



Integrating Conservation and Transportation Planning

Tools for Integration, Ecological
Assessment, CWA & ESA Compliance,
and Crediting

Today's presenters:



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Senior Policy Analyst
Parametrix

Today's presenters:



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Director, Water Resources
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Moderator

Steve Andrie

TRB, SHRP 2

Technical Support

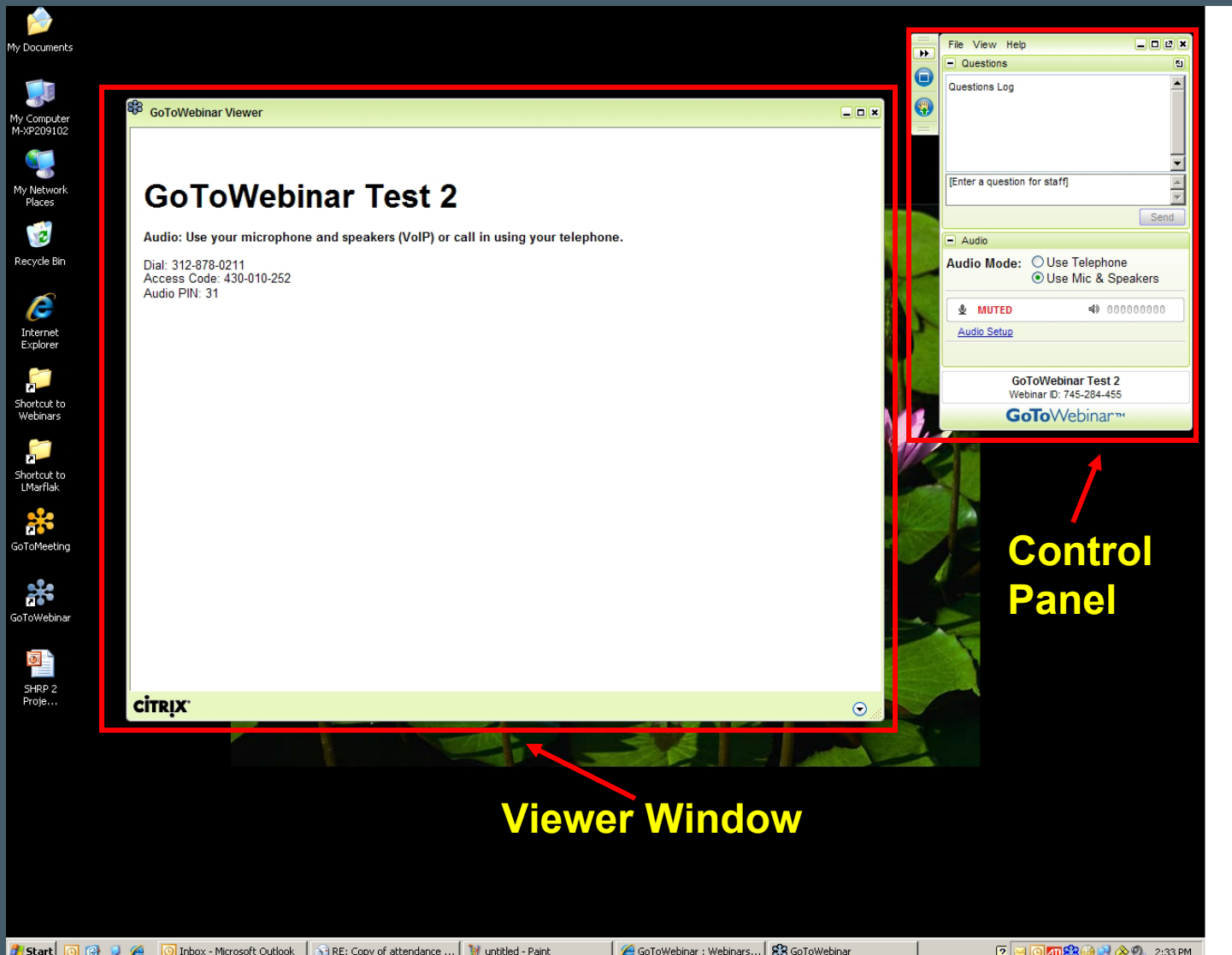
Patrick Zelinski

TRB, SHRP 2



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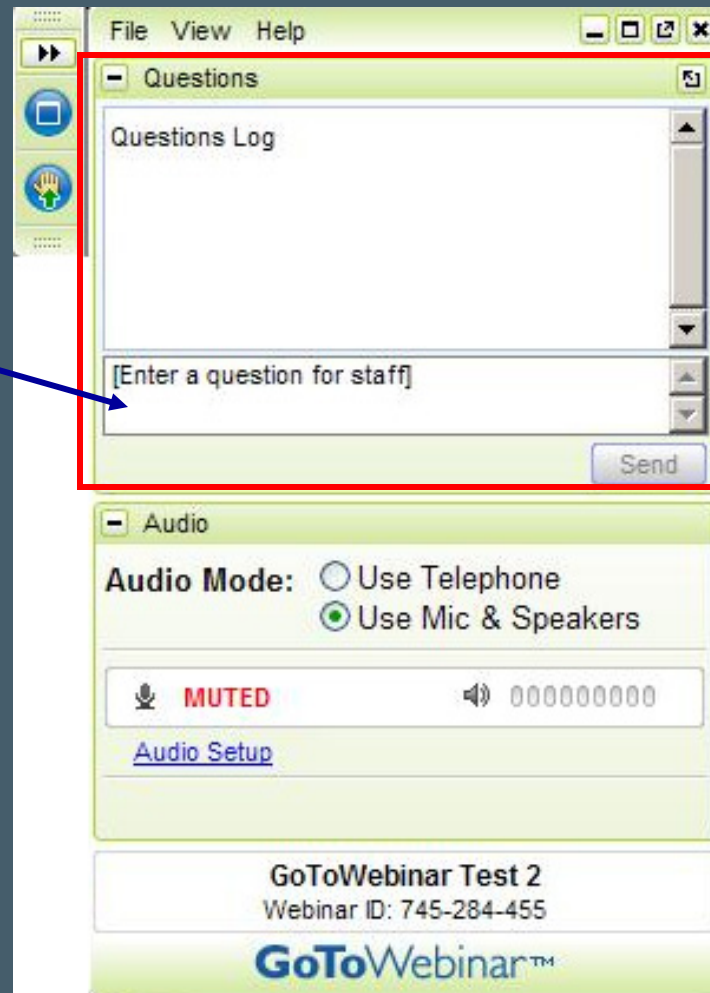


Commonly asked question

- Can I receive a copy of the presentation slides?
- Answer: Yes
- You will receive an e-mail with:
 - A link to a recording of today's session
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Question and Answer Session

- Please type your questions into this box
- We will answer as many of your questions as time allows



The screenshot displays a GoToWebinar interface with two main panels. The top panel, titled 'Questions', contains a 'Questions Log' area and a text input field with the placeholder text '[Enter a question for staff]'. A red rectangular box highlights this input field, and a blue arrow points to it from the left. Below the input field is a 'Send' button. The bottom panel, titled 'Audio', shows 'Audio Mode' options: 'Use Telephone' (unselected) and 'Use Mic & Speakers' (selected). It also features a 'MUTED' status indicator with a microphone icon and a volume level indicator showing '000000000'. A link for 'Audio Setup' is visible below the audio controls. At the bottom of the interface, the text 'GoToWebinar Test 2' and 'Webinar ID: 745-284-455' is displayed, along with the 'GoToWebinar™' logo.

