Water Resources Council (WRC)

July 10, 2024

North Central Texas Council of Governments
Environment & Development

www.nctcog.org/WaterResources

Procedures for Online Meeting

- Today's presentation will be posted on the WRC website at: https://www.nctcog.org/envir/committees/water-resources-council
- Roll call today in lieu of sign-in sheet.
- Please keep your microphone on mute when not speaking.
- Please use the "raise hand" feature to ask a question or provide a comment. When called on, state your name and entity you are representing.
- Approval of action items will still be done by a voice vote. Please only vote if you are a member of the WRC.

Welcome and Introductions

- Meeting attendees will introduce themselves.
- Welcome guests.
- Thank you all for attending!

Speaker Presentation

Kelly Albus, Ph.D., and Bardia Heidari, Ph.D., P.E.- Texas Water Resources Institute

TWRI's Urban Water Program:

Community Engagement in Water Management and Regional Expansion of Blue-Green Infrastructure (BGI)

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Texas Water Resources Institute
make every drop count

Texas A&M AgriLife

TWRI Urban Water Team

Meet TWRI's Urban Water Program team

April 30, 2024 / By Leslie Lee / Urban Water, Dallas Center, Urban WISH

Kelly Albus, Bardia Heidari, Dean Minchillo, Emily Monroe, and Samantha Murray.

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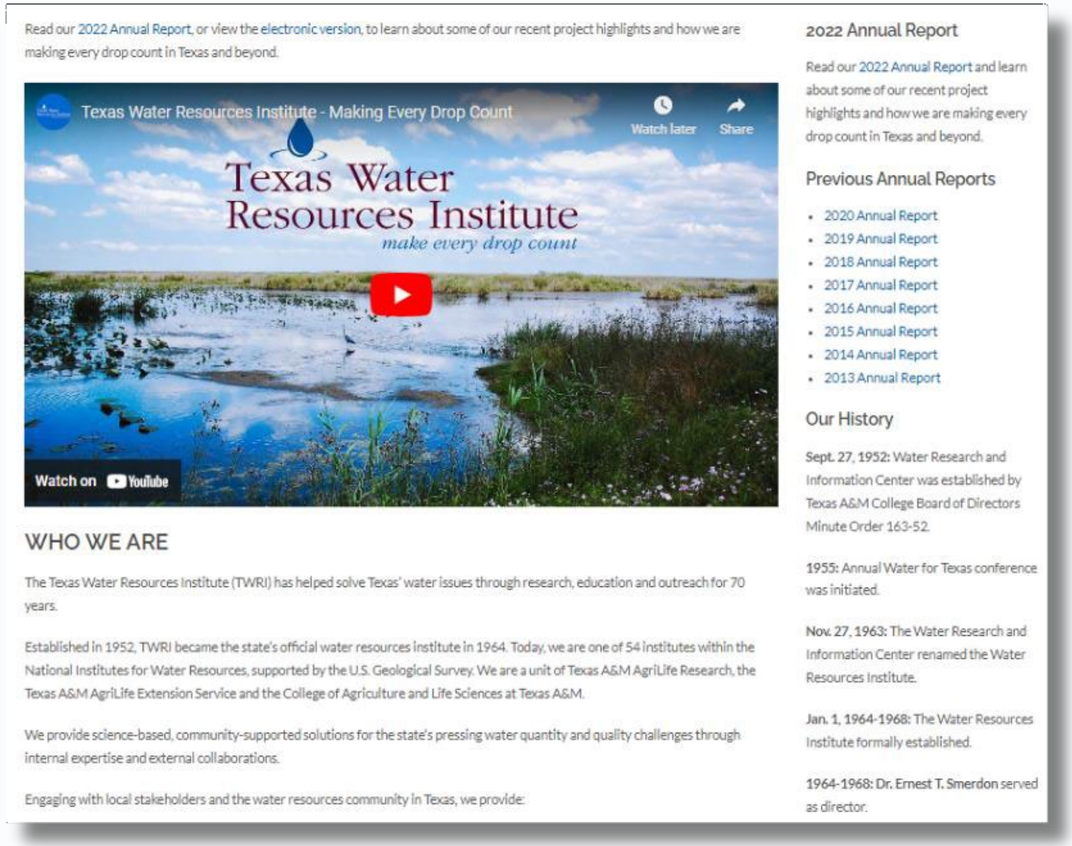
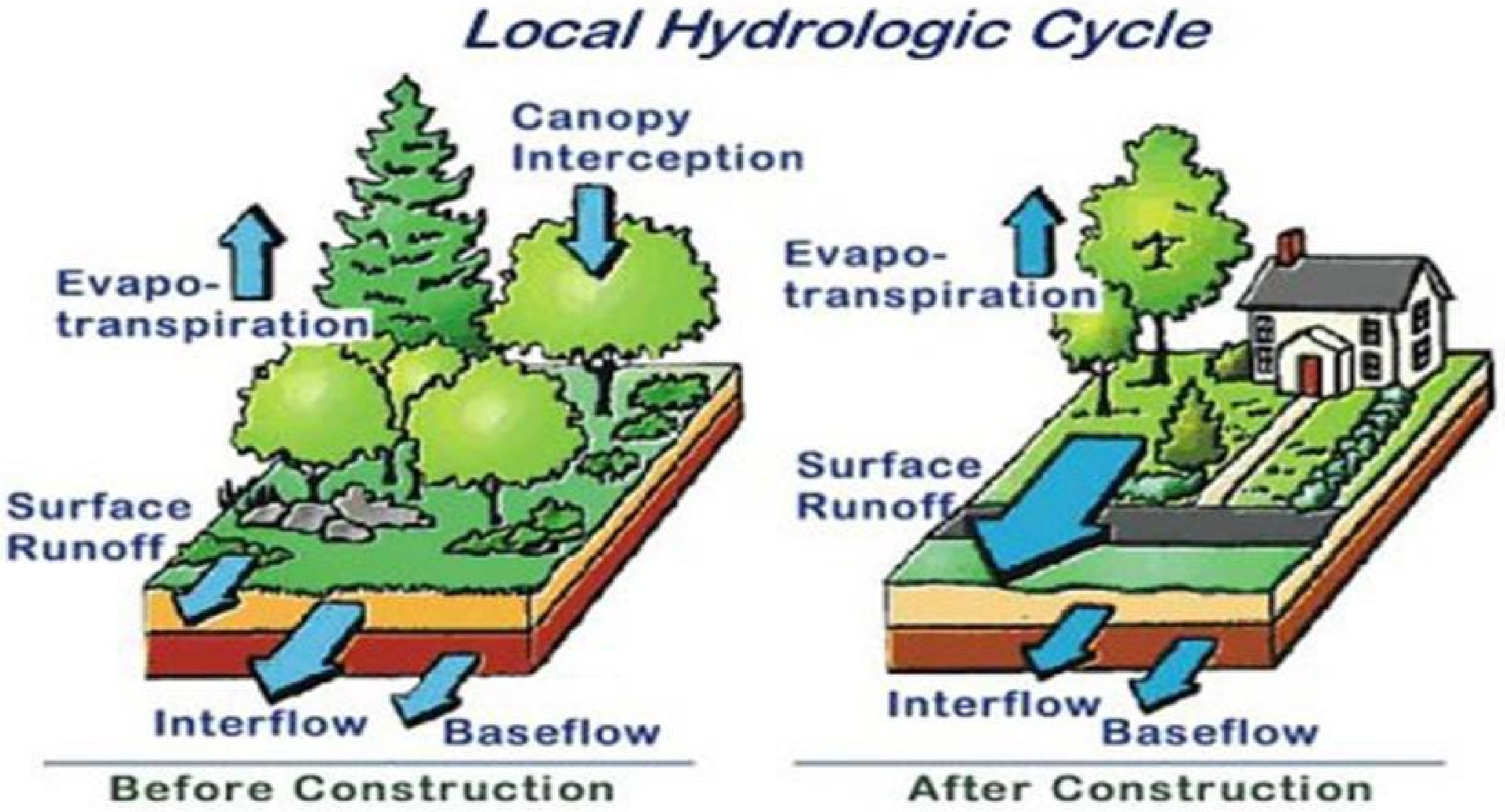
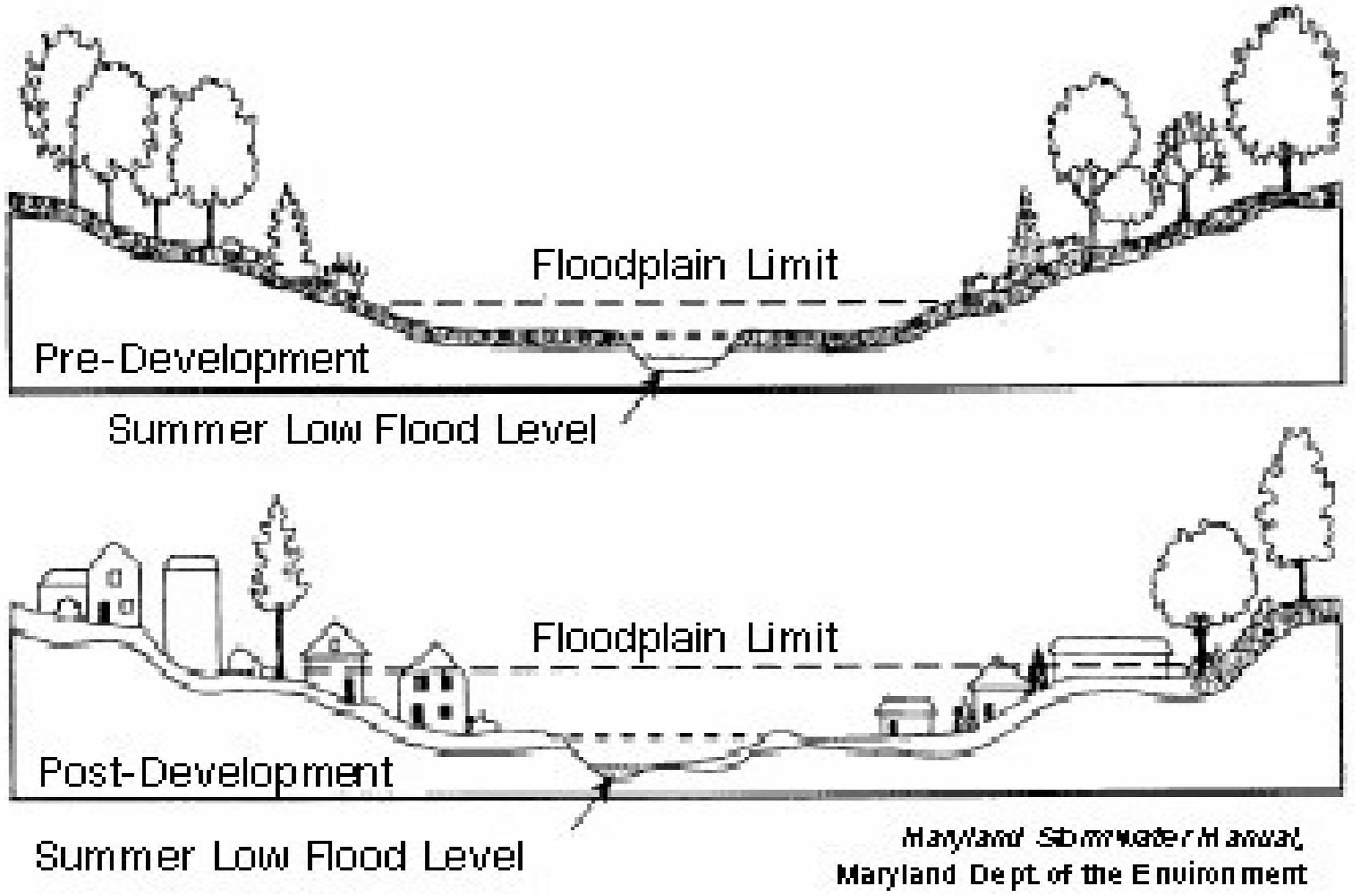


