-6. Minimum Clear Roadway Widths and Design Loadings for New and Reconstructed Bridges

Metric			U.S. Customary		
Design Volume (veh/day)	Minimum Clear Roadway Width for Bridges[a]	Design Loading Structural Capacity	Design Volume (veh/day)	Minimum Clear Roadway Width for Bridges[a]	Design Loading Structural Capacity
400 and under	Traveled way + 0.6 m (each side)	HL 93	400 and under	Traveled way + 2 ft (each side)	HL 93
400 to 2000	Traveled way + 1.0 m (each side)	HL 93	400 to 2000	Traveled way + 3 ft (each side)	HL 93
over 2000	Approach roadway width[b]	HL 93	over 2000	Approach roadway width[b]	HL 93

[a] Where the approach roadway width (traveled way plus shoulders) is surfaced, that surface width should be carried across the structures.

[b] For bridges in excess of 30 m [100 ft] in length, the minimum width of traveled way plus 1 m [3 ft] on each side is acceptable.

Bridges to Remain in Place

Where an existing road is to be reconstructed, an existing bridge that fits the proposed alignment and gradeline may remain in place when its structural capacity, in terms of design loading and clear roadway width, are at least equal to the values shown in Table 5-7 for the applicable traffic volume.

The values shown in Table 5-7 do not apply to structures with total lengths greater than 30 m [100 ft]. These structures should be analyzed individually, taking into consideration the condition of the structure,

6 Collector Roads and Streets

6.1 INTRODUCTION

This chapter presents guidance on the application of geometric design criteria to facilities functionally classified as collector roads and streets. The chapter is subdivided into sections on rural and urban collectors.

The collector street is a public highway, usually serving moderate traffic volumes. There may be few discernible differences between collectors and local streets within a neighborhood, since collectors provide an access function to adjacent residential development and to some neighborhood facilities. However, the design of a collector street should reflect its function as a collector and should not be conceived or developed simply as a continuous access street. The collector should allow access to abutting properties consistent with the level of service desired.

The function of a collector may be understood by referring to those functional classes that are both higher and lower than the collector classification—the arterial and the local road or street. Since the function of a collector combines aspects of both arterials and local streets, collectors serve a dual function: collecting traffic for movement between arterial streets and local roads, and providing access to abutting properties. Collector streets link neighborhoods or areas of homogeneous land use with the arterial street system. These streets not only serve traffic movements between arterials and local streets, but also serve through traffic within local areas. Collector streets should be planned so as to not disrupt the activities within the areas they serve.

The use of design criteria that exceed those described in this chapter is encouraged, where practical. Every effort should be made to obtain the best practical alignment, profile, sight distance, and drainage that are consistent with terrain, present and anticipated development, current and projected traffic volumes, safety, and available funds.

Roadside design has an important role in reducing the severity of crashes that may occur when vehicles run off the road. On low-volume roads or streets or in urban areas, it may not be practical to provide an obstacle-free roadside. However, as much clear roadside as is practical should be provided. This becomes more important as speeds increase. The judicious use of flatter slopes and roadside barriers helps to reduce crash severity for vehicles that leave the roadway. Proper placement of utility features also assists in achieving reduced severity for roadside crashes.

Table 6-5. Minimum Width of Traveled Way and Shoulders

Metric					U.S. Customary				
Design Speed (km/h)	Minimum Width of Traveled Way (m) for Specified Design Volume (veh/day[a])				Design Speed (mph)	Minimum Width of Traveled Way (ft) for Specified Design Volume (veh/day[a])			
	under 400	400 to 1500	1500 to 2000	over 2000		under 400	400 to 1500	1500 to 2000	over 2000
30	6.0[b]	6.0	6.6	7.2	20	20[b]	20	22	24
40	6.0[b]	6.0	6.6	7.2	25	20[b]	20	22	24
50	6.0[b]	6.0	6.6	7.2	30	20[b]	20	22	24
60	6.0[b]	6.6	6.6	7.2	35	20[b]	22	22	24
70	6.0	6.6	6.6	7.2	40	20[b]	22	22	24
80	6.0	6.6	6.6	7.2	45	20	22	22	24
90	6.6	6.6	7.2	7.2	50	20	22	22	24
100	6.6	6.6	7.2	7.2	55	22	22	24	24
					60	22	22	24	24
					65	22	22	24	24
	Width of Shoulder on Each Side of Road (m)					Width of Shoulder on Each Side of Road (ft)			
All Speeds	0.6	1.5[c]	1.8	2.4	All Speeds	2.0	5.0[c]	6.0	8.0

