



TDOT 25-YEAR LONG-RANGE TRANSPORTATION POLICY PLAN



POTENTIAL ENVIRONMENTAL MITIGATION STRATEGIES

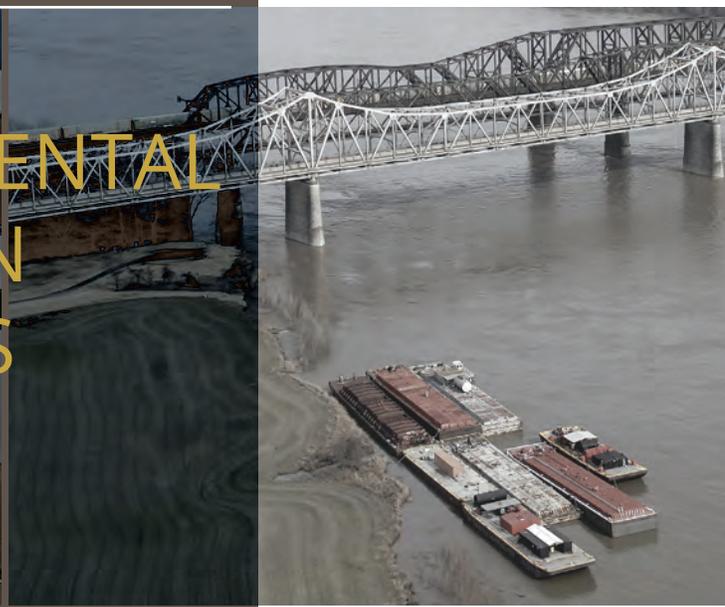
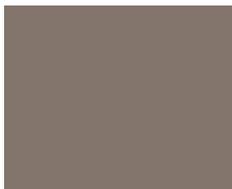
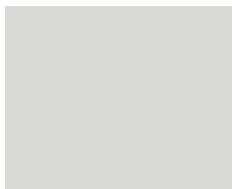


table of contents

	section 1 introduction.....4
	section 2 tdot's existing mitigation strategies.....5
	section 3 tdot's long-range transportation plan.....6
	section 4 potential environmental mitigation strategies....12
	section 5 conclusion.....15
	appendix16

List of Tables

Table 1 Potential Environmental Mitigation Strategies and Activities.....	13
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List of Figures

Figure 1 Environmental Impact Analysis.....	10
Figure 2 Interstate Congestion Comparison, 2010 to 2040.....	11

1.0 INTRODUCTION

Tennessee's natural, cultural, and historical resources provide the backbone for our state's economy, quality-of-life, and cultural heritage. While transportation investments enhance Tennesseans' lives, they also bear a cost. Impacts to the environment waged by transportation systems generally include water quality, soil quality, biodiversity, air quality, climate change, noise, and land changes. The loss of natural capital impacts the quality of our natural and built environment, the health of our communities, and the sustainability of economic growth.

1.1 TRANSPORTATION AND ENVIRONMENTAL IMPACTS

The types of environmental impacts from transportation projects fall into three categories: direct, indirect, and cumulative. Direct impacts are those caused by the action and occur at the same time and place of the action, such as a business relocation caused by the need to purchase land to construct a project. Indirect impacts are those caused by the action at a later time or are farther removed in distance, but are still reasonably foreseeable as a result of the action, such as land use changes from induced growth resulting from construction of a new roadway interchange. Finally, cumulative impacts are the incremental impacts of the action when added to other, past, present and reasonably foreseeable future actions, such as individually insignificant changes to a historical community that, in the context of past and planned transportation, housing or telecommunication projects would result in the significant removal of the historic community.

State departments of transportation (DOTs) are tasked with finding a balance between transportation investments and environmental impact costs. Guided by Federal legislation, DOTs develop plans, procedures, and strategies to predict and minimize potential environmental impacts both at the project and policy level; the statewide long-range transportation plan is one such mechanism.