https://dallas.tamu.edu/urban-water/

Why is Stormwater a Concern?

Urban vs Natural Hydrology





Maryland Stormwater Manual,
Maryland Dept. of the Environment

Blue Green Infrastructure (BGI)

(Green Stormwater Infrastructure, Nature-based Solutions)

- Rain garden-bioretention areas
- Porous pavements
- Green roofs
- Rainwater harvesting

Nature-Based Solutions benefit citizens' well-being and health

CLEAN AIR

NBS create a healthier environment by improving the air, water and soil quality.

RECREATION

Green areas encourage recreational activities and reduce stress.

CARBON SEQUESTRATION

Urban trees absorb carbon dioxide, helping to mitigate the impacts of climate change.

WATER CONSERVATION

Nature plays a role in water cycles, reducing runoff and preventing floods and keeping citizens safe.

HABITAT

NBS provide homes and shelter for a wide variety of birds, insects, mammals, and more.

SHADE AND COOLING

Green spaces offer shade, reduce temperatures and cool the environment.

WWW.NATURE-BASEDSOLUTIONS.COM

Image source: www.naturebasedsolutions.com

Figure 3: Major societal challenges addressed by NbS. (© IUCN)

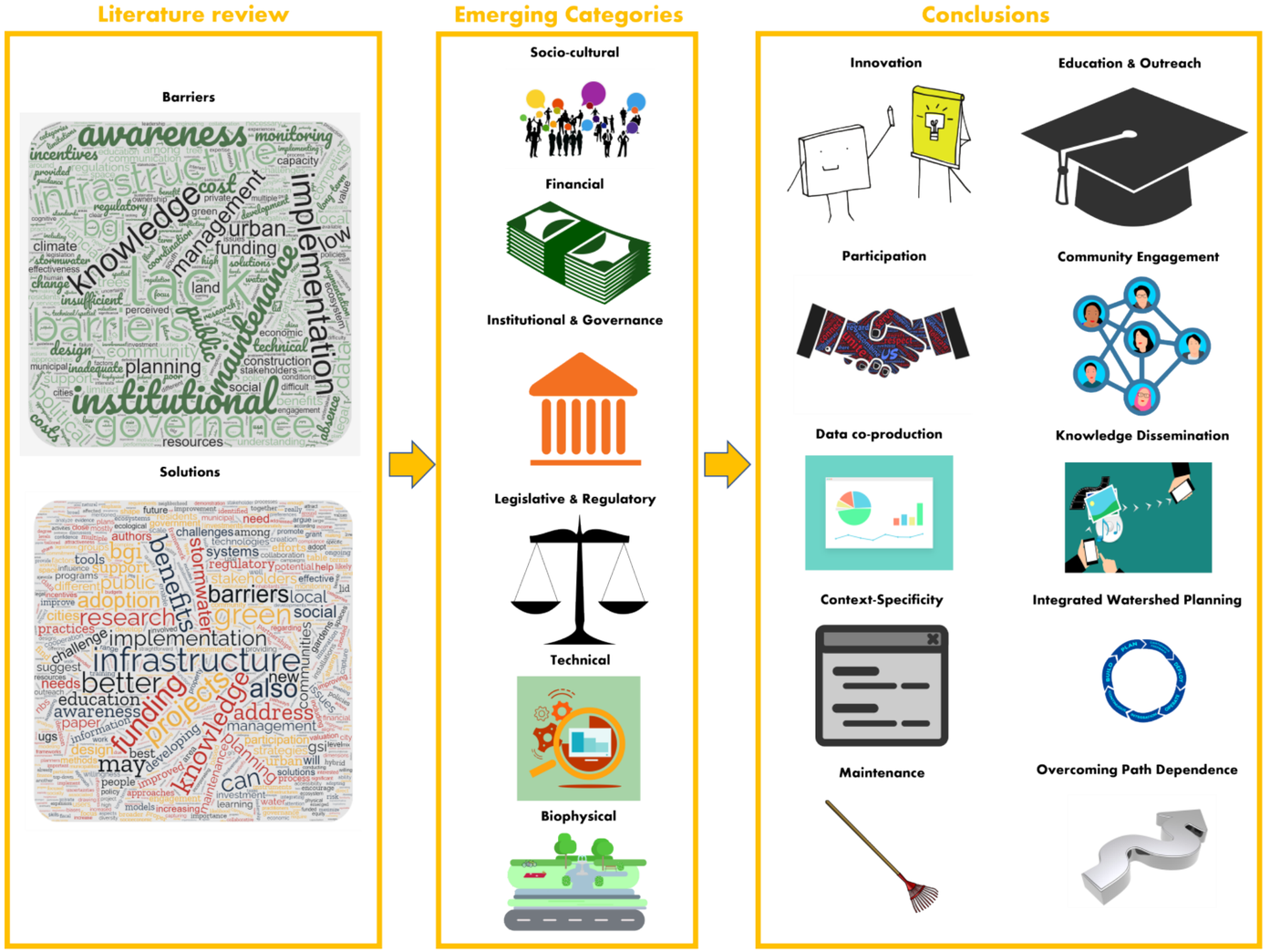
Sounds great, right?

What are the barriers to increased implementation of BGI?

Green stormwater infrastructure: A critical review of the barriers and solutions to widespread implementation

Bardia Heidari, PhD, PE
Dean Minchillo,
Sayd Randle, PhD
Fouad Jaber, PhD, PE

Available at:



CIVIC Innovation Project: Community Working Group Feedback

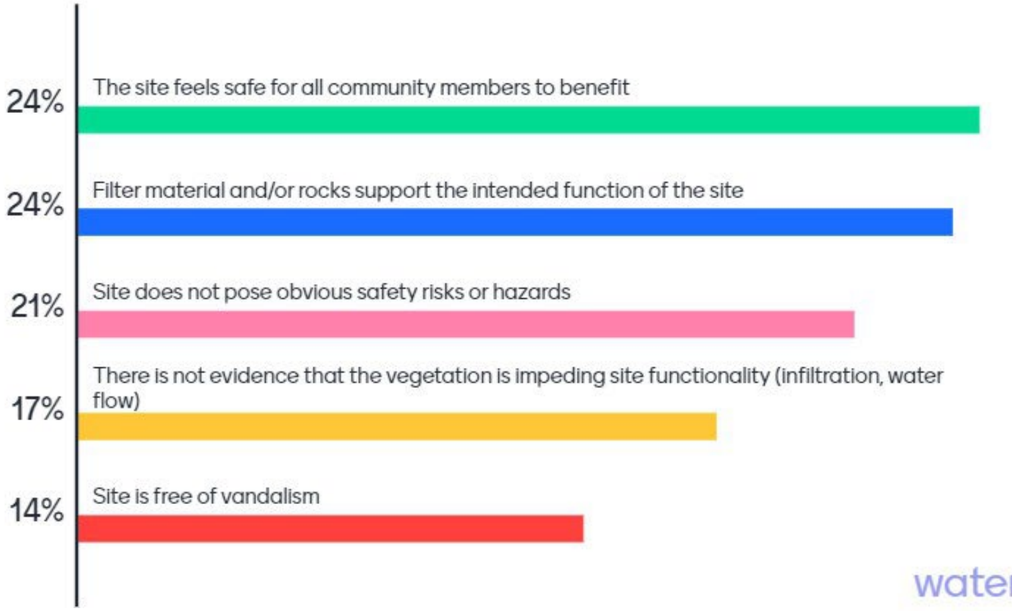
Consider BGI broadly, rank these aspects in terms of their importance:

Considering BGI in terms of Community Integration and Social Connectivity, rank the importance of the following aspects:

CIVIC INNOVATION CHALLENGE

NSF

Considering BGI in terms of Criticality, rank the importance of the following aspects:



What problem or barrier do you think the C-GAM tool can help overcome?