Today's Objectives –Steve Andrie

- Introduce Transportation for Communities- Advancing Projects Through Partnerships (TCAPP) transportationforcommunities.com
- Introduce the environmental performance measures elements of TCAPP (Project C-02)
- Introduce work in progress on ecological approaches to mitigation (Projects C06A&B)
- Answer pre-bid questions on Project C21 – Pilot tests of the ecological approach



C06 Agenda

- Goals for Project
- Status and Timelines
- High Level Review of Findings to Date
- Stepwise Guidebook for Testing
- Questions

C06 Purpose

1. **Create an ecological framework** for making decisions about transportation capacity improvements and the environment:
 - To achieve more for the environment – substantive on-the-ground improvements for priority resources and ecosystems, through a more efficient process for transportation participants.
 - A way to integrate transportation planning and conservation planning
 - Basis for step-wise guidebook
2. **Understand barriers** to Eco-Logical and ecosystem approaches as well as interests, incentives, readiness for organizational change and potential solutions



C06 Purpose

3. To address the *scientific and technical* obstacles to the adoption of an integrated conservation and transportation planning process described in *Eco-Logical*

Key Outcomes:

- ***Process*** - First a framework then a guidebook - for integration of conservation and transportation planning
- ***Interactive database of methods, tools, systems and case studies*** that support the Ecological Assessment methods
 - Three areas of focus:
 - (1) Cumulative Effects and Alternatives Analysis;
 - (2) Regulatory Assurances; and
 - (3) Ecosystem Crediting

Guidebook to be produced this year

- Framework approved in 2009, Guidebook due in Dec. 2010
- Structured as a 9 Step Process based on *Eco-Logical*, provides start to finish process for integrated planning
 - Designed to **address key ESA and CWA issues much earlier**
 - **Discern progress toward objectives** (retention goals), through an outcome-based ecosystem approach
 - **Science rather than opinion-based**
 - **Adaptable and applicable nationwide**, to various natural, regulatory and political contexts
 - **Useable** and generating products/approaches that **foster conservation on a local and regional as well as a state level**
- Guidebook will include recommended tools, methods

Timeline for Initial/Internal C06 Pilot Studies and Guidebook

- Methods Developed, and in Pilot Testing

Initial Pilot Studies Begin

Initial Pilot Studies
Results & Finish Draft
Guide
June-July, 2010

Symposium on Guide,
Results
September, 2010

Final Reports and Tool
Oct. & Dec., 2010



Findings from 150 Interview and Surveys in 2009: Top Common Interests

- Target mitigation resources and staff time to produce the greatest environmental benefit
- Improve natural resource planning and data availability
- Improve/streamline the transportation decision making and compliance processes to:
 - Achieve better environmental results
 - Meet regulatory requirements and guidance
 - Reduce costs and delays
 - Improve public perception



Top 3 Barriers

- **Lack of resources** – time and manpower
- **Lack of data**, information, and tools – especially lack of natural resources data **on conservation and restoration priorities**
- **Resistance to change** or lack of incentives to change traditional processes

The takeaway:

*Ecosystem-based approaches have got to be **easier and more practical to implement** and a **management priority** if they are going to become a new way of doing business.*

Top 3 Recommended Solutions

- **Integrate transportation & land use planning – *the Holy Grail, but there are clear, feasible steps we can take. Framework/Guide help outline.***
- **Identify priority conservation areas**
- **Make data available to all decision makers early in the process (and make decisions earlier)**



Readiness for Change

All agencies in “at risk” range for unsuccessful implementation, but...

- **Ecosystem-based approaches constitute an idea whose time has come.**
- **There is a general feeling that the approach aligns with current agency business strategies.**
- **Inadequate rewards and reinforcements are major problems.**
- The degree to which managers are drawing lessons from implementation and sharing experiences varies, but is a general area of weakness, that needs support/action.
- **Champions/advocates for the approach was the lowest scoring category across all agencies.**

Making the Case for Ecosystem Approaches

- Brief, agency specific documents will “make the case” for stakeholder agencies to implement ecosystem-based approaches
- Identify areas where change or adaptation may be necessary (next steps)
- Provides a basis for further action and agreements to implement ecosystem approaches, within and between agencies

Framework for Integrating Conservation and Transportation Planning

- Step 1: Build & Strengthen Collaborative Partnerships and Vision
- Step 2: Integrate Ecosystem Plans
- Step 3: Create Regional Ecosystem Framework
- Step 4: Assess Transportation Effects
- Step 5: Establish & Prioritize Ecological Actions
- Step 6: Develop Crediting Strategy
- Step 7: Develop Agreements
- Step 8: Implement Agreements
- Step 9: Monitoring and Adaptive Management

TCAPP Website

Practical Applications - Long Range Transportation Planning

Key Decision Name: LRP-2
Key Decision Title: Approve Vision and Goals

Description: At this key decision, the community's values, whether stated as a vision and goals or simply agreed upon by the stakeholders for the planning area, are used to guide the transportation-specific vision and goals. This decision is the first opportunity for public stakeholders to inform the process, or provide their input. Linkages are also established with the scoping and goal-setting key decisions in corridor planning and environmental review, so the vision and goals approved at this key decision point should eventually influence what transportation projects are built. In order to facilitate collaboration, partnerships with other planning processes are established at this key decision.

There is information developed in prior key decisions that informs this step.

Need Help?

Check out the [Understanding the Decision Guide](#) page

Basics

Integration

Decision Making Questions

Case Study Examples

Technical Support

Special Topics

Purpose

To develop a common, comprehensive set of vision and goals for the planning area that incorporate the vision and goals from previous or existing plans, if applicable.

Outcome

Where no community vision and goals exist, transportation-specific vision and goals consistent with community values. Where a regional community vision and goals exists, transportation-specific goals for the planning area consistent with the regional vision and goals.

Partner Roles

MPO	Decision Maker
FHWA	Advisor
State DOT	Advisor
Resource Agency	Advisor

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Share your thoughts with your Colleagues
Topic Name - LRP-2 Approve Vision and Goals
posted 6 months ago ----- Welcome to the forum
(admin)Administrator

Ecosystem Based Tools Site

Tech Question	Data	Methods	Tools	Case Studies
<p>Technical Questions</p> <p>Questions that relate to details for implementing the step. E.g.:</p> <p>What areas are identified in conservation plans?</p>	<p>Data</p> <p>Data sources to be used. E.g.:</p> <p>Distribution model outputs Permitting data GIS inputs</p>			
<p>Methods</p> <p>Methods that further step(s). E.g.:</p> <p>Inter-agency teams Programmatic agreements</p>			<p>Tools</p> <p>Specific tools that further step(s). E.g.:</p> <p>Software models for species Natural Heritage Program S-Ranks</p>	

A map showing a river system with various colored zones (green, blue, yellow, pink) and a dashed line. A label 'Young Creek Bridge' points to a specific location on the river.

