Oklahoma State Transportation Innovation Council (STIC)

July 30th, 2025 Meeting Minutes

9:00 am – 11:00 am

Meeting Location: Virtual

Welcome and Opening Comments

Tara: Good morning, everyone. I appreciate your participation, Thank you all for your efforts in reporting and updates. I'm excited for today, especially because we'll have some additional information on the AI activities that we've been doing through STIC. Lance is going to share some of their findings when it comes time for his updates. As far as I know, we're still waiting on approval to see if any of the STIC applications we've turned in have been approved. EDC 8 has not been announced. That's all the updates I have.

Souzan: Before we begin, I would like to share an update on the Surface Transportation Reauthorization Kickoff Meeting. On July 17, USDOT Secretary Sean Duffy convened a conference, bringing together Congressional members, state CEOs, and infrastructure stakeholders to collaborate on priorities in advance of Congress's surface transportation reauthorization process. In his remarks, Secretary Duffy highlighted USDOT's priorities, including "enhancing transportation safety", such as work zone safety, truck parking, and related initiatives and "accelerating project delivery and advancing innovation", such as progress in autonomous vehicle. Thank you for your participation and thank you for your part in advancing innovation in Oklahoma. We still have not received any information on EDC-8, but will share it with you as soon as it becomes available. Thank you for your patience. Also, thank you all for your efforts in submitting the STIC proposals. .

Tara: We'll go ahead and get started. We don't have anything under the Standing Committee on Pre-Construction. Sorry, Mr. Tegler. We'll go ahead and move to Construction, Materials and Maintenance. I'll toss it over to Matt.

<u>Standing Committee on Construction, Materials, and Maintenance</u> (Matt Romero)

EDC-7 & STIC Innovation Combined Efforts:

<u>Enhancing Performance with Internally Cured Concrete & Pilot Internal Curing for Bridge Decks</u>

(ODOT Champion: Matt Romero/Walt Peters/ Nairi Matevosyan-FHWA Champion: Ralph Nguyen & Waseem Fazal)

Matt: Good morning, everybody. I was going to ask Walt if he had an update on the internally cured pilot project.

Walt: Good morning, everybody. Dr. Ley's been doing a lot of work. In May, he inspected the work and took samples. In June, he got a copy of the mixed designs, including the design tickets. In July OSU visually inspected the three spans and took cores. They're looking at the cores and digging into that. The bridge is now open to traffic, and the bridge division does "NBIS" inspections. This bridge was inspected recently but unfortunately, I don't have the report because our BRM is closed at the moment. This project got behind on the construction, which got us behind on our timeline for EDC. We're progressing and I expect a final report from Dr Ley, probably early in 26. I'm hopeful we find encouraging results. The goal is to keep cracks to a minimum or eliminate them altogether which is maybe overly optimistic.

Matt: We're still trying to get Dr Josh Li's equipment to map that. Now I'm going to rely on Justin to try to find us some funding to pay for that. It would be nice if we can map that and track those cracks as they progress over time or, if it even happens. That's something I'd like to try to see if we could find some funding for.

Walt: Actually, Doctor Li did say he'd be willing to do that with the funding he already has. I've tried to get him and Dr Ley together, but I haven't been successful. I'll keep trying.

Matt: I'll try to help with that Walt. I talk to Tyler often, I'll see if we can spur something up with that. That's all I got, thank you for the work, Walt. I really appreciate it.

Walt: Thank you.

Tara: I would like to add that Dr Li does have a current project going with SPR funds. The next time I talk to him, I'll mention he needs to get with you two to have those conversations, to ensure that this becomes a part of it as well.

Matt: Thank you, Tara. I really appreciate that.

Tara: Any questions or comments for Walt or Matt?
OK, up next is Bryce.

Innovative High-Performance Geotextiles for Stabilization of Problematic Roadway Subgrades
(ODOT Champion: Bryce Hanlon - FHWA Champion: Waseem Fazal)