CIVIC INNOVATION CHALLENGE

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Beginnings of BGIN

CIVIC Innovation Project - Denton

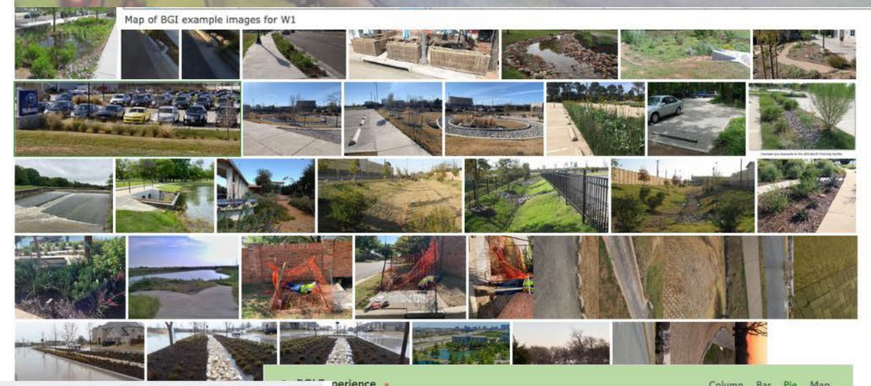
CIVIC INNOVATION CHALLENGE

NSF

https://www.youtube.com/watch?v=h6SPace8SUg

Beginnings of Blue Green Infrastructure Network (BGIN)

Stakeholder Workshops



Answers	Count	Percentage
Blue-Green Infrastructure (BGI)	7	58.33%
Green Infrastructure (GI)	6	50%
Low Impact Development (LID)	8	66.67%
Green Stormwater Infrastructure (GSI)	2	16.67%
Nature-Based Solutions (NBS)	9	75%
Sustainable Drainage Systems (SuDS)	1	8.33%
Structural Best Management Practices (BMP)	2	16.67%
Water Sensitive Urban Design (WSUD)	2	16.67%
Other related terminology I have heard or used _____	1	8.33%
I have never heard any of these terms prior to being contacted about this workshop.	1	8.33%

Coordinated by:

Texas Water Resources Institute
make every drop count

Texas A&M AgriLife Extension

UNT

CIVIC INNOVATION CHALLENGE

NSF

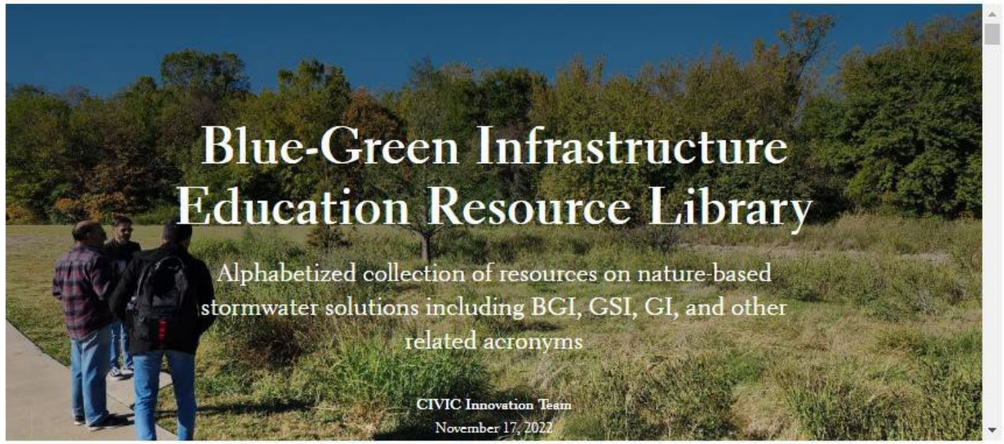
BGIN Hub Platform

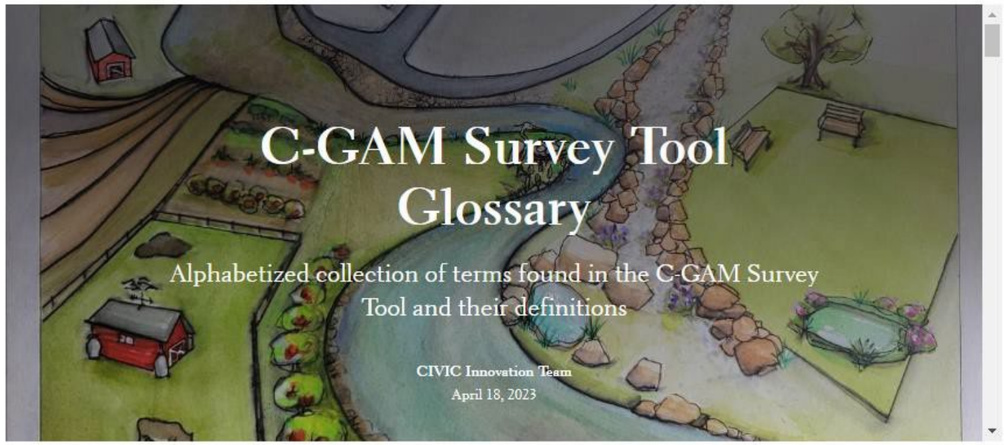
Community Green Asset Management (C-GAM) Tool - *Now Open!*

Click the link below to be a **community scientist! We need YOUR help to evaluate existing "green assets" such as blue-green infrastructure installations for stormwater and flooding.**

To participate:
1. Visit an existing BGI site - choose one from our Denton BGI Sites Map (below) or one of your own
2. Fill out the the survey (V.2 C-GAM Tool below) to share your thoughts about how the site looks, how it's working, and how it may be impacting your community.

Click this link to complete the C-GAM Survey Tool: https://arcg.is/KCf1T





CIVIC INNOVATION CHALLENGE

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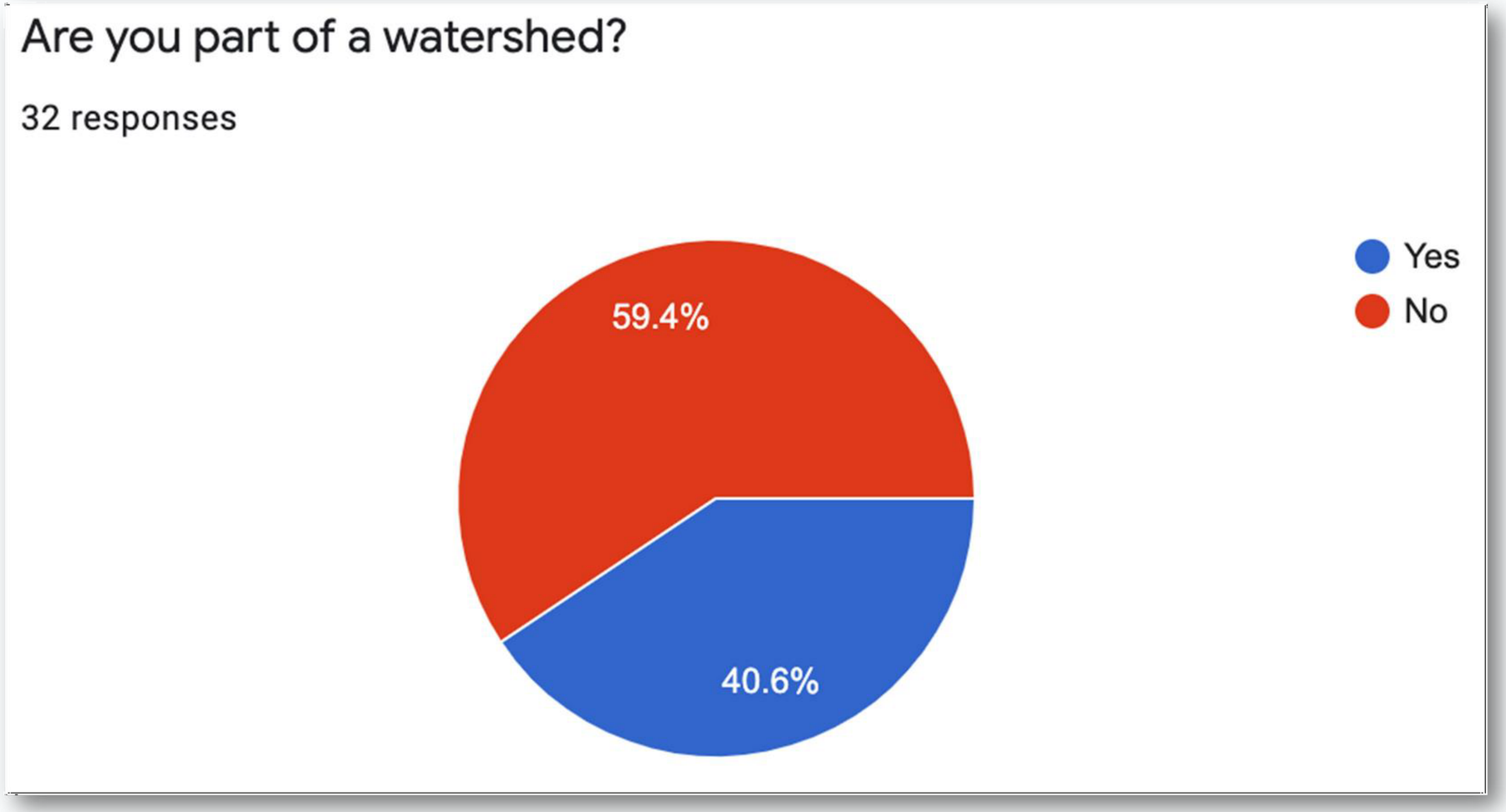
Why do we need community education and engagement with water management?



THE NOT “MY” PROBLEM PROBLEM

EDUCATOR SURVEYS: WHAT ISSUES WITH WATER EDUCATION DO YOU AND YOUR STUDENTS STRUGGLE WITH MOST?

"The hopelessness and dread of what seems an impossible situation"

"They're {students] scared of what's next"

"They [students] see it more as a someone else's problem or what I see in the news."