Step 1: Build & Strengthen Collaborative Partnerships

■ Purpose:

- Develop a shared vision of regional goals for transportation and conservation.
- Develop agreements on the process for stewardship and streamlining throughout transportation project delivery.

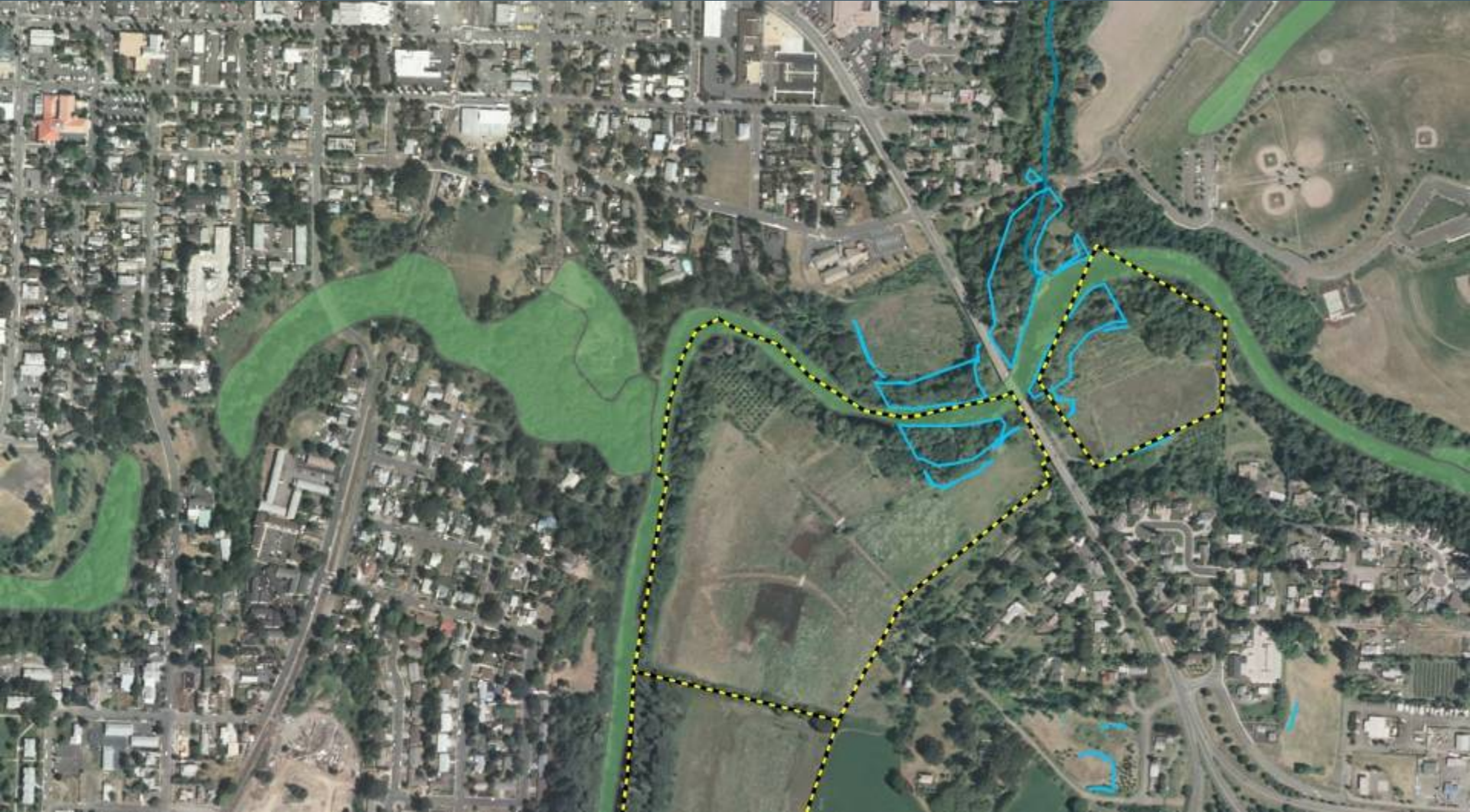
■ Outcomes:

- Understanding, appreciation and agreement on transportation and resource agencies' priorities and goals – including areas of concern.
- Understanding of land use issues that impact goals and needs.