Bryce: In our last meeting we had just gotten the funding and OU just started the process of manufacturing their box. They have gotten all the soils and were still collecting the geosynthetics. Since then, Waseem and I went down in May to see their early tests and we saw their full setup. They have a test box that is large scale, also it has a load cell in the middle that's cyclically loading the profiles they're creating. The idea of this research is to see the variability you get in long term strength and long-term support for pavement. They have a test box that's filled with the soil that the materials division provided. I would categorize it as typical, not high strength but low strength. You can actually see the benefits of these geosynthetics placed on the subgrade. They've now started doing different tests where they load different subgrades, different geosynthetics, different "AG" thicknesses to see if there's any variance in performance based on the different variables. It's averaging about one model per month. It does take a long time to get everything prepped and do the testing because of the scale and the type of materials they're dealing with.
The idea is to see these geosynthetics providing any structural value. It's too early on but it looks like there is benefit to it, being able to quantify that is the end goal. Dr Tommy is in contact with some ODOT field districts to try to get different materials. He doesn't feel comfortable getting any of these geosynthetics direct from the manufacturer because it may not be true to what's actually being received out in the field. He's waiting for a more suitable project, I think there's a project coming up in D1 or D8. That one is on the schedule; whenever that one gets going, he's going to grab some material for that and test.
That's a Hanes product, which is another manufacturer. Hopefully we'll get to test that and see if there are any variants and move forward from there. It'll be optimizing the test method, basically developing a consistent test method that can be repeated in the future for all different materials and then quantify the benefit in an actual paved design. How can we apply to the equations so the benefits can be seen… progress is being made. The setup was super cool when we went and visited. I believe Materials… Andrew was there. That's all I have.

Matt: Thanks Bryce. Andrew was there.

Bryce: I think they did some DCP testing in the box as well, to see the strength of the soil. If you're loading this setup over and over again, they're trying to see how that affects the density of the soil underneath and whether or not they need to recompact the soil every time. There's a lot of variables; you want to make sure you're comparing apples to apples. That's a lot of what they're going through right now.

Tara: Thank you, anybody have any questions? Any comments?
We'll move on to the Standing Committee on Safety, Mobility and Technology. Allen, I'll toss it over to you.

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: James Bui)

Alan: I appreciate it, I'm going to toss it to Caitlin since she's over all of it now.

Caitlyn: We don't have any new updates since the final progress report in April of 2025, other than the Pi-lits just deployed a new platform for us to see all of the incidents on a map instead of just in a spreadsheet which has been great. A lot of the districts gained access to that as well, so they're able to see all of the pi-lits that are distributed in their area and across the state. It's been running great, and this has definitely been a fun project to work on.

Tara: That's great to hear. Anybody have any questions? Any comments?
Up next is Marty with Nighttime Visibility.

Nighttime Visibility for Safety
(ODOT Champion: Marty Farris & FHWA Champion: Huy Nguyen)

Marty: We didn't have any updates on this one in the last period. The only major thing that happened was I35 and 412 is still happening in September. I-40 and Shawnee slid from August to September, so it's still going to let this fiscal year just move back a month. That's all I had.

Tara: Anybody have any questions? Any comments?
Up next is the AI projects, Lance, I'll throw it over to you for the update as well as a visualization of what's going on.

STIC Incentive Projects:
Transportation AI Projects Team
(ODOT Champion: Lance Underwood & Sam Coldiron & FHWA Champion: Huy Nguyen)

Lance: This first slide is just talking about where we were in 2024. That's where we put the proof of concept together and then started building the OMES data science team to help us move into the next phase. I'll hit some of the highlights and then we'll get into the actual demo. I've got some screenshots of the product, and you can see how far we've progressed. Some of the big highlights as part of the second phase, we increased the scope beyond that proof of concept where we were just looking at a single stretch of roadway. Now we've captured the entirety of the entire Oklahoma State Roadway System, which includes about 52 terabytes of image data. 3 1/2 years' worth of images were moved over into the Google Cloud platform, which has allowed us to do a lot of machine learning analysis. The big take away in this is the estimated efficiency gains. Previously the manual method would take about two years to get through one year of images. Now the data science team can capture an entire county of images in about 24 hours. We can process an entire year's worth of images in about two months. This really cuts down on that manual review time. This helps the team zero in on the parts of the roadway that need the most attention. This was the proof of concept, Power BI dashboard. This showed that we could pull analysis from the different asset types and the images, then be able to display that in an informational dashboard. This is the results of phase two, we've loaded these images and captured the asset types, into the ESRI dashboard. You're able to navigate and drill into those areas with the highest level of change and then be able to see what kind of asset types you're looking at. As you get to those different control sections, you can actually pull up the image to see what the AI was identifying. Here are the different annotated images that detected the assets and labeled them. You can visually see what the changes were. Once we have the entire state mapped, we'll be able to zero in on those counties that have the most change. This will allow us to focus efforts on those areas that need the most attention and then eventually we can get to some of those other areas as well.
High level, once we get this deployed into live production and they're able to pull in all the images, we'll get through the rest of the counties and we'll be able to have a complete picture of the entire state. This view, we can see the percent changes in the clusters of those assets. We can see those predominantly blue areas or those warning signs. The yellow are the rumble strips. If you wanted to zero in on a particular category, you could filter that out.
Each of the dots represents an image location, clicking on that point is what's going to bring out that image analysis. You can really look at the results of what that AI has analyzed. There's also a heat map filter, this is similar to the clusters. You'll be able to see which areas of the road have the greatest percentage of change and be able to focus in on those and maybe see some trends along the way. This view enables you to see which asset types are most responsible for the changes in that area. All of this is filterable by asset type, you can look at everything or filter to the particular category. We've come quite a way since the proof of concept and the team has made a lot of advances in improving the accuracy of the model. Being able to expand the number of asset types and categories that the AI is able to successfully identify. This is going to be exciting when we get this out into production, and we'll continue to make continuous changes to it and improvements along the way.