"I'm probably not doing the best job of not seeming helpless, and I'm probably translating that to my students."

"Students just seem depressed by environmental issues, they think there's nothing they can do about it."

"They [students] don't see it as a local problem"

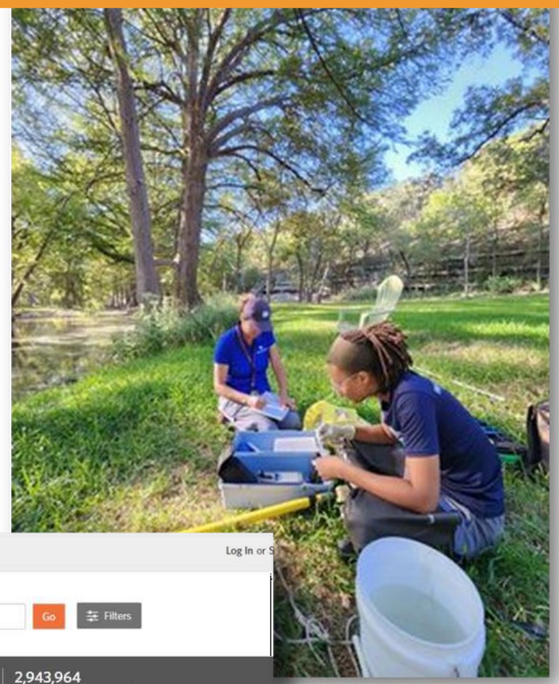
Teacher Education

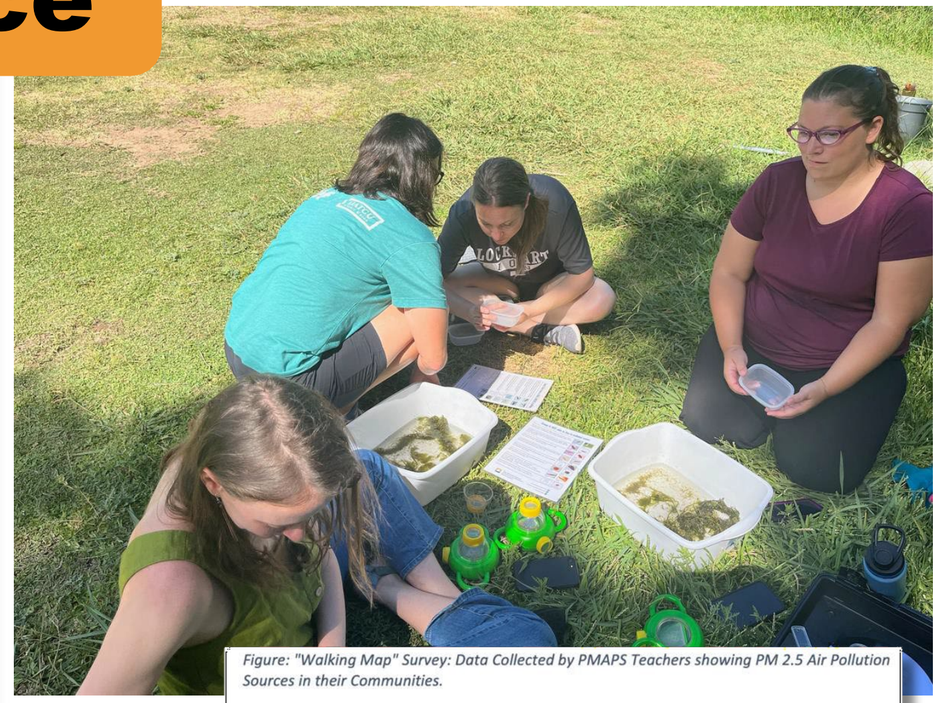
THROUGH A WATER LENS

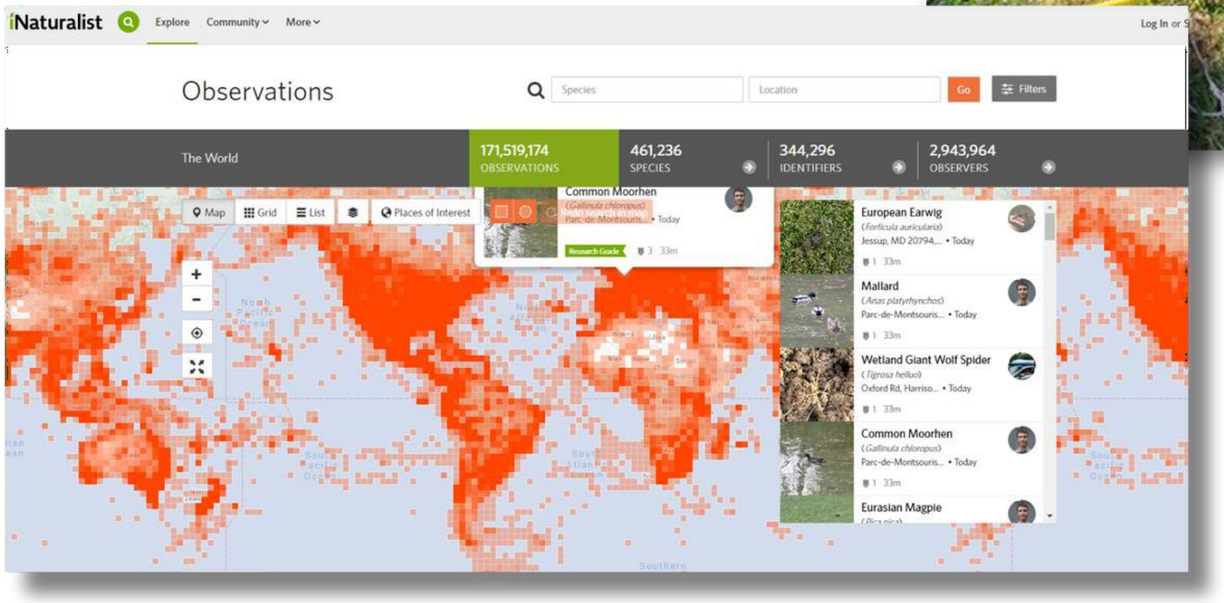
- Local examples
  - Hands-on
  - Action
- Personal connections
- Processes and Methods
- Careers

CITIZEN SCIENCE

Citizen Science

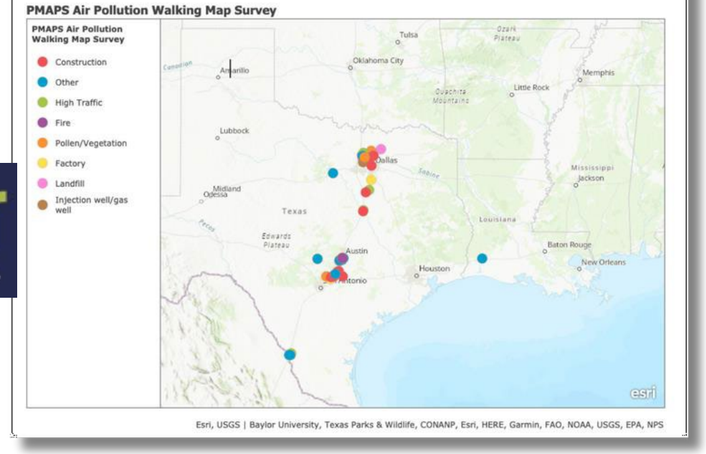




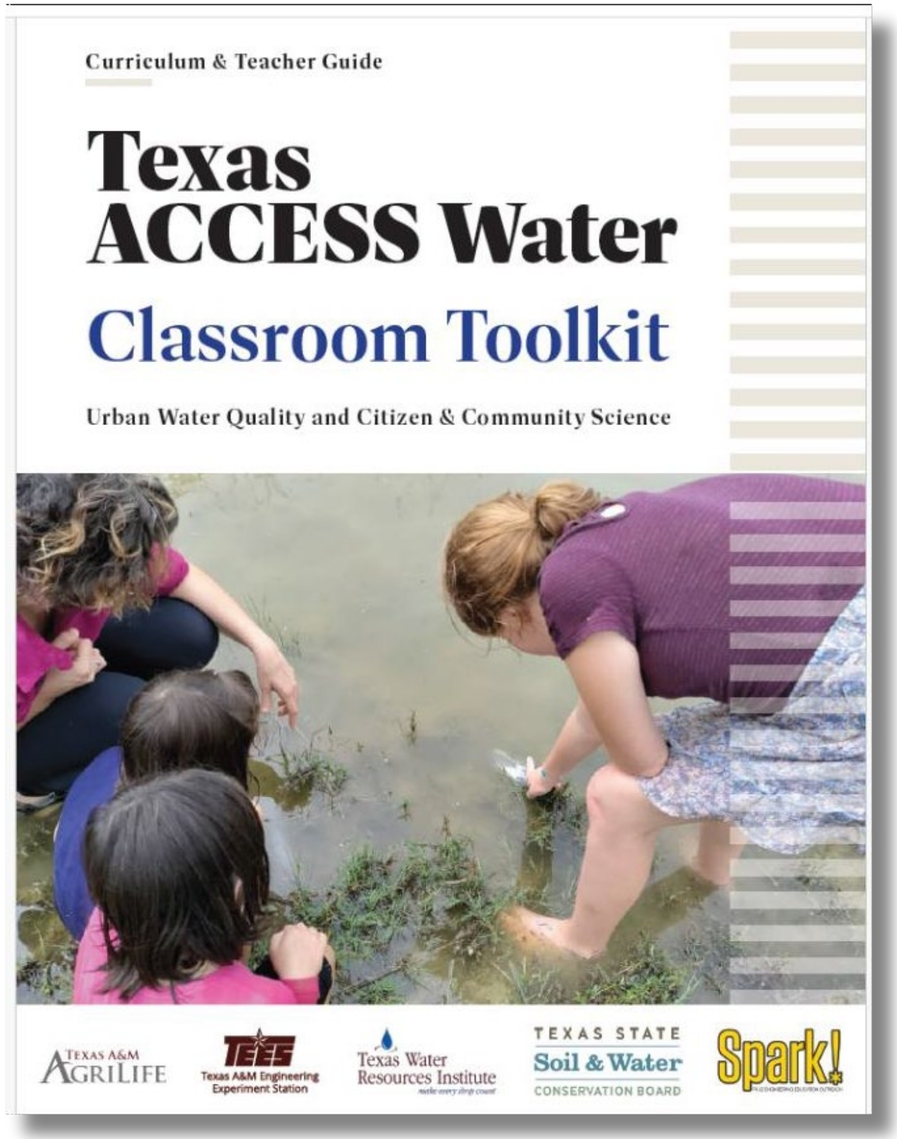


scistarter
Science we can do together.