[a] On roadways to be reconstructed, a 6.6-m [22-ft] traveled way may be retained where the alignment is satisfactory and there is no crash pattern suggesting the need for widening.

[b] A 5.4-m [18-ft] minimum width may be used for roadways with design volumes under 250 veh/day.

[c] Shoulder width may be reduced for design speeds greater than 50 km/h [30 mph] provided that a minimum roadway width of 9 m [30 ft] is maintained.

Note: See text for roadside barrier and off-tracking considerations.

Number of Lanes

The number of lanes should be sufficient to accommodate the design traffic volumes for the desired level of service. Normally, capacity conditions do not govern rural collector roads, and two lanes are appropriate. For further information, see Section 2.4 on "Highway Capacity."

Parking Lanes

Parking lanes are generally not provided on rural collectors. For additional information on parking lanes, see Section 6.3 on "Urban Collectors."

Medians

Medians are generally not provided on rural collectors. For additional information on medians, see Section 6.3 on "Urban Collectors."

Right-of-Way Width

Providing right-of-way widths that accommodate construction, adequate drainage, and proper maintenance of a highway is an important part of the overall design. Wide rights-of-way permit the construction of gentle slopes, resulting in a reduced crash severity potential and accommodating easier and more eco-

nomical maintenance. The acquisition of sufficient right-of-way at the time of initial construction permits subsequent widening of the roadway and the widening and strengthening of the pavement at a reasonable cost as traffic volumes increase.

In developed areas, it may be necessary to limit the right-of-way width. However, the right-of-way width should not be less than that needed to accommodate all elements of the design cross section, utilities, and appropriate border areas.

Bicycle/Pedestrian Facilities

Where bicycle and pedestrian facilities are included as part of the design, refer to the AASHTO *Guide for the Development of Bicycle Facilities* (2) and the AASHTO *Guide for the Planning, Design, and Operation of Pedestrian Facilities* (4).

Curbs and sidewalks are generally not constructed on rural collectors. See Section 6.3 on "Urban Collectors" for additional information.

6.2.3 Structures

New and Reconstructed Structures

The design of bridges, culverts, walls, tunnels, and other structures should be in accordance with the current *AASHTO LRFD Bridge Design Specifications* (8). Except as otherwise indicated in this policy, the dimensional design of structures should be in accordance with these design specifications.

The minimum design loading for bridges on collector roads should be the HL-93 design vehicle live loads. The minimum roadway widths for new and reconstructed bridges should be as shown in Table 6-6.

Table 6-6. Minimum Roadway Widths and Design Loadings for New and Reconstructed Bridges

Metric			U.S. Customary		
Design Volume (veh/day)	Minimum Clear Roadway Width for Bridges[a]	Design Loading Structural Capacity	Design Volume (veh/day)	Minimum Clear Roadway Width for Bridges[a]	Design Loading Structural Capacity
400 and under	Traveled way + 0.6 m (each side)	HL 93	400 and under	Traveled way + 2 ft (each side)	HL 93
400 to 1500	Traveled way + 1 m (each side)	HL 93	400 to 1500	Traveled way + 3 ft (each side)	HL 93
1500 to 2000	Traveled way + 1.2 m (each side)[b]	HL 93	1500 to 2000	Traveled way + 4 ft (each side)[b]	HL 93
over 2000	Approach roadway (width)[b]	HL 93	over 2000	Approach roadway (width)[b]	HL 93

[a] Where the approach roadway width (traveled way plus shoulders) is surfaced, that surface width should be carried across the structures.

[b] For bridges in excess of 30 m [100 ft] in length, the minimum width of traveled way plus 1 m [3 ft] on each side is acceptable.

