

Project Update: Integrating Planning for Transportation and Stormwater Infrastructure

Upper Trinity River Basin Meeting | March 5, 2024 Jai-W Hayes-Jackson

Project Overview

WHY THE REGION NEEDS A STUDY ON INTEGRATING TRANSPORTATION AND STORMWATER INFRASTRUCTURE



Project Details

Purpose

- Prevention vs. response
- Integrate stormwater management, urban development, transportation, and environmental planning
- Develop plan for risk awareness and resiliency
- Identify impacts and alleviate risks from flooding

Project Team Members:

- NCTCOG Stakeholder Engagement, Transportation Planning, Urban Planning
- USACE and UTA H&H Modeling
- TRWD and Texas A&M AgriLife Environmental Planning







Why TSI?

- 60% undeveloped (2015)
- 19% growth in impervious surface (2006 2016)
- 126% increase in population (2020 – 2045)
- >7,000 miles of streams
 >274,000 acres of 100-year floodplain



Urbanization Challenges



After (75%-100% Impervious Cover)



BEFORE (Natural Ground Cover)

Stormwater Challenges

- No regionwide data
- Piece-meal/lacks connectivity
- NOAA Atlas 14 rainfall estimates
 - Required for infrastructure design, planning, and delineation of flood risk
 - 2022 FLOODS Act
 - 10-year updates





Transportation Challenges

- Transportation spending is high and growing
- Rate of deterioration for transportation infrastructure increasing
- Needs can outweigh resources for local governments

Exhibit 2-4: Major Expenditures

Mobility 2045 Update Planning Approach	
Infrastructure Maintenance*	\$42.8
Management and Operations	\$9.6
Growth, Development, and Land Use Strategies	\$1.5
Rail and Bus**	\$44.9
HOV/Managed Lanes + Freeways/Tollways and Arterials	\$49.5
Total, Actual \$, Billions	\$148.3

Values may not sum due to independent rounding

*Includes transit system maintenance

**Transit capital expenditures, including those using innovative revenue sources such as publicprivate partnerships

Source: NCTCOG, Mobility 2045 Update



Update on Current Progress

STAKEHOLDER ENGAGEMENT



1. Identifying Stakeholders

- Municipality and County Staff
- Municipality and County Elected Officials
- Rural and Agricultural Stakeholders
- Business Stakeholders
- NCTCOG Emergency Preparedness and Economic Development Departments





2. Prioritizing Local Governments for Outreach

- Flood history
- Growth rate and control overgrowth
- Presence of relevant ordinances or other flood mitigation activity
- Participation or non-participation in National Flood Insurance Program
- Resources and professional capacity to address flood mitigation
- Interest in TSI study and goals
- Existing flood mitigation infrastructure





3. Preparing for Outreach to Local Government Staff

- Update contact lists
- Conduct preliminary outreach and identify preferred means of communication
- Provide TSI overview
- Share information gathered in Step 2, Prioritizing Local Governments for Outreach
- Schedule site visits and tours
- Develop custom presentation
- Conduct visit
- Prepare follow-up questions





4. Following Up After Outreach to Local Government Staff

- Seek meeting with elected officials
- Plan to meet with elected officials multiple times over project
- Provide quarterly follow-up communications
- Develop factsheet or other summary of site visit and meeting with elected officials





5. Addressing Equity

- FEMA grant for equity-based outreach in North Central Texas
- FEMA equity definition
 - Communities of color
 - LGBTQ+
 - Persons with disabilities
 - Religion, national origin, Limited English Proficiency
 - Rural residents
- Flood risk faced by these groups
- Greater participation
- Equity-related discussions





6. Reaching Rural and Agricultural Audiences

- Identify stakeholders
 - AgriLife Extension Service
 - Natural Resources Conservation Service
 - Soil and Water Conservation Districts
- Attend existing meetings of these groups





7. Reaching Business Audiences

- NCTCOG's Economic Development
 Department
- Real estate councils
- Chambers of commerce
- Independent flood insurance providers
 - Contacts from NCTCOG's Emergency Preparedness Department





