

Oklahoma State Transportation Innovation Council (STIC)

October 25, 2023 Meeting Minutes

10:00 am – 12:00 pm



Meeting Location: Virtual

Welcome and Opening Comments

Tara: Welcome and thank you for attending. Thank you for all your joined efforts on these initiatives.

Souzan: I appreciate all your continued support with advancing and innovation in Oklahoma.

I see all of you taking the innovations to the next level in our state. One thing I wanted to mention is I wanted to thank Tara for recommending the use of these one-pagers. It gives you a good snapshot of where we're at and how we started. Great idea! Thank you, champions, for jumping in and filling out the forms. It truly helps. I look forward to hearing about the great work you guys have done.

Waseem: I would like to thank many of you, including Tara, for the success of your research day. The activities and the presentations and poster presentations, everybody did a great job. A lot of people put their effort into that, congratulations to all. STIC and EDC played a big role too, thank you.

Tara: It was a success, that's due to the internal research team. I know we don't have them all on the call, but they did put a lot of work into it, great job! I did want to start off by recognizing Brian Cooper. This will be his last STIC meeting. He has decided to leave us and go fishing and retire. Brian, thank you for your dedication, not only to the research area, but every area over your entire career.

Brian: It's really been a blessing and an honor to work at ODOT for 35 years. I don't have a college degree, but I got a 35-year education. It's been a joy; I really love the EDC program. I've been following it since it started. I've learned a lot and it's been an honor to work with all of you, thank you.

Tara: Let's get started with the Standing Committee on preconstruction. Again, thank you for all your efforts in getting with this format. At a quick glance we can see where things are at. If you're the champion on either the ODOT or the FHWA side, if you see anything that needs to be updated, especially on key deliverables, please reach out to us and we can update those accordingly. Justin you're up.

Standing Committee on Pre-Construction

STIC Incentive Project:

Development of standard drawings for low-cost bridge options for use by Local Public Agencies (LPAs) on low-volume locally owned roads

(ODOT Champion: Justin Hernandez & FHWA Champion: Ralph Nguyen)

Justin: Updated drawings according to a technical review done by the Bridge Division. Drawings are ready to be signed and accepted but we have a discussion that still needs to be put to rest regarding surface cracking tolerances and possible mitigation for acceptance. This is stemming from experience on the Grant County project. We've received input from the Materials Division and are discussing the merits of applying mitigation at the fabrication yard or following construction. That discussion is occurring now, and I hope to get enough people in the room to finalize within the next 7-14 days. Once that is done and resulting update made to the plan notes and quantities, the drawings will be ready to release for use. We've allowed the stakeholders a comment period and incorporated those comments. We had some fabrication issues we needed to work through internally and I think we've done that this week.

Develop Strategic Plan & Roadmap for Digital Delivery

(ODOT Champion: Siv Sundaram, Katie Brown & FHWA Champion: James Bui)

Siv: The gap assessment, digital delivery maturity matrix, and process maps were presented to ODOT leadership on Oct 16, 2023. An outline for the Strategic Plan will be developed November 2023. The task order to develop a Strategic Plan and Road Map will be issued using the STIC funds by the end of the year. Letha has already set the funding for it.

Tara: We'll add the JP # to this from your email. If anybody has any questions on the finance side, you're able to search quickly.

Tara: Up next is the Standing Committee on Construction, Materials and Maintenance. I'll toss this over to Matt if you want to introduce the Champions.

Standing Committee on Construction, Materials, and Maintenance (Matt Romero)

EDC-7 Innovation:

Matt: Walt Peters is leading this one. We had a brief conversation about one of the things that I want to include here is that we're considering putting together a pilot for internally cured bridge decks, as well as the EDC 7 initiative. I'll let Walt talk a little about this, since he's been spearheading the whole project.

Enhancing Performance with Internally Cured Concrete -EPIC2

(ODOT Champion: Matt Romero & FHWA Champion: Ralph Nguyen)

Walt: EDC 7, we allocated \$85,000 of STIC funding which includes a state match of MC funds \$17,000 and \$68,000. We've selected a candidate in Texas County State Highway 94 over the Beaver River.

