

**Integrated Transportation and Stormwater Infrastructure Initiative
Technical Advisory Group Meeting #1 Meeting Summary
March 6, 2023 – via Microsoft Teams
10 a.m. – noon**

I. Introductions

Attendees introduced themselves in the chat and Jai-W Hayes-Jackson (NCTCOG) invited everyone to introduce themselves.

II. Introduction to the Integrated Transportation and Stormwater Infrastructure Initiative

- a. Overview and history
- b. Goals and deliverables
- c. Update on current progress

Jai-W described NCTCOG's role as a Council of Governments. He described the purpose of the integrated Transportation and Stormwater Infrastructure study and displayed a map of the study area. He displayed flooding pictures occurring in a rapidly developing community in Wise County.

III. Goals of Technical Group

Jai-W described a list of draft goals of TAG and let the group know the meeting would circle back to discuss those goals in more detail.

- a. Data needs for the Project Area communities

Kate Zielke (NCTCOG) described data already received from cities following the August 2022 round of sub-area meetings.

Kathy Jack (The Nature Conservancy) provided a link to a project The Nature Conservancy completed with the US Army Corps of Engineers (USACE) Silver Jackets program; the project produced a tool with base layers that could be helpful. The tool is currently in beta format. She said she would welcome feedback on the beta tool, <https://maps.freshwaternet.org/trinity-river-basin-floodplain/>

Sandy Hertz (Maryland Department of Transportation) said Texas Department of Transportation (TxDOT) should have a pretty robust asset management plan as it relates to structures. The plan would include stormwater infrastructure. She said Maryland and a lot of states have not had Atlas14 rainfall values updated by National Oceanic and Atmospheric Administration. Atlas 14 provides curves that show precipitation depth, duration, and frequency. She said the age of stormwater infrastructure plays key role in whether infrastructure is right-sized for the amount of flow the infrastructure is trying to convey. In Maryland, not all of the transportation infrastructure is in state control. Some is controlled by cities and counties, so the study team may look to counties and municipalities. Kate noted that the study area does have updated Atlas 14 data.

Rose Marie Klee (TxDOT) asked in the chat whether it would also be helpful for the project team to have/develop downscaled climate information. Edith Marvin (NCTCOG) said USACE has been developing Watershed Hydrology Assessments (WHAs). Matt Lepinski (USACE) said they have been working collaboratively for decades with communities and the state to produce valuable flood risk awareness and the resiliency data that is forming the foundation of TSI. WHAs can generate specific cubic feet per second, so this data will affect resulting floodmaps. Matt also said USACE is doing innovative work with base level engineering.

Janette Monear (Texas Trees Foundation) asked about the scope of the project and described soil differences and imperviousness in DFW. She said it is challenging to strategically plant trees considering watershed management. It requires private landowners in addition to municipalities. Edith described the TSI project scope. She said an initial meeting was held with communities to see if they were amenable.

TSI seeks to help communities get out in front of development, discourage fill in valley storage, and discourage development where floodwaters occur. Janette asked if the study team plans to put together a strategic plan that would include opportunities for land use planning and transportation, including quantity and quality. She asked if the project is going to address policy and ordinances, can it get out in front of how urban fringe cities are designing their cities. Edith said the project will produce policy recommendations, but NCTCOG is a non-regulatory entity.

Jeff Neal talked about integrating resilience planning and asset management. He said H&H work can be used to run better vulnerability and criticality analysis on the current and future transportation networks. Hopefully thru coordination with locals governments and TxDOT, TSI can identify projects or areas of concern. TSI can look at strategic planning from the perspective of transportation projects, but TSI does need to go into policies, data, etc., to connect planning and resiliency proactively.

Kathy asked if TSI included fundable projects. Jeff said the study could show how projects might be eligible for funding tied to need and purpose.

