WACA/WSDOT Meeting Agenda
For Wednesday, September 7, 2022

Day/Time: Wednesday, September 7, 2022, on Microsoft Teams, 10:00 AM – 12:00 PM.

In attendance:

Henderson, Donny
Hammond, Mike
Adam Gaunt Stoneway Concrete (Guest)
Holt, Seth
Sargent, W. Scott
Dan Dieter
Landers, Steven L
Britton, Michele
Norton, Patrick
Waligorski, Kevin
Carl Labbe
Dafoe, Katharine
Emerick, John C.
Dave Germer
Burg, Dave (Ash Grove)
Balick, Pete J (Seattle) USA
Schroeder, Michael
Hill, Kentin
Legaspi, Erica
Johnson, Matt
Craig, Michael C.
Heidi Helmink
Davis, Steve
Vincent, Ryan
McIver, Michael
Rob Shogren - Lafarge (Guest)
Papich, Chris M.
Michael Gardner
Diego Coca
Cherne, John M (Redmond) USA
Bruce Chattin
April Tinnin
Randy Romeo
Bower, Nate
Spencer Kull

Next WACA Meeting Date: *Wednesday, December 7, 2022, on Microsoft Teams, 10:00 AM – 12:00 PM*

Future WACA Meeting Dates: *Wednesday, March 1, 2023, on Microsoft Teams, 10:00 AM – 12:00 PM*

Meeting Minutes:

The link below will take you to past meeting minutes and show upcoming WACA meeting dates.

https://partners.wsdot-sites.com/washington-aggregates-concrete-association/

New Business topics:

Cement / CAPS Program Update: Katie Dafoe / Steve Davis

With the continued issues with timely submittals of Mill Certs and Samples, the following process will be in place moving forward:

1. Cement suppliers that do not meet the requirements of the CAPs program by the due date for each quarter will no longer get a grace period to provide information.
2. If cement suppliers are non-compliant, a notice will be sent stating that the process of removing them from the QPL has started.

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We have given non-compliant cement suppliers grace periods for the first and second quarters this year and this will not continue going forward.

CAP is doing so much better; most people are doing a good job of getting everything submitted in a timely manner.

Ask: when you submit quarterly samples, please make sure you have at least 10 pounds. This past submittal quarter, a few places didn't submit a minimum of 10 pounds. We are asking CTL, the outside testing lab, to get a list of those cements with insufficient quantity.

If you do not have production, you still have to submit a "no production" email for the month to let us know.

Per 3 different QC plans, you have 25 days past the last day of the quarter to submit samples and mill certs. The current quarter will end on October 25th.

Noncompliance emails will begin to be built starting on the 10th through the 25th. If you are not in compliance, there will be no delay in removing you from the QPL.

Rob Shogren: asking if there's a way to expedite the QPL acceptance process

Katie's only option is to send out testing via 3rd party lab (currently, no chemists in the lab), there is no control on how long it takes them to get things tested. Yes, it is taking a long time to get them tested, but we are hoping to get staffing issues resolved soon. Once that occurs, we'll be able to get back into testing everything inhouse, so turnaround doesn't take as long.

Rob: potential solution – if the Oregon State DOT QPL manager, Dean Chass, goes through their due diligence to approve samples, would this suffice?

Steve Davis: this is something we can entertain and look into. We're reorganizing the entire section and hopefully filling the positions soon.

Steve Holt: are you able to pay for expedited services?

Katie: No. They're [CTL] looking at it based on the sheer amount of cements we've submitted/are submitting. They are looking at samples on a first come, first serve basis. They are still working on samples submitted from July. They are unable to expedite shipping at this point.

Bruce: appreciate your help looking at alternative solutions. Sounds like you're strict on timeliness and restriction. We have rules and specifications, but things are slow, there aren't enough people, and we're overwhelming 3rd party labs. Given the state of the industry and materials supply issues, we should look at something that will give us a middle ground of solutions rather than drawing your line in the sand. What's a good solution to work together?

