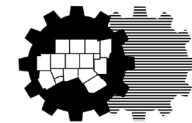


Environmental Matchmaking Tools

North Central Texas Council of Governments
September 30, 2020



North Central Texas
Council of Governments

Welcome!

This webinar is being recorded and will be posted on NCTCOG's website.

Please leave yourself muted. A question and answer session will take place at the end of the webinar. You can ask questions by unmuting or by entering questions in the chat box.

Poll questions will be asked several times during the presentation. A polling box will appear on your screen. If you would like to close the box, you can "x" out of it.

Today's webinar

NCTCOG and its role in the environment

Poll questions

Permittee Responsible Mitigation Database

Economic & Environmental Benefits of Stewardship Tool

Regional Ecosystem Framework and Interactive Viewer

Poll questions

Audience questions

Contacts

NCTCOG and its role in the environment

Voluntary association of more than 200 local governments

Regional planning assistance

- Transportation
- Environment & Development

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Poll – Getting to know you

What area do you primarily work in?

- Environmental services
- Landowner or land conservation
- Parks
- Public works
- Stormwater management
- Transportation
- Other

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Permittee responsible mitigation (PRM)

- Clean Water Act, Section 404
- Discharge of dredge or fill material into wetlands, streams
- US Army Corps of Engineers Regulatory Division
- Alternative to mitigation bank credits, if approved



Getty Images

Parties involved in PRM

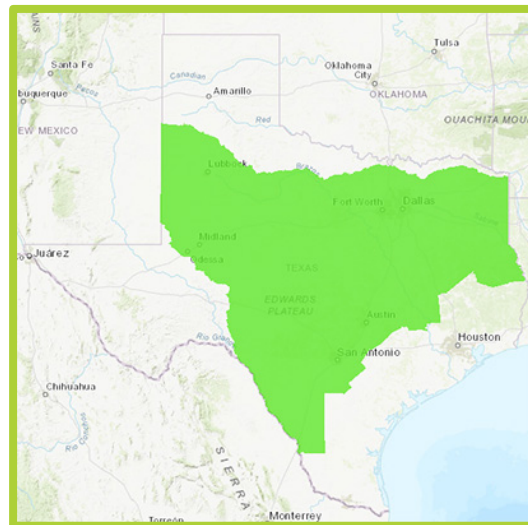
- Willing landowner
- Permit applicant
- Third-party land trust
- US Army Corps of Engineers Regulatory Division – must be consulted



Getty Images


PRM Database

- Connects willing landowners and permit applicants
- Identifies appropriate mitigation locations
- Covers area compatible with the US Army Corps of Engineers, Fort Worth District



PRM Database demonstration

<http://prmd.nctcog.org/>



Permittee
Responsible
Mitigation
Database

Permittee Responsible Mitigation Database

The Permittee Responsible Mitigation Database helps connect landowners whose streams or wetlands need rehabilitation or restoration with developers or entities needing to rehabilitate or restore streams or wetlands to offset construction impacts elsewhere.

Landowners, including private landowners or government jurisdictions, may own property where the function of streams or wetlands needs to be restored or enhanced. Construction projects, such as roads or housing, can impact the function of streams or wetlands at the project site. Federal law requires developers or

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Economic & Environmental Benefits of Stewardship tool (EEBS)

“ We look at environmental programs as the right thing to do, but we look at them as a cost. How do we measure the return on investment of this work? ”