David Marquis (environmental activist) said he has communicated with the Dallas Regional Chamber, and TSI also needs to not oppose development but engage the business community because they are the ones conducting development. He asked if the TSI process can be accelerated and move farther north and west. He suggested additional funding sources may be needed. Jeff said the study team is looking for additional sources of funding. He said it is critical that the TSI work is replicable and expandable to a larger geography and vulnerable places. He said the study must provide a portal where all of information is available; this is important for communities where resources are lacking. David responded that water projects are usually funded via bonds, but people are looking at public-private partnerships, water credits, and other ways to fund this work. Edith said solving problems once they are already exist is more expensive than being proactive, and that is what led to the specific study area. She said TSI will lend some helpful information in those areas that are already developed, as they redevelop. Matt said USACE provides several funding opportunities; he will provide information and a funding template for interagency non-structural funds. He said another funding opportunity is the Continuing Authorities Program.

Chad Marbut (City of Weatherford) said the city is lucky because of its size and support from the community has enabled it to develop pretty good stormwater requirements in development reviews. Tier II changes and the removal of involuntary annexation has created challenges. This city still has an extra-territorial jurisdiction (ETJ) area, but in reality the city can't control what type and kind of development occurs in the fringes. The city does exercise authority in the ETJ thru platting and coordination with the county. He said Weatherford is constrained because of the presence of water in the west; the number of wells drilled every year is astounding. The county has less authority to enforce stormwater requirements and less political will, at least that is the perception. There is no zoning, and authority seems limited on roads. Even when the county has legal authority, applications will require political will. The groundwater district conducted studies and encouraged a shift to larger lots. If a lot doesn't have water it must be at least 2 acres, which creates less imperviousness. As folks voluntarily annex to get city water, that affects the city's density. The city is not going to get as dense as it had originally planned. The city is going to take advantage of coordination with NCTCOG to plan for growth, but counties and smaller cities need to be on board. Staff resources and expertise are limited; counties and smaller cities may not have funding or political will.

Edith described FEMA's Cooperating Technical Partnership program and work done in Mary's Creek. She said sometimes not enough resources or staff exist to do anything above FEMA minimums, but with the TSI study, NCTCOG is trying to do something different, including partnering with transportation. Communities need to think about setting open spaces aside. David said that while there are many

environmental resource reasons to do this, the message should be that we are protecting people and their homes from flooding.

b. Policy needs related to accomplishing mitigation goals

Janette said authority and political will are needed, as are education and implementation strategies that can be short term and long term. Education and outreach needs to be conducted with the public, and corporations, because FEMA may not cover all economic impacts of floods. The state legislature is in session, maybe a subcommittee can seek to influence the legislature and look at a broader funding approach. The study team should look for policy that is working in other areas.

Sandy said transportation policy-related efforts at the Department of Transportation level should focus on design specifications, including getting resilience and flood mitigation strategies into the design manuals that engineers are using. In Maryland, the State Highway Administration works very closely with the Department of Environment, which regulates stormwater management and quality. Local developers use the design manual that was created by staff from these agencies. TSI could review design specs and whether they include potential for projected increases in stormwater flows, whether that's based on change in impervious or a climate model. If not, the study team could work with the resource and regulatory agencies, sharing the information that is unique to transportation. Transportation is relevant to developers because people need to get from Point A to Point B. Policy needs to be developed to address interdependencies. Jeff said this is something the project is trying to accomplish – including looking at drainage related to future land use within the life cycle of the facility, not just current land use. Sandy added that there is an economic component; if roads are flooded, they don't provide a base for economic development at the community level.

Jeff said sometimes NEPA documents are being used to accomplish this, but this method has its own challenges. He would be interested to see how Maryland has adopted policy to integrate these ideas at the beginning of the transportation process.

Chad said the legalities of policy should be considered. Also to be considered are available tools and potential policies. But it needs to be proven that policies are enforceable.

Ben Thompson (City of Fort Worth) asked in the chat which storm frequency the Maryland DOT designs to.

Sandy responded that it depends on the classification of the roadway.

Jeff said silo busting can create additional benefits and win-win solutions that mitigate risks.

Kate mentioned an NCTCOG effort from several years ago that found that legislation does support county enforcement of floodplain management.