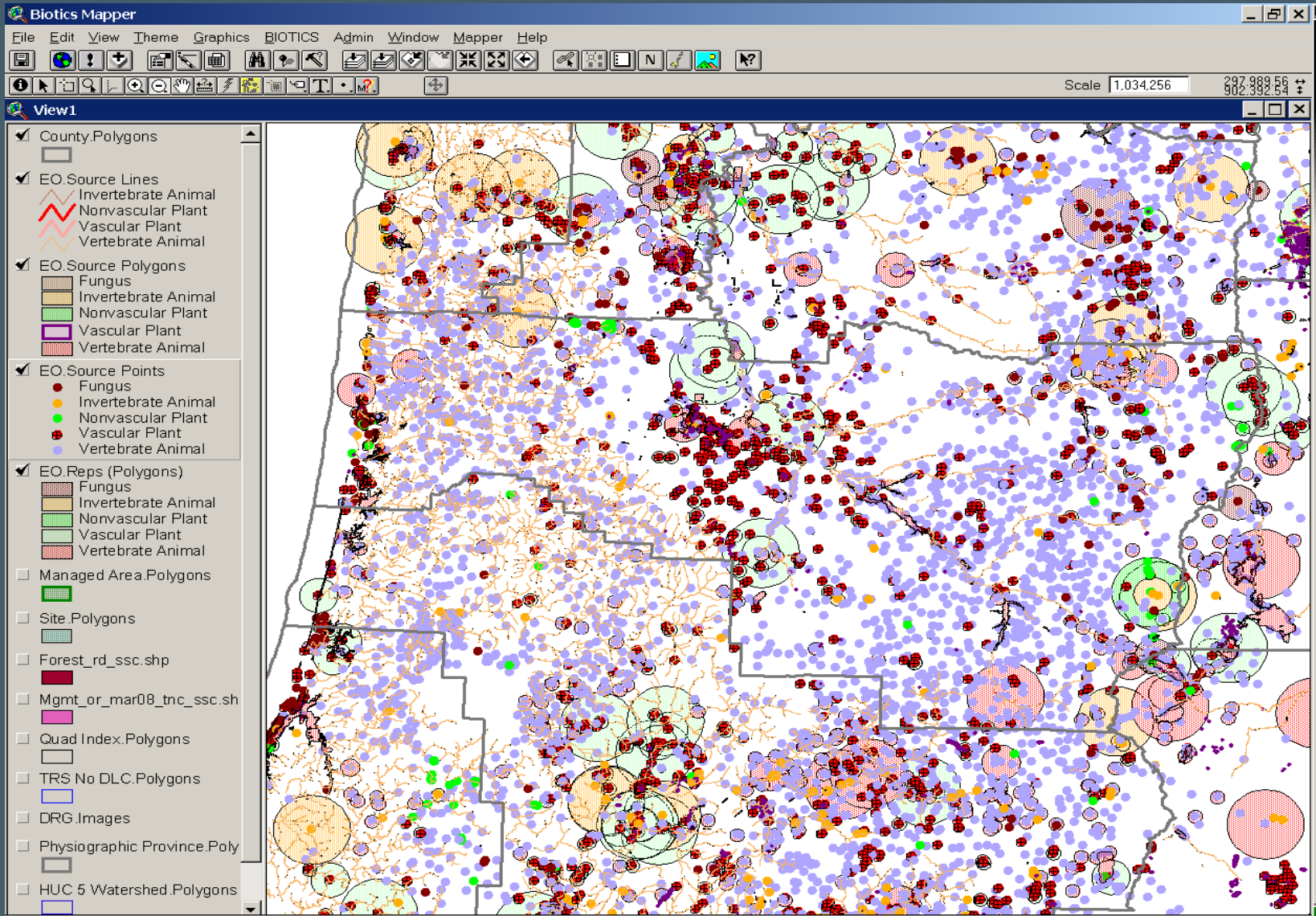
Step 2: Integrate Ecosystem Plans

- Purpose:
 - Compile all existing data and plans into a refined set of conservation priorities to guide decision making.
 - Develop conservation priority spatial data and cumulative effects outline.
 - Provide basis for developing the Regional Ecosystem Framework (REF).
- Outcomes:
 - Identification of resources and issues to be addressed in the REF.
 - Data needed for assessment, identification of data gaps, how to address gaps.
 - Commitments for data delivery and modeling to fill data gaps.
 - Outline of cumulative effects at a landscape level.
 - REF-ready data and planning inputs

Step 2: Integrate Existing Data

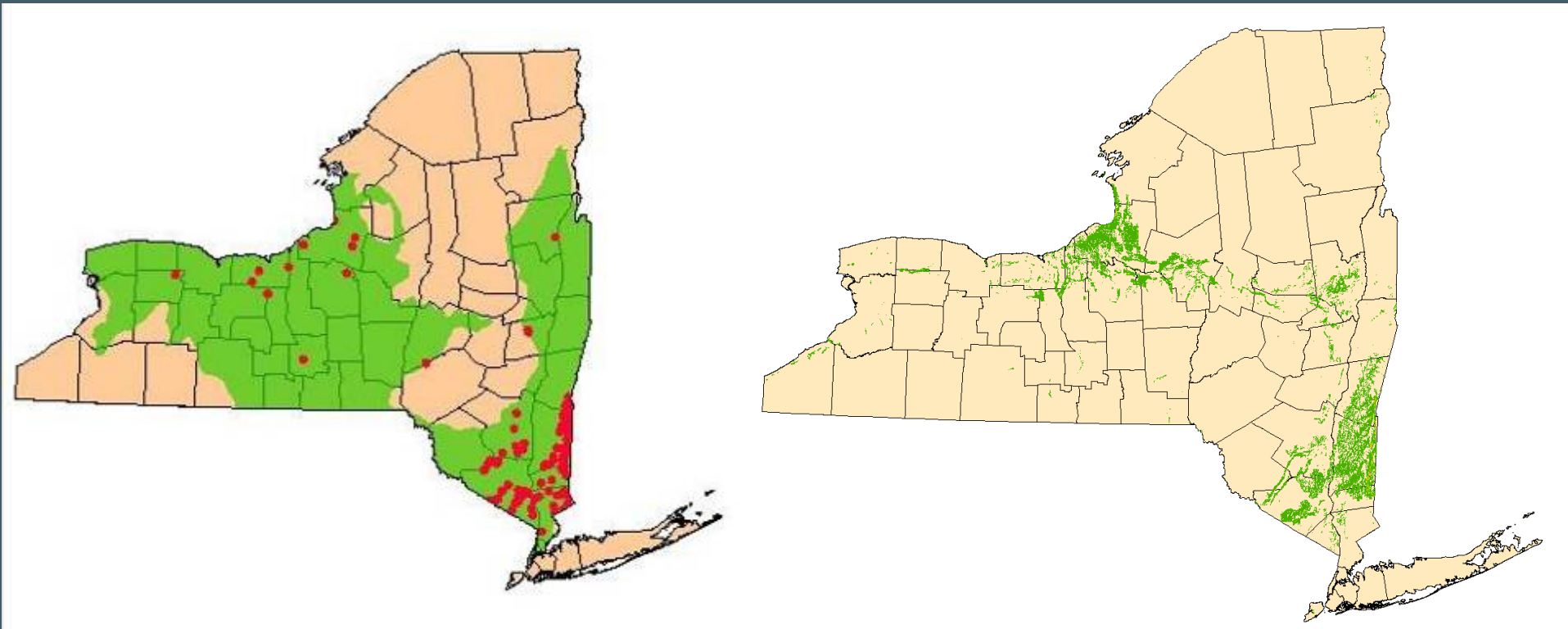


Step 2: Moving Beyond Observed

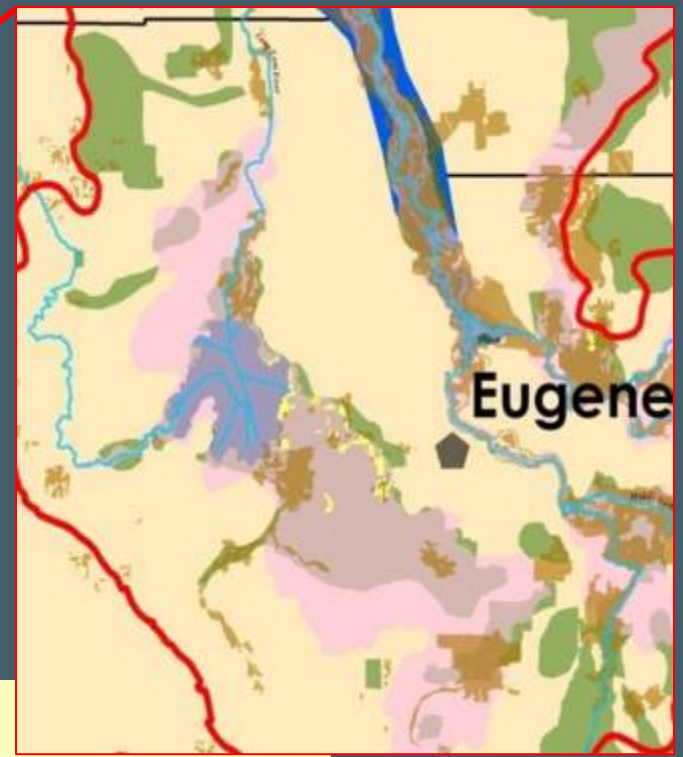


Step 2: Model Presence Data

- Distribution models to inform decision making.