It's scheduled to be a three-span bridge. This morning we've been having discussions with Siv about modifying it and doing 2 spans with eternal curing, but with two different products. I know we don't have contracts signed with Dr. Ley yet, but he told me that he's aware of sources for internal curing in the state of Texas, Colorado and Oklahoma as a source that we're considering additional study. It's like volcanic rock, if District 6 doesn't have a problem, we'll put a little more state money into this and the state money entirely from the material cost for research. Which should give us extra fees to study alternative technology. Bryson Ridley and I attended a bridge preservation meeting in South Dakota last week, the presentation from Indiana on what they're doing for internal curing, really impressed me. I've talked to Dr. Ley about using that on Highway 94 bridge and that's why I'm wanting to modify it.

Teresa: That contract for Dr. Ley was sent yesterday by Becky Lyons. I informed her earlier this morning that we may be expecting an updated proposal. If that's the case, we'll wait for his proposal to come in and then attach it to the contract.

Walt: There needs to be a correction. I just learned from Gene Thomas; the leading day is March 24 instead of February.

Teresa: That should be fine.

Souzan: This is regarding the scope changes. I did receive an email from Siv this morning. We're going to do what we can to help. I have asked Ralph to look at the scope of services for the project to see if this is something we could do internally or if we need to get the scope changed. Ralph, do you have anything else to add?

Ralp: No, they say it's possible.

STIC Incentive/AID Projects:

Fiber-Reinforced Asphalt Concrete Using Aramid Fibers

(ODOT Champion: Matt Romero & FHWA Champion: Waseem Fazal)

Matt: I think we're going to be able to finalize this report. We need to change that to David because he's the one that's been completing this since the departure of Kevin Souter. Victoria wasn't involved in this project at all, but David is working on finalizing the report. We plan to share that report with you, Tara, as well as Waseem once it's completed.

Waseem: The results we have seen are promising, it reduced the cracking on the surface. Based on conversations, we would like to pursue a few more projects with this fibrous add few more vendors. They may try different products to see how they work. We may go into more of an implementation phase. I'll work with David and Matt to finalize the report.

Teresa: Do you want Brian Cooper to go out one more time before the end of the year to document with photos?

Waseem & Matt: Yes

Brian: I've been to this location before; the construction is in Osage County.

Phoenix Test Method

(ODOT Champion: Matt Romero & FHWA Champion: Waseem Fazal)

Matt: There is a contract in place. Victoria, you can correct me if I get this wrong, but EST is looking at finding a project to do more testing with the Phoenix. My understanding is they're having issues getting with the contractor. As that progresses we'll provide you with an update, but we are in the process of collecting more data on the actual project, we're not there yet.

Waseem: That might be an additional scope of the work. The work you guys have done and based on your previous projects data, can we conclude this project and provide a final report and then whatever follows, we can treat it separately?

Matt: Victoria is writing the preliminary final report. I just wanted to provide an update that we are continuing work with this instrument to continue to gather more data, but she has begun the process of writing the final report.

Waseem: We will look at finalizing this report most likely by next quarter.

Tara: We'll update this with Victoria working on the preliminary final report and notate the continuation of work to continue collecting data. But the essence of this project will be getting ready to close.

Bridge Deck Cure and Seal technique to improve the current curing method

(ODOT Champion: Walt Peters/Bruce Arnold & FHWA Champion: Ralph Nguyen)

Bruce: We didn't get quite what we were looking for. It was contaminated by the application of anti-graffiti treatment. Supportive of doing more testing using the silencure instead of the wet cure for difficult bridges, in trying to manage water.

Walt: Final report anticipated in November per Dr. Ley. There are no funds to support further research that I'm aware of.

Tara: If we're going to go the route of SPR, we have the problem statement aspect that Dr. Ley in submitting a proposal or also going up the chain through Justin to present to Rick Johnson about getting approval of looking at

additional research on it and providing SPR funds to it possibly. Two different routes we could go if we want to continue down that road.

Teresa: They spoke yesterday with Dana Todd of Brown Manufacturing, and we talked about that. This would be a great time to submit with SPR funding and I suggested to her that I would compose an email sent to her and to Walt and Bruce. And they can collaborate with Sherwood to try to put together a topic statement for consideration of SPR funding.

