

Minutes

WSDOT/ACEC PD Team Meeting

September 23, 2022

9:00am – 11:00am

Attendees:

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Kevin Miller/WSDOT | <input type="checkbox"/> Cesar Mayor/WSDOT | <input type="checkbox"/> Jeff Lavinder/ Parsons Jacobs |
| <input type="checkbox"/> Mike Fleming/WSDOT | <input checked="" type="checkbox"/> Chad Hancock/WSDOT (SW) | <input checked="" type="checkbox"/> John Donahue/WSDOT |
| <input type="checkbox"/> Lisa Reid/SCJ Alliance | <input type="checkbox"/> Chris Keifenheim/WSDOT | <input type="checkbox"/> Larry Larson/WSDOT |
| <input checked="" type="checkbox"/> Amir Rasaie/WSDOT | <input type="checkbox"/> Joseph Perez/WSDOT | <input type="checkbox"/> Manuel Feliberti/DEA |
| <input checked="" type="checkbox"/> Ben Hoppe/JUB Engineers | <input type="checkbox"/> Daniel Babuca/WSP | <input checked="" type="checkbox"/> Steve Olling/Parametrix |
| <input type="checkbox"/> Brian White/WSDOT | <input checked="" type="checkbox"/> Don Sims/HNTB | <input checked="" type="checkbox"/> Suryata Halim/RHC Engineering |
| | <input type="checkbox"/> Heather Weeks/Jacobs | |

Others who joined the meeting:

- Rafael Reyes – New ASDE for Central and Eastern Regions and Mt Baker Area for NWR
- Chun-Ho Chen – New Engineering Manager for WSF
- Lone Moody – Project Development Engineer, OR
- Jim Mahugh - ASDE

Welcome & Introduction

Several visitors attended and there was a round of introductions

Staff Updates

- HQ Development Division – Rafael Reyes is a new member of the ASDE team. He was promoted after Scott Zeller left the ASDE office. John Donahue is moving to part time and will be working on special projects. Dean Moon is no longer going to retire at this time. Kevin shared a revised org chart alignment for the design development group office (this is still a work in progress). Kevin is also transitioning into John Tevis' old role.
- WSDOT Regions & Consultants – Amir had updates for the NWR, Brian Nielson is now the Regional Administrator and Robin Mayhew is Assistant Regional Administrator. Chad mentioned some recent SWR changes, and that the Region is setting up a consultant management office (8-10 people). Chun-Ho Chen had updates for WSF and mentioned the GEC for ferry vessel electrification (selection process is underway for the GEC consultant). Lone Moody had some minor updates for the OR, many positions they are trying to fill, including a Utilities Engineer position. Suryata had updates on the SR 520 program, the Portage Bay bridge project is next and they are gearing up for that one now. Don Simms has some updates for HNTB on a key office leader position in Bellevue. Steve Olling mentioned some senior level

changes at Parametrix and that they are still looking for key hires. Ben provided updates that echoed Steve's update on needing key staff and that they are remaining very busy.

Buy America: new Project Delivery Memo

Kevin had a presentation (attached). There was a lot of discussion on the waiver process, and this hasn't been tried yet as this is all very new, and these waivers could take a lot of time. Ben mentioned that this is a bigger deal for Local agency projects that haven't traditionally seen federal dollars on their projects (such as sewer and water projects). Finding US made materials, such a ductile iron pipes is not easy and therefore costs may begin to escalate even more. Chun Ho also had comments on the specialized equipment that is needed for WSF (especially as they continue their electrification journey). Not a lot of this is 100% manufactured in the US. Kevin mentioned that the key is to start this conversation as early in a project as possible, especially if a waiver may be desired or needed.

Membership/Representative Discussion

There was discussion on our current changes to the membership on this team (for example, with Jeff Lavinder moving from Parsons to Jacobs's, therefore having two Jacob's team members). The team had previous discussions on this topic to ensure that the ACEC membership was spread out to as many separate firms as possible to gain more diversity. This team may need to recruit others to get more diversity. Steve mentioned in one example that the move of Jeff to Jacob's, Jeff and Heather do represent two completely different groups at Jacob's. Keeping both on this team should not be a showstopper however the group felt more representation from smaller firms and/or maybe more firms from the east side of the State may be beneficial. Therefore, it was decided that Kevin and Steve would ask Heather and Jeff to decide which of them would represent Jacobs for our group. And, to help backfill the vacancy, Kevin asked that team members provide some potential candidates from other firms and he and Steve will work on the recruiting options. ACEC can also advertise this on their web site. The goal is to have a good balance between WSDOT and ACEC staff in both numbers and diversity. All were supportive of additional recruitment to ensure more diversity.