1.2 STATEWIDE LONG-RANGE TRANSPORTATION PLAN DEVELOPMENT AND ENVIRONMENTAL IMPACTS

Federal requirements help drive the process by which state DOTs develop their long-range transportation plans. The current federal transportation legislation requires statewide plans to be developed, as appropriate, in consultation with State, Tribal, and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. This consultation includes comparing available State and Tribal conservation plans or maps and inventories of natural and historic resources to the transportation plan. State DOTs also must include a general discussion regarding potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the state's long-range transportation plan. This process also requires consultation with Federal, State, and Tribal¹ land management, wildlife, and regulatory agencies. These plan development provisions are intended to incorporate environmental considerations into the early stages of the transportation planning process in order to ensure inter-agency consultation and collaboration regarding environmental stewardship strategies, avoid adverse impacts to the environment while reducing project delays, and support informed decision-making through a better understanding of policy implications.

2.0 TDOT'S EXISTING MITIGATION STRATEGIES

The Tennessee Department of Transportation (TDOT) has long considered the environmental impacts of transportation investments on a number of levels. The degree of analysis becomes more detailed as policies and programs translate into projects (i.e. from the planning stage to project-level environmental documentation). Federal legislation, most notably the National Environmental Policy Act (NEPA), heavily guides the actions of state DOTs as it relates to analyzing and documenting environmental impacts.

NEPA was enacted to promote prevention or elimination of damage to the environment and is the umbrella process for meeting various Federal compliance requirements. Agencies are required to use the NEPA process to identify and assess reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions. State DOTs incorporate these requirements into both policy and project levels using the following ordered mitigation strategy set forth by NEPA:

- Avoid impacts – The first strategic step in the environmental process is to avoid negative impacts altogether
- Minimize impacts – If impacts cannot be avoided, they should be minimized by limiting the degree or magnitude of the proposed activity or project
- Rectify impacts – Repair, rehabilitate, or restore the impacted resource
- Reduce or eliminate impacts – Preservation and maintenance operations during the life of the proposed activity or project should seek to reduce or eliminate environmental impacts over time
- Compensate for impacts – A substitute or replacement resource or environmental function of equivalent or greater value could be implemented

These mitigation strategies involve understanding the affected resource or environment and assessing transportation effects throughout policy and project development as effective mitigation begins at the NEPA process's inception, not the conclusion. TDOT has established a number of policies, strategies, procedures, and programs dedicated towards meeting environmental compliance, most notably the Tennessee Environmental Streamlining Agreement (TESA); however, this document focuses upon the possible mitigation strategies and activities as they relate to impacts of the TDOT's 25-Year Policy Plan versus detailing TDOT's TESA process, sustainability initiatives, and guidelines for meeting environmental justice concerns and Title VI of 1964 Civil Rights Act.

3.0 TDOT'S 25-YEAR POLICY PLAN

In 2013, TDOT embarked on the creation of a new 25-Year Long-Range Transportation Plan. It was envisioned that this plan would connect the old with the new by retaining and aligning with the principles that the Department had previously outlined in PlanGo (2005) as well as looking to the current and future implications of federal transportation legislation. In response to federal transportation planning requirement updates, TDOT passed a minor amendment to PlanGo in 2007 which provided supplementary information demonstrating how the Plan responded to possible environmental impacts (including potential mitigation strategies), ensured consistency between the statewide plan and other adopted growth management and development plans, and addressed the incorporation of security into the transportation planning process. This companion document to TDOT's current 25-Year Long-Range Transportation Plan provides similar supplementary information regarding environmental impacts and consistency between adopted agency plans.

3.1 NATIONAL GOALS

MAP-21 created a streamlined, performance-based, multimodal program to address the challenges of the transportation system. Section 1203 of the legislation identified the national transportation goals to focus the Federal-aid Highway Program. These goals are to be largely supported through the statewide and metropolitan planning processes, which includes environmental sustainability. The national goals are as follows:

- Safety – to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State owned public roads and roads on tribal lands.
- Infrastructure condition – to maintain the highway infrastructure asset system in a state of good repair.
- Congestion reduction – to achieve a significant reduction in congestion on the National Highway System (NHS).
- System reliability – to improve the efficiency of the surface transportation system.
- Freight movement and economic vitality – to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- Environmental sustainability – to enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Reduced project delivery delays – to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

3.2 GUIDING PRINCIPLES

In order to accomplish its vision of serving the public by providing the best multimodal transportation system in the nation, TDOT adopted seven Guiding Principles in the process of developing PlanGo. After minor revisions, the following principles, described below, were carried forward to align with the MAP-21 national planning goals described above and guide the overall direction of this planning effort.

