ACEC/Caltrans Division of Engineering Services
Structures Liaison Committee

MEETING MINUTES

DATE: February 7, 2014

TIME: 10:00 AM – 12:00 PM

MAIN LOCATION: California Department of Transportation
Division of Engineering Services
1801 30th Street, Room 102 (Farmers Market 1 Building, 1st Floor)
Sacramento, CA 95816

VIDEO CONFERENCE LOCATION: District 12 Office, Room 333
3337 Michelson Drive, Irvine

Note ***action items*** are in ***bold italics*** with person responsible and due date in parenthesis.

I. Call to Order

A. Self-introductions – *see sign-in sheets*

B. Changes to Agenda – *New Business & Annual Report Items were added*

C. Review Previous Meeting Minutes (10/27/2013)

II. Old Business

A. Technical Workshops:

1. Caltrans 2010 Construction Standards Webinar – Update
Stott stated that the webinar is posted. However, it is not easy to find. Stott will send Fredrickson the link to post on Website.
Caltrans to post webinar link on website (Fredrickson, 2/21/14)

2. 2010 Specifications Training – Update
Keever stated that Caltrans may be willing to provide 2010 Specifications training to a few selected consultants, with the intent of these consultants leading an ACEC Speciation Training Class. Jeff Goronea could provide training, since Ruth Fernandez has left Structures Specifications. Pieplow stated that Caltrans is transitioning to 2015 Specifications. Reno stated that ACEC will be putting together a training agenda. Abcarius suggested working through a typical bridge project with Caltrans representatives. Shenoy said a similar example that was done with prior specifications. Reno stated that a small group will compose a draft outline and agenda for the training session and circulate to the committee. The group will consist of Abcarius, Reno, Cullers and Shenoy.
ACEC to develop draft specifications training outline and agenda (Abcarius, 2/21/14).

3. Structures Design Seminars – Update
Reno stated ACEC is offering to lead a workshop with Caltrans on design-build best practices and lessons learned. Rajendra stated that Caltrans has been tracking

design-build best practices internally. Keever suggested presenting case studies. LaFranchi suggested developing a whitepaper. Reno stated a small group within ACEC will develop a workshop outline and agenda for the committee to review. The group will consist of Wang, Ashley and Kazmi.
ACEC to prepare Draft Structures D/B Workshop Agenda and Outline (Wang, 2/21/14)

4. Construction Annual Winter Training Seminar
Stott stated that Session 5 of the Winter Training is underway, and the subjects are earth retaining systems, bridge demolition and dispute-resolution. Stott affirmed that a one day training seminar, similar to previous ones done, could be made to ACEC. With Caltrans current schedule of classes, the middle to end of April would be ideal. ***Stott will send agenda to Fredrickson****. Fredrickson to determine availability of Sacramento training room.*
Caltrans determine availability of Sacramento Training Room Facility (Fredrickson, 2/21/14)
ACEC to find Southern California Training Room Facilities (Reno, 2/21/14)

III. Recurring Business

A. DES Updates (Pieplow)

Pieplow stated Jim Davis has been promoted to lead HQ-Project Management. Shira Rajendra has taken Jim Davis's position to lead DES-Program/Project & Resource Management. Lam Nguyen has taken a position with the High Speed Rail, and Said Ismail has taken Lam Nguyen's position to lead DES-OSFP / SLA / SCM. Ofelia Alcantara has taken a position with High Speed Rail. Gudmund Setberg is responsible for Structure Design for Districts 5, 6, 9 & 10 (Centra)l. John Fujimoto has left OSFP and is the new Technical Liaison Engineer (TLE) for Districts 1, 2 & 3in-house projects. Workload overall is trending downward.

Several new publications are available:

- ✓ *Draft California Bridges & Structures Strategic Direction.*
- ✓ *Safe, Smart, Transportation Initiative (SSTI) Report on Caltrans is available. Per request of Brian Kelley. Authors are former transportation officials and academics. Negative comments focused on Caltrans being too freeway focused, and not sensitive to multi-modal transportation systems and smart growth.*
- ✓ *Mile Marker has been released this week and is available on Caltrans website. Rajendra noted articles on the Devil's Slide project and bridge health monitoring.*
- ✓ *Caltrans Program Review Report is available.*

B. DES Updates: Memo to Designers, Technical Research, IQA (Hida)

1. Adoption of the AASHTO LRFD 6th Edition
California Amendments Adopting 6th Edition are at the Publications Office at this time. A draft implementation memo was circulated at the meeting, and Hida requested feedback on the memo. Stott stated that using the Ready-to-List (RTL) date as risky because there are many projects that reach a fairly advanced state of design and sit on the shelf for various reasons. Reno suggested that 65% or PA&ED be used as a marker instead of RTL. Rajendra suggested using the Highway Design Manual implementation memo as an example. Hida stated that the biggest change in

the CA Amendments is abutment design using LRFD. In parallel, CT Abut is currently under development and is soon to be released. Abcarius stated that ACEC is offering to provide beta testing. Updates to CT Bridge, and CT Rigid are expected.
ACEC to provide feedback on Draft 6th Edition Implementation Memo (Reno, 3/1/14)

2. Structure Policy & Innovation Update

Hard copies of the Structure Policy and Innovation Update for FY 13/14 were made available to the committee. Hida stated that draft Memo-to-designers 3-1 and 4-1 are available. ***Hida will send Fredrickson the link****.*
Eleven research projects were completed, and the research included topics related to ABC, seismic performance and repair, and earth retaining systems. Keever stated that there is a commitment to seismic research, but no guaranteed set aside. Seismic related research projects will receive funding on a competitive basis through the Division of Research and Innovation.