Focus Areas

All

- Bluebeam: Statewide Initiative Status Update – Kevin provided a quick update on Bluebeam use at WSDOT, which may be similar to what other agencies or consulting firms are experiencing. There were discussions at the July Statewide Project Development Engineers meeting about Bluebeam and it is widely used and liked at WSDOT. Kevin gave an overview of the licensing and annual renewal of Bluebeam. Basically, it is about \$150k to get 325 new licenses at WSDOT (bringing the total number of licenses to approximately 1000) and license acquisition cost includes the first year subscription. To maintain that along with existing licenses, it will be around \$70k per year for all 1,000 licenses (i.e., existing plus new acquisitions). This information was shared internally at WSDOT to see if they can proceed to make this a consistent tool for use at WSDOT. There is hope that these prices could come down as a contract is negotiated.
- Other Ideas?: Kevin brought up another topic from the Statewide Project Development Engineers meeting about hybrid design-build/DBB projects and the industry's thoughts about this contracting approach and implications and limitations associated with it. Within a typical design-bid-build contract, there are elements that may be best for the contractor to design, similar to what is done now relating to proprietary wall systems, traffic controls, staging, etc. With the hybrid approach, there may be other elements that can be added to this list, such as illumination, signals, ITS, large culverts, etc. The

outcome of this is that the contractor is obligated to design the feature or element. This could help save time in design and push more of the risk on to the contractor in areas that may be impacted more by changing site conditions or potential utility conflicts, etc. This could reduce the number of claims by the contractor. Suryata and Steve both mentioned that one item that has been used on some of their projects was having the contractor develop the temporary traffic control plans. There still needs to be sufficient planning as part of the design process so the specifications can be very clear on limitations and ensure that there is adequate time to review the plans provided by the contractor before the traffic control is put in place. Contractor expectations must be very clear so there are few claims in the end. There was some continued discussion on this specific item.

Design parameters worksheet - Exploring possible updates

Jim walked through the current design parameters worksheet and showed where the new version is heading. This is a substantial change (and improvement) to what is being used now. Right now, as a lot of folks on this team agree, the current process is laborious. WSDOT started this improvement process over a year ago. The draft view of the new version of the design parameters is attached to these minutes. The improvement process is not complete but getting close to completion for testing. This update will save a great deal of time for the designers and engineers and maybe even standardize things better across all Regions as part of the design approval process. There was some discussion on how this will work with DB projects, and this could be very helpful. Additional columns can be added to support this and also provide clear references to the Technical Requirement chapters within a design build project. This is one area that this group wants to stay engaged in as this gets closer to testing and implementation.

BIM: Overview of the Statewide Initiative

Jim shared a quick ACEC presentation on implementing BIM at WSDOT (Attached). This is the future at WSDOT, but it will take time and WSDOT is learning from other State DOT's who have taken this further. There were also discussions of how this works with people who do not work in the CAD environment. This can be done with PDF's as well. There was also some discussion on how QA/QC works with BIM and these protocols would need to be clearly established.

Other

Amir announced an upcoming event for the NW Region. There will be a construction and design contracting open house where they have invited around 1100 different individuals from contractors, subcontractors, DBE firms, and consultants to hear about upcoming opportunities and to network. There will be discussions about the mega programs such as I-405, SR 520, the Gateway project, and WSF. This is basically a showcasing event on these projects and other region project opportunities. Hopefully all members of this group received the invite on that. If not, please let Amir know and he will send out the details.