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Chapter 7
Bridge Railings and Transitions

7.0 OVERVIEW

A *bridge railing* is a longitudinal barrier intended to prevent a vehicle from running off the edge of a bridge or culvert. Bridge railings are normally constructed of a metal or concrete post-and-railing system, a concrete safety shape, or a combination of metal and concrete. Most bridge railings differ from roadside barriers in that bridge railings are an integral part of the structure (i.e., physically connected) and usually are designed to have virtually no deflection when struck by an errant vehicle.

This chapter summarizes the performance and structural requirements of each of the six test levels defined in *NCHRP Report 350: Recommended Procedures for the Safety Performance Evaluation of Highway Features (13)* and *Manual for Assessing Safety Hardware* (MASH) *(3)* for bridge railings. It also addresses selection and placement guidelines for new construction and includes examples of some typical retrofit designs for older bridges with substandard railings. Finally, it addresses bridge railings and roadside barriers as a complete system and provides general information on appropriate transition sections between the two barrier types.

The information presented here is intended only to summarize selected sections of the current *Standard Specifications for Highway Bridges (1)* and the *AASHTO LRFD Bridge Design Specifications (2)* from the American Association of State Highway and Transportation Officials (AASHTO). Detailed information on analytic design procedures for test rail specimens, design loadings, and materials specifications can be found in those documents.

7.1 PERFORMANCE REQUIREMENTS

The *AASHTO Standard Specifications for Highway Bridges* requires that bridge railings meet specific geometric criteria and be capable of resisting applied static loads without exceeding design requirements in any of their component members. The Federal Highway Administration (FHWA) requires all bridge railings used on the National Highway System (NHS) to be a crash-tested design.

The *AASHTO LRFD Bridge Design Specifications* provide the most current guidance on performance requirements of railings for new bridges and for rehabilitated bridges to the extent that railing replacement is determined to be appropriate. NCHRP Report 350 crash test criteria were used to develop the design criteria in the *AASHTO LRFD Bridge Design Specifications*.

Existing bridge railings designed to criteria in the *AASHTO Standard Specifications for Highway Bridges* and those crash tested under previous guidelines may be acceptable to use on new or reconstruction projects through evaluation of their in-service performance. For existing bridge rails, individual states should develop a guideline for retention, upgrading, or both for the in-place rails based on a safe, cost-effective approach. See Section 7.7 for additional guidance or comparative analysis.

It is not reasonable to establish absolute warrants as to when, where, or what type of barriers or screens should be installed. The general need for economy of design and desire to preserve the clean lines of the structures, unencumbered by screens, must be carefully balanced against the requirement that the highway traveler, overpass pedestrian, and adjoining property be provided maximum protection.

Various types and configurations of screens, usually of a chain-link fence type, have been installed on overpasses throughout the country in areas where the problem of throwing or dropping objects has been determined to exist.

The simplest design for use on pedestrian overpasses is a vertical fence erected on the bridge railing of the structure. Although this type of design has been effective in keeping children from playing on the railing, the design has proven somewhat ineffective in combating the problem of objects being thrown from the structure. Objects large enough to cause serious damage to passing vehicles still can be thrown over a vertical structure with some degree of accuracy. On pedestrian bridges, a semicircular enclosure has been placed on top of the two vertical walls to discourage this type of vandalism. This design has further evolved into one with a partially enclosed curved top, which is used in some areas. Objects generally cannot be thrown over the top of a partially enclosed screen with any degree of accuracy.

Care should be taken in the design of chain-link type screens to ensure that the opening at the bottom of the side screens, through which an object can be pushed or dropped, is eliminated or kept to a minimum. Where aesthetics are important, decorative type screening has been used.