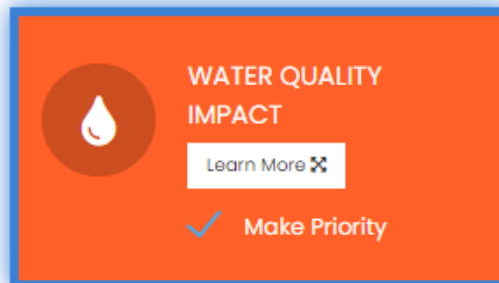
NCTCOG

Goals in developing EEBS

User-friendly online tool

Preliminary information for policy and decision-making

Qualitative and quantitative benefits of stewardship

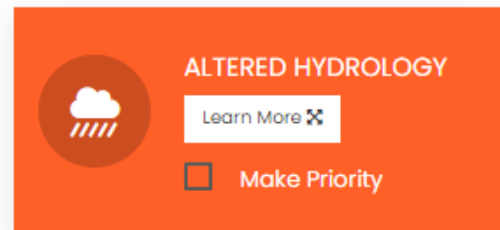


WATER QUALITY
IMPACT

Learn More ☒

Make Priority

This card features a water drop icon in a circle on the left. The text 'WATER QUALITY IMPACT' is centered at the top. Below it is a white button with 'Learn More' and a small square icon. At the bottom, there is a checked checkbox followed by the text 'Make Priority'.

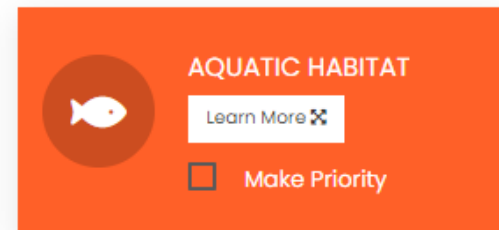


ALTERED HYDROLOGY

Learn More ☒

Make Priority

This card features a cloud with rain icon in a circle on the left. The text 'ALTERED HYDROLOGY' is centered at the top. Below it is a white button with 'Learn More' and a small square icon. At the bottom, there is an unchecked checkbox followed by the text 'Make Priority'.

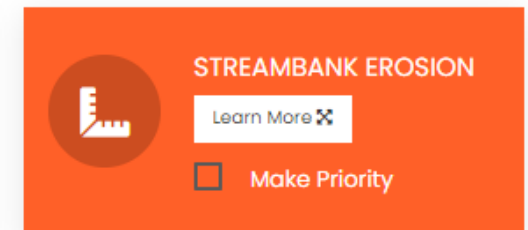


AQUATIC HABITAT

Learn More ☒

Make Priority

This card features a fish icon in a circle on the left. The text 'AQUATIC HABITAT' is centered at the top. Below it is a white button with 'Learn More' and a small square icon. At the bottom, there is an unchecked checkbox followed by the text 'Make Priority'.



STREAMBANK EROSION

Learn More ☒

Make Priority

This card features a streambank erosion icon in a circle on the left. The text 'STREAMBANK EROSION' is centered at the top. Below it is a white button with 'Learn More' and a small square icon. At the bottom, there is an unchecked checkbox followed by the text 'Make Priority'.