Buy America Changes

November 2022 Implementation

September 23, 2022

Infrastructure Investment and Jobs Act (IIJA)

- On November 15, 2021, President Biden signed into law the **Infrastructure Investment and Jobs Act** (“IIJA”), Pub. L. No. 117-58, which includes the Build America, Buy America Act (“the Act”). Pub. L. No. 117-58, §§ 70901-52. The Act strengthens Made in America Laws and will bolster America’s industrial base, protect national security, and support high-paying jobs.
- The Act establishes authorities for the Made in America Office (MIAO) in the Office of Management and Budget (OMB)

Key Changes in Buy America

1. All **iron and steel** used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. *(already included in Buy America requirements)*
2. All **manufactured products*** used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All **construction materials** are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

*There is an existing waiver for all “manufactured products” used on Federal Aid Transportation projects.

Construction Materials

1. “Construction materials” includes an article, material, or supply—**other than** an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:
 - non-ferrous metals;
 - plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
 - glass (including optic glass);
 - lumber; or
 - drywall.

Construction Material Exceptions

1. Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

Waivers

- (1) **Public interest waiver** - applying the domestic content procurement preference would be inconsistent with the public interest;
- (2) **Nonavailability waiver** types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
- (3) **Unreasonable cost waiver** the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

All waivers have to be submitted to the “cognizant” federal agency (who in turn submit it to MIAO). Submittals require a minimum of 15 days public comment period.

General applicability waivers are subject to a minimum 30-day public comment period.

Direction

Continue to apply existing Buy America requirements associated with iron, steel, and certain manufactured goods per WSDOT Plans Preparation Manual 700.01(7) to projects with federal funding any phase (PE, RW, or CN).

Apply the expanded IIJA requirements associated with “construction materials”, as outlined above, to all projects with Federal Aid funding in the construction phase executed on or after November 10, 2022. Incorporate new standard specification language associated with the IIJA requirements to affected projects (contact your Assistant State Construction Engineer for more information).