Demonstrate Two-Coat Deck Seal System

(ODOT Champions: Walt Peters/Bruce Arnold & FHWA Champion: Ralph Nguyen)

Walt: Final report anticipated in November per Dr. Ley. The results we got had a previous application of sealant that we weren't aware of, and we didn't get the results that we were expecting. I talked to Advance Chemicals that supplied the materials, and he was telling me that they're using these two-coat system in other states, Texas and state of Maine. Texas and Maine are using a two-coat system, Maine seeing great things. There's a project, which is the ASHDALE TTS P2 innovative technology demonstration. We can piggyback on some of the research that's going on in other areas. I'm disappointed that we didn't get quite what we were looking for. I think we leave this one the way it is.

Pilot Internal Curing for Bridge Decks

(ODOT Champion: Walt Peters & FHWA Champion: Ralph Nguyen)

Walt: Based on Indiana's research it looks like they were able to reduce the cement content which helps reduce the shrinkage and that's what I would like to look at what Indiana is doing. We have three spans, first span with aggregate from either from Texas or Colorado. The north span we could do it with the Indiana mix. The center span would be a control. We'd have some good places to look at where we could study cost effectiveness and the results. This internal curing is pretty good at reducing the number of cracks. There's a lot of benefits to that technology. I think the Panhandle is where we're doing this in Texas County. That's a good place to try it because it's a more challenging environment and also senior staff were directing us in that direction.

Standing Committee on Safety, Mobility, and Technology

EDC-7 Innovation:

Next-Generation Traffic Incident Management: Integrating Technology, Data, and Training

(ODOT Champion: Caitlyn Carolus & FHWA Champion: Raghu Kowshik)

Caitlyn: We're replacing all our snowplow tablets with samsara dashcams. The system already integrates with DPS software, this should make our integration easier. We are ramping up for TIM training again at ODOT with all field workers. Purchased Pi-Lit Smart Sequential Road Flares to test in field & a couple with DPS.

Raghu: FHWA Traffic Incident team to assess what kind of assistance we'll need with the state in terms of training or peer exchanges, that could assist scheduled for Nov or Dec. Consideration on using the Pi-lit with the House alerts and ways to give advanced warning to drivers and maybe test that out.

Walt: I attended a meeting by Purdue University, and they have a test area for UAV UASS. They have consistency training for Pi-Lit and have a trailer where there's a lot of objects to see if drones can fly around those without incident.

Caitlyn: We've been collecting as much data as we can on just drone usage and integrating with DPS is one of our main goals.

Nighttime Visibility for Safety

(ODOT Champion: Marty Farris & FHWA Champion: Huy Nguyen)

Huy: ODOT is on a project that is in development to add more light to the area that is warned under AASHTO. They are going to pursue HSRP funding to complete those projects, the time frame is between two to three years for those projects to improve the lighting for those areas. Looking into different programs for measuring retro reflectivity of signs and striping. Working with the program leads from FHWA to schedule additional training/peer exchanges and workshops as they become available. Next steps would be finalizing the policy / guidance for HAWK / RRFB implementing and finalizing the ICE (Intersection Control Evaluation)

STIC Incentive Projects:

CAV Task Force Support

(ODOT Champion: Tara Brown & FHWA Champion: Huy Nguyen)

Tara: We're wrapping final reporting. Successes on policies that have come through: HB 1712- Created the Oklahoma Road User Charge Program. Senate Bill 189- Truck Platooning, SB 1541 – Autonomous vehicles, allowing fully automated vehicle to operate on public roads. SB 1688 The Oklahoma Advanced Mobility Pilot Program. SB 365 The Oklahoma Driving Automation System Uniformity Act. From the initiation up until the last legislative session, emphasis on public education and engagement. Public engagement and getting it out there, that Oklahoma is a place for autonomous vehicle activity. Canoo made their announcement that they're going to be coming to create a Mega Micro factory on 400 acres in Tulsa and that was Stitt and the Department of Commerce. Policy efforts, connected and autonomous vehicle working force, has merged with the Advanced Mobility Advisory Council. They're still helping in the same sense through policy, public education, engagement, researching best safety practices within the CAV community. This STIC initiative is concluded, and they'll continue their efforts under the Advanced Mobility Advisory Council.