Installation of protective screening should be analyzed on a case-by-case basis at the following locations:

- Existing structures where incidents of objects being dropped or thrown from the overpass have occurred and where increased surveillance, warning signs, or apprehension of a few individuals has not effectively alleviated the problem
- An overpass near a school, playground, or other location where it would be expected that the overpass would be frequently used by children not accompanied by adults
- All overpasses in urban areas used exclusively by pedestrians and not easily kept under surveillance by law enforcement personnel
- Overpasses with walkways where experience on similar structures indicates a need for such screens
- Overpasses where private property that is subject to damage, such as buildings or power stations, is located beneath the structure

7.6 PLACEMENT RECOMMENDATIONS

A desirable feature of a bridge structure is a full, continuous shoulder so that a uniform clearance to roadside elements is maintained. However, there are many existing bridges that are narrower than the approach roadway and shoulder. When the bridge railing is located within the recommended shy-line offset distance (see Table 5-7), the approach railing should have the appropriate flare rate shown in Table 5-9.

Curbs in front of bridge railings should be avoided unless the bridge rail was crash tested with a curb. Use of combination curb and vehicle barrier rail typically shall be restricted to roadways designated for a TL-1 or TL-2 applications. Curb height is prescribed in Chapter 13 of the *AASHTO LRFD Bridge Design Specifications* as a 152-mm [6-in.] preferred height, with a maximum of 203 mm [8 in.] on a sidewalk in front of the bridge rail. Final curb height may be determined by considering subsequent maintenance overlays.

Terminating the bridge railing requires special treatment considerations. A crash-tested transition from the approach guardrail should be attached to the end of the bridge rail.

7.6.1 Considerstions for Urban and Low-Volume Roads

The variables regarding the placement of bridge railings, bridge rail transitions, and approach guardrails become more challenging for urban and low-volume roadways. The primary reasons are the need to design these features around intersections, streets, sidewalks, and other features to provide access for pedestrians and persons with disabilities. The selection of the appropriate bridge railing needs

to consider roadway design, traffic volumes, percentage of heavy vehicles, design speed, and volume of pedestrian traffic. However, bridges in urban or low-volume roads that carry low traffic volumes, reduced speeds, or both may not need bridge railings designed to the same standard as bridge railings on high-speed, high-volume facilities.

The bridge rail and transition section must function effectively for the selected location and conditions. Bridge railings with adequate strength to prevent penetration from passenger vehicles and transitions that meet the TL-1 or TL-2 requirements of MASH or NCHRP Report 350 are generally acceptable for low-speed roadways of 70 km/h [45 mph] or less. FHWA does require a TL-3 bridge railing as a minimum for all NHS projects unless supported by another rational selection procedure.

When a bridge also serves pedestrians, two options for accommodating them typically are used. The first is a raised curb with a sidewalk in combination with an outer bridge barrier and pedestrian railing combination. The second option involves placing the barrier where it affords maximum pedestrian protection from vehicular traffic when it is justified for the design conditions. For this option, a pedestrian railing is needed at the outer edge of the bridge structure. The need for the second option should be based on the volume and speed of roadway traffic, lane width, curb offset, number of pedestrians using the bridge, crash statistics, and site conditions at either end of the bridge structure.

The use of a bridge railing may create a hazard unless the railing is terminated in an acceptable manner. Flaring the railing end section away from the roadway often is not practical because it may encroach on the sidewalk. In some instances, a crash cushion or a section of approach guardrail parallel to the roadway with a suitable end terminal may be used. However, the presence of a raised curb may affect the performance of these types of end treatment. In low-speed situations, a concrete barrier tapered end section parallel to the roadway may be the best compromise. Concrete railings should be extended a sufficient length beyond the end of the bridge to protect drop-offs, yet not extend so far as to intrude on sight distance for adjacent street intersections. Figure 7-7 shows one method of terminating a railing in low-speed situations, while Figure 7-8 shows a termination of a parallel approach rail with a suitable end terminal.

Figure 7-7. End Treatment for Traffic Railing on a Bridge in Low-Speed Situations

Chapter 12

Roadside Safety on Low-Volume Roads and Streets

12.0 OVERVIEW

Although much of the information and design guidelines contained in earlier chapters address the application of roadside safety design to high-speed, high-volume roadway facilities, some design parameters such as for minimum clear zone and for barrier runouts, are available for roadways with an average daily traffic (ADT) of less than 750 vehicles per day (vpd) and 1,000 vpd, respectively. However, crash data indicates that a significant number of fatal crashes have occurred on roads and streets with even lower traffic volumes. Using functional classification as a surrogate for lower volume facilities, a high proportion of these crashes occur on roads other than freeways and principal arterials (see Figure 12-1). Furthermore, specific types of crashes, such as rollovers and impacts into trees and utility poles, contribute heavily to the overall number of highway deaths resulting from single-vehicle, run-off-the-road crashes, many of which occurred on low-volume roads and streets.

