

(1) Welcome and Facilitator Introductions- Andy, Tony and Donnie

- Brief introductions, and welcome
- Tom Ostrom (Division Chief, DES) – welcome, and shared briefly about future trends

(2) Opening Remarks and purpose for meeting – (Rich Foley, DDC-SC)

- Rich Foley introduction, overview improvements, innovation- for example, fiberglass plates instead of steel to reduce weight and ease of handling
 - Innovation-something we want, and need to work towards...
 - Value Engineering Change Proposals... VCEP... challenge is to get others on board... Maybe CMGC is the answer?
 - Job value... Broadband

(3) Safety Update/ Topic (Veera Nanugonda- DOC-OS&RM)

- Talked about recent accidents, and a fatality... his office owns the COSP
- Showed graph about Work zone intrusions... (Construction) going back monthly to Jan 2021
- Talked about CPDs, 21-23, COZEEP for traffic control...
- CPD 21-16, Impact Attenuator...
- Crane safety, overhead power lines, underground utilities
- Grading FW,....
- Heat Illness... recent fatality with employee on his first day on job- lack of acclimatization?
- Caltrans Industry Safety Summit... starting back in 2018, under Laurie Berman
 - 5th one scheduled for January 31, 2023
 - Increased industry participation
- Work zone enhancements..
 - Buffer lane specifications
- Work zone safety enhancements.
 - Full closures/ expanded work windows...
 - **VECP**- Preconstruction Value Engineering meetings
 - Positive work zone protection (Design Bulletin DIB-91)
 - Ongoing contracts- CPD 21-4
 - Devices that contain and/ or redirect vehicles and meet crashworthiness ...
 - Example- K-Rail, Impact attenuator vehicle... (crash cushion truck), mobile barrier system... Movable barrier system...
 - Safety Training and Certifications...
 - Certified flaggers, traffic control technician, Safety QC Manager
 - Safety Summit task group
 - Rumble strips.. cameras on traffic control equipment... traffic drums instead of cones...traffic breaks
 - Safety Award Programs... similar to Partnering awards...
- Key Takeaways...
 - Report work zone intrusions... for tracking purposes
 - Positive work force protection is a paradigm shift
 - Utilize VCEP specs
 - Participate in Safety Summit
 - Apply for Construction Safety Awards
 - Safety First Goal #1- First year with zero deaths or serious injuries on CA highways

- Discussion and questions...

(4) Building Information Modeling (BIM) for Bridges Contractor Survey Results (Lynn Hiel-Bridge Design) - Innovation

- Lynn... with Caltrans since 2019
- Involved with BIM...
- Results of a survey...
- Overview of Strategic objectives... five of them, Vision- Bridge design pilot projects
 - Also have some Enablers...
- Break out session in April of 2022... led to survey?
 - Overview of results of survey
 - Adoption- 80% of Contractors have NOT used bridge models
 - Digital Delivery...none of the responses used Common Data environment
 - Conclusions and next steps...
 - Addressing blockers- developed proposed actions for the following
 - No clear model objectives (60%)
 - No clear standards... (87%) - using ISO 19650 Parts 1-5
 - BIM Forum Level of Development Specification
 - FHWA BIM Roadmap (2021)- Guidance
 - Lack of interoperability... (53%) – can not handle on our own.. but there is an AASHTO TPF 5(372)
 - Lack of trained staff/ skills is barrier to BIM (67%)
 - Infrastructure should connect- not divide
 - Q&A... 4D- connection of model with time, 5D takes cost into consideration as well
 - Resourcing can be a challenge? Recognize that especially in Design, the resourcing is so important.. but Lynn has worked for a Contractor, doing BIM modelling and knows the value
 - Designers and BIM do not use the same language?
 - Goal in Caltrans.. get BIM started early in the design phase
 - BIM is not an “all or none”... you can draw up one or two bentcaps- identify specific areas of complexity that would benefit from it
 - Digital delivery is a goal of the Department, as mentioned by Tom Ostrom...

(5) New Design Standards Reduced girder stem widths (Keng Mun Low), Lead Climate Action

- Purpose of presentation- to request constructability input from Industry..
- Purpose of study- lead climate action... thinner web effect, reduced material, emission impacts on Global Warming Potential (GWP)
- Scope of Design study
 - Used 3 actual bridges (one and two span- all post tensioned CIP RC Box)
 - Provide summary of the output... reduced girder widths... we had 2.5% reduction in concrete volume ..as we reduced the web from 12 inch to 11 inch ...
 - Reduced capacity is pretty negligible due to this change (bending)
 - Efficiency Coefficient actually increased
 - Initial Design findings
 - Results are promising...
 - How do we implement
 - Reduce the standard cover to stirrups to slightly less than 2.5 inch
 - This translates to increased risk to damage ducts during concrete placement
 - May not be suitable for curved structures, or ones with tall superstructure depth
 - May be suitable for shallow structures
 - SC Recommendation...
 - Proceed with 10-inch girder web design. Since snap ties are in 2-inch increments...
- Request input/ feedback from Industry to build 10-inch web for CIP/PS Box Girder
- Questions for Contractors...
 - This may require smaller vibrators... less effective.. rock pockets..
 - Major concern- concrete consolidation around ducts... definitely will require additional consolidation efforts.
 - Curved structure? Risk of blowing out...
 - General thought, Contractor’s perspective- this increases their risk