Example: REF





Step 3: Create Regional Ecosystem Framework

■ Decisions:

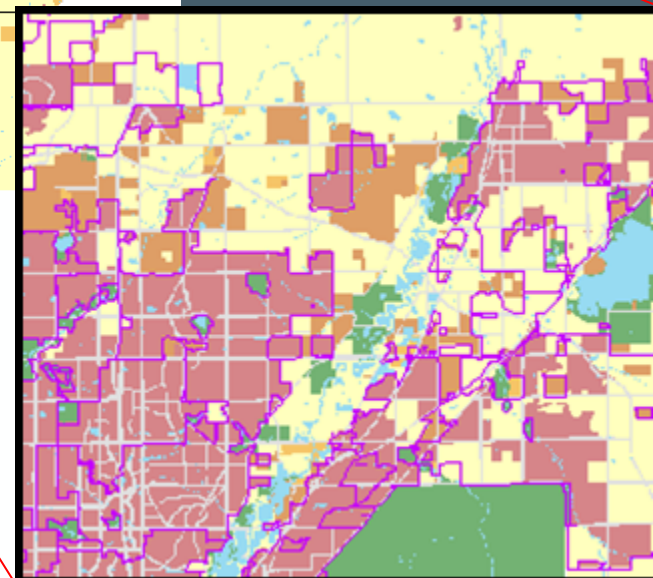
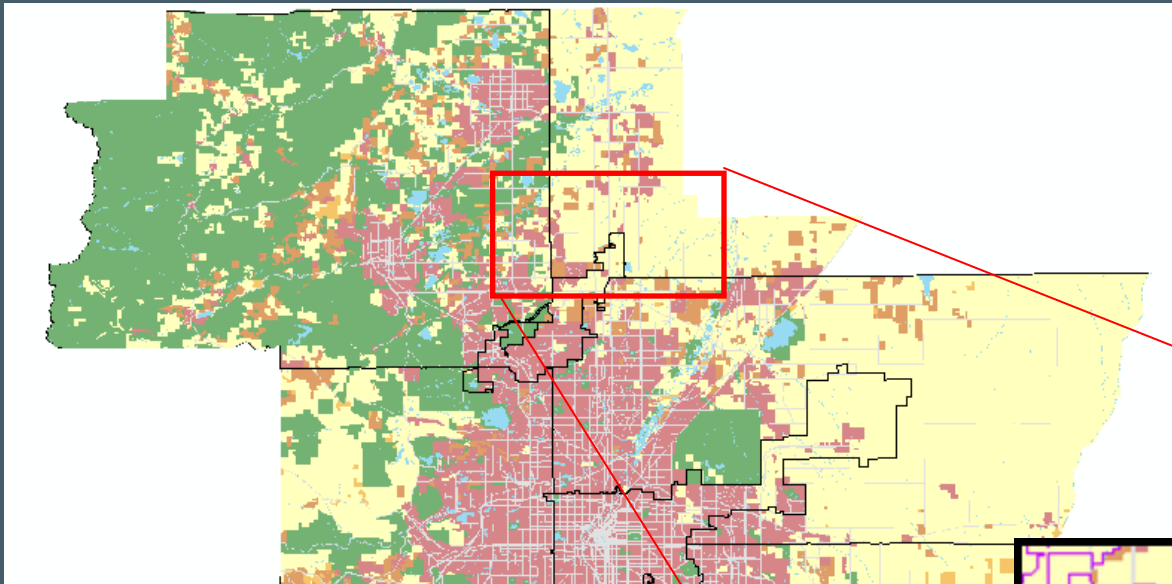
- What areas will be directly impacted by transportation development?
- How severe are the likely impacts (cumulative impacts)?
- What areas and measures could be used for mitigate?
- How can conservation goals be met through these mitigation approaches?



Step 3: Create Regional Ecosystem Framework

- Roles:
 - Review and verify REF and data sources used.
 - Distribute completed REF to all jurisdictions, agencies and affected parties.
- Technical Questions:
 - What site level measures are needed to verify progress?
 - What impacts are likely to be avoided, which ones should be replaced on site or off-site?
 - What unprotected conservation priorities can be protected through project mitigation?

Example REF Product



- All Values
- Livestock Farming_Ranching 2.3
 - Roads_Railroads 4.1
 - Livestock Farming_Ranching 2.3
 - Resource_Habitat Protection CA1.2
 - Roads_Railroads 4.1
 - Residential 35 acre
 - Residential 2.5_5 acre
 - Housing_Urban Areas 1.1
 - Utility_Service Lines 4.2
 - Commercial_Industrial Areas 1.2
 - Dams_Water Management/Use 7.2
 - Mining_Quarrying 3.2
 - Tourism_Recreation Areas Development 1.3