- Preserve and Manage the Existing System – Balance maintenance and preservation needs with critical capacity enhancements and operations. Optimize system capacity and safety through cost effective management and new technologies.
- Support the State’s Economy – Invest in transportation infrastructure that advances quality economic development and redevelopment, economic competitiveness, tourism, and increased access to people, places, goods and services within and through the State.
- Maximize Safety and Security – Reduce injuries and fatalities in all modes of transportation; minimize construction-related safety incidents; improve disaster and extreme weather preparedness and incident response.
- Build Partnerships for Sustainable and Livable Communities – Provide early and ongoing opportunities for broad public input on plans and programs; work closely with local public and private planning efforts; proactively coordinate land use and transportation planning to optimize the efficiency and long term viability of the transportation system.
- Protect Natural, Cultural, and Environmental Resources – Responsibly plan and manage the transportation system to maintain the integrity of communities, historical sites and the natural environment, minimize and mitigate impacts of transportation projects, and develop a transportation network that improves congestion and addresses air quality issues.
- Emphasize Financial Responsibility – Provide accountability; maximize Tennessee’s share of federal transportation funding; develop alternative funding strategies; select projects based on identified regional needs; allow flexibility in local management of projects where feasible.

These Guiding Principles were used as a framework to develop policy and program recommendations for the 25-Year Policy Plan to ensure consistency with the Department’s vision and mission. TDOT is committed to the protection, preservation, and enhancement of the environment throughout the implementation of transportation projects. The Department continues to work to bridge the gap between planning and the environment, not only to meet the intent of federal transportation legislation, but to protect and enhance quality-of-life in Tennessee’s communities.

3.3 POLICY PAPER THEMES

TDOT’s 25-Year Policy Plan is comprised of eight policy papers. These policy papers, as presented below, were used to guide discussion under each of TDOT’s Guiding Principles as well as support the Department’s overall Statewide Long-Range Transportation Planning Program.

- Demographic and Employment Changes & Trends
- Travel Trends & System Performance
- Financial Revenues & Fiscal Outlook
- Safety, Security, & Transportation Resilience
- Freight Logistics & Planning
- Mobility: Public Transportation, TDM, & Non-Motorized Modes
- Accessibility: Land Use Planning, Access Management, Complete Streets, and Health & Environment
- Coordination, Cooperation, & Consultation

Unlike many long-range plans that may be separated by mode, the intent of this 25-Year Policy Plan was to take a more holistic approach to the topical areas for each policy paper. These topics were designed to align with the Guiding Principles as well as areas of emphasis expressed by residents through TDOT's previous Customer Survey. The resultant policy recommendations from each topical area were developed through an extensive TDOT internal review process as well as far-reaching engagement efforts to the public, external agencies, and TDOT's many planning partners.

3.4 FEDERAL, STATE, AND TRIBAL AGENCY INPUT AND PLAN COMPARISON

The Department's Public Involvement Plan (PIP) outlines the procedures for the public and stakeholder engagement process as it relates to the development of the statewide long-range transportation plan. TDOT has formal agreements for consultation with federal land management agencies and other federal and state agencies responsible for planned growth and resource management to coordinate environmental stewardship efforts. Such agencies provide the Department with the latest inventories, maps, and plans regarding natural and cultural resources for consideration during the plan's development. A copy of the draft plan is provided to agencies for a review and comment period of 30-days.

The following resource agencies are identified in the PIP to be included in the consultation process:

- U.S. Army Corps of Engineers (USACE)
 - Nashville District
 - Memphis District
- National Park Service (NPS)
 - Southeast Regional Office
 - Obed Wild and Scenic River
 - Big South Fork National Recreation Area
 - Stones River National Battlefield
 - Great Smoky Mountains National Park
 - Natchez Trace Parkway
- U.S. Fish and Wildlife Service (FWS)
- U.S. Environmental Protection Agency (EPA)
- Tennessee Valley Authority (TVA)
- U.S. Department of Agriculture Forest Service (USFS)
 - Cherokee National Forest
 - Land Between the Lakes
- Tennessee Department of Environment and Conservation (TDEC)
- U.S. Coast Guard (USCG)
- Tennessee Wildlife Resources Agency (TWRA)

- Tennessee State Historic Preservation Office

As previously described, the statewide long-range transportation plan should maintain consistency with inventories, maps, and plans produced by the consulted agencies listed above through a consultation process. This ensures that an integrated planning approach is being undertaken when considering transportation investments. Conflict between goals and priorities that may have arisen during this process are used to identify potential future project challenges or delays.