Stakeholders, project review committee

Cities of Dallas, Denton, Fort Worth, Cedar Hill

NCTCOG

Tarrant Regional Water District

Texas Parks & Wildlife Department

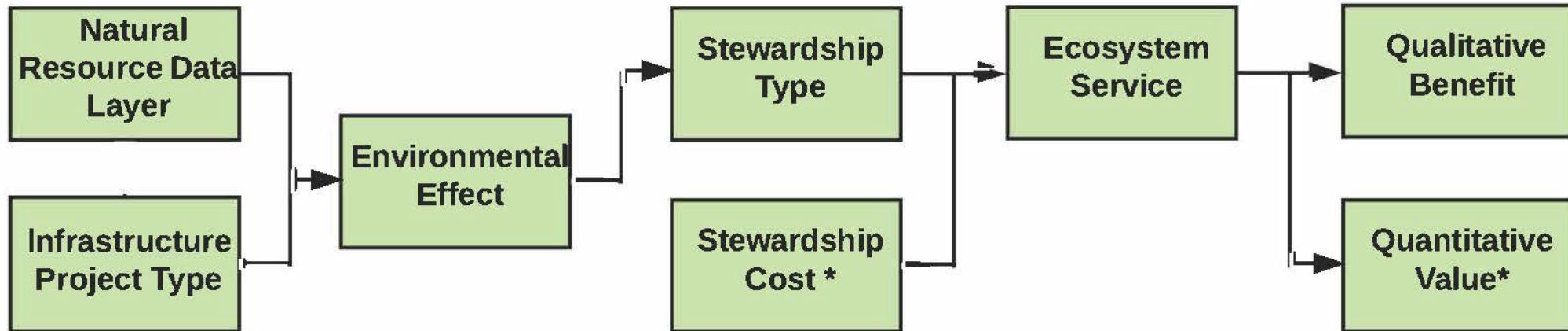
Barriers to green infrastructure

Need for financial data

Need for public education

**Need to include green infrastructure
in planning phase**

Tool concept map



** If data was available*

Economic data

Economic and Social Benefits of Mitigating Environmental Impacts of Transportation Projects

September 25, 2018

Prepared For:

North Central Texas Council of Governments
Centerpoint II
616 Six Flags Drive
Arlington, TX 76011

Prepared by:

Highland Economic, LLC
2344 NE 59th Ave
Portland, OR 97213
503-954-1741



Highland Economics
HIGHLAND ECONOMICS, LLC

Table 1-1: Quantified

Type of Environmental Impact		
Stormwater Runoff ¹		
Water Quality ²		
Sediment		
Nitrogen		
Phosphorus		
Recreation ³		
Urban Heat Island ⁴		
Habitat		
Wetland/Riparian		
Terrestrial Habitat		
Air Quality ⁵		
Particulate Matter	12.5 - 50.9	Annual Pounds / Acre of Tree Canopy Removed / Year
Nitrogen Dioxide	4.5 - 12.5	Annual Pounds / Acre of Tree Canopy Removed / Year
Sulfur Dioxide	1.8 - 6.2	Annual Pounds / Acre of Tree Canopy Removed / Year

1/ Source: Derived from rainfall in the Dallas/Fort Worth area from 2008 - 2017 (National Weather Service, 2018).

2/ Source: (Li, Barrett, Rammohan, Olivera, & Landphair, 2008). Ranges are similar to the pollutant loads found in other studies of urban runoff in North Central Texas (Banks, 2008; U.S. Geological Survey, 1998). Note that bacteria contamination is also a pollutant of concern in many area waterbodies, but is not related to transportation.

3/ Derived from (The Trust for Public Land, 2017; City of Plano, 2017; Dallas Park & Recreation, 2017; Dallas Park & Recreation, 2018)

Table 1-3: Quantified Benefits: Tool Inputs on Economic Benefit

Environmental Benefit	Economic Value	Unit
Stormwater Management ¹	\$1,000 - \$1,100	\$ / Acre impervious / Year
Water Quality (Nitrogen) ²	\$1 - \$10	\$ / Pound
Water Quality (Phosphorus) ²	\$1 - \$10	\$ / Pound
Water Quality (TSS) ²	\$6	\$ / Ton
Recreation ³	\$3 - \$25	Per Visit Benefit to Recreator
Energy Savings ⁴	\$0.1165	\$ / kWh
Aesthetics	\$300 - \$900	\$ / Street Tree / Year
Air Quality (PM ₁₀) ⁵	\$7.36 - \$19.85	\$ / Pound
Air Quality (NO ₂) ⁵	\$4.59 - \$11.54	\$ / Pound
Air Quality (SO ₂) ⁵	\$3.67 - \$18.40	\$ / Pound
Habitat, Terrestrial	\$100 - \$750	\$ / Acre / Year
Habitat, Wetland/Riparian	\$500 - \$11,400	\$ / Acre / Year
Pavement Maintenance Costs	\$3.50 - \$17	\$ / Tree / Year

Note: Health benefits from air quality are included in the air quality values.