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Katie: Our staffing issues have absolutely nothing to do with certs being submitted on a timely basis. If you're already on the QPL and submitting your items, regardless of testing being completed, we're not kicking you off. Testing is a verification of checks and balances of what you're submitting. Our staffing issue is not, in any way, shape, or form, determining if you're getting kicked off the QPL. People trying to get on the QPL is a completely different issue.

Steve: Obviously we get audited frequently and continuously, we meet with FHWA quite a bit. The issues we're bringing up and the "line in the sand" as previously stated, are due to audit findings. Staying on the QPL is easy. What we've seen is people in the 11th hour finally sending things in less than a day after being contacted. It's not an understaffing issue. Understaffing is a short-term issue.

Bruce: I understand staffing and getting material to you, recognize that everybody is short staffed. Materials are being produced as quickly as possible and trying to get things out the door. I'd like to see more flexibility. How do we get these things together?

Steve: we can be flexible on some things, but need to be tight to audits and FHWA guidelines. There are some things that we cannot be flexible on.

Rob: Katie has been good to work with getting things in. We just need a way to get new items out on the market.

Steve: Using Oregon's QPL data is a great idea, we'll certainly look into that today. As far as flexibility, that's some flexibility on our end. The goal is to not have the line in the sand. It's a relationship of cooperation and everybody being compliant. It's a pain to remove people from the QPL. It's not a snap judgment to remove someone.

Donny: We're not trying to do that [remove people from the QPL]. We're trying to make this program work. The reason we're here is to work through these issues together. At some point, a "line in the sand" needs to be drawn on some things, but we DO realize that many people are understaffed.

Katie: If someone submits items on the 26th, and they were due on the 25th, I won't kick you off. I look at the submitted items every month to see who is in compliance. If we haven't had mill certs submitted for the entire quarter, that's a bit more than a staffing issue. That's just non-compliance. Yes, there does have to be some kind of "line in the sand," but yes, there is room for flexibility.

Steve: When we did the revamp to the CAP program 6 months ago, the response has been wonderful. Kudos to the suppliers for adapting with us. The improvement on the response has reduced non-compliance. We're working to solve the issue on the testing piece, it's definitely not lost on us.

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Rob: When do you want non-compliance reports?

Katie: Any time during the month following production, just send an email saying you don't have production. Eg: no production in August – send an email any point in September. By September 1st, you'll know there was no production in August.

Synthetic Fiber Reinforced Bridge Deck Concrete: Scott Sargent (for Anthony Mizumori)
No update on pilot projects and specification development.
Two projects are doing a side-by-side comparison – I-90 phase 3 (1 with Class 4000D with fibers and 1 with Class 4000D) and SR3 Purdy Creek (1 with Class 4000D with fibers and 1 with Class 4000D). The bridge decks are not on yet.

Type 1L Cements in Bridge Deck Overlays: Scott Sargent (for Anthony Mizumori)
WSDOT would like to allow the use of Type 1L cements in modified concrete overlays and is looking for industry guidance on how to best do so. The current overlay mix designs (microsilica, latex, flay ash) originated in the 80's and 90's where performance was established through strength and durability testing. Existing prescriptive mix designs could be altered as needed, and/or performance specifications could be developed. Strength and durability testing may need to be provided in a contract setting, or potentially through WSDOT-funded research

Below is the document covered in the meeting:

Type IL Cement in Modified Concrete Overlays on Bridge Decks

WACA/WSDOT 9/7/2022

Anthony Mizumori

Overview:

Type IL cements are currently allowed in place of Type I and II cements in the Std. Spec book, but they are not allowed in modified concrete overlays on bridge decks. This may be partly due to the fact that the overlay mix designs are prescriptively specified in Division 6 based on historic research. WSDOT would like to incorporate Type IL cement into current practice given the industry trend away from producing Type I/II cement.