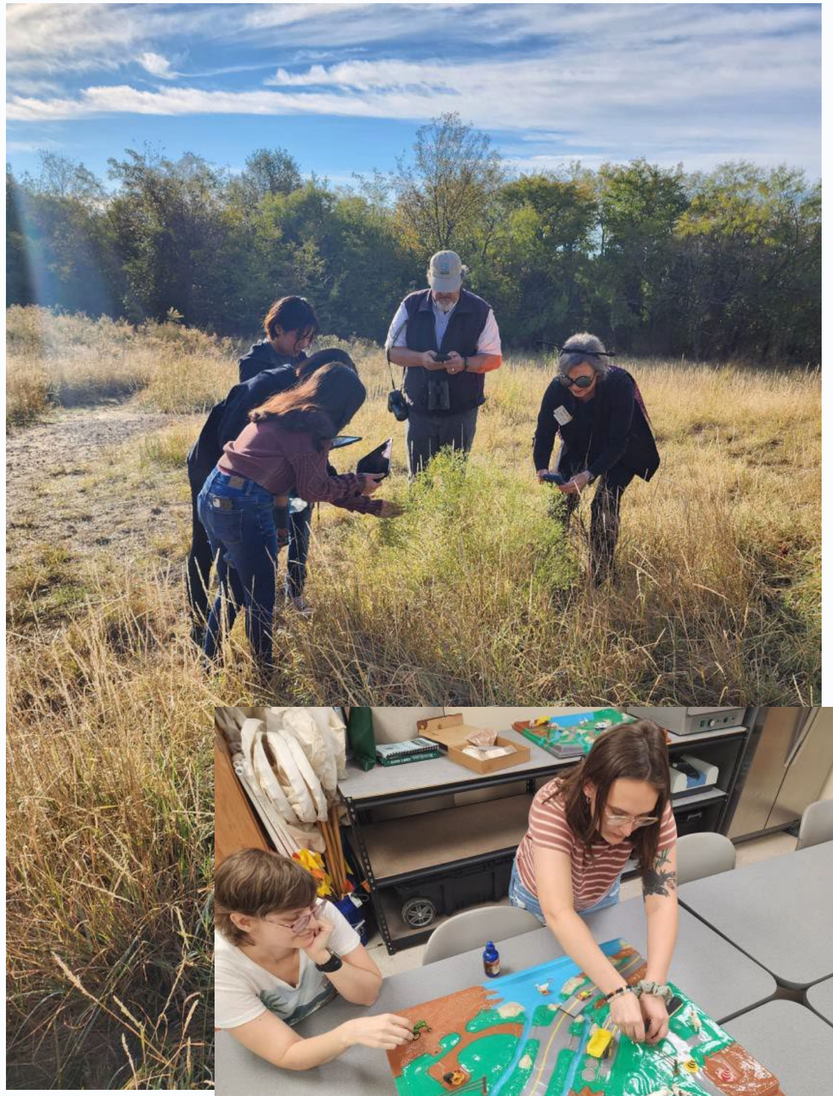
Figure: "Walking Map" Survey: Data Collected by PMAPS Teachers showing PM 2.5 Air Pollution Sources in their Communities.

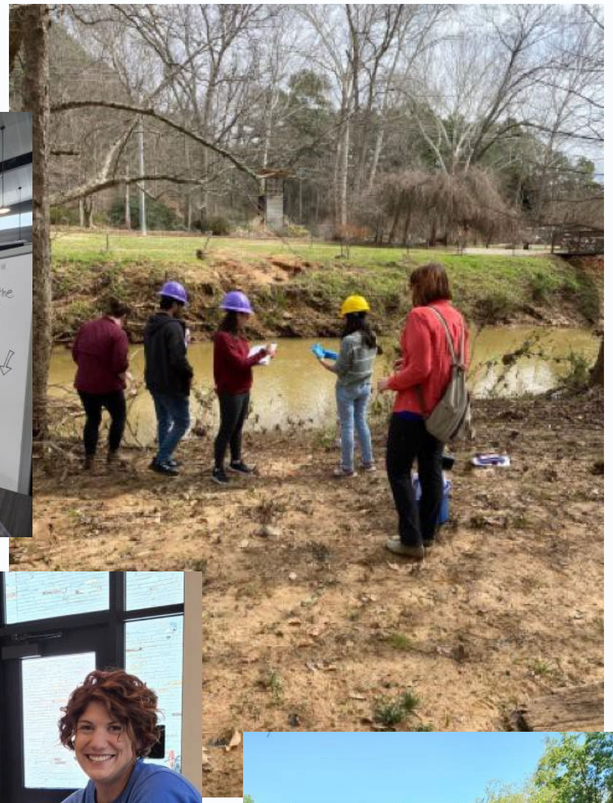


Statewide Youth Water Education Programs



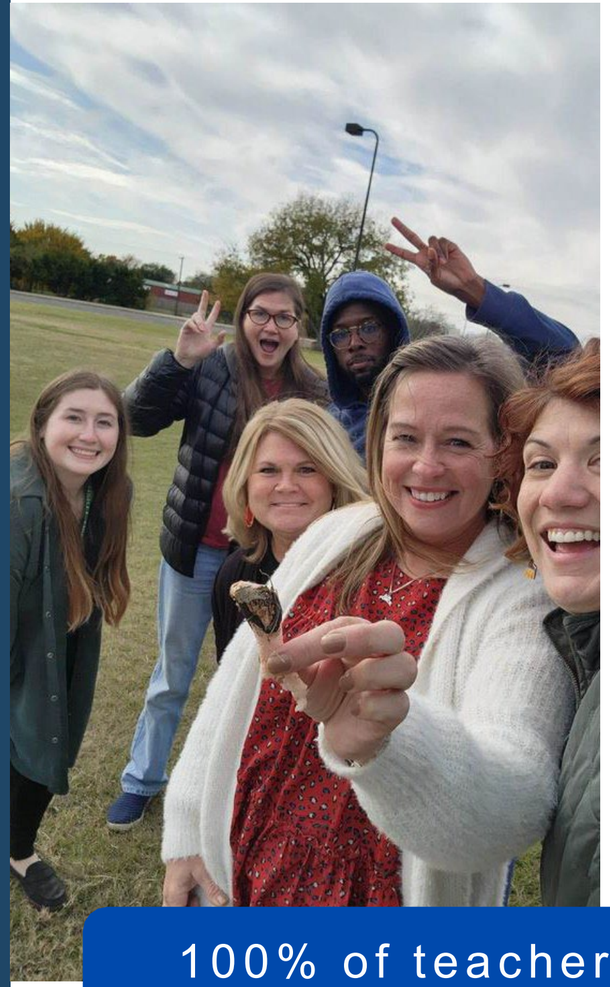
Community Outreach





5 TAKE-AWAY LESSONS for COMMUNITY ENGAGEMENT:

1. **Learn community needs/goals** *(meetings, surveys)*
2. **Co-develop project goals & materials with community**
3. **Embrace regional differences** *(data!)*
4. **Empower community participation** *(ex. citizen science)*
5. **Set up pipeline of support for ongoing engagement** *(i.e. Hub page)*



PARTICIPANT FEEDBACK TO ASSESS OUTCOMES

"I loved reading [my student's] reports on the citizen science. Some described life stories and chose projects that they really related to."

"Will revolutionize the way we teach 8-12 grade human impacts on the environment"

100% of teachers surveyed three to six months post-workshop say they feel more confident teaching their students about water issues after attending an ACCESS workshop

"My students will become more familiar with their local water bodies and have a deeper understanding about the issues"

"I loved being able to collaborate with other teachers to hear how they were teaching and using the tools."

"I can do a better job giving my students hope for the future and that they will feel like they actually can make a difference in the world."

Next: BGI at Education Centers

- Resiliency, planning for future
  - Urban expansion
  - Extreme weather events
- Cost savings and long-term benefits
- Public outreach and community engagement
- Education opportunities
  - Career Development
  - New TEKS
  - STEM Education and project-based learning
- Sustainable Development = alignment with state, federal and international urban planning, funding, and education goals.

Thank you!

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PROJECT PAGES

Tampling Citizen Science Project
- https://arcg.is/bzz9i0

BGIN Hub:
- https://denton-bgi-pmaps-tx.hub.arcgis.com/

Classroom 2 Community Workshops
- https://arcg.is/bzz9i0

Water Education Resource Library
- https://arcg.is/1jjq94

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CLIMATE CHANGE AGENTS

climate_changents

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Action Item

Meeting Summary

- The April 3, 2024, meeting summary will be presented for approval.

Action Item

FY2025 Water Resources Council Membership

- The FY2025 Roster, recommended by the FY2025 Ad Hoc Nominations Subcommittee, will be presented to the WRC for approval.

- The WRC will also vote on the WRC Chair and Vice-Chair.