3. Load Rating of Local Agency Bridges

Reno stated that Caltrans has already begun mentioning the requirement of load rating as a deliverable during recent Type Selection Meetings for on-system work. Keever asked the source of these requests. Reno confirmed that the most recent request was made by an OSFP engineer in District 4. Rajendra suggested that it is coming from OSMI because of budget constraints. Reno asked for the software and methods currently used by Caltrans. Hida stated that there should be a policy directive, if there is not one currently available.
Caltrans to report on load rating policy (Hida. 3/1/14)

C. Project Development Oversight/Updates/Contracting Opportunities

Rajendra stated that there are no active procurements and more information on upcoming procurements will be available next quarter.

D. Statewide ACEC Committee Update

Abcarius reported on the statewide ACEC-Caltrans Liaison meeting held three weeks ago, and he reported on the following items:

- ✓ *LAPM Sections 13 and 14 are currently being rewritten for ADA compliance.*
- ✓ *The Safe Harbor rate of 110%, proposed by FHWA, will not be revised.*
- ✓ *DBE utilization is on the rise for 2013.*
- ✓ *Audits and Investigations: Executive compensation and indirect cost rates were discussed. Breach of contract rates of 100% or 2/3 of submitted rates were discussed. Mark Creveling presented an example showing that the requirement could result in significant financial harm to a company, as it takes often more than a year to resolve. Caltrans will meet with company CPA before rejecting rates. Joint ACEC/Caltrans taskforce on this issue has been formed.*
- ✓ *Pilot program for consultant selection is underway in District 8, where SOQ is reviewed and questions about SOQ are prepared and submitted to consultant prior to interview. For project references, Caltrans new form requires signature from project owner, which is difficult, considering the unwillingness and/or unavailability of owner's representatives.*

IV. New Business

A. 2013 ACEC Structures Liaison Annual Report

Reno stated that all comments on the annual report are needed by 2/14. Woelfel noted that the Santa Ana location was omitted from the Winter Training Seminar sites. Fredrickson noted that Caltrans committee members will review and provide comment.
ACEC to comment on 2013 Annual Report (Reno, 2/21/14)
Caltrans to comment on 2013 Annual Report (Fredrickson, 2/21/14)

B. Education Committee

Reno stated that ACEC is willing to present projects and/or innovations to Caltrans. These could be 2-3 presentations held over one day period. Reno requested ideas to be sent to him.
ACEC to circulate presentation concepts (Reno, 3/1/14)

C. Open Discussion

1. Structures Design Software

LaFranchi requested a list of externally-developed programs that are currently being used on the design floor by Caltrans. Keever was interested in what ACEC members are currently using.
Caltrans to develop list of commercial software used in-house (Hida, 4/25/14)
ACEC to develop list of commercial software currently used (Reno, 4/25/14)

2. Caltrans Field Testing Equipment

Stott noted that the Caltrans Profilograph Test Method is intended for the mechanical testing machines and not electronic machines. The electronic testing machines have not been calibrated.
Stott stated that new driving surface friction testing equipment is under development. This equipment is being developed so the units can be fabricated by external vendors.
Information only

3. Shop Drawing Review Stamp

LaFranchi stated that the stamp in Memos-to-Designers (MTD) is not consistent with the 2010 Standard Specifications. MTD 1-41 is referenced by both MTD 11-1, for prestressed shop drawings, and MTD 12-1, for steel shop drawings, but is not yet available. LaFranchi wanted to know how Caltrans Engineers are currently stamping show drawings for projects utilizing 2010 Specs. Stott reminded the group that the falsework reviews should be completed as outlined in the Bridge Construction Memo 3-6.0 which does require the completion of a Temporary Structure Plan Analysis Report, which must be signed and stamped by the Structure Representative.
Caltrans to report on shop drawing policy regarding the 2010 Spec. (Fredrickson, 3/1/14)
Caltrans to report on access of Bridge Construction Memo outside of Caltrans (Stott 3/1/2014)

4. 2010 Specifications

Reno asked if there have been any lessons-learned regarding the 2010 Standard Specifications with regards to the administration of construction projects. Stott noted that there haven't been many 2010 projects. Pieplow noted that Caltrans is

currently transitioning to the 2015 Spec. Abcarius noted that local agencies are requesting the use of the 2006 Specification. Stott noted that the 2010 Specifications are much cleaner standards and plans have consistent numbering. Reno cautioned that use of the 2006 Specifications will not include any of the major revisions to some of the significant sections which are in use today. This issue is compounded by the fact this it is extremely difficult to try to find the new language in the 2010 sections and format and then try to translate back into the 2006 format.
ACEC to report on 2010 Specification Issues (LaFranchi, 4/25/14)
Caltrans to report on 2010 Specification Issues (Fredrickson, 4/25/14)

Attachments:

Attachment 1 - Draft AASHTO LRFD 6th Edition Implementation Memorandum

Attachment 2 - Draft FY 13/14 Update on Cap-Corp Deliverables

Attachment 3 - 2013 Annual Report: ACEC/Caltrans DES Structures Liaison Committee

Attachment 4 - Draft California Bridges & Structures Strategic Direction

Attachment 5 – Caltrans DSR Research Notes, October 17, 2013

Attachment 6 – Sign-in Sheet – Caltrans Sacramento Location

Attachment 7 – Sign-in Sheet – Caltrans District 12 Location

Distribution:

Robert Pieplow, Caltrans, DES
Rob Stott, Caltrans, SC
Mike Keever, Caltrans, SD
Tom Ostrom, Caltrans, EQE
Sue Hida, Caltrans, SPI
Barton Newton, Caltrans, SPI
Dolores Valls, Caltrans, SMI
Said Ismail, Caltrans, OSFP
Phil Stolarski, Caltrans, GS/METS
Shira Rajendra, Caltrans, PPRM
Eric Fredrickson, Caltrans, OSFP
Mark Reno, Quincy Engineering
Mark Ashley, TY Lin International
Jay Holombo, TY Lin International
Nien Wang, HNTB
Jim Frost, Simon Wong Engineering
Wei Koo, WKE
Jack Abcarius, NV5
Chandu Shenoy, NV5
John Woelfel, HNTB
Steve Tayanipour, Huitt Zollars
Todd Goolkasian, Cornerstone Struct. Eng.
Shawn M. Cullers, Cornerstone Struct. Eng.
Greg Zeiss, HDR
Majid Sarraf, TTG
Ayman Salama, TRC
Kevin Coates, WKE
Syed Kazmi, URS
Mike Bianucci, Mark Thomas & Company
Sunny Jhutti, AECOM
Kevin Thompson, URS
Patricia Preston, Apex Civil Engineering
Walt LaFranchi, URS Corporation

Attachment 1 - Draft AASHTO LRFD 6th Edition Implementation Memorandum

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: DES DEPUTIES
Division of Engineering Services
DOLORES VALLS
Division of Maintenance
RAY ZHANG
Division of Local Assistance

Date: February 5, 2014

- Amendments finalized but not posted

From: BARTON NEWTON
Deputy Division Chief
Structure Policy & Innovation
Division of Engineering Services

Subject: **ADOPTION OF THE *AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION WITH THE CALIFORNIA AMENDMENTS.***

Effective February 5, 2014, the *AASHTO LRFD Bridge Design Specifications, 2012 (Sixth Edition)* with *California Amendments* (*AASHTO-CA BDS-6*), constitutes the primary design specifications for Caltrans bridges and ancillary structures.

For projects under development, adoption of *AASHTO-CA BDS-6* is:

- Not applicable when the Plans, Specifications, and Estimate (PS&E) has been submitted for advertising, or the project is under construction.
- Optional if it would not impose a significant delay in the project schedule or a significant increase in the project engineering or construction costs. The project history notes and plans must indicate the design criteria used.
- Mandatory for all projects with scheduled "Ready-to-List" dates (as defined in the FY14-15 Delivery Plan) after December 31, 2014.

Caltrans Standard Plans and Standard Specifications remain valid for use. If a project under development requires significant deviation from these standards, the design must meet the requirements of *AASHTO-CA BDS-6*.

The State Bridge Engineer shall approve any exception to adopting provisions in the *AASHTO-CA BDS-6* as stated above. This request must be made as early as possible.

AASHTO-CA BDS-6 shall be the basis of all Caltrans guidance material under development.

For questions or concerns on the application of the *AASHTO LRFD Bridge Design Specifications and California Amendments* on a specific project, consultants and local agencies should contact the Structure Liaison Engineer. Caltrans staff may contact the appropriate Technical Committee Chair or Technical Specialist.

c: Bob Pieplow, Chief, Division of Engineering Services
Amarjeet Benepal, Chief, Division of Pavements
Tim Craggs, Chief, Division of Design
Sue Hida, Chief, DES SP&I Office of State Bridge Engineer Support
Roberto Lacalle, Chief, DES SP&I Office of Structure Quality Management
Tom Ostrom, Chief, DES SP&I Office of Earthquake Engineering
Shannon Post, Chief, DES SP&I Office of Design & Technical Services

Attachment 2 - Draft FY 13/14 Update on Cap-Corp Deliverables

FY13-14 Update on Cap-Corp Deliverables

February 6, 2014

The objective of this SP&I Update is to share the list of Standards/Guidance targeted for delivery in FY13-14. This "Update" is not intended to be all inclusive of important Committee and Specialist activities, but to communicate what PRODUCTS can be anticipated. We hope you find this informative and the deliverables eventually the helpful to Project Delivery. Best wishes for a successful 2nd-half to this FY!

Accelerated Bridge Construction (ABC)

- ABC Decision Making Guidance
- MTD 1-8 Planning Studies – incorporating ABC decision making guidance
- MTD 1-29 Type Selection Review Meeting – incorporating ABC decision making guidance

Analysis Committee

- MTD15-19: Bridges with Skewed Supports (New)

Bridge Barriers

- Crash test Type 732SW
- Crash test ST-10 on trench (ALMGR)
- Prototype design contract ST-70SM
- MTD 14-19: Temporary Railing (Update, Draft)

Bridge Joints & Bearings

- MTD 7-1: Bridge Bearings (Update)
- MTD 7-2: Expansion Joints (Update)
- BDP Chapter 11: Bridge Bearings and Expansion Joints (New)

Bridge Preservation (SM&I)

- Concrete Spall Repair Qualified Product List Approval Criteria
- MTD 8-2: Protection Against Deicing Chemical and Freeze-Thaw Environment

Concrete: Post-tensioned Working Group

- Section 50 Specifications
- BDA 5-25 Modern Hinge Design (deferred until FY14-15)

Concrete: Non-prestressed Working Group

- Section 52 Specifications
- Spec changes for "Early Age Deck Cracking" pilot

Concrete: Precast-Prestressed Working Group

- BDP Chapter 8: Precast/Prestressed Concrete Girders
- Documentation for precast/prestressed concrete girder XS sheets
- MTD 11-8: Design of Precast Prestressed Girders