Taylor: ODOT is receiving our first autonomous truck on Sunday. We've coordinated with Russell and Strat Comms. Classroom and runway training next week and then the week after we'll have it out on the road doing additional training in, in live instances. After that, we'll assign it to a certain field district, but it'll be available to all the field districts. Kratos is our vendor and they'll be out here training. We will be using this exclusively as a shadow vehicle. We will be doing pothole filling, armor coating, striping, any kind of maintenance activity that we can fit in between the lead vehicle and this drone vehicle. This isn't fully autonomous; it's got a lead vehicle it's more control than just sitting it out on the road and letting it do its thing. The demonstration will be in Burns Flat, Oklahoma landing strip airspace. We'll be there all week.

Wireless Sensor for Detection of Black Ice

(ODOT Champion: Alan Stevenson/Taylor Henderson & FHWA Champion: Huy Nguyen)

Alan: Half of the final report is describing the radar board, antennas, software to configure it. All measurements are made in an anechoic chamber which is far from representing an actual world environment. Many of the graphs are hard to read and some are not labeled with units. Many measurements, testing processes and purposes were not defined. Conducted angle measurements are important for the installation of the radar board but didn't specify the distance between the radar and sample being tested. The optimal distance from the radar to the ground was not evaluated. No testing was done in a mobile vehicle, just theoretical. Final report submitted and reviewed; comments sent back. Overall, I would not recommend continuing this study.

Expand Utility Surveying Capabilities

(ODOT Champions: Rick Johnson & Siv Sundaram)

Siv: The first training classes for the Magnet Field Survey software were held October 9-13, 2023. We are currently putting together the Magnet Office software. We expect to have the training classes for it sometime in early 2024. ODOT's solicitation for consultant services for updating the outdated Construction Survey Manual from 1989 and capturing the collection of as-built utility data didn't receive any responses in July and is being resolicited this month.

Ken Phillips has been invited to take part in the 811 underground utility damage prevention working group between utility companies and contractors and attended a meeting this month. Right now, they are working on the language for the agreement. Siv will be serving on the NCHRP panel as a reviewer for NCHRP Project: 10-135 Removing Barriers to Sharing Subsurface Utility Engineering. Our first meeting in December and that NCHRP project is going to look at it for all the states.

Standing Committee on Special Initiatives

EDC-7 Innovation:

Strategic Workforce Development

(ODOT Champion: Jennifer Hankins & FHWA Champion: Souzan Bahavar)

Souzan: We formed a workforce group; ODOT hired a consultant to conduct a needs assessment. There's been some staffing changes, Jennifer Hankins is a new champion and some of the things that she and her team are doing as part of the on-the-job training and supportive services that align with the strategic workforce development initiatives. We also have new partners such as ACOG and Job Corps. Tomorrow we're having our first meeting to get everyone else involved coordinated by LTAP.

STIC Incentive Projects:

Pre-Apprenticeship Stakeholder-Focused Training Program

(ODOT Champion: Jennifer Hankins & FHWA Champion: Souzan Bahavar)

Souzan: This goes hand in hand with the EDC-7 piece we just reviewed.

Accelerating Innovation Deployment in Oklahoma – Phase II Innovation Webinar Series – Seeking Up-and-Coming Innovation Topics

(ODOT Champion: Teresa Stephens & FHWA Champion: Souzan Bahavar)

Teresa: Final report submitted and have expended all the funds.

Closing Comments:

Tara & Souzan: Thank you Champions for working on reporting and final reporting on your projects.

Tara: Something to remember is the finance side, if we expend all the funds, we need to make sure that we get the PO's closed on our ends. For both sides, if FHWA and ODOT, even if there's zero funds left, we still need to make sure that process is done.

Souzan: if you have ideas or proposals, don't wait, go ahead and submit them.

Tara: Please send them to this office, that way we're aware of what's going on and what's being requested. That way we're able to collectively with leadership decide which ones that we would like to request for funding.

Tara & Souzan: We'll work on a STIC initiative final template to review in our next meeting. Once we finalize a template, we can include it on our STIC SharePoint.

Next Meetings/Events:

- January /February 2024 weather dependent to be In-Person