1/ Derived from the residential stormwater fees in Fort Worth and Dallas

2/ (U.S. Environmental Protection Agency, 2015; Natural Resource Conservation Service, US Department of Agriculture, 2010; Shaik, Helmers, & Langemeier, 2002)

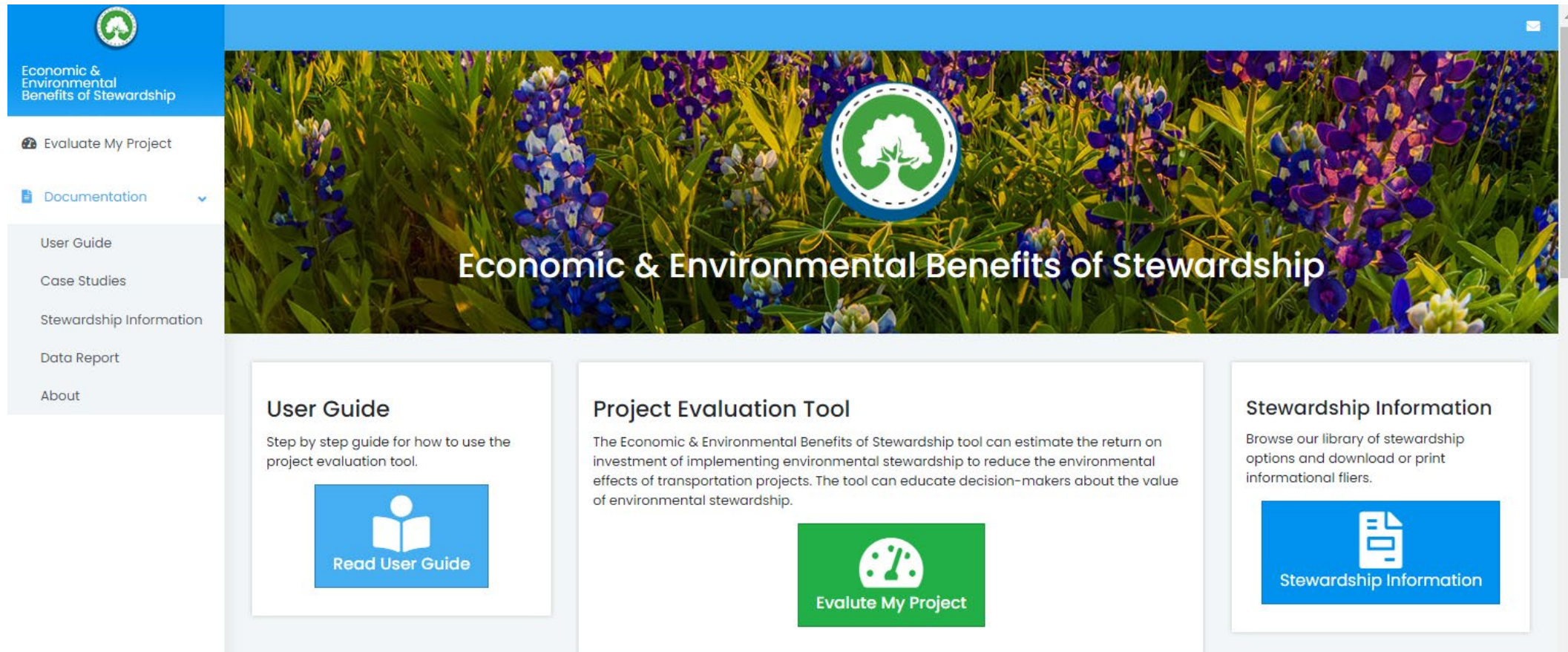
3/ Sources: (Hansen, Mills, Stoll, Freeman, & Hankamer, 1990; Bergstrom & Cordell, 1991; Loomis, 2005). All values were adjusted for inflation to 2018 dollars using the Consumer Price Index.

4/ Based on the average marginal charge for electricity in Dallas in July 2018 (TexasElectricityRatings.com, 2018)

5/ Derived from (Wang & Santini, 1995). The most recent data available were used for the Dallas metro area population and air pollutant concentrations. Values were adjusted to 2018 dollars using the Consumer Price Index.