(6) Break- 10 minutes

(7) New barriers – MASH compliant temp barriers (Jim Nicholls- FW Engineer)

- Introduction.. TT A, Manuals, etc..
- Caltrans FW Advisory Team meetings...
- Will be in person on October 25th...
- Today... talked about RSS 12-3.20, *Temporary Barrier Systems*
 - Modelling is done... but crash tests are not completed
 - New MASH test increased weight, angle of approach, and vertical distance to center of gravity...
 - Why? More SUVs on the road, heavier and larger vehicles driven at high rates of speed
 - AASHTO MASH... Manual for Assessing Safety Hardware (MASH)
 - K-rail is being phased out.
 - Talked about Dynamic deflection (DD), SW = system width...
 - Clear area = DD + rollover
 - Minimum MASH requirement...meet crash test level 3
 - Clear width based on TL-3 plus TL-4 rollover
 - 2 stake/ side, for four total to a temporary barrier
 - New standard.. 3 feet clear to a post
 - Clear distance to FW pads is growing to 12 inches, from current 3 inches
 - SSP 12-3.20 Minimum Clear Area Width.... Maybe allow 3 inches to footing (for tight areas) and 2 ft 6 inch to post
 - Issues with new standards...
 - May encroach on pedestrian opening width, and/or a traffic lane
 - At Caltrans, we are testing an F-type Barrier system...
 - Currently being tested by TTI
 - Results of testing scheduled for 2023
 - 12 ft length being tested with 20 ft length available
 - The bolts are recessed into the sides of the rail.. the rails sit closer together, essentially touching each other.
 - Cross Bolt system from Texas... is 10- and 30-foot lengths
 - Zone guard- temporary metal rails that have performed well, and are fairly light
 - Q&A... we should phase this in.. not just suddenly switch and enforce in 2026
 - After crash test in 2023.. we (Caltrans) should have standard details for our official rail that enables the Contractors to begin producing them.

(8) Project Presentation- (Brandon Farmer, Tiffany Clonts- SC Office B)

- Present on SR 11- Otay- border system CA-Mexico...
- US Trade benefits... economy, increased trade
- Need for Port of Entry (POE)
- Current POEs are beyond capacity
- New technologies... dynamic tolls depending on how busy the crossings are, in general
- Project Overview... Enrico Fermi- Diverging Diamond interchange
- SR 11 is a 4 lane highway...
- A Project Simulation Flyover was a great way to illustrate the project
- POE scheduled to open in 2024
- Otay Mesa Entry =OME point of Entry
- Benefits... Reduce greenhouse gases
 - Strengthen border security...

(9) Wet Setting Columns into CIDH at San Diego Airport (Abe Aceves- Flatiron)

- Abe joined Airport project in February of this year...
- Focus of project- redo Terminal 1
- Also, Parking structure, Airport authority building, seven bridges, improve flow
- Lots of utility work in early phase of project
- Wetsetting column- to date, they have successfully wetset 13 columns
- What is wetsetting?
 - Typically pile contractor... drill pile to tip, place pile cage and pour up to Construction Joint (CJ), then clean the CJ, and place Column cage with some considerable overlap/ lap splice of pile and column rebar
 - Overlap is distance from CJ to Pile cutoff. On this project, that is 12 ft
 - Wetset- they fly in the column cage and wetset it into the top of the pile concrete when the concrete is still fluid
 - Note that these piles are 'wet' piles
 - Subcontractor delivered pile rebar full length, 110 to 120 ft long
 - If the concrete is setting up near CJ, they will abort wet set and treat it as typical two pour operation
 - If concrete is fluid, they pour another two trucks from CJ to cutoff and then wetset the column rebar, thus pouring tip to cutoff in ONE pour
 - They made a template of beams and a short portion of a column form to hold the column cage at the proper alignment
 - Since these are wet hole CIDH, they are fully cased, and the casings are removed by twisting them up and out as the pile pour progresses
 - Columns are only twenty foot tall
 - Benefits...
 - Safety- we are eliminating a confined space, avoiding having to send workers down to the CJ for chipping and blasting. Avoiding the concrete debris that accompanies chipping and abrasive blasting
 - Potentially increase the quality of the product by avoiding the CJ- you are avoiding a potential place for water intrusion and corrosion
 - Increased speed and efficiency
 - These are for wet hole CIDH... so the mix is fluid and workable for a longer time compared to dry hole
 - Somewhat similar to an Auger cast pile

(10) Look Ahead Project List Wrap Up / Adjourn (Rich Foley- Deputy Division Chief- SC)

- Closing Remarks...
- Thank attendees... nice to have face to face meetings
- Next meeting planned for April 7th of 2023 in Sacramento
- And looking ahead to near Labor day of next year... September 8 could work, back here San Diego