Current Situation:

Contractors currently have the option to choose between three prescriptive mixes using latex, microsilica or fly ash modified concretes. The cement content of these mixes is specified. These mixes have performed well overall, but they can be harder to place and finish. And they are prone to shrinkage cracking in many situations. These mixes are typically wet cured for 42 hours, then cracking is inspected and sealed prior to opening to traffic based on a 2,500-psi minimum compressive strength. These mixes are relied on for their rapid strength gain, abrasion resistance, freeze-thaw resistance, salt scaling resistance and low chloride permeability.

Recent overlay projects have had difficulties obtaining Type I/II cement to use in overlay mixes. There have been local agencies that are hesitant to accept Type IL cement as a substitute based on WSDOT's apparent exclusion of it.

Type IL cement is allowed in place of Type I/II cement for most elements based on the understanding that fresh and hardened properties of concrete are comparable. Regarding overlay mixes which have very high cement contents, Type IL cement is not expected to dramatically change the hardened properties of the concrete. But it's not clear how Type IL cement would affect fresh/working properties of these mixes, which can already be difficult to work with.

Near Term Goals:

WSDOT is looking for the best way to incorporate Type IL cement into modified concrete overlays. This could be done either prescriptively with the current mixes at a fixed substitution ratio, or through performance specifications to be developed.

Q: Does industry have any experience using Type IL cement in modified concrete overlays, or similar mixes?

Q: If so, is there and strength/durability testing that could be shared.

Q: If not, is this testing that could be performed by industry ahead of time? Or is it best left to a contractor to propose and test under contract.

Q: Does industry have a preference towards prescriptive or performance-based material specifications for modified concrete overlays? If prescriptive, how should the substitution ratio be determined?

If hardened and/or working properties aren't well established ahead of a pilot project, WSDOT may rely on material qualification testing under contact and/or an overlay test pour prior to the actual overlay work.

Long Term Direction:

WSDOT is looking at a potential research project with Dr. Aguayo at UW to develop a more modern specification for modified concrete bridge deck overlays. The specific improvement goals may include:

- Allowing flexibility with material types, such as Type IL cement
- Crack control, possibly through internal curing and/or synthetic fiber reinforcement.
- Cost and/or greenhouse emission reduction, possibly through the use of CSA or alternate cement types.
- Specification flexibility, perhaps a combination of prescriptive and performance-based specifications.

WSDOT will likely maintain polyester concrete as a tool for very-rapid reconstruction projects. And we're designing an ultra-high-performance concrete (UHPC) overlay pilot project on I-90. UHPC has the potential to be a highly durable overlay material that can be used where structural strengthening is needed.

Q: What are some potential areas of improvement that WSDOT should consider when looking at modified concrete overlays in the future?

Past Practice and Other Facts:

LMC overlays were used back in the '70s but may have fallen out of favor due to cost.

MMC overlays we researched and constructed starting in the '80s. That is when the current mix was developed. The mixes had ultimate strengths of up to 12,000 psi and were very durable by many metrics. The original projects used a 42-hour wet cure, followed by a 6-hour dry cure.

FMC overlays followed in the '90s.

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In the past 3-4 months, HQ Construction and the Bridge Office have been getting inquiries on Type IL cements for modified microsilica and latex overlays. The current overlay mixes are prescriptive in the Standard Specs. Most of these were designed and tested in the 80s/early 90s. We've received questions with compatibility. Right now, we don't allow Type IL in Modified Overlays.

Rob: We did overlay mixes with Okanogan creek and two in Montana. Couldn't find real info on those projects (highway 97). Type IL might start taking over for Type I/IIs.

We don't have information on strength and durability through testing. Is there strength/durability testing that could be shared?

We need to define what durability means in terms of what you're looking for. We'll be hard pressed to find data on these modified concretes.