3.4.1 TDOT Deficiency Analysis Tool

The investment portion of TDOT's 25-Year Policy Plan was produced separately from the policy document as a 10-Year Strategic Investment Plan and yielded an important tool for the environmental analysis of the long-range plan document. A deficiency analysis tool was developed by TDOT that used a data-driven process to support the programmatic allocations of the Strategic Investment Plan. Simply put, the deficiency analysis tool breaks the state's network functionally-classified as collectors and above into thousands of roadway segments defined by physical termini and then attributes various data to them based on their spatial location. Once all of the data is attributed to the network, segments can be examined for their deficiencies relative to all other segments based upon a score that is derived from factors aligning with TDOT's seven Guiding Principles.

The deficiency analysis tool uses data from a combination of sources (i.e. Tennessee's Roadway Information Management System (TRIMS), TDOT's statewide travel demand model, US Census, etc.) with an overall goal of combining information on structural deficiencies, roadway conditions, bicycle and pedestrian conditions, freight infrastructure, economic development, safety issues, and environmental impacts to determine the areas in most need of investment. To define deficiencies within these areas, data was collected from various divisions within the Department as well as from federal land management agencies and other federal and state agencies responsible for planned growth and resource management. This tool allowed sets of data resources to be collected and overlaid in a singular location for purposes of comparing TDOT's long-range plan vision and those of partner agencies. This tool has been invaluable in making environmental resource considerations during the development of TDOT's 25-Year Policy Plan. The following sub-sections describe how data points making up the deficiency analysis tool were used for considering environmental impacts.

3.4.2 Environmental Impact Analysis

This analysis uses a 0.5 mile grid cell system for assigning segments with criteria scores based upon various environmental considerations. Data sources used for this analysis include:

- Tennessee Office of Information Resources (OIR) Parcel
- National Register of Historic Places
- Tennessee Sink Hole Database
- Tennessee Cave Database
- Tennessee Wildlife Resources Agency Endanger Species Database
- TNMAP State Park Map
- TNMAP Airport Map
- TNMAP Flood Zone Database

- Land Trust of Tennessee

Assigned grid cell scores were weighted based upon the presence of environmental challenges and conflicts. Environmental challenges included impacts to important wildlife or habitat resources identified by TWRA, the presence of an archaeological or historical site(s), if more than 50% of the grid cell area has been identified as a “green belt”, which represents State-recognized land areas of farm, forest, and open space, the grid cell is located within a floodplain or special flood hazard area, and finally, if the grid cell included a park, forest, or undeveloped area. *Environmental conflicts* included the presence of geologic hazards (i.e. sink holes or caves) or lands that have a special designation, including airports, landmarks, and recreation areas. Combining these weighted scores allows for an understanding of environmental constraints that exist within the state as they relate to the roadway network and the overall transportation system. The figure below maps the resultant scores statewide for easy identification of environmental challenges and conflicts which are useful for both policy and project-level analyses. As shown below, areas of red and orange indicate a higher number of environmental challenges or conflicts whereas lighter green areas have fewer environmental challenges or conflicts.