| Element - Main | Element - Sub | Design Manual Section | Design Build Goal | Design Manual Guidance Met? | Mode, Function, Performance | Design Analysis | Notes | |
|--|---------------------------------------|--|-----------------------------|-----------------------------|-----------------------------|-----------------|---|--|
| 9 - Vertical Alignment | | | | | | | | General questions: Why Mode/Function/Performance? MFP does not apply to a lot of the design elements. It really only applies to the lane/shoulder widths. |
| General Design Principles | Multiple | 1220.02(1) | | Yes | | | | |
| Crest Vertical Curve | Minimum Length | 1220.02(2) | | No | | Yes | Design Analysis #2, approved 9/23/22 | We only need to know the minimums were met. We don't need to know the exact vertical curve dimensions. |
| Sag Vertical Curve Minimum | Minimum Length | 1220.02(2) Spreadsheet | | Yes | | | | |
| Grade | Maximum Grade | 1220.02(3) 1220.02(6) | | Yes | | | | |
| Grade | Minimum Grade | 1220.02(4) | | Yes | | | | |
| Grade | Length | 1220.02(5) | | Yes | | | | |
| Ramp Grade | Maximum Grade | 1360.03(3) | | Yes | | | | |
| Structures | Multiple | 1220.02(7) | | N/A | | | | |
| Coordination with Horizontal Alignment | Multiple | 1220.03 | | Yes | | | | |
| Airport Clearance | Multiple | 1220.04 | | N/A | | | | |
| Railroad Crossings | Low-Vehicle Clearance | 1220.05 | | N/A | | | | |
| Sight Distance | Passing | 1260.04 | | Yes | | | | There is no requirement in the DM that we meet decision sight distance, it is only a recommendation. |
| Sight Distance | Decision | 1260.05 | | Yes | | | | |
| Climbing Lane | Warrant | 1270.02(2) | | N/A | | | | This is a good one to show as an example of how you the text and exhibit instigate a lot of criteria that MUST be met. I did not capture all of that detail, instead stayed high level with the "design" category. |
| Climbing Lane | Multiple | 1270.02(3) | | No | | Yes | Design Analysis #3, did not meet in-taper | |
| *** Add More As Necessary *** | *** Fill-In *** | *** Fill-In *** | | | | | | |
| 10 - Cross Slope | | | | | | | | |
| Lane - Preservation Project | Minimum Cross Slope | 1120.02(3) | 2% | | | | | |
| Lane | Normal Crown | 1250.02(1) | 2% | | | | | |
| Lane | Lane-to-Lane Algebraic Difference | 1250.02(1) | 5% | | | | | |
| Lane | Superelevation Chart | emax = 8% Exhibit 1260-5 | emax = 8% Exhibit 1260-5 | | | | | |
| Lane | Superelevation Max | 1250.03 | 8% | | | | | |
| Lane | Existing Curves | 1250.04 | 1.50% | | | | | |
| Lane | Intersection Turning Movements | 1250.05 | Exhibit 1250-7 | | | | | |
| Shoulder | Maximum | 1250.02(2) | 5% | | | | | |
| Shoulder | Lane-to-Shoulder Algebraic Difference | 1250.02(2) | 6% | | | | | |
| Runoff | Highways | 1250.06 | 1250.06 | | | | | |
| Runoff | Ramps | 1250.07 | 1250.07 | | | | | |
| Ramp | Lane-to-Shoulder Algebraic Difference | 1360.03(4) | 6% | | | | | |
| Ramp | Mainline Connection | 1360.03(4) | Same as Mainline | | | | | |
| Ramp | Cross Slope | 1250.02(1) | 2% | | | | | |
| Auxiliary Lane | Cross Slope | 1270.02(3) 1270.03(4)(b) | 2% | | | | | |
| HOV Lane | Cross Slope | 1410.04(2) | 2% | | | | | |
| Chain-Up/Chain-Off | Cross Slope | 1239.07 | 2% | | | | | |
| Roundabout | Circulatory Cross Slope | 1320.04(5) | 3% | | | | | |
| *** Add More As Necessary *** | *** Fill-In *** | *** Fill-In *** | | | | | | |
| 11 - Side Slope | | | | | | | | |
| Fill | Foreslope | 1239.03 | RFP 2.11.3.6 | | | | | There is no maximum or minimum specified in the DM. |
| Fill | Median Crossover | 1239.03 | | | | | | |
| Fill | Crossroad | 1239.03 | | | | | | |
| Fill | Plantings | 1239.03 | | | | | | |
| Ditch | Foreslope | 1239.03(1) | | | | | | |
| Ditch | Backslope | 1239.03(1) | RFP 2.11.3.6 | | | | | |
| Ditch | Shape | 1239.03(1) | | | | | | |
| Bridge Ends | Multiple | 1239.03(2) | | | | | | |
| Cut | Rock Cuts | 1239.04 | | | | | | |
| | | | | | | | | There are statements to round according to standard plan at the top of the cut. How do we plan on capturing the multitude of variations that are possible? |

Implementing BIM at WSDOT

Jim Mahugh, ASDE

September 23, 2022

Why are we Here?

- COVID pushing us to electronic business
- ACEC started asking questions
- AGC asking for digital files
- Transformational like Mylar to CAD
- Digital Delivery ... The next step in our digital world
- BIM is more than digital plans ... it's asset management

What Have We Done?

- Construction White Paper in 2021
- Statewide LiDAR
- January 2022: Began BIM research from Design perspective
 - Webinars
 - Executive Leadership Support
 - Agency Wide: Non-Siloed

White Paper Team

- Spring 2022: Assembled BIM White Paper Team
 - Construction
 - Design
 - Maintenance
 - Bridge
 - CAE

Interviews

- Nationwide Interviews:
 - FHWA
 - Iowa DOT
 - Florida DOT
 - Pennsylvania DOT
 - Utah DOT

What Have We Learned?

- BIM is not a siloed approach
- BIM is about asset management across the whole agency
 - Design ⇨ Construction ⇨ Maintenance ⇨ Asset Management
- BIM needs executive management support
- Stepped approach
- Dedicated staff

How are we Preparing?

- V8 to OpenRoads
- LiDAR
- PDF Plans
- Electronic Files being available during Advertisement
- White Paper ... How do we proceed
 - Design's Effort
 - Two FTEs: one manager, one technical support

Terms

- Terms you might hear
 - Building Information Model: BIM
 - Model as a Legal Document: MALD
 - Industry Foundation Classes: IFC
 - Digital Twin: A digital copy of what is designed and as-builts that mimic the real world