Highway agencies cannot reasonably address all roadside design issues on low-volume roads for one important reason: Although these facilities constitute a major portion of total highway mileage, available funding for improvements on these types of roads is usually a small percentage of the total monies available for highway improvements. Because crashes on these types of facilities seldom are concentrated in specific areas, it is far more difficult to plan and implement cost-effective countermeasures. Though it is important to note that the roadside design principles identified in earlier chapters apply to all public roads and streets, it is equally important to acknowledge that the extent to which these principles can be effectively applied to low-volume roads will vary significantly from jurisdiction to jurisdiction.

It may not be practical to provide an obstacle-free roadside on very low-volume (ADT $\leq$400) local roads and streets. However, every effort should be made to provide as much clear roadside as is practical. This becomes more important as speeds increase. The judicious use of flatter slopes, guardrail, and warning signs all help to achieve roadside safety as well as to reduce crash severity for vehicles that leave the roadway. It may not be cost-effective to design local roads and streets that carry less than 400 vpd and use the same criteria applicable to higher volume roads or to make extensive traffic operational or safety improvements to such very low-volume roads. System-wide strategies to make smaller improvements or concentrate on areas of higher crash locations may be more cost-effective and produce more effective results.

12.8 BRIDGES

Bridges or bridge-length culverts may represent the most restrictive features found on low-volume roads. Safety concerns related to structures can be grouped into four major areas: signing and delineation, approach guardrail (including terminals), the physical transition from the approach guardrail to the bridge rail proper, and the bridge rail itself. Figure 12-5 illustrates all of these deficiencies.

Figure 12-5. Typical Low-Volume Rural Bridge

Bridges located on low-volume roads often do not meet current geometric design criteria. More specifically, these bridges may be narrower than the approach roadway, only one-lane wide, or aligned so that they are not readily visible to an approaching motorist and thus require a significant speed reduction to cross safely. Older bridges may have been constructed at right angles to a stream or crossroad, necessitating sharp curves at one or both ends of the bridge. Standard signing for any of these cases is in the *Manual on Uniform Traffic Control Devices* (MUTCD) *(5)*, and their detailed application is shown in Chapter 4 of the 1997 AASHTO *Highway Safety Design and Operations Guide (2)*. Curve warning signs and roadside delineation, including the Chevron Alignment sign, should be used, especially when the safe approach speed is significantly lower than the operating speeds on the adjacent sections of the approach roadway.

Another item of concern is the approach guardrail. Often, approach guardrails at bridges and culverts are the only guardrails along a section of roadway. Not only is this barrier intended to shield the ends of the bridge rail, but it also should be designed to prevent a motorist from running off the road and into or onto whatever feature the bridge crosses. Thus, the length of approach guardrail should be determined based on the lateral area to be shielded, approach traffic speeds and volumes, and site-specific conditions. Some bridges have driveways or intersecting roadways so close to the bridge that a fully effective barrier installation is not possible. In these cases, many agencies curve the approach rail from the bridge end around the intersecting roadway to provide partial protection for motorists. Under some circumstances (e.g., extremely low traffic volumes or approach speeds, good sight distance, and low probability of a severe crash), a decision to use no approach guardrail may be appropriate. In such instances, adequate signing and delineation become critical. A study conducted for the Minnesota Department of Transportation (Mn/DOT) *(6)* concluded that approach guardrail might not be cost-effective for bridges on roads with traffic volumes less than 400 vpd and recommended that these bridges be reviewed on a case-by-case basis for guardrail need. However, that does not eliminate the need to protect the bridge rail end. Appropriate end treatments should be evaluated where guardrail is not needed.