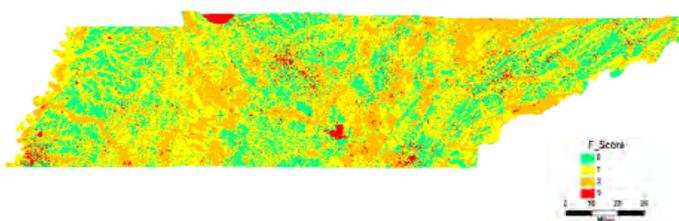


Figure 1 Environmental Impact Analysis

3.4.3 Secondary Impact Analysis

In addition to the environmental impact analysis, several additional analyses generated from the deficiency tool were used for the plan comparison process, as well as identifying potential areas for implementing general environmental mitigation strategies and activities. These included, but are not limited to, mapping freight and transit facilities, bicycle and pedestrian level of service scores, high crash corridors, and congestion/bottlenecks. Components of the transportation system such as these indirectly and cumulatively impact the environment such as the reduction of vehicle miles traveled (VMT) and maximization of traffic flow, which both impact air quality. Understanding high crash corridors provides information relating to the safe transport of hazardous materials, while also assisting in understanding causes of congestion. Secondary components such as these assisted in identifying relational impacts between the transportation system and environmental health as well as potential mitigation strategies and activities. A secondary analysis example is located below in Figure 2 illustrating a comparison of congestion on Tennessee’s interstates in the year 2010 to projected conditions for 2040.



Figure 2 Interstate Congestion Comparison, 2010 to 2040

4.0 POTENTIAL ENVIRONMENTAL MITIGATION STRATEGIES RELATING TO TDOT'S 25-YEAR POLICY PLAN

The policies outlined in the 25-Year Policy Plan have direct, indirect, and cumulative impacts upon the environment. These impacts in turn affect Tennessee's economy and residents' quality-of-life. Statewide long-range transportation plans are to include a discussion of potential environmental mitigation strategies and possible areas for carrying out these strategies required by federal transportation legislation. This approach seeks to balance impacts the transportation system has on the human and natural environment with the public's need for safe and efficient transportation.

TDOT will continue to apply the mitigation strategy hierarchy outlined by NEPA: avoid, minimize, repair or restore, reduce over time, and compensate. These are generally consolidated by transportation professionals into 3 simple steps: avoidance, minimization, and mitigation. This general approach is applicable to both policy and project levels.

Identifying potential environmental impacts and possible mitigation strategies allows for greater predictability in transportation project timelines and generally results in better environmental outcomes. The table below presents a list of mitigation strategies and activity options for various resource categories. These resources are presumed to have the greatest potential to restore and maintain environmental functions that may be impacted or disrupted by transportation investments. Strategies and activities were identified based upon possible implications of the policies recommended in the 25-Year Policy Plan using information gathered during the agency consultation process and analyses yielded by TDOT's new deficiency analysis tool. Often, mitigation strategies are used for natural resources (such as wetlands or wildlife); however, for purposes of this discussion, the concept is applied to other resources, which are also impacted by the transportation system. While the implementation of many of these strategies may be beyond TDOT's sole control, they are appropriate means of mitigating the impacts of transportation on the environment and may necessitate partnerships and/or agreements between TDOT and other agencies in the future.