Edith provided more information on that NCTCOG effort, saying the state water code supported county enforcement. She presented that information to a legislative group. It allows planning for future flows to prevent flooding by counties. The state water code does not allow for land use planning, but it does not prevent counties from using impervious surface to calculate runoff. She referenced Sandy's comment on design manuals; a city Edith previously worked for had a Farm-to-Market road, had future flows, and had evidence that the watershed would be fully built out 5 years, but was fighting with the roadway engineer to allow that flow to pass under the bridge. The bridge as designed would have handled 50 % of the water. She had to take the matter to the county commissioner to get the problem rectified. She hopes that through the TSI project some of these behaviors will change.

Sandy said that in Maryland, there is a lack of workforce development around resiliency. Part of the challenge is regulations are prohibitive in terms of doing a betterment; a betterment could improve conveyance. Maryland doesn't have more current intensity/frequency/duration curves; designs must relate back to this national analysis, which is 20 years behind in its currency of precipitation data – it has not updated since 2004. Maryland doesn't have depth grids for embankments for roadways. Regulations constrain what we do on engineering side. There are both resource challenges and regulatory barriers that may exist at the state DOT side; design may not be allowed to be oversized to accommodate flows because they can't flood downstream neighbors. Planning has to start almost at the outlet of the watershed and predict the future footprint; it would need to start from the bottom and work its way up if you are going to right-size culverts with an eye to what will happen via climate models or weather trends.

c. Resource challenges associated with mitigation planning

Chad said money is a resource challenge. He said the city is always looking for the next step, how do we get BMPs, design manuals, watershed studies, how do we get to the next level of what we should plan for to get ahead of the growth. The resources needed are funding, what they can participate with COG to achieve, and hiring staff /consultants. Stormwater utilities have a funding source. The city needs partnerships where it can get bigger return than what is invested.

Sandy provided a link to resilience funding from the Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law: <https://www.georgetownclimate.org/adaptation/toolkits/resilient-infrastructure-investments/what-funding-opportunities-does-ijja-offer-for-building-resilience-across-sectors.html?chapter>. She said that from the DOT perspective, new sources of formula funding have been made available to DOTS. Maryland got funding thru PROTECT, which can be used for planning and for implementation – the federal government wants they money to be used for implementation. Two percent is set aside for planning. No more than 10 percent can be used for planning – the emphasis is on implementation. Other formula funding can be used; even existing pots of funding, such as safety and Surface Transportation Block Grants, have added definitions of resilience and expanded the ability to do green and gray infrastructure as an acceptable and eligible activity. This is new funding for Maryland. Also discretionary funding is available; the PROTECT notice of funding opportunity hasn't been released yet. FEMA has Building Resilient Infrastructure and Communities (BRIC) and a hazard mitigation assistance program. Stakeholders have told us funding is likely out there, but one of resource challenges is depth of bench – staff who can put together grant applications. This is harder at local level to put together a strong grant application. A gameplan could be put together a think tank to get grant applications submitted. Consultants are another resource challenge – with the influx of funding, the number of consultants is growing but not large that can downscale climate projections or conduct other tasks related to flooding. So we may have the money but not may have a consultant who can help us deliver on what we need to deliver on.

David said the Texas Water Development Board is talking statewide about water challenges, while TSI addresses stormwater. But we need to understand that stormwater affects water supply. A water caucus in the state legislature ties these together. Lots of forces are available to address water and are tied together politically. The word “integrating” is so important. Many people are interested in going in this direction if we can get money for projects.

Edith said Denton County is interested in aquifer recharge but finding anyone with expertise is difficult. She asked if anyone had guidance on this topic.

Dr. Fouad Jaber (Texas A&M AgriLife Extension Service) said someone at A&M does that work.

Jeff: TxDOT is creating a resiliency plan for the state. TEMPO (Texas Association of Metropolitan Planning Organizations) is working to be part of a stakeholder committee. TSI could be incorporated into the state resiliency plan.

Sandy said incorporating resiliency in planning can reduce the match for federal projects. She said having a resiliency plan provides a 7 percent reduction if the project is in plan. Having the project incorporated into the MPO's transportation plans gives you another 3 percent reduction – so state dollars can go further in terms of being a match for projects. Having the resiliency plan and MPO coordination reduces the required match. You also can move funding from another program to PROTECT to reduce the match. Various strategies exist to get a \$100 million project down to a \$2-4 million project based on how you combine the federal programs.