Action Item

Recommended FY2025 Reappointments

- Sally Wright, City of Dallas
- Steve Pettit, City of Irving
- Caroline Waggoner, City of North Richland Hills
- Rachel Ickert, Tarrant Regional Water District
- Eric Roberson, City of Richardson
- Stacy Walters, Fort Worth Water Utility
- Mike Adams, City of Midlothian
- Stephen Gay, City of Denton
- Kevin Mercer, Lantana Upper Trinity River Water District
- Glenn Clingenpeel, Trinity River Authority
- Matthew Jalbert, Trinity River Authority

Action Item

Recommended New Members for FY25

Jason Sutton, Town of Addison

- Utility Provider, Development Community, or Industry Representative Region-At-Large
- Utility Manager Water Quality

Michael Brinkmann, City of Garland

- Major Utility Provider, Customer Member-At-Large (North Texas Municipal Water District)
- Water Utilities Managing Director

Darrel Andrews, Tarrant Regional Water District

- Major Utility Provider
- Environmental Director

Action Item

- Questions on FY2025 Roster?

- Vote on WRC FY2025 Roster

Action Item

Chair and Vice-Chair Appointments for FY25

- FY24 Chair: Stacy Walters
  City of Fort Worth
- FY24 Vice-Chair: Rachel Ickert
  Tarrant Regional Water District
- Nominations from Floor
- Vote on Leadership

Action Item

Approval of the Draft 2024 Update to the North Central Texas Water Quality Management Plan (WQMP)

- NCTCOG will provide an overview of the Draft 2024 WQMP and comments received.

Link to the Draft 2024 WQMP

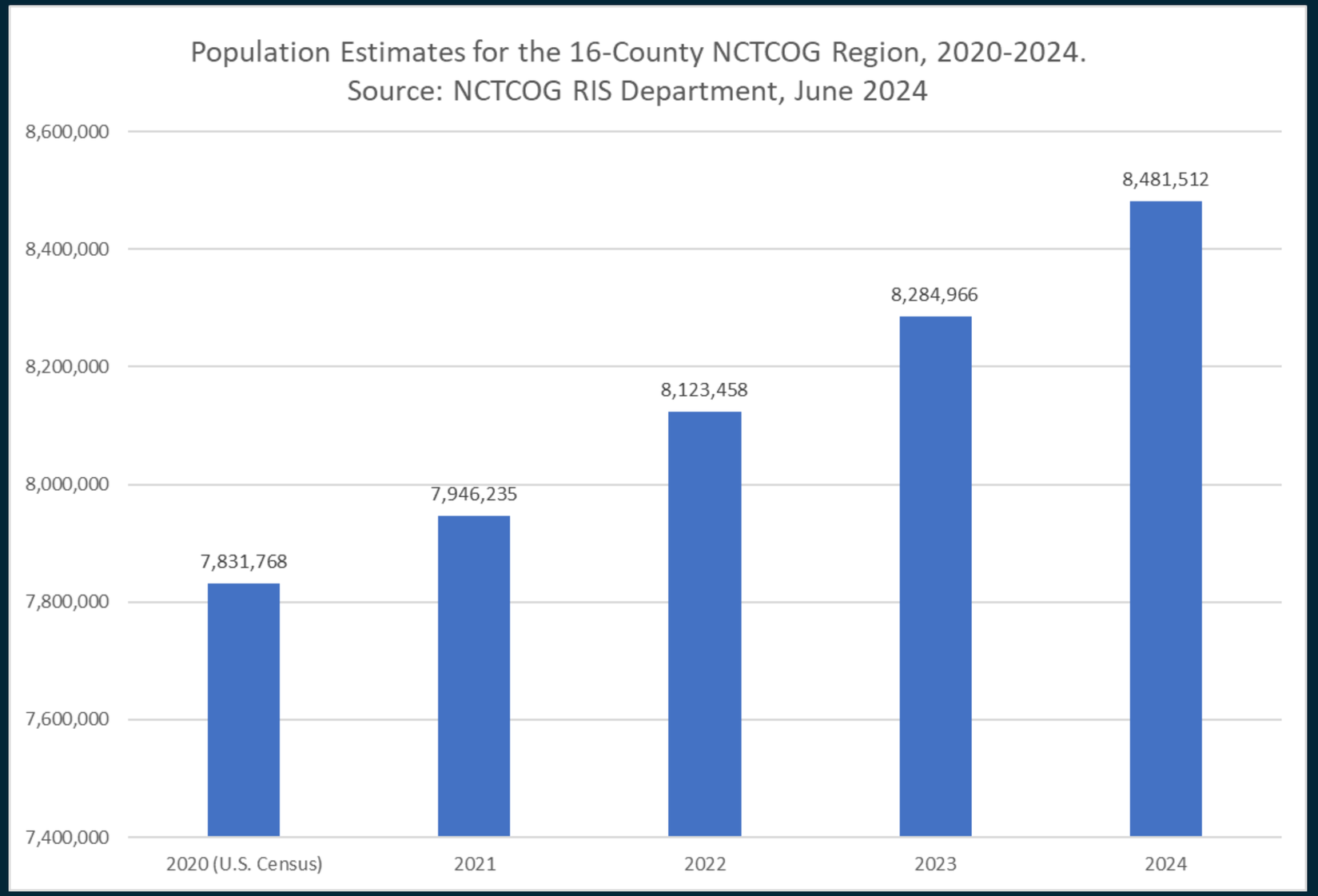
Action Item

Draft 2024 WQMP

- To be included on NCTCOG's website with other mapping products
- All mapping data updated with data from TCEQ's 2022 Texas Integrated Report
- Continuing to add locations of on-site sewage facilities
- Permitted TPDES wastewater outfall locations mapped with TCEQ data

Action Item

2024 Population Estimates



Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore; **NCTCOG RIS Department, June 2024**

Action Item

City	2024 Population
Dallas	1,356,479
Fort Worth	1,001,741
Arlington	411,167
Plano	294,152
Irving	264,546
Garland	250,099
Frisco	231,768
McKinney	214,871
Grand Prairie	209,231
Mesquite	155,382

2024 Ten Largest Cities in 16-County NCTCOG Region

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

Top 10 Cities Experiencing the Highest Absolute Growth in the NCTCOG Region, 2023–2024.

City	2023	2024	Absolute Population Growth (2023 - 2024)
Dallas	1,326,278	1,356,479	30,201
Fort Worth	974,846	1,001,741	26,895
Celina	35,028	45,854	10,826
Frisco	225,072	231,768	6,696
Princeton	26,914	33,288	6,374
Arlington	405,420	411,167	5,747
McKinney	209,626	214,871	5,245
Denton	149,509	154,189	4,680
Grand Prairie	204,973	209,231	4,258
Mansfield	82,285	86,323	4,038

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

Top 10 Cities Experiencing the Largest Percent Population Change in the NCTCOG Region, 2023–2024

City	2023	2024	Percentage Population Growth (2023 - 2024)
Godley	1,979	2,752	39.06%
Celina	35,028	45,854	30.91%
Pilot Point	5,218	6,578	26.06%
Princeton	26,914	33,288	23.68%
Hudson Oaks	2,820	3,482	23.48%
Ferris	3,069	3,766	22.71%
Caddo Mills	3,923	4,688	19.50%
Boyd	1,467	1,737	18.40%
Melissa	20,359	24,087	18.31%
Haslet	3,579	4,197	17.27%

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

Core Counties Population Estimates and Projections

County	2020 County Population (U.S. Census)	2024 County Population Estimate	2045 County Population Projection
Collin	1,064,465	1,229,632	1,789,009
Dallas	2,613,539	2,716,721	3,533,454
Denton	906,422	1,036,720	1,516,522
Tarrant	2,110,640	2,224,584	3,047,872

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

Top Five Counties Experiencing the Largest Absolute Population Change in the NCTCOG Region, 2023–2024

County	2023 County Population Estimate	2024 County Population Estimate	Absolute Growth (23 - 24)
Collin	1,175,974	1,229,632	53,658
Dallas	2,675,009	2,716,721	41,712
Tarrant	2,188,951	2,224,584	35,633
Denton	1,006,492	1,036,720	30,228
Ellis	218,201	228,511	10,310

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

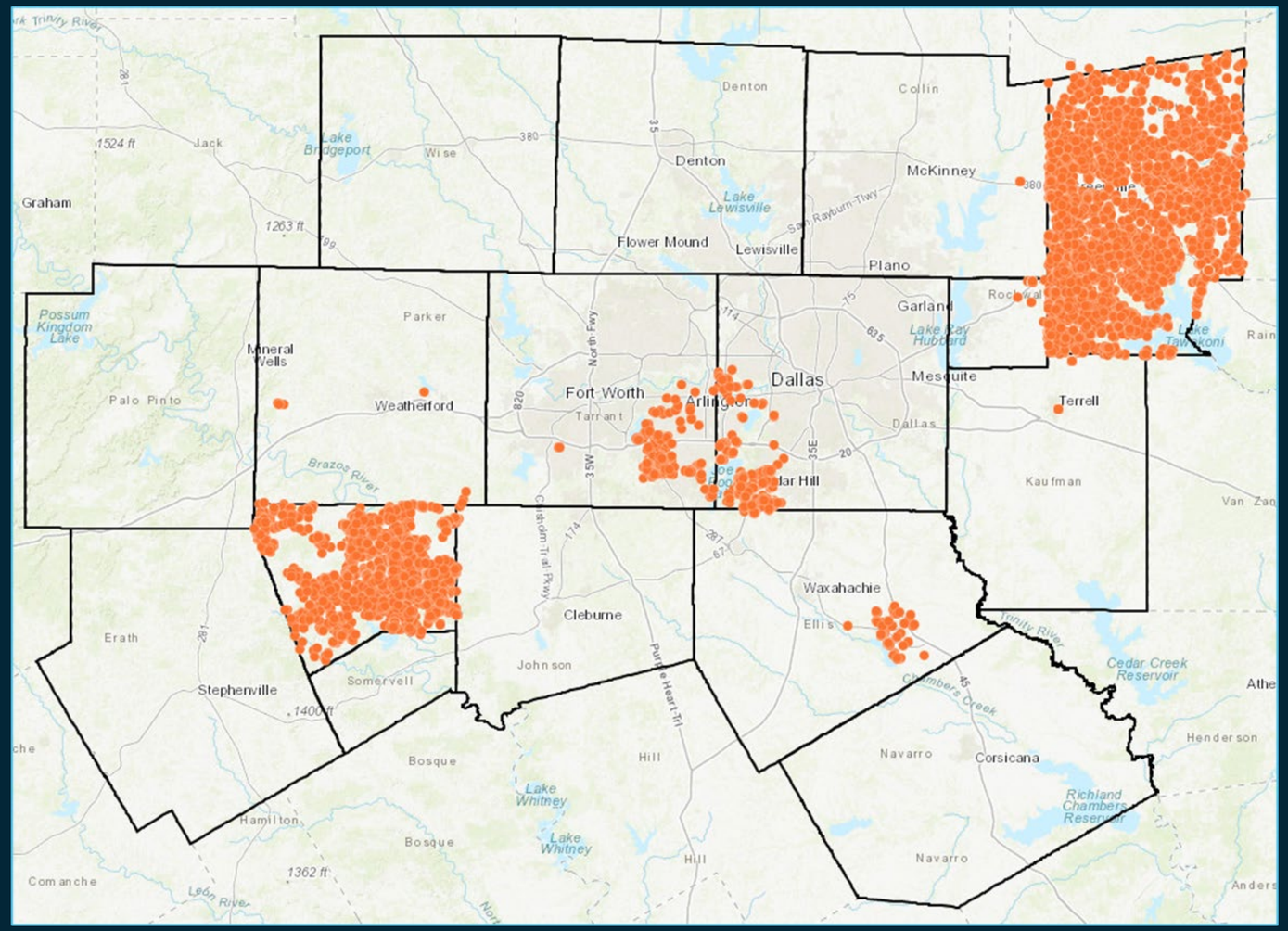
Top Five Counties Experiencing the Largest Percentage of Population Change in the NCTCOG Region, 2023–2024