Culverts & Underground Structures

- MTD 23-1: Reinforced Concrete Box Culvert Design

Earth Retaining Systems Committee

- MTD 5-5: Design Criteria of Standard Earth Retaining Systems

Earthquake Committee

- MTD 20-7: Seismic Design of Slab Bridges (NEW)
- MTD 20-9: Splices of Bar Reinforcing Steel (NEW)
- MTD 20-17: Seismic Analysis Methods and Directionality for Earthquake Ground Motion (New)
- MTD 20-18: Seismic Design and Retrofit of Reinforced Concrete Short Columns and Pier Walls (New)
- MTD 20-11: Establishing Bridge Seismic Design Criteria (Update)

Hydraulics Committee

- MTD 1-29: Type Selection Review Meeting (Upadte)
- MTD: Hydraulic Products (New)

Loads Committee

- MTD 15-16: Crane Loads on Structures While under Contract Administration (Update by including example)

Signs & Overhead Structures

- MTD 16-1: Sign and Overhead Structures (New)
- BDA 18-14: Span Wire Structures
- LTS-6 (Adopted and training provided)
- Type 60P series XS sheets
- Re-engineer 35 ES Standard Plans

Sound Walls

Substructures Committee

- MTD 3-1: Deep Foundations
- MTD 4-1: Spread Footings
- BDA 12-1: Lateral Capacity of Standard Plan Piles (New)
- BDP 15: Shallow Foundations (Revision)
- BDP 16: Deep Foundations Parts I, II, and III (New)
- BDP 14: Abutments : No-integral (New) (First draft)
- BDA 12-1: CIDH Piles Standard Details (New) - Phase-I (New)
- MTD 5-1: (Revision) "Abutments" (Update deferred to FY14-15)
- BDA 12-1: CIDH Piles Standard Details - Phase-II (Update deferred to FY14-15)

Steel Committee

- Section 55 Specifications
- BDD Section 11 – Steel Bridges
- MTD 8-7: Stay-In-Place Metal Forms for Cast-In-Place Concrete Decks of Precast Concrete and Steel Girder Superstructures (developed with Concrete Committee)
- Caltrans Guide Specifications for Seismic Design of Steel Bridges (2nd Edition)

Other: Bridge Design Practice

Published
- Chapter 1 - Bridge Design Specifications
- Chapter 4 - Structural Analysis and Modeling
- Chapter 5 - Concrete Design Theory
- Chapter 6 - Steel Design Theory
- Chapter 10 - Concrete Deck

From SPI
- Chapter 3-Loads & Load Combinations

From Technical Publications:
- Chapter 7 - Post-tensioned Prestressed Concrete Girders
- Chapter 9 - Steel Plate Girders

From Technical Publications consultant to SP&I:
- Chapter 8 - Precast/Prestressed Concrete Girders
- Chapter 12 - Concrete Bent Caps
- Chapter 13 - Concrete Columns
- Chapter 15 - Shallow Foundations
- Chapter 16 - Deep Foundations
- Chapter 21 - Seismic Design of Concrete Bridges

Other: CA Amendments to 6th Edition

- DONE!

Attachment 3 - 2013 Annual Report: ACEC/Caltrans DES Structures Liaison Committee

2013 ANNUAL REPORT

ACEC/Caltrans Division of Engineering Services
Structures Liaison Committee

Prepared By: Shawn M. Cullers, Committee Co-Chair
Date: January 31, 2014

Introduction

The ACEC / Caltrans Division of Engineering Services (DES) Structures Liaison Committee (the Committee) was formed in 1992 with the primary purpose of maintaining a professional working group between Caltrans DES and ACEC member firms that perform engineering services for transportation structure projects. The Committee Charter requires that an Annual Report on Committee activities be prepared each calendar year.

Committee Meeting Dates

During the 2013 calendar year, the Committee met on the following dates:

February 1st (Friday), 2013
April 26th (Friday), 2013
July 26th (Friday), 2013
October 25th (Friday), 2013

Meeting minutes are prepared by the Committee Secretary, reviewed by DES and posted on the OSFP web site.

Committee Members

DES had strong representation on the Committee with most DES Deputy Division Chiefs attending regularly. Lam Nguyen served as Committee Co-chair. Caltrans' usual attendees included Rob Stott, Tony Marquez, Barton Newton, Eric Fredrickson, Mike Keever, and Jeff DeFevere. Sudhakar Vatti attended all meetings and provided coordination between ACEC and Caltrans committee members. Several guest speakers attended to address specific technical agenda topics.

The five regular members from ACEC were:

- Member 1: Districts 1-3, 9 & 10 – Mark Reno, Quincy Engineering
- Member 2: District 11 – Mark Ashley, TY Lin International
- Member 3: District 4 – Po Chen, Mark Thomas & Company
- Member 4: Districts 7,8 and 12 – Y. Nien Wang, HNTB
- Member 5: Districts 5 & 6 – Todd Goolkasian, Cornerstone Structural Engineering Group

For the 2013 meetings, the Committee Co-Chair was Shawn M. Cullers (via proxy for Todd Goolkasian) and the Committee Secretary was Mark Reno.

Major Topics

A standing agenda was utilized throughout the year. Regular agenda items included the following:

- Reports on Technical Topics
- DES Updates
- ACEC Updates/Technical Workshops
- Project Development Oversight
- Contracting Opportunities
- ACEC Statewide Committee Report

The Reports on Technical Topics included a wide variety of technical items that were addressed by the Committee. Committee meeting minutes and new guidance were provided to ACEC for distribution. Significant changes, and known impacts were discussed by the Committee to identify potential issues on multiple topics including the following:

MSE Walls: Caltrans developed a new Quality Management Plan (QMP) that is required as part of MSE shop drawings submittals. Only smooth wire reinforcing is allowed per the new Caltrans standard details and QMP.