Tara: Thank you, Lance. Does anyone have any questions?

Souzan: This is incredible. Thank you for providing the presentation and it's amazing to see how much that's going to streamline the processes. Did you guys have to go back and make any modifications along the way? For example, were certain assets that weren't being picked up/detected, requiring adjustments to make them more visible

Lance: During the proof of concept there was a limited number of asset collections. It was high, but it was also providing a lot of false positives. Part of the phase two, that's what they were able to zero in on and increase the number of asset types that it can identify. Also increasing the accuracy and the method that they were using is better than our proven concept was.

Souzan: What is the timeline for getting this completed?

Lance: Currently they're going through the quality assurance and change management on this side and then we're targeting August. So next month we should deploy this into production and people will be able to start using it.

Tara: Anybody else have some questions or comments?
We will go ahead and move on. I believe that Jennifer actually made it to the same conference that I got stuck trying to get to after possibly staying overnight at a hotel in Chicago. But hers is up next Committee on Special Initiatives.
I don't know if Viplav is here, I think he might be out on vacation.

Standing Committee on Special Initiatives
EDC-7:

Strategic Workforce Development & Pre-Apprenticeship Stakeholder-Focused Training Program
(ODOT Champion: Jennifer Hankins & FHWA Champion: Viplav Reddy)

Tara: The last thing that we were working on the EDC 7 activities as well as the STIC initiative is completing the final report/paperwork. She did present on that at our last STIC meeting we had. We're trying to wrap that up with the administrative side and paperwork. Me personally, I'm looking forward to possibly having this be a continuation into EDC 8. Seeing the different aspects, we can do regarding workforce development within transportation. Souzan, do you want to add anything to that?

Souzan: No, I think you're absolutely right. I hope to see that as well as. This was one of the initiatives that was carried forward from EDC 6 to EDC 7.. Kudos to ODOT for advancing this initiative from "planning stage" to having it institutionalized, Thank you.

Tara: Before we go to closing comments, does anybody have any questions or comments?
As we mentioned before, the two STIC applications out of the four that we received were put forward. One of them is the "Piloting a Public Involvement Software Platform for Oklahoma DOT" specifically. The other, "Increase Testing Capacity of Field Residencies for BMD implementation".
Those are the two that we're waiting to hear back on. Once we do, we will let the STIC group know and then we'll be looking forward to kicking those off. We possibly might have that information at the next quarterly meeting, at least if they've been approved or not.
I appreciate all the efforts and the time that you all put into not only EDC, but STIC initiatives that you head up. Working with the vendors and keeping those relationships going. I will toss it over to Souzan and Zach and see if they have anything to add.

Souzan: I don't have anything to add, but I'll turn it over to Zach.

Closing Comments:

Zachary: You have already touched on EDC8 and the two STIC applications. Thank you to all of you that submitted EDC7 final reports and for your continued hard work and efforts. Also thank you to those that were able to submit their STIC quarterly updates. That's all I have.

Tara: As a reminder, October 28th will be the next quarterly meeting. We will have that one in person since this one got switched to virtual, I look forward to seeing everybody in the fall. Make sure you reach out if you have any questions, comments or concerns.

We’ve been working on getting the STIC website’s content updated. We've updated photos to EDC 6, updated agendas and meeting minutes, to get everything current.

I appreciate you all and we'll see you in October.