EEBS demonstration

<http://eebs.nctcog.org>



The screenshot displays the EEBS website interface. On the left is a blue navigation menu with the following items: "Evaluate My Project", "Documentation" (with a dropdown arrow), "User Guide", "Case Studies", "Stewardship Information", "Data Report", and "About". The main content area features a large banner image of purple lupines with a circular logo of a tree. Below the banner is the title "Economic & Environmental Benefits of Stewardship". Three content cards are arranged horizontally: "User Guide" (with a book icon and "Read User Guide" button), "Project Evaluation Tool" (with a gauge icon and "Evaluate My Project" button), and "Stewardship Information" (with a document icon and "Stewardship Information" button).

Economic & Environmental Benefits of Stewardship

User Guide
Step by step guide for how to use the project evaluation tool.
[Read User Guide](#)

Project Evaluation Tool
The Economic & Environmental Benefits of Stewardship tool can estimate the return on investment of implementing environmental stewardship to reduce the environmental effects of transportation projects. The tool can educate decision-makers about the value of environmental stewardship.
[Evaluate My Project](#)

Stewardship Information
Browse our library of stewardship options and download or print informational fliers.
[Stewardship Information](#)

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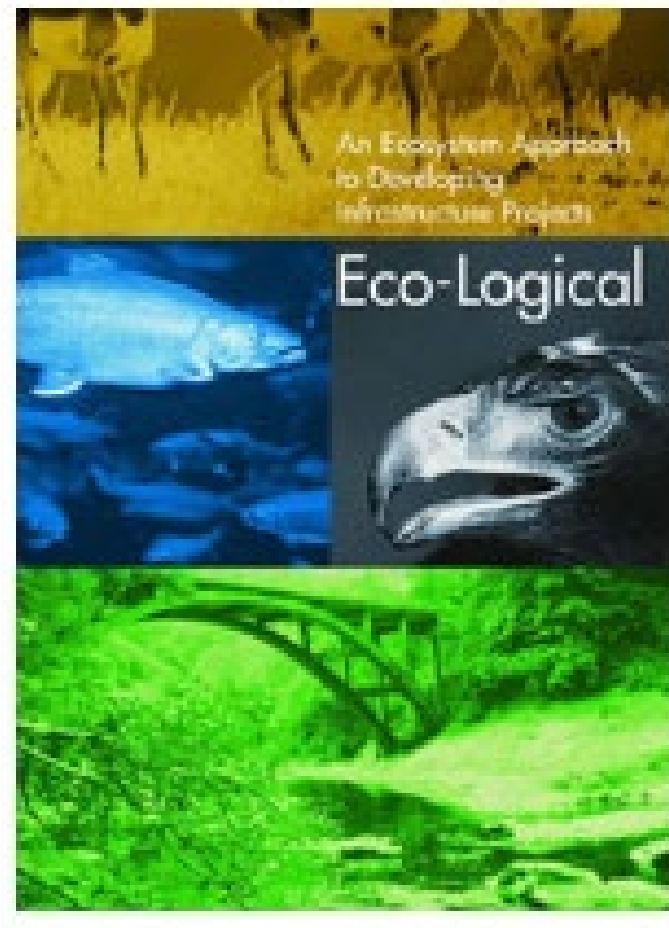
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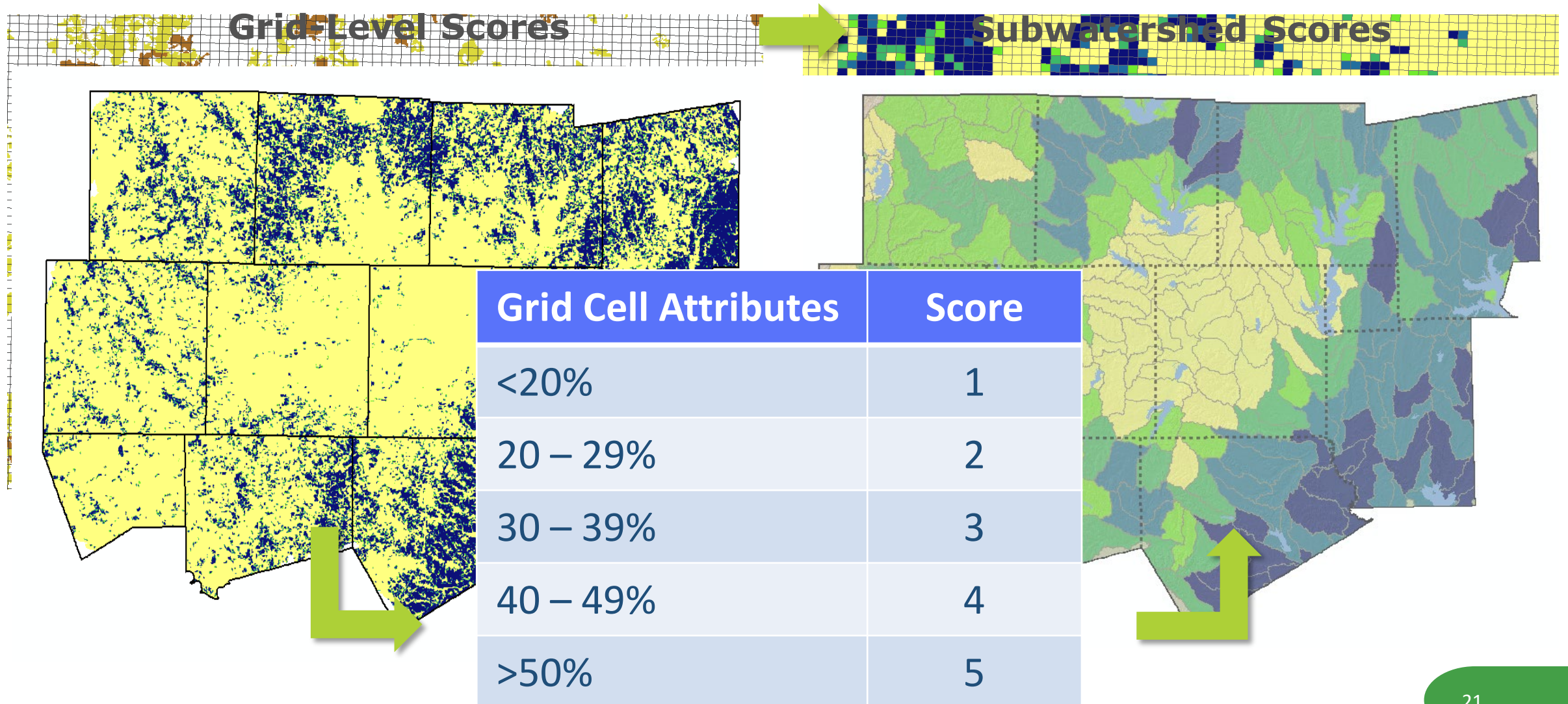
Regional Ecosystem Framework (REF)