Update on Current Progress

FUNDING



Funding

W	ho do we need to convince?	What matters to these folks? Example pitches.	What evidence can we use? \$ (least expensive) – \$\$\$ (most expensive)
		Community health, safety, & welfare; competing demands & priorities; budgets; electability	
	Local Elected Officials	 Project creates jobs and brings new funding to the area 	\$ Show budget & planning process impacts
		Protecting the community is worth the cost	\$\$ Use neighborhood-level data and from familiar peer
		Project is a "win-win" for all affected parties	municipalities
		Project complements municipal plans & departmental strategies	\$\$\$ Estimate budget savings with built alternative
		 Project reduces climate changes impacts on underserved populations and/or communities 	
	Local Taxpayers	Fees; taxes; quality of life; community/economic stability & vitality	\$ Show similar projects have increased property values
		 Small investment now will avoid tragedy with big future loss 	\$\$ Identify savings from decreased flood risk and
		Our neighbors are participating	lowered insurance premiums
		Project will provide safe & reliable transportation	\$\$\$ Share data from questionnaires, surveys, & public
		 Project will improve neighborhood safety 	meeting comments
	Local Business Owners	Regulation predictability; economic impacts/efficiency; avoid debt	\$ Identify population/employment data trends to explain
		 Project creates jobs and brings new people/investment to the area 	how project can contribute to economic development
		Good return on investment (ROI)	\$\$ Estimate protected or created jobs & income resulting
		Local economic drivers may be sustained or enhanced	from the completed project



Funding

W	/ho do we need to convince?	What matters to these folks? Example pitches.	What evidence can we use? \$ (least expensive) – \$\$\$ (most expensive)
	State/Federal Agency Partners	 Quantifiable costs/benefits; reliable & logical data/methodologies Protecting the community is worth the cost Doing "Y" will most likely result in "Z" Avoidance of damage and expenses from natural hazards Project increases safety for both people and infrastructure 	 \$ Get letters of support to demonstrate buy-in \$\$ Compare costs of different actions to achieve a specific goal \$\$\$ Estimate cost-effectiveness through a benefit-cost analysis (BCA) \$\$\$ Estimate positive impacts on amenities people value (health, clean air, recreation, etc.)
	Foundations, Philanthropy, & Impact Investors	 Climate change impacts on people/environment; future generation obligations; equitable outcomes; environmental stewardship Climate change threatens the world as we know it – we must act Project improves racial and environmental justice Project improves clean air/water & fosters abundant wildlife Project provides green infrastructure & alternative energy uses Project is the right thing to do for future generations Project supports neighborhood decision-making 	 \$ Show how project will benefit underserve individuals & neighborhoods \$ Take compelling photos, organize site visits, get quotes from community members who will benefit \$ Show how philanthropic investment will catalyze or leverage additional funding \$\$ Explain who will bear costs & who will receive potential benefits



Update on Current Progress

POLICY



Policy

Water Rights Workshop Update

- Continuing planning with potential speakers
- Topic of interest:
 - Water rights application to TSI strategies e.g., green stormwater infrastructure, nature-based solutions
- Target Date May 2024



Source: Dr. Fouad Jaber, Texas AgriLife



Update on Current Progress

MODELING



Modeling H&H Pilot Study Update

Pilot Study Locations and Updates:

- Intent: to develop and test approach for larger effort
- Bridgeport:
 - Finalized initial H&H pilot study in late 2023
- Eagle Mountain and Mary's Creek:
 - Completing more comprehensive H&H pilot studies, including:
 - Hydrology approach development and technical enhancements
 - Hydraulics approach development and technical enhancements
 - Optimization study and urban drainage methodology refinement





Progress to Date

2 Rounds of meetings with stakeholders in the study area

- **3** Technical Advisory Group meetings
- 2 Steering Committee meeting
- 15 Communities have provided GIS and non-GIS data
- 2 Workshops conducted
 - Beginning planning for 2 additional workshops
- **2** Visits to observe challenges faced by small but developing cities

2 meetings with ULI's Mini-TAP Program
SME for Transportation has kicked off work
Submitted scope for GLO grant
Equity Engagement Plan written for North Study Area (FEMA)
Literature review has been completed and is under review
1D H&H Pilot Study completed
Working toward contract with H&H consultant





Contacts

Kate Zielke Program Supervisor, NCTCOG KZielke@nctcog.org 817-695-9227

Susan Alvarez, PE, CFM E&D Department Director, NCTCOG Salvarez@nctcog.org 817-704- 2549

Jai-W Hayes-Jackson, CFM Planner, NCTCOG jhayes-jackson@nctcog.org 817-695-9212

Jeff Neal Senior Program Manager, NCTCOG jneal@nctcog.org 817-608-2345



Matt Lepinski, PE Lead Hydraulic Engineer, USACE Matthew.T.Lepinski@usace.army.mil 817-266-6520

Fouad Jaber, PhD, PE Professor and Extension Specialist, Texas A&M AgriLife Extension Fouad.Jaber@ag.tamu.edu 972-952-9672

Nick Z. Fang, PhD, PE Associate Professor, The University of Texas at Arlington NickFang@uta.edu 817-272-5334

Aaron Hoff Watershed Programs Manager, TRWD <u>Aaron.Hoff@trwd.com</u> 817-720-4453