Pressure Testing of PT Ducts: A new SSP for air pressure testing of post-tensioning ducts prior to grouting is being developed by Caltrans to help prevent grout leaks. SSP will be released when criteria for failed tests is established.

Bridge Sidewalk Widths: Due to ADA compliance requirements, sidewalks on bridges will be wider (6 ft. minimum width, 8 ft. recommended width, and 10 ft. preferred width). Updates will be issued to the HDM. Caltrans will be looking at the evaluation of the effects of a whole vehicle on a sidewalk due to the additional width.

Type 26 Barrier Phase Out: Research is progressing on the Type 732 barrier w/ an 8' Sidewalk as a TL-2 qualified replacement for the Type 26 barrier. The Type 26 barrier was grandfathered in and was never crash tested and will be phased out.

Railroad Clearances: Caltrans has removed guidance for railroad clearances due to recent interpretations of the guidelines relating to permanent vs. future configurations and the CPUC envelope. Caltrans is working on getting consensus on interpretations between itself, FHWA, and the railroads.

Caltrans Strategic Direction Document: Caltrans is developing a Structures Strategic Direction Document to better focus efforts on the department needs and development areas with objectives for both short and long term goals. There is more emphasis on total cost of a project including both construction and maintenance costs.

Updates to MTD and BDA: Caltrans is currently going through a quality review process of the Memo To Designers and Bridge Design Aids to determine if they are still required and should be updated.

Caltrans Update of New technical guidelines: Committee meeting minutes and new guidance were provided to ACEC for distribution, Caltrans also suggested a bin list be created within the meeting

agenda's so that certain items are placed on hold and not forgotten until action can be taken on them in the future.

Significant Accomplishments

Structure Construction, Falsework Design Winter Training Seminar (June 7th, 2013)
In a collaborative effort with Caltrans staff, ACEC members organized "Falsework Design Seminar" based on Caltrans in-house trainings. The training seminar was held statewide using webinar with sites in Sacramento, San Jose, Santa Barbara, Fresno, and San Diego. The webinar format accommodated a larger number of attendees and minimized travel time. The webinar format also reduced the time invested by trainers. Over 200 attendees from consultant engineering firms, construction contractors, and Local Agency representatives benefitted from this meaningful joint investment by ACEC and Caltrans. The ACEC regional committee leads provided local sponsorship that paid for snacks for the events. Feedback on the presentations was very positive.

The Caltrans Winter Training that was primarily focused on the design, review, and inspection of bridge falsework. It was geared towards both design professionals and construction personnel. Training course topics included design and analysis considerations, design examples, constructability concerns, inspection and construction considerations, camber examples, examples of what can go wrong, how systems are approved, and shop drawing review.

Future Plans (for the coming year)

Efforts will be made to establish seminars for the following topics:

1. Design Build - Lessons Learned Seminar: This seminar would pool both Caltrans and consultant experiences from recent design build projects to assist with the development of design criteria standards that could be used on future projects.
2. 2010 Specifications Training: Training would be provided by ACEC members trained by Caltrans Specifications writers. The training would be a hands-on approach that would clarify how the 2010 Specifications should be constructed on an example project.
3. Education Seminars for Caltrans – meet every 3rd Wednesday of the month. Currently the committee is calendared out for the next three to five months.

Committee Distribution Update
The effectiveness of the distribution system for the Committee's proceedings and announcements will be evaluated and updated if determined to be necessary.

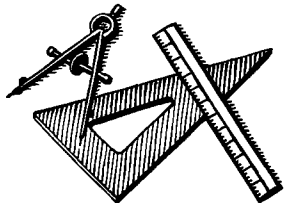
Closing Statement

The Committee continues to be a highly effective interface between DES and the private sector design community in the area of transportation structures. Of particular value, is the opportunity for direct communications and the introduction of trending design and construction issues which are of mutual interest to both parties. This year's meetings produced high quality discussions and a considerable exchange of information on important and relevant topics. This has increased our ability to plan and initiate collaborative efforts to improve delivery of transportation structures throughout the state.

Attachment 4 - Draft California Bridges & Structures Strategic Direction

Expected Outcomes:

- Integrated planning, design, construction, and maintenance decision-making regardless of the method of procurement or implementing agency
- Consistent and appropriate quality and management of risk
- Reduced project delivery costs and delays
- Maximized asset service performance and minimized total lifecycle costs
- Improved resources and tools, including people skills
- Effective use of research, new materials and emerging technologies

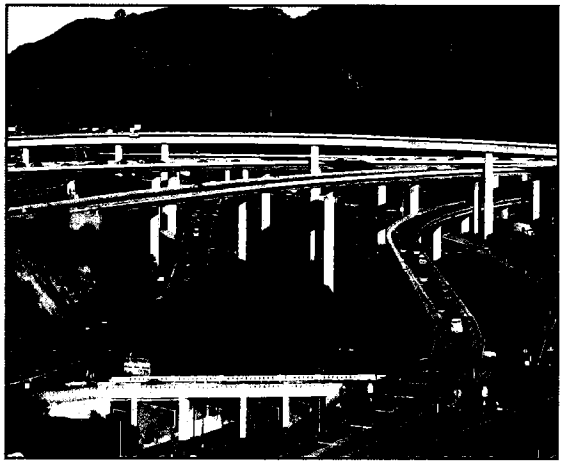


CALTRANS

Division of Engineering Services
1801 30th Street
Sacramento, CA 95816

"Caltrans improves mobility across California"

California Bridges & Structures Strategic Direction



IMPROVING MOBILITY IN CALIFORNIA THROUGH INTEGRATED LEADERSHIP

DRAFT - Informational Only

California Bridges & Structures Strategic Direction

The California Bridges and Structures Strategic Direction is a roadmap for the integrated management of **ALL** bridges and structures located on public roads in California. Through an integrated management approach, Caltrans and its partners can more effectively improve mobility by strategically addressing California's bridge and structure needs to best serve the traveling public. Ultimately, the California Bridges and Structures Strategic Direction will optimize system efficiency through synchronized delivery and management of bridges and structures that are safe, durable, and cost effective.