Seth Holt: We did a durability report through Sound Transit, nothing related to modified mixes, but I think it's going to be hard pressed to find data there. But we did do a compatibility report of Type I/II vs IL

Scott: We allow Type IL in other structural elements, so WSDOT is comfortable with a replacement for that. We're getting into a period where bridge decks that need a rapid repair. These mixes are 42hr mix and 2500PSI, it works great for traffic control. The only other option is polyester, but this requires quite a bit of traffic control. Regions are hesitant with this and hindering the traveling public.

Seth: From a fly ash- and silica fume compatibility standpoint, those should be a nonissue for you. Oregon, Alberta, and Montana allow it.

Dave: Is your concern early strength or are there other concerns? There might not be a Type I/II in a couple years, it might not be available. I'm sure we can address what your concerns are if we knew what your exact concern is.

Scott: We don't know how it is going to affect the overlay. These mixes are sticky and hard to work with at times. We don't know how IL will affect the placement. We're just looking for more information to allow Type IL for modified concrete overlays. We have a prescriptive mix in the standard spec, so we want to know if you want to stick with this or come up with a performance-based specification. If we go prescriptive, what ratio would the Type IL be incorporated?

We will work with UW on a research project to develop a more modern specification for modified concrete bridge deck overlays.

Bruce: When there's an opportunity to do something collaboratively with the U, please make sure you get industry perspective/experience to get the best outcomes. Peer review is great, but

from my experience, once the words get on paper, it's hard to get them off. Early communication and collaboration will require less changes because the considerations have been made early enough.

WSDOT will likely maintain polyester concrete as a tool for very-rapid reconstruction projects. And we're designing an ultra-high-performance concrete (UHPC) overlay pilot project near I-90. UHPC has the potential to be a highly durable overlay material that can be used where structural strengthening is needed. Can industry/contractors produce a reliable UHPC mix?

Depends on your definition of UHPC. We have pre-crack that's 35-50,000 PSI

We're looking down into 14,000 PSI.

You might be able to do that in downtown Seattle, but not the middle of I-90 or Moses Lake, that would be pretty tough.

The local suppliers just don't have the ability to batch it out. Personally, I was a bridge office specification engineer, and told them if we're going with industry produced UHPC mix, it would have to be in one of the three core areas – Spokane, Vancouver, or Central Puget Sound.

Q: What are some potential areas of improvement that WSDOT should consider when looking at modified concrete overlays in the future?

Scott: I think the path you're going on now is going to be a big help, at least in the middle and short term. Things change so fast; I don't know about 10 years. That's a tough question.

E-Ticketing Issues with Aggregate and Concrete Tickets: Kevin Waligorski

We're in the same process as we were last year and we're looking at transitioning towards ~~an e-ticketing system~~ a portal system that will accept tickets from any contractor e-ticketing system. With the program we have now, some of the issues we have are multiple, different types of tickets coming in in multiple, different ways. An ~~e-ticketing~~ portal system would fit in with our larger goal of e-construction.

We're doing peer exchanges with other states, looking at the different options of what we can do with e-ticketing.

Options: vendor supply, state portal systems, a proprietary system. WSDOT is not in a position to mandate a proprietary system. Recently we've been in conversations with haul-hub, this would be a vendor supply portal system. Granite construction currently works with them. We don't want to dictate what system people are using. Just find a system that has the appropriate data for us to utilize and manage. Unifier is a construction documentation system we use. The more things we can do to tie things together electronically, the better.

Big 3 Materials to look at: HMA, aggregates, concrete. Maybe we can take it to liquid asphalt

and rebar for delivery. Or even purchasing salts and sands on the maintenance side. For now, we want to keep it simple and usable.

Some states are ahead of us, and some are behind us.

Environmental Permit Concerns with using RCA in Construction Projects: Kevin Waligorski
Developments from meetings with WSDOT Environmental staff, Department of Ecology, and select WACA members regarding RCA usage.

RCWs require 25% use of RCA in our projects whenever we have that type of work going on. We have the "get out of jail free" card if a contractor is able to supply documentation that it is not cost effective to use it.