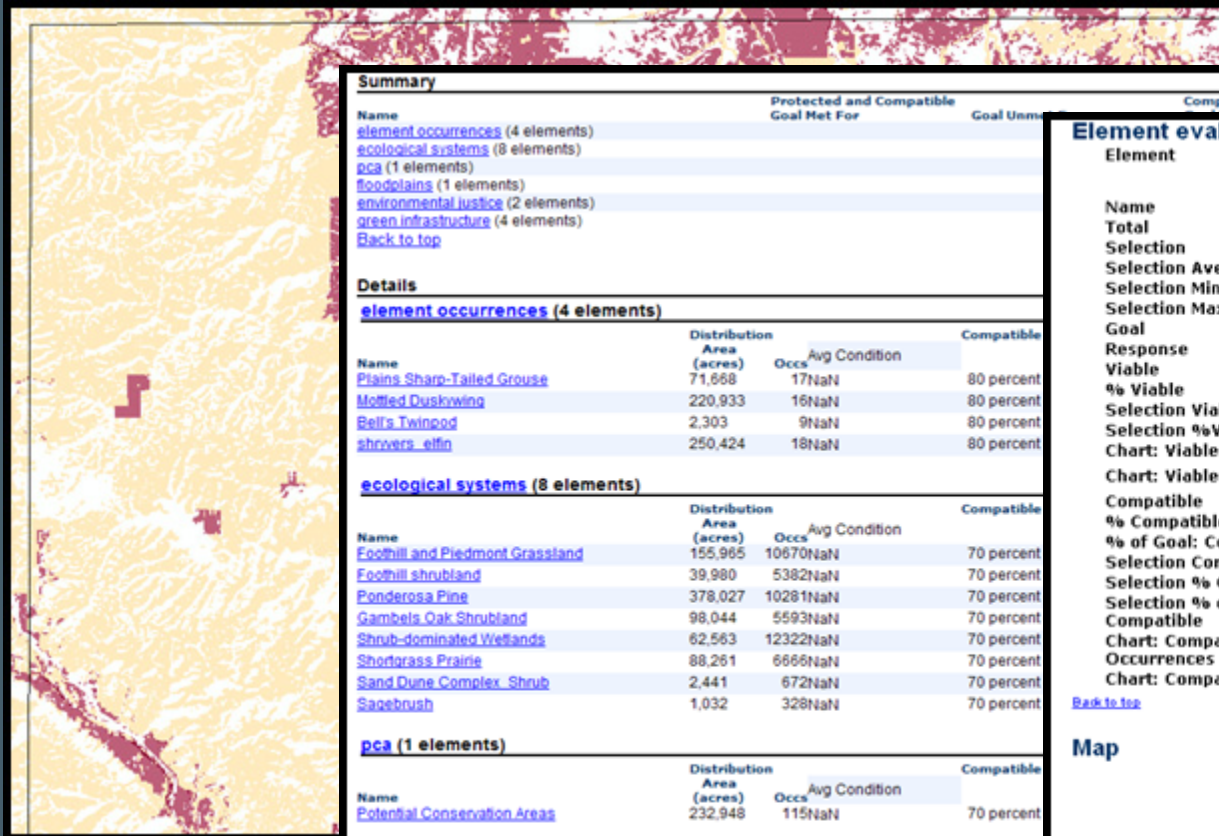


Step 4: Assess Transportation Effects

- Purpose:
 - Analyze transportation project scenarios in relation to resource conservation objectives and priorities.
 - Identification of preferred alternative to meet transportation and conservation goals.
- Outcomes:
 - Refined quantification of transportation effects under each scenario.
 - Identification and quantification of mitigation needs.
 - Cumulative effects scenarios of future land uses and transportation.
 - Identification of best transportation plan alternatives in relation to conservation goals.

Using REF and Models for Priorities

Young Creek Bridge



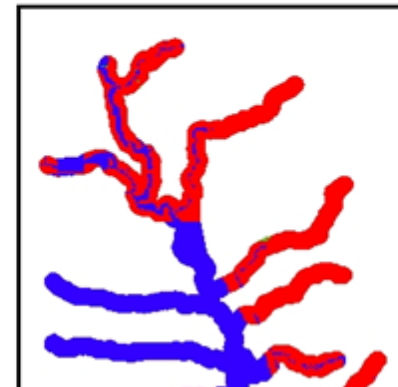
Summary		Protected and Compatible	Compatible
Name	Goal Met For	Goal Unmet	
element occurrences (4 elements)			
ecological systems (8 elements)			
pca (1 elements)			
floodplains (1 elements)			
environmental justice (2 elements)			
green infrastructure (4 elements)			
Back to top			
Details			
element occurrences (4 elements)			
Name	Distribution Area (acres)	Occs	Avg Condition
Plains Sharp-Tailed Grouse	71,668	17	NaN
Mottled Dusshwing	220,933	16	NaN
Bell's Twinpod	2,303	9	NaN
shovers_elfin	250,424	18	NaN
ecological systems (8 elements)			
Name	Distribution Area (acres)	Occs	Avg Condition
Foothill and Piedmont Grassland	155,965	10670	NaN
Foothill shrubland	39,980	5382	NaN
Ponderosa Pine	378,027	10281	NaN
Gambels Oak Shrubland	98,044	5593	NaN
Shrub-dominated Wetlands	62,563	12322	NaN
Shodgrass Prairie	88,261	6666	NaN
Sand Dune Complex Shrub	2,441	672	NaN
Sagebrush	1,032	328	NaN
pca (1 elements)			
Name	Distribution Area (acres)	Occs	Avg Condition
Potential Conservation Areas	232,948	115	NaN
floodplains (1 elements)			
Name	Distribution Area (acres)	Occs	Avg Condition
Floodplains	185,145	1249	NaN

Element evaluation details

Element	http://aldo/Elements/Monument Creek PCA525338711.html?name=Monument Creek PCA
Name	Monument Creek PCA
Total	1 occ's; 13,141.8 ac.
Selection	1 occ's; 13,141.8 ac.
Selection Average CV	0.5
Selection Minimum CV	0.5
Selection Maximum CV	0.5
Goal	100% of acres
Response	Negative
Viable	1 occ's; 13,141.8 ac.
% Viable	100% occ's; 100% area
Selection Viable	1 occ's; 13,141.8 ac.
Selection %Viable	100% occ's; 100% area
Chart: Viable Occurrences	
Chart: Viable Area	
Compatible	1 occ's; 7,099.9 ac.
% Compatible	100% occ's; 54% area
% of Goal: Compatible	54.03%
Selection Compatible	1 occ's; 7,099.9 ac.
Selection % Compatible	100% occ's; 54% area
Selection % of Goal, Compatible	54.03%
Chart: Compatible Occurrences	
Chart: Compatible Area	