The Challenge:

The great State of California is faced with a number of challenges that influence our ability to effectively manage the complex bridge and structure infrastructure. Major challenges include:

- Aging infrastructure
- Inadequate funding
- Multiple stakeholders
- Competing interests
- Population growth
- Changing transportation needs
- Environmental constraints
- Legislative mandates

In light of these challenges, it is in the best interest of California that all the stakeholders involved in the management of bridges and structures collaborate to meet shared goals. The California Bridges and Structures Strategic Direction is a collaborative effort to manage this asset independent of ownership or financial funding.

Moving Forward:

The Strategic Direction identifies twelve objectives and twenty-four strategies that maximize innovation, integrated planning, design, construction and the maintenance of bridges and structures.

Objectives - California will improve mobility by investing in its bridges and structures in a manner that will:

1. Minimize accidents
2. Minimize traffic delays
3. Ensure reliability and structural integrity
4. Optimize flexibility in meeting future transportation needs
5. Establish and meet standards and policies consistent with laws, regulations, and codes
6. Assure quality
7. Ensure open communication between all stakeholders
8. Integrate performance, life cycle cost, delivery and risk to optimize value
9. Preserve the environment and minimize impacts
10. Ensure transparency and accountability
11. Cultivate knowledge and experience
12. Encourage innovative solutions

Attachment 5 – Caltrans DSR Research Notes, October 17, 2013

DES RESEARCH NOTES

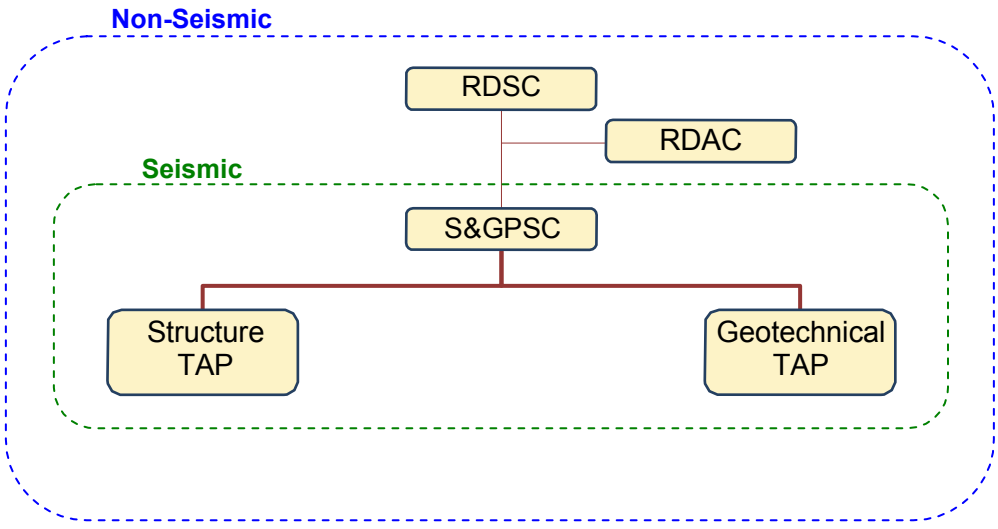
October 17, 2013

The Division of Engineering Services Structure, Seismic and Geotechnical Research Program

SUMMARY: ***The Division of Engineering Services (DES) manages a multi-million dollar problem-focused research program to investigate issues and develop results that can be deployed to meet Project Delivery and Department goals. This program utilizes practitioners to identify research needs and to provide technical support to research projects to ensure they meet Caltrans needs and can be deployed into practice. Cross-functional management level oversight committees have been created to provide broad strategic insight and to support the implementation of research into practice. DES Research Notes will be published and distributed regularly as a tool to communicate activities associated with the DES Research Program and to share research results.***

Organizational Structure:

The Structure, Seismic and Geotechnical Research Program is managed in coordination between the Division of Engineering Services (DES) and the Division of Research & Innovation (DRI). Office-Chief level representatives from Structure Design, Geotechnical Services, Structure Maintenance & Investigations, Structure Construction, Materials Engineering and Testing Services, Design Technical Services, Earthquake Engineering, and DRI form the Structure and Geotechnical Technical Advisory Panels (TAPs). The TAPs are responsible for coordinating the research program, developing strategic research plans, evaluating and prioritizing research problem statements and research proposals, and sponsoring Technical Support Teams for guiding research projects and deploying results. The Structure & Geotechnical Research Program Steering Committee (S&GPSC) provides oversight and guidance to the TAP, reviews and approves prioritized research problem statements, oversees the development of strategic research plans, and approves funding for seismic research projects. The S&GPSC recommends funding priorities to the Department's Research & Deployment Steering Committee (RDSC) for non-seismic projects utilizing funds managed through DRI. The Research and Deployment Advisory Committee (RDAC) provides funding and program recommendations to the RDSC. The key to success of the Structure, Seismic and Geotechnical Research Program is practitioner participation throughout the process including the development of Problem Statements, evaluation of Research Proposals, providing technical support to ongoing research projects, and serving on work teams to deploy the results.