Environmental concerns with using RCA- this is an effort that WSDOT put together a position paper to the Department of Ecology the issues we often see with RCA, specifically environmental concerns.

In April, WSDOT and Ecology started meeting monthly about how we could remove barriers using RCA in construction projects. We want to focus on on-site production, stockpiling, and incorporation of recycled concrete into our construction projects.

On August 1st, brought some of the WACA membership (industry on the WSDOT side) about the concerns on the industry's perspective. One concern is inconsistent enforcement between different inspectors.

What are the concerns from the industry's perspective: inconsistency between inspectors. Make sure we're not intermixing sand and gravel permit issues with stormwater general permitting issues – those sand and gravel issues are more long-term storage and production issues. When we're looking at construction contracts, we're looking at short term issues.

When is RCA a product vs hazardous waste? Clarify stockpile management requirements, PMPs, etc. We're continuing our work with Ecology. We've been documenting an ongoing agreements sheet with Ecology. They meet with their inspectors monthly. We want to identify issues, eg: stormwater – is that considered processed water or wastewater? It's really not considered processed water. When water comes in contact with RCA, is that ok? Is percolation of water after contact, ok? RCA is not a hazardous waste, however, water in contact may be hazardous if the pH is increased. We're trying to identify and focus on what the actual requirements are so contractors know what they're going to be held to when utilizing RCA on projects.

Management of stockpiles – if you're nowhere near water of the state, raining season vs non-raining season, west side vs east side, etc. - we'll probably have a decision tree on these things. The process is going, soon we'll have something to share with the group that is useful to remove risk from contractors using RCA in construction projects.

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Bruce: We have a meeting on September 14th with our environmental committee and I can tell you that they have a high frustration with Ecology. They are basically, somewhat an obstruction to the use of RCA. I would like a copy of the agreement sheet that you're working on so some of our folks can take a look and give an industry perspective. The challenge is the inspectors at ecology are starting to use the state surface water management plan as additional elements that are influencing the construction stormwater permit, and they're changing the construction program without opening up the permit. We've asked to help train their inspectors for years and we don't get anywhere. While I'm glad you're making progress, I'd like to see what that progress is, because we're not. There are a lot of challenges. If we can give you assistance reviewing what you have on paper, that would be most appreciated - I can give it to our environmental committee and consultants to make some recommendations. From an industry perspective, the construction permit is completely separate from the sand and gravel permit. It's unfortunate, but we're pretty frustrated. While you may be getting some input, I'd like the opportunity to get involved at this point while you have documents, agreements, and checklists to make sure it's consistent with what the permit is saying. It's not the pH that becomes the issue, it's how you manage the pH that is the issue, and that is a site specific, contractor specific, PMP specific type of exercise. Ecology doesn't understand pH and the stormwater permit doesn't regulate surface water. We're not seeing how this is being put on a better path.

Kevin: I asked if we're ready to share any of the documents, and we're not ready yet. We would like to add decision trees on stockpile management, so it's not even developed yet.

Bruce: if you have a stockpile of unfinished material on your project, it is not a solid waste, it's a project.

Kevin: correct. The question is, is the rainwater runoff from that potentially an issue?

Bruce: Well, we don't test puddles. We are frustrated with ecology. They are simply making it impossible to use RCA, even on really good jobs. I don't want to see you go down a path of isolation with ecology. They're not following their own rules. Any way we can look at what you have on the table now would be beneficial, for us, you, and ecology.

Kevin: We're still editing and developing this document. Based on my perspective, I think things are going well. We can certainly get back together with your group and our group and discuss it again at some point, for sure.

Bruce: It's a necessity. We know this better than anybody. We just want you to be successful and our contractor to be successful. Here to help, as always, but we have to be plugged in!

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Proposed Pea Gravel Specification: Michele Britton

Below is the document covered in the meeting:

Use of Pea Gravel is specified as an option in two Section of the Standard Specifications. Pea Gravel is not a defined material in Section 9-03 aggregates.