Federal Highway Administration's "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects"



FHWA

Method



REF layers

GREEN INFRASTRUCTURE

- Wildlife habitat
- Natural areas
- Agricultural land

WATER CONSIDERATIONS

- Impaired water segments
- Flood zones
- Surface water quantity
- Wetlands

ECOSYSTEM VALUE

- Rarity
- Diversity
- Ecosystem Sustainability

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Poll – You + environment

Why does your agency typically consider the environment during infrastructure or public works planning?

- To minimize impacts
- For regulatory mitigation
- To engage in non-regulatory environmental stewardship
- To identify how environmental factors may negatively affect the project
- We do not consider the environment when planning
- Other [open ended]

Poll – You + environment, part 2

How does your agency typically consider the environment during infrastructure or public works planning?

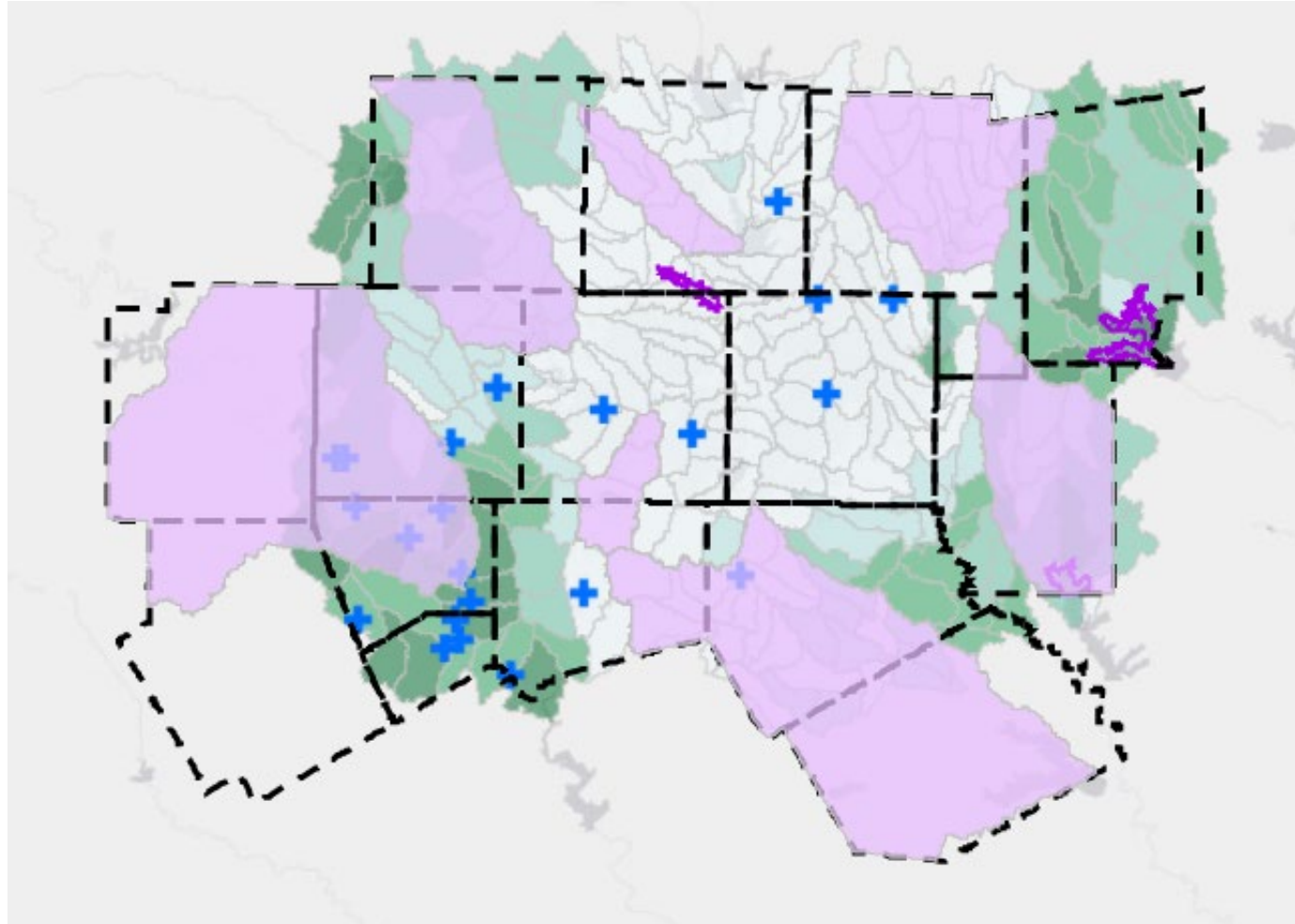
- Review GIS layers of environmental data
- Tap staff existing knowledge
- Conduct windshield survey
- We do not consider the environment when planning
- Other [open ended]

Poll – You + environment, part 3

What are your agency's goals for conservation? If you are a private landowner, what are your goals for conserving your land?

If you would like us to contact you about your poll responses, please provide your email address in your response.