Target Resources for Mitigation	Mitigation Strategies and Activities	25-Year Policy Plan Recommendation
Parks and Recreation	Avoidance, Minimization, Mitigation; design considerations; replacement of impacted facilities	<ul style="list-style-type: none"> • TDOT's efforts to provide local and regional planning partners with the latest planning data and tools will assist entities in avoiding existing and proposed park and recreation resources • Changes to the State Industrial Access (SIA) program would allow for more in-depth analyses of transportation investment impacts and their compatibility with nearby land uses and resources • TDOT's efforts to identify existing programs that can be used to promote greater public health considerations in transportation provides opportunities for aiding in minimizing and mitigating impacts to parks and recreation resources
Water Quality and Hydrology	Avoidance, Minimization, Mitigation; Maintain meanders in streams; minimize concrete channelization of streams; reduce use of riprap on river banks opting instead for natural vegetation; wetland mitigation banking; implementation of green infrastructure; bridge sensitive areas; improve stormwater management; compensation (could include preservation, creation, restoration, in lieu fees, riparian buffers); use of reduced-salt or reduced-sand road treatment mixtures in sensitive areas; use of best practices regarding herbicide use	<ul style="list-style-type: none"> • There are a number of goals, objectives, and policies within the 25-Year Policy Plan that address water quality and the health of hydrological cycle functions. These include: <ul style="list-style-type: none"> ◊ Continuing sustainability best practices as it relates to design, construction, maintenance, operations of TDOT transportation infrastructure and building facilities ◊ Continuing to promote and enhance TESA for avoiding and mitigating impacts to water resources ◊ Continuing to make the latest planning datasets and tools available to local and regional agencies and governments, especially those provided by partner resource agencies ◊ Supporting the expansion of transit services and multimodal freight movements, while enhancing the shortline program will assist in reducing NOx emissions, a major contributor to acid rain ◊ Evaluating its training and standard procedures on environmental compliance
Noise	Avoidance, Minimization, Mitigation; Truck restrictions such as the use of engine brakes; noise barriers; construction schedule considerations; speed control; pavement material considerations; roadway design (Context Sensitive Design)	<ul style="list-style-type: none"> • Continuing customer surveys and using findings to track performance will assist the Department in understanding the impacts of transportation infrastructure • Providing staff and technical resources to assist communities and freight partners with freight planning, freight and land use, and impacts of freight will help local and regional governments better balance land use and community goals with transportation needs • Traffic impact analysis requirements will help to minimize noise impacts from the early stages of project planning and development
Air Quality and Climate Change	Minimization, Mitigation, Adaptation; Establishing a low-carbon fuel standard (lcfS); Setting regional targets for per capita GHG Green House Gas (GHG) reductions from passenger vehicles; facility energy code standards; reduce and minimize impacts of exposed soils; minimization of idling, both passenger and commercial vehicles through congestion reduction and on-board technologies for freight transport	<ul style="list-style-type: none"> • There are a number of goals, objectives, and policies within the 25-Year Policy Plan that address air quality, and subsequently climate change. These include: <ul style="list-style-type: none"> ◊ Traffic impact analysis requirements will assist in identifying impacts to traffic levels and subsequent congestion issues ◊ Access management strategies assist in maintaining traffic flow and reducing idle time ◊ Increased communications between TMCs and traffic incident partners resulting in reduced nonrecurring congestion ◊ Continued support for the Multimodal Access Policy and development of a Program will help to reduce the number of vehicle miles traveled ◊ Exploration of emerging technologies (such as Intelligent Transportation Systems (ITS), Transportation Systems Managements & Operations (TSM&O), and Active Transportation Demand Management (ATDM)) will assist in improving traffic flow, reducing congestion, and reducing vehicle miles traveled ◊ Support in planning regional transit services will aid in the reduction of vehicle miles traveled ◊ Studying user based fees may identify a strategy for encouraging users to drive less, therefore impacting local air pollution

Target Resources for Mitigation	Mitigation Strategies and Activities	25-Year Policy Plan Recommendation
Visual and Aesthetics Resources	Avoidance, Minimization, Mitigation; Maintain natural features including landscape contours and vistas; maintain natural stream channel features; vegetation screening; revegetation using a diverse mix of native species; architectural considerations; Context Sensitive Design; light pollution reduction	<ul style="list-style-type: none"> • Continuing customer surveys and using findings to track performance will assist the department in identifying customer priorities • Going beyond a traditional Benefit Cost Analysis will help to quantify the economic benefit of maintaining or enhancing visual or aesthetic appeal • Continuing to promote and enhance TESA will assist in identifying impacts to visual and aesthetic qualities of a project
Wildlife Habitat and Endangered/Threatened Species/Natural Areas	Avoidance, Minimization, Mitigation; reduction of habitat fragmentation; habitat banking; Smart Growth concepts; wildlife fencing; maintenance of vegetation along infrastructure rights-of-way; use of native trees, shrubs, and warm season grasses for stabilization of disturbed areas; maintenance of important wildlife movement corridors, possible provision of wildlife crossings; Memoranda of Agreements for species management	<ul style="list-style-type: none"> • Exploring opportunities that support smart growth will help to reduce loss of habitat • Sharing of planning data and increased communication and coordination, especially between partner resource agencies, will assist in identifying vital wildlife resources, plant and animal species, ecologically important sites, and conservation managed lands
Communities and Neighborhoods/Land Use	Minimization, Mitigation; Context Sensitive Design; transit-oriented development (TOD); Smart Growth concepts; noise abatement; ensuring environmental justice; avoidance, minimization of agricultural lands; construction schedule coordination with farm operators; reimbursements to farm operators for loss of income; traffic calming design considerations	<ul style="list-style-type: none"> • There are a number of goals, objectives, and policies within the 25-Year Policy Plan that address livability and land use implications of transportation systems. These include: <ul style="list-style-type: none"> ◊ Providing technical resources and training to local and regional governments and organizations regarding access management, multimodal access, smart growth concepts, accommodating future transportation demands, freight movements, traffic impact analyses, and the promotion of greater consideration for public health as it relates to transportation ◊ Sharing data and tools will provide communities with best practice strategies and means of analyzing their projected impacts ◊ Increasing efforts to assist city, county, and regional organizations in proactively planning for and accommodating future transportation demands in a manner that is congruent with community livability values and minimizes loss of agricultural lands ◊ Going beyond a traditional Benefit Cost Analysis will help to understand economic impacts of transportation investments, which includes quality-of-life characteristics
Historic and Archaeological Resources	Avoidance, Minimization, Mitigation: Design considerations, design exceptions, and variances that avoid or minimize impacts to historic properties should be considered first. If avoidance or minimization isn't possible mitigation measures should be considered in cooperation with the appropriate resource agencies and depend on the type of resource being impacted.	<ul style="list-style-type: none"> • Increased coordination and consultation with local and regional organizations relative to land use and transportation will help to identify important local historical and cultural resources • Coordination and consultation with partner resource agencies will assist in identifying and understanding the importance of national and state historical and cultural resources