Sections specifying Pea Gravel:

2-09.3(3)D Shoring and Cofferdams

"If soldier piles are placed in drilled holes, and lagging is installed concurrently with the excavation, all backfill above the bottom of the lagging shall consist of controlled-density fill or lean concrete. Backfill below the bottom of the lagging may consist of pea gravel. If full-height steel sheet lagging is installed prior to excavation, soldier pile holes may be backfilled with pea gravel."

6-05.3(11)D Achieving Minimum Tip Elevation and Bearing

Prebored holes and pile spuds shall have a diameter no larger than the least outside dimension of the pile. After the pile is driven, the Contractor shall fill all open spaces between the pile and the soil caused by the preboring or spudding with dry sand, or pea gravel, or controlled density fill as approved by the Engineer.

Cal Trans definition of pea gravel, "Size of pea gravel must be such that 100 percent passes the 1/2-inch sieve, at least 85 percent passes the 3/8-inch sieve, and not more than 5 percent passes the no. 8 sieve. "

Cal Trans definition meets WSDOT Section 9-03.1(4)C, AASHTO Grading No. 8.

9-03.1(4)C Grading

Coarse aggregate for concrete when separated by means of laboratory sieves shall conform to one or more of the following gradings as called for elsewhere in these Specifications, Special Provisions, or in the Plans:

Passing	AASHTO Grading No. 467		AASHTO Grading No. 4		AASHTO Grading No. 57		AASHTO Grading No. 67		AASHTO Grading No. 7		AASHTO Grading No. 8	
Sieve Size	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
2"	99	100	99	100								
1½"	95	100	90	100	99	100						
1"			20	55	95	100	99	100				
¾"	35	70	0	15			90	100	99	100		
½"					25	60			90	100	99	100
⅜"	10	30	0	5			20	55	40	70	85	100
No. 4	0	5			0	10	0	10	0	15	10	30
No. 8					0	5	0	5	0	5	0	10
No. 16											0	5

All percentages are by weight.

Where coarse aggregate size 467 is used, the aggregate may be furnished in at least two separate sizes. Coarse aggregate shall contain no piece of greater size than two times the maximum sieve size for the specified grading measured along the line of greatest dimension.

Cross Reference 2-09.3(3)D and 6-05.3(11)D to 9-03.1(4)C ASSHTO Grading No. 8.

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Last year when we were updating Irrigation, there was a reference to pea gravel. I discovered there really was no material spec in Section 9. We have actually removed it from the Irrigation spec, which leaves 2 references of it in the spec book. Scott Sargent and I have looked at what's available in the Standard Specifications for pea gravel and worked together on this subject.

We looked at our existing 9-03 specs, and in conversation with the MATS Lab, it looks like AASHTO Grading No. 8 is what we would like to cross reference those two sections of the spec.

This change would come out in the 2024 Standard Specifications Book.

There appeared to be no objections to the change.

Work Order process and updates: Donny Henderson
Work order generation process has been steadily improving. We do have a backlog of samples at the lab that are causing delays with test results due to staffing issues and volume of work with HMA Mix Designs, Cement samples, ASAs and Steel Samples.

The topics below have no Further information currently. We will need to discuss how to proceed and set up meetings during the next quarter.

Standard Specifications 9-23.12 Natural Pozzolan:
Update on the possible expansion of 9-23.21 to include "Volcanic Ash and Tephra". Need to speak with SME on possible specifications expansion.

Our SME wants to verify this is something that will be used in the future. We'll try to move this forward in the next few months and see where it goes.

Recycled Concrete Aggregates with MSE Walls:
Need to set up a meeting to discuss.

Naturally Occurring Asbestos in Aggregates:
Need to set up a meeting to discuss.

Discussion on Global Warming Potentials (GWPs) for Portland Cement:
Need to set up a meeting to discuss.