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Map

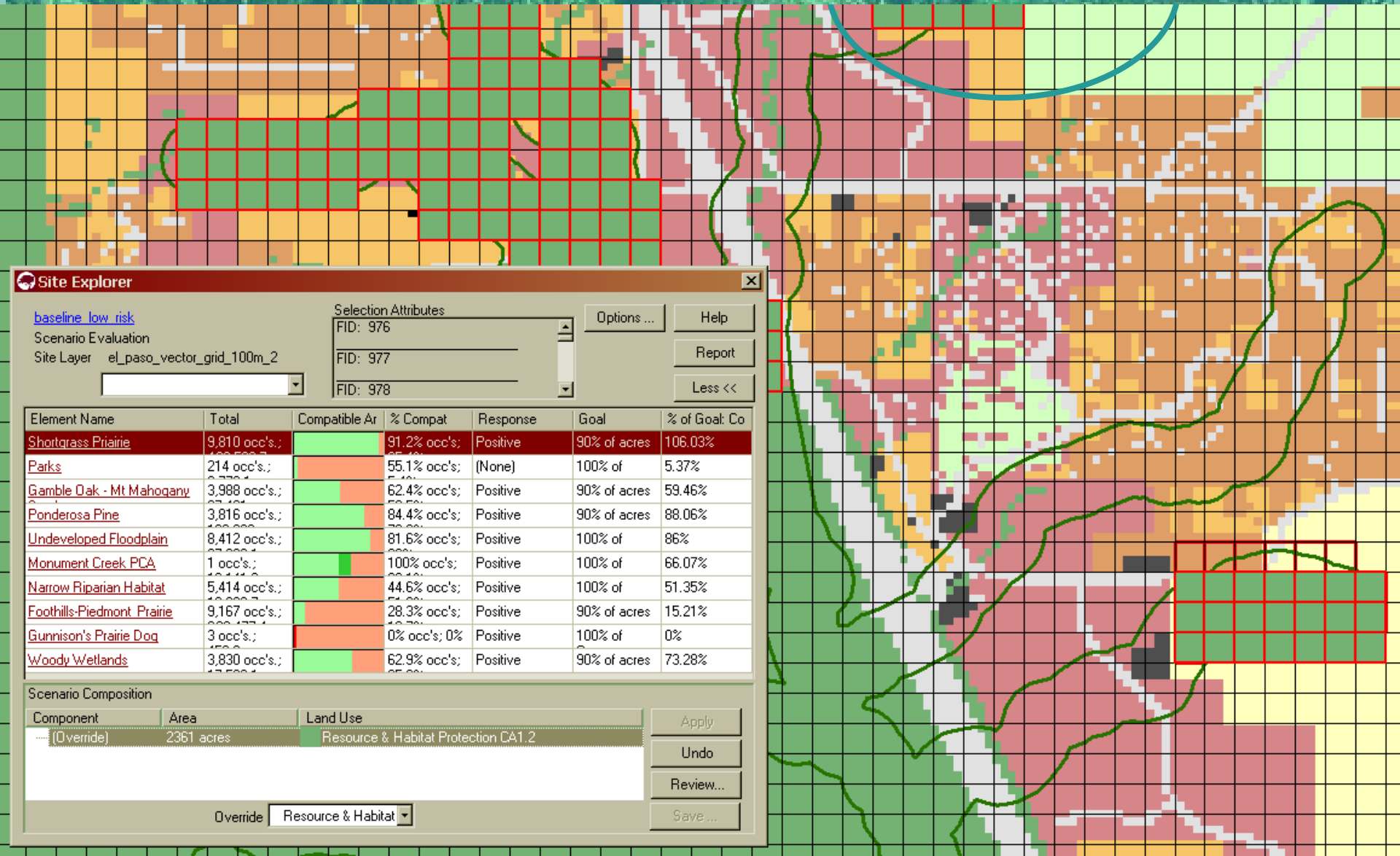


A map showing a river system with various colored zones (green, blue, yellow, pink) and a bridge labeled 'Young Creek Bridge'. The map is overlaid with a semi-transparent blue banner containing the title.

Step 5: Establish & Prioritize Ecological Actions

- Purpose:
 - Develop and agree on a Regional Mitigation Strategy based on preferred alternative.
- Outcome:
 - Prioritized mitigation areas.
 - Quantitative and qualitative valuation of mitigation areas.
 - Documented goals for each mitigation site, mitigation methods and lead agency.

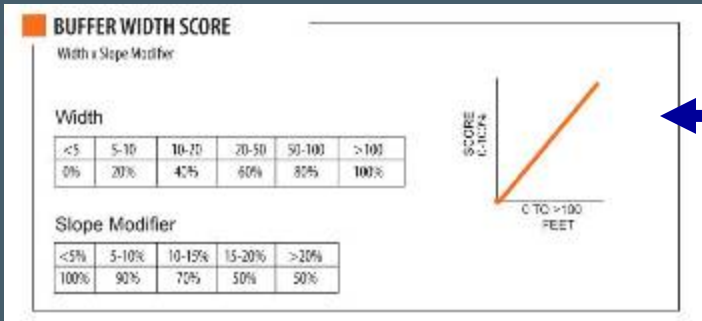
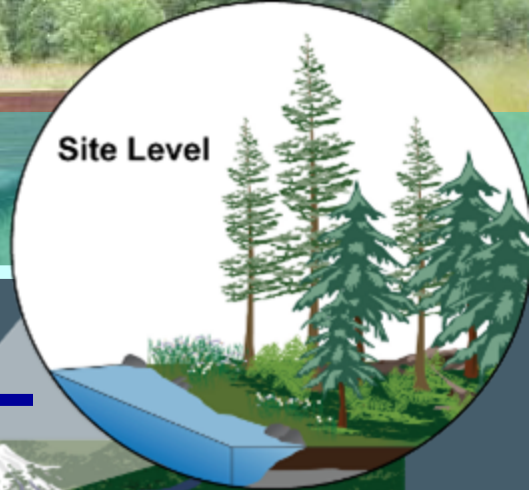
Step 5: Establish & Prioritize Ecological Actions



Step 6: Develop Crediting Strategy

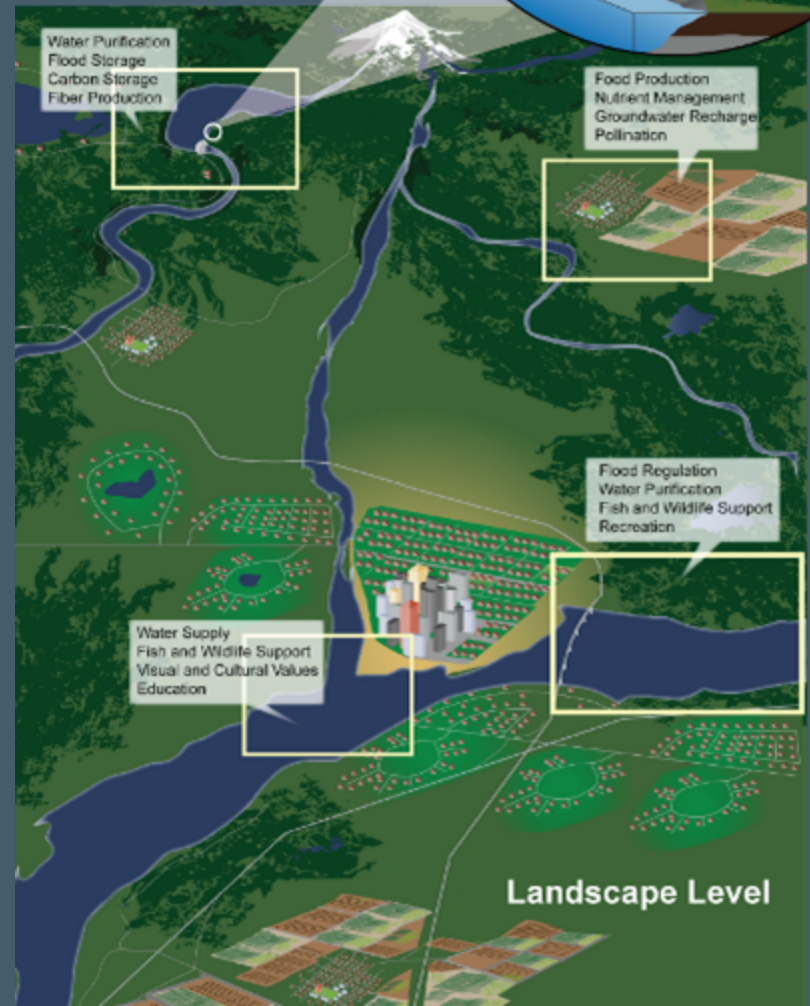
- Purpose:
 - Integrate mitigation sequence at site level: avoidance, minimization, compensation.
 - Development of a crediting system to accelerate implementation and improve the results of mitigation.
 - Support implementation tools like conservation/mitigation banks, programmatic permitting, and advance mitigation.
- Outcomes:
 - Agreement on rules for field measurement of ecological functions.
 - Agreement on approved mitigation/conservation banking.
 - Outcome-based performance standards using credit system.

