Innovative Landscape-Scale Planning by the Texas Department of Transportation and the Maryland State Highway Administration

Texas Ecological Assessment Protocol (TEAP)

The TEAP serves as a general screening tool allowing environmental professionals to rapidly assess possible environmental impacts from large scale projects.



Composite Layer

Diversity, Sustainability, and Rarity combine into a composite map that shows where ecologically important areas occur in Texas. The top 1% highly ecologically important areas in Texas are highlighted in red.





An innovative tool that assists with the review of Environmental **Assessments and Environmental Impact Statements**

What It Is

NEPAssist is a GIS application that automates and Web-enables the collection and coordination of information inherent in the environmental review process mandated by the National Environmental Policy Act (NEPA).

What It Does

NEPAssist provides immediate screening of environmental assessment indicators in accordance with regional decision rules for a user-defined area of interest. These features contribute to a streamlined review process that potentially raises important environmental issues at the earliest stages of project development.

Special Features:

Users can digitize features directly from Web-based digital aerial photography

Decision rules based on implementation of policy can be automated and Web-enabled

Dedicated to sharing high-payoff, market-ready technologies among transportation agencies across the United States, AASHTO's Technology Implementation Group (TIG) promotes technological advancements in transportation, sponsors technology transfer efforts and encourages implementation of those advancements.

TIG chose these data-driven decision support tools as a focus technology because they can accelerate project planning and delivery while protecting the environment, improving project quality and cost effectiveness. Use of the tools can also build multi-agency partnerships, offer more transparent decision-making and eliminate redundancy of effort. Used effectively, this technology helps agencies strengthen communities by using sustainable practices and improving quality of life.



GIS Screening Tool (GISST)

- WHAT IT IS sound decisions
- impact or is more vulnerable

WHAT IT DOES

- technical and regulatory data with industry, the public, and other stakeholders
- concern or vulnerability, based on available data sets and expert input
- Works for local or region-wide projects; new criteria can be added as needed
- Uses the following major factors:
- Average Flow, Stream Density, Distance to Water, and Aquifer Geology
- **Percent Economically stressed**
- 5 Toxicity Factors related to the EPA's Toxic Release Inventory

HOW IT WORKS



1. Choose Project Area (Point, Line, or Polygon)





3. View Scores in Microsoft Access

For more information visit www.aashtotig.org

• An environmental assessment identification and prioritization tool developed to provide a more systematic approach to considering single media and cumulative impacts in making environmentally

• A prioritization tool in which given several options, determines which one has the least potential

• Relays the potential importance of single and cumulative effects and to facilitate communication of

• The scoring structure consists of criteria, using 1 as low concern or vulnerability and 5 as high

• Saves time in an environmental review (traditional EIS=62 months, using GISST=26 months)

• 15 Hydrology-Related Factors such as Surface Water Use, Rainfall, Unified Watershed Assessment,

• 3 Air Quality Factors: EPA regulated facilities, Road density, and Nonattainment areas

• 14 Socio-Economic Factors such as Population density, Age Distribution, Percent Unemployed,

• 5 Land Cover Factors such as Percent Wildlife Habitat, Agricultural Lands, Wetlands, and Land Use







SPATIAL RESULTS

There is a high percentage nearby that r



There is a low ture lands for the for NEPA purposes



here is a high density of wetlanc in the project c There is a high thesis, etc



Cumulative scores for the project area based on the 15 major factors. **Proposed project** area should b reconsidered according to gri





for restoration.



national, state, regional, and local scales encouraging land use planning and practices that are good for nature and people.