Additional comment in the chat: Lisa Ann Biggs (City of Fort Worth): Even though there is funding available it can take a long time to receive those funds and utilize them, which in terms of rapid development can come too late.

d. Discuss and formalize draft goals

Chad said he agreed with the proposed goals. The group decided to use the proposed goals.

IV. Next Steps

a. Set recurring meetings

Carol Warkoczewski (Institute for Leadership in Capital Projects) said the group should talk about what we want to accomplish in a certain time frame.

Several participants posted in the chat that they favored quarterly meetings. Aaron Hoff (Tarrant Regional Water District) said meetings should be quarterly at minimum, but with ad-hoc meetings as needed to support goals.

Matt discussed the TSI task schedule. Kate suggested the study team share information on the task/deliverable deadlines to strategically schedule meetings.

b. Form subcommittees

Jai-W proposed funding as a topic for a subcommittee.

Sandy has seen other projects that have subcommittees on science, education and outreach, adaptation and resilience, and workforce development. She has also seen subcommittees organized based on sectors, such as transportation or critical infrastructure, natural and working lands, water quality, and critical needs for plan development. At a minimum, subcommittees could address equity and education and outreach; a technical subcommittee could look at what data we have access to and data gaps. This is a niche area in terms of expertise.

Jai-W said the project team will consider the options for subcommittees.

Additional comments in the chat:

Carol Warkoczewski chatted that she would be interested in having I-LinCP help with an education subcommittee but would need to discuss with her Board, so she would need some more details so she can be knowledgeable when she talks to the Board. The Board meeting is in June.

Janette chatted that several people on the call are from private non-profits. She would like suggestions on how the non-profits can help support the project. She said this is one of biggest gaps she sees in planning in Texas.

Attendees	Affiliations
Blake Alldredge	Upper Trinity Regional Water District
Tyler Bazan	Maryland DOT/State Highway Administration, Highway Hydraulics Division
Korrie Becht	City of Fort Worth, Planning Manager for Planning & Data Analytics
Lisa Ann Biggs	City of Fort Worth
Carla Bingaman	Institute for Leadership in Capital Projects (I-LinCP), Executive Director
Erin Blackman	NCTCOG, Environment & Development
Clair Davis	City of Fort Worth, Floodplain Administrator
Christina Derr	City of Springtown, Director of Administrative Services
Heather Finn	Trinity River Authority
Jai-W Hayes-Jackson	NCTCOG Environment & Development
Sandy Hertz	Maryland Department of Transportation, Director, Office of Climate Change Resilience and Adaptation
Aaron Hoff	Tarrant Regional Water District
Fouad Jaber	Texas A&M AgriLife Extension Service
Kathy Jack	The Nature Conservancy
Srikanth Koka	Texas Water Development Board
Rose Marie Klee	Texas Department of Transportation, Design Division H&H Section Director
Matt Lepinski	US Army Corps of Engineers
Daniel Li	University of Texas at Arlington
Chad Marbut	City of Weatherford, Director of Public Works
David Marquis	Environmental activist
Maribel Martinez-Mejia	NCTCOG Emergency Preparedness, Director
Edith Marvin	NCTCOG Environment & Development, Director
Janette Monear	Texas Trees Foundation, President/CEO
Jeff Neal	NCTCOG Transportation
Stephen Nichols	City of Fort Worth, TPW Stormwater
Elizabeth Rophael	NCTCOG Transportation
Andrea Sanders	Texas Division of Emergency Management
Bill Smith	City of Weatherford, Assistant Director of Engineering
Ben Thompson	City of Fort Worth, Floodplain Management
Sam Wallace	USGS Oklahoma-Texas WSC, Hydrologist
Carol Warkoczewski	Institute for Leadership in Capital Projects (I-LinCP), Founder and CVO/CEO
Michelle Wood-Ramirez	Tarrant Regional Water District