Landscape to Site



Crediting must:

- Be enforceable
- Link to REF
- Be easily measured





Step 7: Develop Agreements

- Purpose:
 - Develop MOU's, agreements, programmatic permits or biological opinions for transportation projects.
- Outcomes:
 - Agreement on resource management.
 - Programmatic permits and biological opinions including outcome based performance standards
 - Implementation guidance
 - Monitoring strategies
 - Adaptive management plans

A topographic map showing a river valley. A blue line represents the river, flowing from the top left towards the bottom right. A bridge is marked with a red dot and a label 'Young Creek Bridge'. The surrounding terrain is color-coded in shades of green, yellow, and brown, indicating elevation. A dashed black line and a solid yellow line are also visible on the map.

Step 8: Implement Agreements

- Purpose:

- Assure transportation project design, construction and operation and mitigation actions are implemented in accordance with negotiated agreements.

- Outcomes:

- Accurate recordkeeping and tracking of all commitments by transportation agency.
- Effective monitoring and adaptive management.
- Feedback of information from construction and operation into REF.



Step 9: Monitoring and Adaptive Management

- Purpose:
 - Assure continued updating of REF and modification of transportation facility operation and mitigation project implementation in response to new information.
- Outcomes:
 - Methods for assuring monitoring information informs revisions to the REF.
 - Adjustments in on-going mitigation project implementation and transportation facility operation as needed in light of new information.

An aerial photograph of a river system with various colored overlays. A blue line represents the river, and a red line indicates a bridge. A label 'Young Creek Bridge' is positioned near the bridge. The surrounding land is colored in shades of green, yellow, and brown, likely representing different land use or vegetation types. A dashed black line and a solid yellow line are also visible on the map.

Initial Pilot Methodology

- Testing occurring under the C06B project in Colorado, Michigan and Oregon.
- Cumulative Effects and Resource Modeling being tested on previous capacity projects to discover benefits from methods.
- Ecosystem Crediting tested via case studies and interviews with agency staff – identifying needs and opportunities for various tool applications.

An aerial photograph of a river system with various colored overlays. A blue line represents the river, and a red line indicates a bridge crossing. A label 'Young Creek Bridge' is positioned near the bridge. The surrounding land is colored in shades of green, yellow, and purple, likely representing different land use or conservation zones. A dashed black line and a solid yellow line are also visible on the map.

Initial Pilot Methodology

- Case Study Methodology:
 - Developing REF for study area
 - Analyze REF through development of conservation priorities and targets
 - Compare results of REF analysis against historic decisions made on case study
 - Analyze Mitigation Opportunities (Avoidance, Minimization and Compensation)



C06 Ecological Assessment Products and Objective

■ Products

- Create a **framework** to integrate conservation and transportation planning
- Develop supporting **tools, methods, and case studies**

■ Objectives

- Faster permitting for new highway projects
- Better environmental results

Objectives of the C-21 Pilot Tests

- Test the application of TCAPP with environmental and ecological enhancements from the C06 Projects
- Assess the ecological framework and business cases
- Try the suggested ecological methods to see how well they work in practice
- Test the results for acceptability to state and federal regulatory agencies



General RFP Terms

- We are looking for collaborative partners – DOTs, MPOs, cities or counties, state and federal resource/regulatory agencies
- A public agency should lead the effort and have at least 25% of the effort
- Consultants or universities may be involved and may submit the proposal on behalf of a public agency but the public agency must take the lead on the project.
- We are looking for commitment to really give the ecological approach a good try.

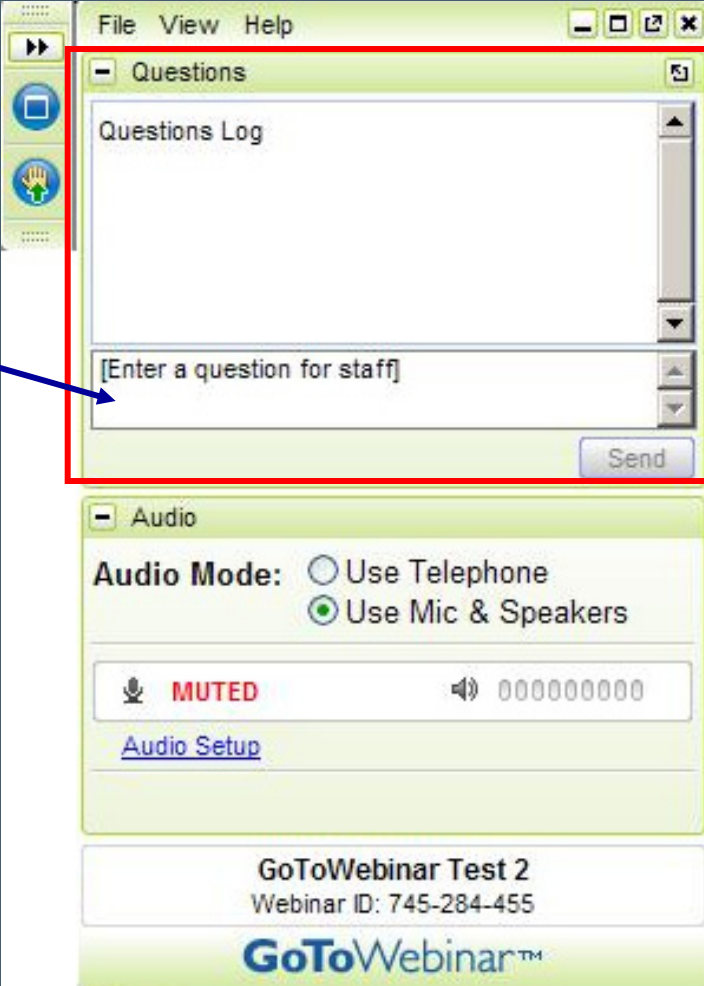
General Terms, Continued

- You may try the ecological methods on a live project or use a back-casting approach or some other approach
- You are encouraged to use the collaboration tools and/ or performance measures from TCAPP in combination with the C06 products
- The selected teams will be asked to come to Washington DC for training and will be asked to attend a closeout meeting
- You will have to write a final report

Questions

Now we will respond to your questions.

- Please type your questions into this box
- We will answer as many of your questions as time allows



The screenshot shows a web browser window with a menu bar (File, View, Help) and a sidebar with navigation icons. The main content area is divided into two sections: 'Questions' and 'Audio'. The 'Questions' section is highlighted with a red border and contains a 'Questions Log' area with a scroll bar and a text input field with the placeholder text '[Enter a question for staff]'. A blue arrow points from the text 'Please type your questions into this box' to this input field. Below the input field is a 'Send' button. The 'Audio' section contains 'Audio Mode' options: 'Use Telephone' (unselected) and 'Use Mic & Speakers' (selected). Below this is a 'MUTED' status indicator with a microphone icon and a volume level indicator showing '000000000'. A link for 'Audio Setup' is also present. At the bottom of the window, the text 'GoToWebinar Test 2' and 'Webinar ID: 745-284-455' is displayed, along with the 'GoToWebinar' logo.

A photograph of two dogs, possibly huskies, looking at each other. The image is partially obscured by a teal gradient overlay.

Thank You

Thank you for joining the webinar.

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