County	2023 County Population Estimate	2024 County Population Estimate	Percent Growth (23 - 24)
Rockwall	124,734	131,172	5.2%
Ellis	218,201	228,511	4.7%
Collin	1,175,974	1,229,632	4.6%
Johnson	201,427	210,104	4.3%
Somervell	9,899	10,246	3.5%

Source: https://data-nctcoggis.opendata.arcgis.com/documents/bde6523859b74c52927fa2249d221a71/explore;
NCTCOG RIS Department, June 2024

Action Item

On-Site Sewage Facilities – 2021 WQMP

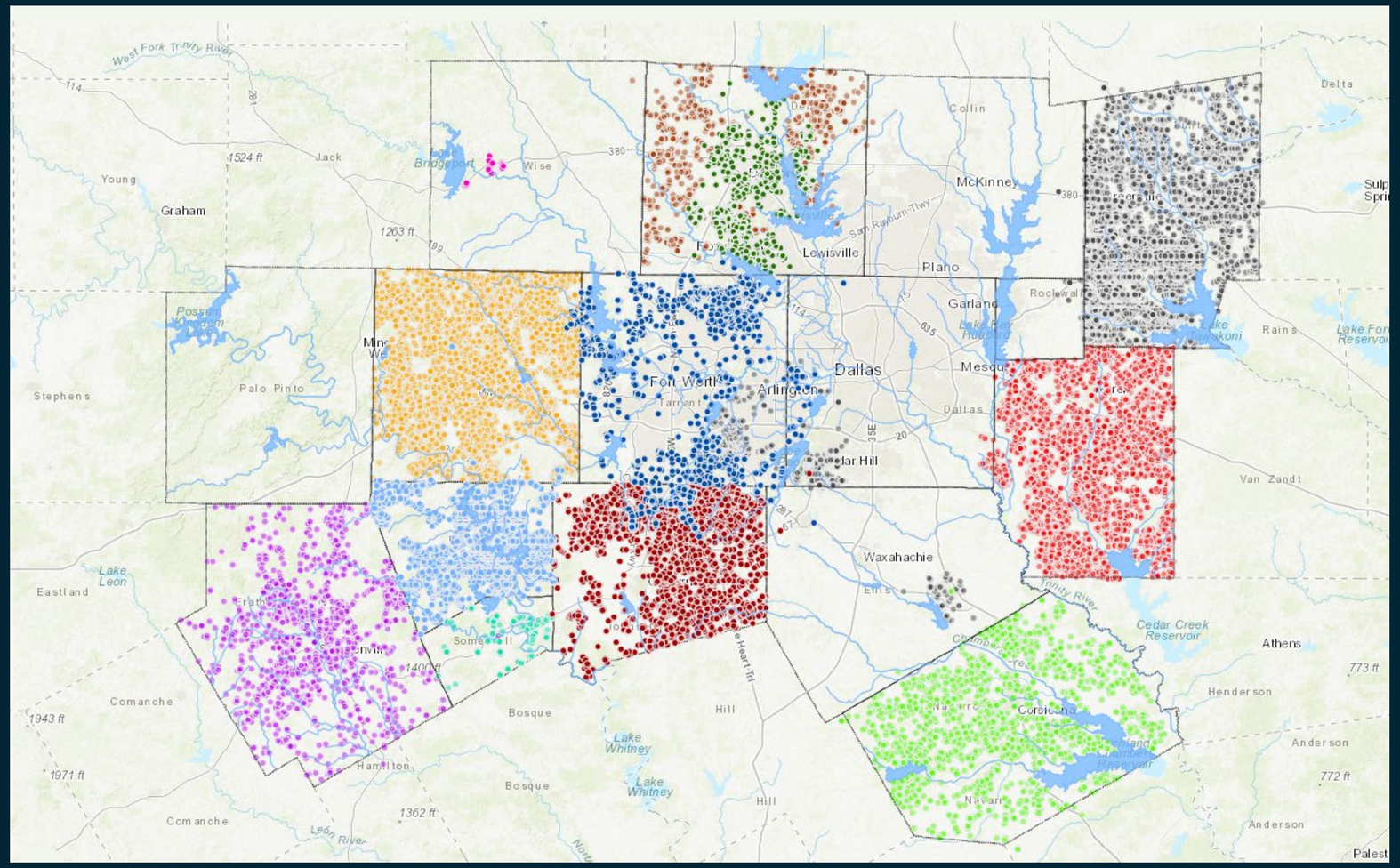


OSSF locations:

- Hood County
- Hunt County
- City of Arlington
- City of Cedar Hill
- City of Ennis
- City of Grand Prairie
- City of Millsap

Action Item

On-Site Sewage Facilities – 2024 WQMP



New OSSF entities added in FY2024:

- City of Denton
- City of Bridgeport
- Tarrant County
- City of Burleson
- Somervell County
- City of Red Oak
- City of North Lake
- City of Oak Point
- Town of Argyle
- Hunt County

Action Item

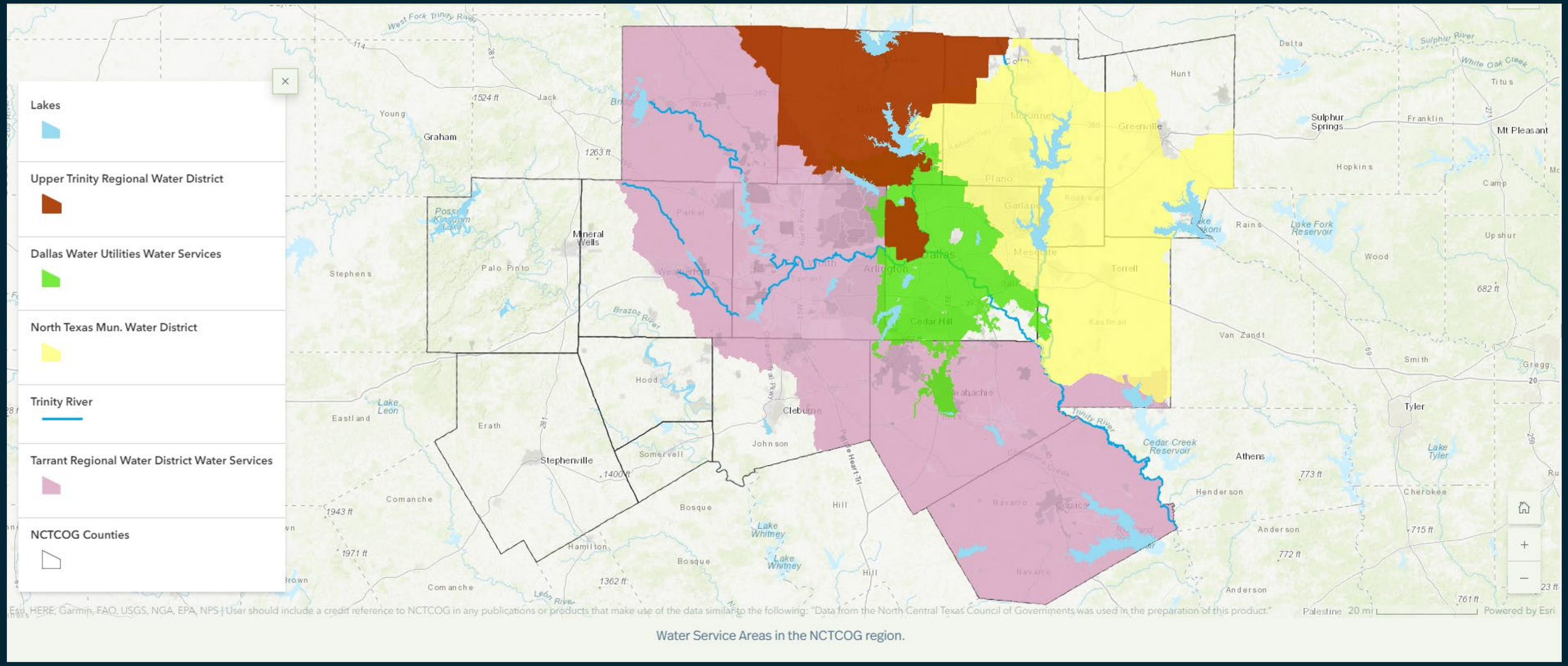
Public Comment Review

Comments from two entities: Trinity River Authority and Upper Trinity Regional Water District, and one private citizen.