DES Structure, Seismic and Geotechnical Research Program Strategic Plan:

The DES Structure, Seismic and Geotechnical Research Program has developed a Strategic Plan to help guide its management and operation and to ensure a focus on developing results that are deployed into practice.

GOALS	OBJECTIVES
Ensure structure and seismic research effectively supports the goals of the Department and meets the needs of practicing bridge engineers.	• Involve practicing bridge engineers in multidisciplinary Work Teams to provide technical support throughout the research process from identifying problems to implementing results. • Utilize the Structure/Geotechnical Technical Advisory Panels (TAP) to advise and provide recommendations to the Structure & Geotechnical Research Program Steering Committee (PSC) on structure, seismic and geotechnical research needs. • Utilize Management level oversight committees to develop strategic research objectives and allocate funds.
Develop overarching research thrust areas to create a framework for the development and evaluation of structure, seismic and geotechnical research proposals.	• Obtain input from DES Technical Committees and Offices, other Divisions, research institutions, and the Seismic Advisory Board. • Hold regular workshops with participants from academia, industry, and internal and external practicing bridge engineers to develop Structure and Geotechnical Research Roadmaps. • Develop Problem Statements focused on the needs identified in the Roadmaps.
Ensure the highest priority research is being investigated by the most qualified research institution.	• Develop a process to request research proposals that ensures responses from a large pool of capable research institutions. • Utilize the Structure and Geotechnical TAPs and PSC to review and prioritize research problem statements, and evaluate and approve research proposals. • Develop a comprehensive, objective procedure to evaluate research proposals. • Ensure a comprehensive literature search is conducted prior to beginning new research projects.
Ensure the successful evaluation and implementation of structure, seismic and geotechnical research results.	• Evaluate proposals based on the likelihood of the research resulting in recommendations that can be implemented into practice. • Require that research reports provide implementation recommendations. • Assign a multi-disciplinary Work Team to negotiate the final scope of work, provide technical support during the research project, evaluate final research reports, develop implementation recommendations, and assist with implementation through Caltrans Technical Committees or Technical Specialists. • Utilize Work Team members to assist other practicing bridge engineers in the implementation of final recommendations. • Effectively communicate research results which would include distributing and posting a database of completed, ongoing, and pending research online, inviting principal investigators to address technical
Develop and document an effective, efficient Structure, Seismic and Geotechnical research program process.	• Maintain a database tracking the status of structure, seismic and geotechnical research projects. • Perform regular progress reviews of ongoing research projects and verify their ongoing viability. • Use Project Management processes to ensure project costs are reasonable, and projects are completed in a timely manner. • Provide training to the Structure, Seismic and Geotechnical Research contract management team. • Define clear roles and responsibilities of contract managers, technical support team members, and research TAP and Steering Committee members. • Define deliverables for each research project. • Develop an abbreviated research process, which can quickly address urgent research needs. • Allocate personnel and travel resources to manage approved research projects.
Maintain strong internal and external lines of communication and forge strategic partnerships to support the Structure Research program.	• Develop and maintain a strong communication network with structure and seismic experts in academia, industry and practitioners to broaden the perspective of the program. • Sponsor structure research workshops or conferences to present results from recently completed or ongoing research. • Leverage research funds in collaborative efforts with other states, agencies, associations, organizations, and research institutions. • Participate and make presentations at technical conferences, workshops and symposiums. • Coordinate activities with other Divisions, Technical Advisory Panels and others that can help to advance the Structure, Seismic and Geotechnical Research program.

Research Roadmap:

In the Fall of 2005, the Division of Engineering Services held a one-day workshop with participation by DES practitioners, consultants and academia. This initial Roadmap has been updated and presented in multiple formats, but remains focused on these primary research areas.

Structure TAP Roadmap Focus Areas:

STAP1	Improved Methods to Monitor and Assess the Performance of Existing Transportation Structures
STAP2	Extended Service Life of Highway Structures
STAP3	Reduced Impact of Structure Construction and Maintenance Activities on the Traveling Public (Accelerated Construction)
STAP4	Optimized and Validated New and/or Existing Materials, Systems and Components for Bridges and Highway Structures
STAP5	Improved Soil-Foundation-Structure-Interaction Analysis Tools, Techniques, and Methods
STAP6	Improved Seismic Analysis and Design Tools, Techniques, and Methods
STAP7	Improved Understanding of Seismic Hazards
STAP8	Improved Performance of Highway Structures to Earthquake and Other Man-made and Natural Extreme Events, and Improved Ability to Quickly Restore Facilities to Full Functionality
STAP9	Nationally Accepted Specifications Advanced for Implementation in California

Geotechnical TAP Roadmap Focus Areas:

GTAP1	Improved Methods for Collecting, Storing and Disseminating Geotechnical Data
GTAP2	Improved Reliability and Consistency of Geotechnical Recommendations and Designs through the Development of Standardized Best Practices.
GTAP3	Development of a Comprehensive Risk Management Strategy for Geotechnical Hazards
GTAP4	Development of More Cost-Effective Foundations
GTAP5	Reduced Impact of Foundation Construction on the Environment

Current Research Projects:

Currently the DES Research Program has over 60 research projects under contract. Topics currently under investigation include the following:

- Analytical Modeling
  - Effective System Damping
  - Suspension Bridge Modeling
  - Live Load Effects on Seismic Response
  - Skew Effects
  - Archive Toll-Bridge ADINA Models for Post-Earthquake Assessment
  - Caltrans Strong Motion Instrumentation Program
  - Multi-Support Response Spectrum/Near Fault Response Spectrum Analysis
  - Nonlinear Analysis
  - Battered Piles and Sloping Ground Analysis
- Post-Earthquake Capacity
  - Post-Earthquake Live Load Capacity
  - Post-Earthquake Emergency Repair with Fiber Reinforced Polymer (FRP) Composites
  - Next Generation Bridges with Improved Serviceability and Accelerated Bridge Construction (ABC)
  - Post-Earthquake Assessment
  - Accessible Hinges for Bearing Replacement and Inspection
  - Innovative Foundations for Improved Performance
- Column Connections
  - Pipe Pin
  - Slab Bridge Superstructure/Pile Extension Connections
  - Epoxy Bonded Couplers
  - Adhesive Anchors
  - Low Cycle Fatigue Characteristics of Large Diameter Rebar
- Near Fault Effects
  - Vertical Acceleration
  - Fault Crossing
  - Near Fault Ground Motion and Fault Rupture

- Seismic Response Modification Devices (SRMDs)
  - Vincent Thomas Bridge Viscous Damper Forensic Investigation
  - In Service Evaluation and Inspection of SRMDs
  - Seismic Isolation Bearing Design Guidelines
  - Seismic Performance of Service Bearings
- Accelerated Bridge Construction
  - Concrete-Filled-Tube connections
  - Precast Piers with Energy Dissipating Joints
  - Precast I-girder on Inverted T Bent Cap Seismic Performance
  - Segmental Construction Seismic Performance and Design Guidelines
  - Post-Grouting to Improve Seismic Performance in Pileshafts
- Liquefaction
  - California Geological Survey Liquefaction Screening
  - Liquefaction Fragility
  - Comprehensive Design Recommendations
- Ductile Steel Cross-Frames
- Retaining Wall Seismic Loading and Design
- Type II Pileshafts
  - Analytical Study
  - Field Study
- Tsunami
- Fiber Reinforced Polymer (FRP) Composites
  - Long-Term Durability of FRP Composites
  - Non-Destructive Evaluation of FRP Bridge Decks
  - Pultruded FRP Sign Structures
- Condition Assessment
  - Long-Term Structural Performance Monitoring of Highway Bridges
  - Health Monitoring to Determine the Performance of Prestressing Steel in Segmental Box Girders
- Construction
  - Falsework Cap and Sill Beam
  - Sand Jacks
  - Closure Pour Waiting Time
  - Pre-weld Distortion Control Measures for Orthotropic Steel Bridge Decks
  - Column Cage Stability
- Structural Response to Blast Loading
- Concrete Materials
  - Controlling the Effects of Heat of Hydration
  - Corrosion Resistant Mineral Admixture Concrete
  - Creep and Shrinkage of Lightweight Concrete
  - Fiber Reinforced Concrete
- Soil-Structure Interaction
  - Battered Piles in Layered and Sloping Soils
  - Post-Grouting Methods to Increase the Load Capacity of Deep Foundations
- LRFD Specifications
  - LRFD Specification Strength Reduction Factors for FRP Composites
  - Prestress Losses in Long Span Post-Tensioned Bridges
- Replacement Alternatives for Concrete Approach Slabs

New Research Projects:

The Structure and Geotechnical Technical Advisory Panels (TAPs), with concurrence from the Structure and Geotechnical Research Program Steering Committee (PSC) and the Research and Deployment Steering Committee (RDSC) approved the following projects during the FY7/8 research project development cycle.

Seismic:

- Live Load Effects on Seismic Response of Bridges
- Abutment Soil-Structure Interaction and Modeling
- Assessment of the Performance of Dampers and Bearings In Service
- LRFD Specifications for Bearings and Isolators
- The Effects of Vertical Ground Motion on Column Shear Capacity
- The Effects of Seismic Ground Motion on Retaining Walls and Soundwalls
- Rapid Remote Post-Earthquake Damage Assessment
- Seismic Performance of Fiber-Reinforced Concrete Columns

Non-Seismic:

- Skew Effects on Concrete Box Girder Superstructures
- Validation of Bridge Deck Rehabilitation Strategies
- Use of Near Surface Mounted Rebar for Bridge Deck Rehabilitation
- Embedded Downhole Foundation Investigation Methods

Additional Information:

Additional information on the DES Structure, Seismic and Geotechnical Research Program is available at http://www.dot.ca.gov/hq/esc/earthquake_engineering/Research/techreps.html, http://www.dot.ca.gov/research/researchreports/dri_reports.htm, http://www.dot.ca.gov/hq/esc/earthquake_engineering/stap/. These websites include a listing of past research projects, electronic copies of recent research reports, and information on the Caltrans research program. Hard copies of research reports can be found through the DES Technical Reference Center located on the 2nd Floor of Farmers Market I Building. For additional information on the DES Structure, Seismic and Geotechnical Research Program please contact Mike Keever, Chair of the Structure TAP at 916-227-8806 (mike.keever@dot.ca.gov) or Mark Willian, Chair of the Geotechnical TAP at 916-227-7014 (mark.willian@dot.ca.gov).

Attachment 6 – Sign-in Sheet

ACEC/Caltrans Division of Engineering Services
Structures Liaison Committee

SIGN IN SHEET

Date: February 7, 2014

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ACEC/Caltrans Division of Engineering Services
Structures Liaison Committee

VIDEO CONFERENCE SIGN IN SHEET

Date: February 7th, 2014

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