Implementing Eco-Logical
Stakeholder Meeting

North Central Texas Council of Governments
June 4, 2014
Dallas-Fort Worth Metropolitan Planning Organization (MPO)

- Conducts long-range transportation planning
- Works with transportation partners and resource agencies to streamline delivery of regional transportation projects
- Serves as staff to Regional Transportation Council that allocates transportation funds
Traditional Transportation Project Development Process

SYSTEM PLANNING

Metropolitan Transportation Planning

NEPA Process

PROJECT PLANNING

PROJECT DESIGN/ CONSTRUCTION

REGULATORY/RESOURCE AGENCY REVIEW
Enhanced Transportation Project Development Process

SYSTEM PLANNING

Metropolitan Transportation Planning

NEPA Process

PROJECT PLANNING

PROJECT DESIGN/ CONSTRUCTION

REGULATORY/ RESOURCE AGENCY COORDINATION AND CONSULTATION

Planning and Environment Linkages
Regional Transportation & Conservation Integration Efforts
MPO Efforts

Planning and Environmental Linkages (PEL)
Transportation Resource Agency Consultation and Environmental Streamlining (TRACES)

2008 FHWA Eco-Logical Grant

Regional Ecosystem Framework (REF)

REF Documented in Mobility 2035

2013/2014 Implementing REF Project (Pilot Study)

Integrate into Mobility 2040
• Transportation Resource Agency Consultation and Environmental Streamlining (TRACES)
  ◆ Data Sharing
  ◆ Working Groups
  ◆ Transportation Policy Development

• Innovative Partnerships
  ◆ Agreement with USACE to expedite permits for regionally significant transportation projects
  ◆ Program has resulted in cost savings and preservation of the aquatic environment
An Ecosystem Approach to Developing Infrastructure Projects

- Vision for infrastructure development process that endorses ecosystem-based mitigation
- Coordinate resource and regulatory agency information earlier in the transportation planning process
- Focus on building partnerships
- Proactive approach to link resource agency and transportation goals
Introducing Eco-Logical Approach

FHWA Eco-Logical Grant

• Conducted by NCTCOG from 2008-2011
• Completed in coordination with E&D Department

Purpose

Develop Regional Ecosystem Framework (REF) to help identify, assess, and avoid environmental impacts of proposed infrastructure projects and to enhance multi-agency understanding of critical resource protection areas

Product

REF documented in Mobility 2035: The Metropolitan Transportation Plan for North Central Texas
Environmental Considerations

Regional Ecosystem Framework: VEIL Composite

NCTCOG Regional Ecosystem Framework Score* (Range: 14 - 37)

Ecological Importance in Corridor

*Lower REF score indicates less resource vulnerability, higher score indicates more resource vulnerability.
Received funds in 2013 from FHWA to Apply Eco-Logical Approach in real-world situation

Project Emphasis Areas:

- Update REF and Identify Mitigation Focus Areas
- Apply REF to Corridor Feasibility Study
- Implement a Regional Shared Value Mitigation Program
Regional Significance

- Save Money and Time
- Preserve and Enhance Natural Resources
- Coordinate Resource Agency Goals with Transportation Goals
Regional Ecosystem Framework Development
• Planning tool developed to **identify** natural resources by watershed

• **Integrates** regional conservation data and infrastructure plans

• Developed with **feedback** from resource agency partners

• Goal is to **avoid** the negative impacts of infrastructure projects and **enhance** the natural environment
Presence of Vital Ecosystems

REF is comprised of 10 Vital Ecosystem Information Layers (VEIL)

VEIL Layers

**GREEN INFRASTRUCTURE***
- Wildlife habitat
- Natural areas
- Agricultural land

**WATER CONSIDERATIONS***
- Impaired water segments
- Flood zones
- Surface water quantity
- Wetlands

**ECOSYSTEM VALUE**
- Rarity
- Diversity
- Sustainability

*Data Source: EPA Region 6, Texas GRID data
**Regional Ecosystem Assessment Protocol is based on Ecoregion Analysis
**Impaired Water Segments**

- Region is divided into 1/4km² grid
- Grid cells are assigned a score based on presence of an impaired water segment:

<table>
<thead>
<tr>
<th>Grid Cell Attributes</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Impaired Water Segment Present</td>
<td>1</td>
</tr>
<tr>
<td>Impaired Water Segment Present</td>
<td>5</td>
</tr>
</tbody>
</table>

- Grid cell scores are aggregated to subwatershed level and an average score from 1-5 is assigned to each subwatershed

Data Source: Clean Water Act 303(d) Segments State Priority Data
The Regional Ecosystem Framework: Composite score represents the combined score of all 10 VEIL layers. A higher score indicates that resources of relatively high concern may be present and that additional review, documentation, and consultation with the applicable agency may be needed. The VEIL layers include: Green Infrastructure (Wildlife Habitat, Natural Areas, Agricultural Land); Water Quality and Flooding (Impaired Water Segments, Flood Zones, Surface Water Quantity, and Wetlands); and Ecosystem Valuing (Rarity, Diversity, and Sustainability). Data sources include the Texas GRID and EPA Region 6 Regional Ecosystem Assessment Protocol data. This information has been developed for the Dallas-Fort Worth MPA for use in long-range planning. These scores are meant to be used as a preliminary screening tool for potential impact identification. For more information on the calculations for this layer, please visit www.nctcog.org/traces.
Implementing Eco-Logical: REF Update Task