One Letter of Support: Greater Dallas Planning Council

- Edited acronyms and general formatting
- Updated the term “Citizen Scientist” to “Community Scientist”- Texas Stream Team made this change in 2023.
- Added Watershed Protection Plan (WPP) website links to WPP map pop-up windows
- Edited text in the Wastewater Outfalls section to clarify if permits are “pending” or “issued”.
- Question about defining a “major” water service provider

Action Item



Water Service Areas in the NCTCOG region.

Action Item

Public Comment Review

Comments continued:

- Encouraged NCTCOG to recommend policies for green infrastructure and push beyond gathering data for OSSFs to promote policies that reduce OSSF use, as well as the development of a master wastewater system plan

- Expressed concern that current wastewater systems will not serve the growing regional population and pushed for a regional wastewater system master plan

- Asked about creating a table for county population percentage change, similar to the city population percentage change table in Figure 4.

- Expressed concerns that WPPs don’t cover the fastest-growing areas in the region.

Action Item

Public Comment Review

Comments continued:

- The Wastewater System Overview map is “inaccurate” in showing the wastewater service provided and should include small wastewater systems proposed in MUDs and Water Control Improvement Districts (WCIDs)

- The Wastewater Outfalls map should differentiate between outfalls that are part of the joint system, other municipalities, MUDs, WCIDs, and non-municipal systems.

- The Water Service Areas map oversimplifies the complex water system in the region; referencing the 2026 Texas Water Plan for Region C may demonstrate this point.

- Question about the Wastewater System Overview map’s symbology.

Action Item

Approval of the Draft 2024 Update to the North Central Texas Water Quality Management Plan (WQMP)

- The WRC will vote to locally adopt the Draft 2024 WQMP, pending any revisions needed based on public comments.

Link to the Draft 2024 WQMP

NCTCOG Updates

Dallas Fort-Worth Air Quality Improvement Plan

- Updates on the Dallas Fort-Worth Air Quality Improvement Plan: Comprehensive Climate Action Plan.

North Central Texas Council of Governments

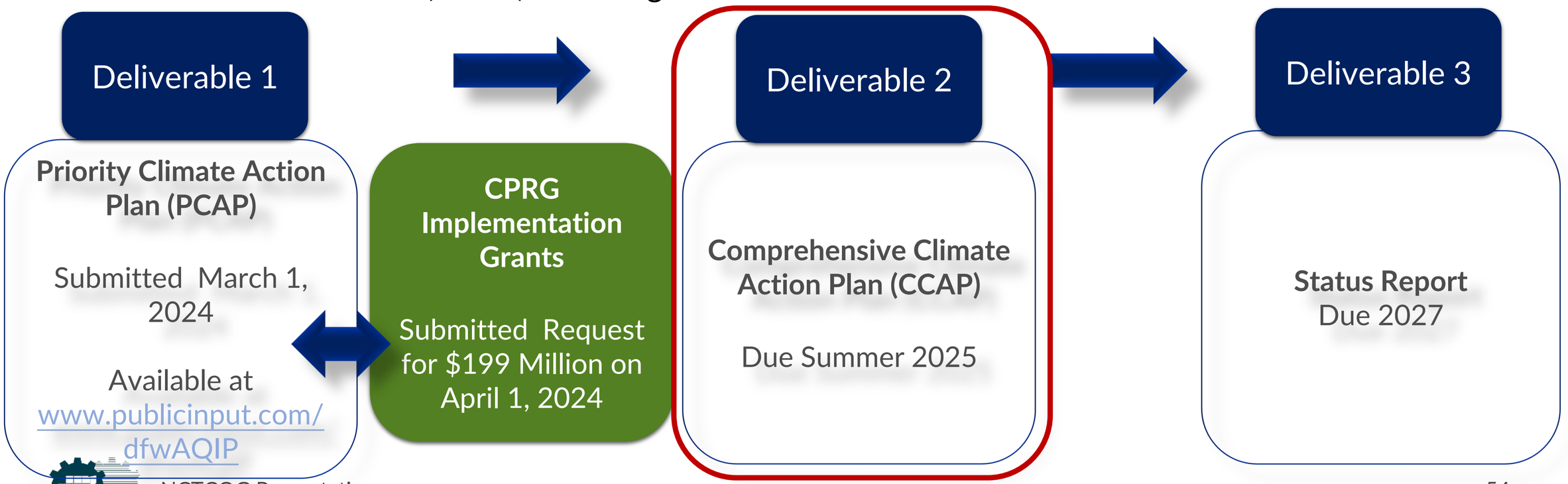
DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Funded through the Environmental Protection Agency's Climate Pollution Reduction Grants

Dallas-Fort Worth Air Quality Improvement Plan

Local governments in the region are collaborating with the North Central Texas Council of Governments (NCTCOG) to develop the **Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP)**

Plan development is supported by funding from the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG): Planning Grants



DFW AQIP- PCAP Measures

The DFW AQIP- PCAP measures focus on measures that can be implemented in the near-term to reduce GHG and criteria air pollutants

Sector	Number of Measures
Transportation	13
Energy	6
Water, Wastewater, and Watershed Management	9
Materials Management (Solid Waste)	6
Agriculture, Forestry, and Land Use (Green Space)	5
Cross-Sector	5

DFW AQIP Community Benefits

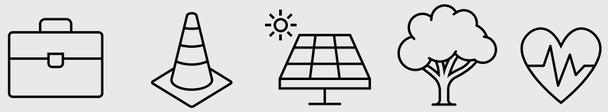
Community Benefits: Other benefits beyond air quality improvements that will occur because of implementation of measures

- Improve Health and Well-Being
- Reduced costs
- Green Spaces and Community Beautification
- Water Conservation
- Increase Access to Service and Amenities
- Increased Resiliency and Adaptability
- Job Creation and Economic Development
- Increased Safety
- Reduced Noise Pollution
- Increased Awareness and Engagement

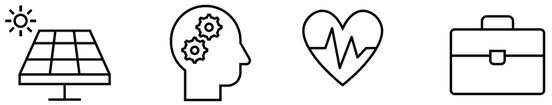
Water, Wastewater, and Watershed Management Sector Measures

- Watershed Management
- Water and Wastewater Treatment Infrastructure
- Wastewater Infrastructure
- Water Resources

Water, Wastewater, and Watershed Management Sector Measures

Measure	Estimated Annual GHGs Reduction	Community Benefits	Estimated Annual Criteria Pollutant Reduction
Implement Integrated Stormwater Management, Low-Impact Development, Green Stormwater Infrastructure, and Other Nature-Based Solutions	2,369.85 metric tons per installment		NO_x: 0.94 metric tons per installment VOCs: Unspecified $PM_{2.5}$: 0.10 metric tons per installment
Expand Contamination Detection and Pollution Prevention Measures	Not Quantifiable	 Local MS4 Compliance;	Not Quantifiable
Update Stormwater and Wastewater Conveyance Infrastructure	52.46 metric tons		NO_x: N/A VOCs: 0.38 metric tons $PM_{2.5}$: N/A

Water, Wastewater, and Watershed Management Sector Measures

Measure	Estimated Annual GHGs Reduction	Community Benefits	Estimated Annual Criteria Pollutant Reduction
Increase Available Stormwater Detention Volumes	Not Quantifiable		Not Quantifiable
Improve Water and Wastewater Treatment Process Efficiency	1,639.27 metric tons		NO_x: 0.72 metric tons per utility plant VOCs: 0.06 metric tons per utility plant
Address On-Site Sewage Facility System	0.0148 metric tons per system	 Reduction in Bacteria-Related Discharges in Area with Related Total Maximum Daily Loads;	NO_x: <.01 metric tons per system VOCs: 0.0087 metric tons per system $PM_{2.5}$: <0.01 metric tons per system

Water, Wastewater, and Watershed Management Sector Measures

Measure	Estimated Annual GHGs Reduction	Community Benefits	Estimated Annual Criteria Pollutant Reduction
Improve Biosolids Management	22.04 metric tons per utility project		NO_x: 0.00001 metric tons per utility capture VOCs: Unspecified $PM_{2.5}$: 0.0001 metric tons per utility capture
Support Effluent Reuse	1,012.28 metric tons per utility project		NO_x: 0.46 metric tons
Improve Local Water Conservation	217.72 metric tons per utility project		NO_x: 0.04 metric tons per utility VOCs: Not Quantifiable $PM_{2.5}$: 0.009 metric tons per utility

Open Discussion Questions

What measure/s do you consider a high priority for the next 25 years?

What are the potential negatives of measures?

What are we missing?

NCTCOG Updates

Total Maximum Daily Load

- Now available: 2023 TMDL Annual Program Summary

NCTCOG Updates

25th Annual Public Works Roundup

- Thursday, August 22, 2024
- Hurst Convention Center
- Registration is now open

NCTCOG Updates

NCTCOG Webinar: *Utilizing Water Reuse to Create Resilient Water Systems*.

- Tuesday, July 16, 2024; 10:30 a.m.
- Virtual, via Microsoft Teams
- Register here

NCTCOG Updates

NCTCOG Webinar: *Fighting PFAS Through Regulations and Remedies*.

- Thursday, August 15, 2024; 1:00 p.m.
- Virtual, via Microsoft Teams
- Register here

Future Agenda Items

- The WRC can present future agenda items & discuss the priority and format of previously requested items.

Roundtable

The WRC is invited to share what is happening in their communities.

Next Meeting

Wednesday, October 9, 2024

- 10:30 AM – 12:30 PM
- In person at NCTCOG Offices
- Add to Calendar

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