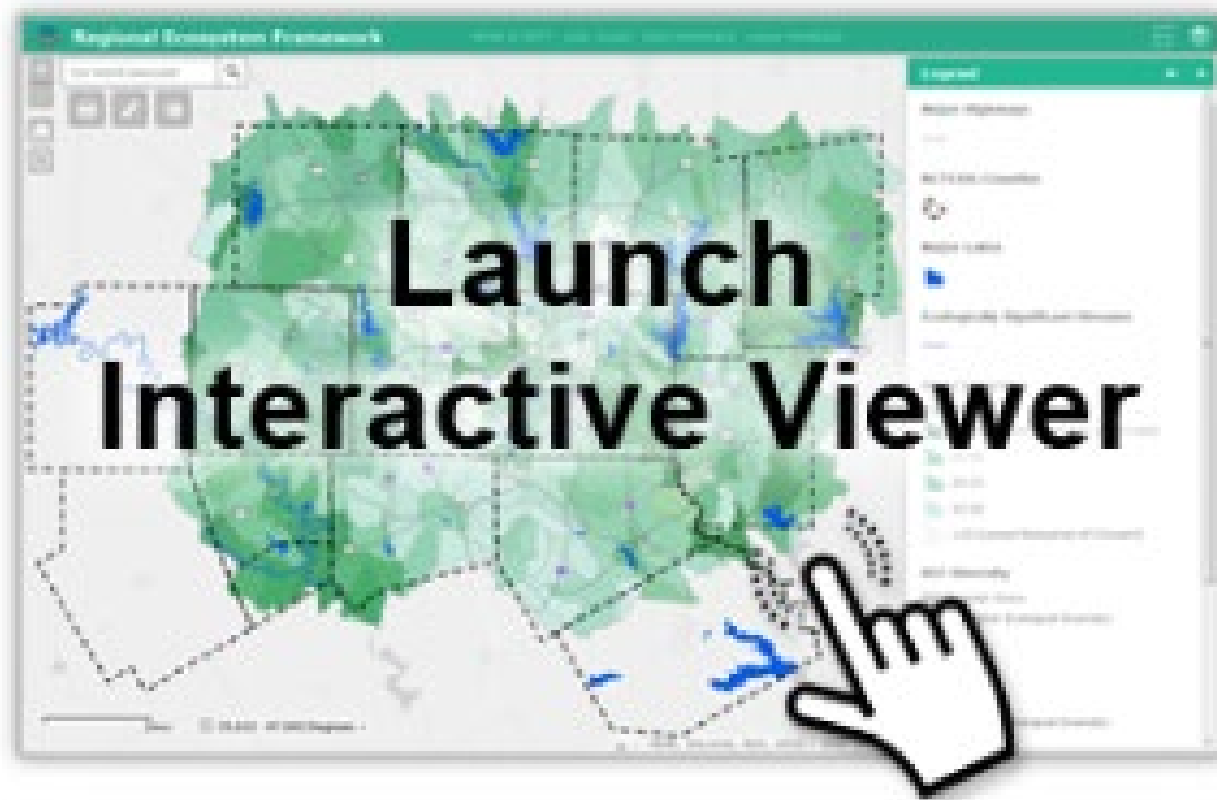
REF Interactive Viewer



data

Interactive Viewer demonstration

www.nctcog.org/REF



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Poll – REF

Did you already know about the REF?

- No
- Yes - I heard about the REF from NCTCOG
- Yes - I heard about the REF from another source [open-ended]

Poll –REF, part 2

How do you think your agency could use the REF?
[open-ended]

If you would like us to contact you about your poll responses, please provide your email address in your response.

Poll –REF, part 3

We promise this is the last one!

What changes would lead your agency to use the REF or to use it more?

- Including different/additional/updated environmental data but using the same GIS layer format
- Using a scale for data that is finer than the subwatershed scale – for example, grid cell
- Creating an online tool that analyzes the data for a specific need, such as stormwater considerations or pre-NEPA analysis
- Our agency has its own processes and would not use a revised REF
- Other [open ended]

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Content questions

Kate Zielke

Principal Transportation Planner

NCTCOG Transportation Department

kzielke@nctcog.org

Technical questions

Brian Geck

Communications and Technology Supervisor

NCTCOG Environment & Development Department

bgeck@nctcog.org