• Re-Engage Resource Agencies and Update REF
  ‣ Stakeholder Meetings
  ‣ Incorporate updated data to REF

• Identify Priority Subwatersheds

• Identify Candidate Mitigation and Enhancement Areas

• Identify Suitable Sites for Potential Mitigation Banks
The Regional Ecosystem Framework: Composite score represents the combined score of all 10 VEIL layers. A higher score indicates that resources of relatively high concern may be present and that additional review, documentation, and consultation with the applicable agency may be needed. The VEIL layers include: Green Infrastructure (Wildlife Habitat, Natural Areas, Agricultural Land); Water Quality and Flooding (Impaired Water Segments, Flood Zones, Surface Water Quantity, and Wetlands); and Ecosystem Valuing (Rarity, Diversity, and Sustainability). Data sources include the Texas GRID and EPA Region 6 Regional Ecosystem Assessment Protocol data. This information has been developed for the Dallas-Fort Worth MPA for use in long-range planning. These scores are meant to be used as a preliminary screening tool for potential impact identification. For more information on the calculations for this layer, please visit www.nctcog.org/traces.
Subwatershed Mapping
• Exercise to determine highest need in each subwatershed in terms of ecosystem vulnerability
• Incorporate REF as underlying data and overlay additional environmental data
• Next steps are to identify vulnerable sites and potential mitigation sites
The Subwatersheds by Ecosystem Value map shows the combined scores of three Vital Ecosystem Layers (VEIL): REAP Diversity, Sustainability, and Rarity. The minimum combined score is 3 and the maximum combined score is 15. Subwatersheds are labeled if the individual VEIL layer have a score of 4 or 5, indicating a higher presence of this particular ecosystem attribute. This information has been developed for the Dallas-Fort Worth MPA for use in long-range planning. These scores are meant to be used as a preliminary screening tool for potential impact identification. For more information on the calculations for this layer, please visit www.nctcog.org/trace.
The Subwatersheds by Green Infrastructure Value map shows the combined scores of three Vital Ecosystem Information Layers (VEIL): Wildlife Habitat, Agricultural Lands, and Natural Areas. The minimum combined score is 3 and the maximum combined score is 15. Subwatersheds are labeled if the individual VEIL layer have a score of 4 or 5, indicating a higher presence of this particular ecosystem attribute. This information has been developed for the Dallas-Fort Worth MPA for use in long-range planning. These scores are meant to be used as a preliminary screening tool for potential impact identification. For more information on the calculations for this layer, please visit www.nctcog.org/traces.
The Subwatersheds by Water Considerations map shows the combined scores of four Vital Ecosystem Information Layers (VEIL): Surface Water Quantity, Flood Zones, Impaired Water Segments, and Wetlands. The minimum combined score is 4 and the maximum combined score is 20. Subwatersheds are labeled if the individual VEIL layer has a score of 4 or 5, indicating a higher presence of this particular ecosystem attribute. This information has been developed for the Dallas-Fort Worth MPA for use in long-range planning. These scores are meant to be used as a preliminary screening tool for potential impact identification. For more information on the calculations for this layer, please visit www.nctcog.org/theses.
Subwatershed Example Analysis
Subwatershed Example Analysis: Additional Ecosystem Considerations

Parsons Slough-Trinity River Subwatershed

Highest Scoring VEIL Layers: Flood Zone, Wetlands, Rarity, Natural Areas

Resources of Concern: Water Quality and Flooding, Green Infrastructure, Ecosystem Value

Resource Agencies: USACE, TPWD

Potential Opportunities: Establish conservation easements; establish conservation areas or parks; incorporate buffer zones; link landscapes together through green infrastructure plans
Next Steps
Request for Data

**Existing Data:**
- Park/Conservation Areas
- Land Use/Land Cover
- Watersheds
- Historic Properties

**Desired Data:**
- Conservation Easements
- Existing and Future Conservation Areas
- Future Parks
- Tree Cover
- Mitigation Sites
- Habitat/Species (conservation plans, assessments, etc.)
Loop 9 Corridor

- Determine feasibility of using REF as tool to address conservation needs and potential mitigation strategies for a corridor in the pre-NEPA stages
- Create Corridor Conservation and Restoration/Enhancement Vision
- Recommend Improvements to REF
- Create regional process for using REF in corridor studies
Next Steps: Develop Regional Shared Value Mitigation Program

Effort to simultaneously expedite transportation projects and enhance resource stewardship through a programmatic mitigation approach.

- Develop Potential Mitigation Project Database
- Prioritize Shared Value Mitigation Projects
- Provide Feedback to REF
- Reserve Funds for Pilot Program
## Project Schedule

<table>
<thead>
<tr>
<th>Focus</th>
<th>Task</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANNING</td>
<td>REF Updates and Identify Regional Focus Areas</td>
<td>Complete Fall 2014</td>
</tr>
<tr>
<td>PROJECT-LEVEL</td>
<td>Apply REF to Pilot Corridor Feasibility Study</td>
<td>Begin Fall 2014</td>
</tr>
<tr>
<td>MITIGATION</td>
<td>Implement Pilot Phase of Regional Shared Value Mitigation Program</td>
<td>Begin Fall 2014</td>
</tr>
</tbody>
</table>
Request for Input

TODAY

Comments on REF maps, process

FUTURE

• Data requests
• Participation in follow-up meetings and conversations