5.0 CONCLUSION

This compendium document to TDOT's 25-Year Long-Range Transportation Policy Plan was assembled to demonstrate the Department's efforts in balancing transportation decision-making with potential environmental costs. TDOT remains committed to meeting the public's need for safe and efficient transportation while avoiding, minimizing, or mitigating environmental impacts. The conceptual mitigation strategies and activities identified in this document are intended to continue to guide TDOT's long-range, environmentally-conscious efforts. Coordination and consultation with various federal, state, and local agencies will remain an important component to these efforts as a collaborative and multidisciplinary approach is necessary for adequately balancing increasing needs of growth and expansion with the fixed amount of environmental resources and services provided by ecological systems.

APPENDIX I

The following layers were used in the development of the deficiency analysis tool.

Resource	Layer	Source
Undeveloped/ Natural Areas	Gisteam.TDEC_Natrl_Area	TDEC
Parks	TNMAP_data_library.dbo.teleatlas_ dynamap/parks-teleatlas	TNMap (TN Office for Information Resources)
Forests	TNMAP_data_library.dbo.State_ Forest_Boundaries_2013_tda	TNMap (TN Office for Information Resources)
Historic Places	NRIS_Cr_Standards_Public.Gdb	National Register Information System (NRIS)
Land Trust Protected Areas	The Land Trust For TN - LTTN_ Protected_Properties.Zip	The Land Trust for Tennessee
Wildlife Habitat	TWRA (GIS Group) Aquatic_Priority_ Habitat.ShpSubterranean_T1_ Priority_Habitat.ShpTerrestrial_T1_ Priority_Habitat.Shp	TWRA
Floodplain/Flood Control Areas	TNMAP_Data_Library.Dbo.Flood_ Hazard_Areas_Dfirm	TNMap (TN Office for Information Resources)
Special Designation Areas	TNMAP_Data_Library.Dbo. Teleatlas_DynamapRecreational Areas_Teleatlas Airports_Teleatlas Large_Area_Landmarks_Teleatlas	TNMap (TN Office for Information Resources)
Farmland	TNMAP_data_library.dbo.ecd_2010_ landuse TNMAP_data_library.dbo.statewide_ parcels davidson_classification.shp (Davidson County Division of Assessment)	TNMap (TN Office for Information Resources)
Greenbelt	TNMAP_Data_Library.Dbo. Ecd_2010_Landuse TNMAP_Data_Library.Dbo. Statewide_Parcels Davidson_Classification.Shp (Davidson County Division Of Assessment)	TNMap (TN Office for Information Resources)
Caves	Gisteam.Tn_Caves	TNMap (TN Office for Information Resources)
Deep Sinkhole Point Features	Tnsinks.Gpx - Deep Sinkhole Data	TN Landforms Website
Number of Sinkholes	Tnsinksq.Zip - All Sinkholes	TN Landforms Website

APPENDIX II

Federally-Recognized Tribal Organizations and Locations

Tribal Organizations	Location
Absentee Shawnee Tribe Of Oklahoma	Shawnee, OK
Cherokee Nation	Tahlequah, OK
Chickasaw Nation	Ada, OK
Choctaw Nation Of Oklahoma	Durant, OK
Eastern Band Of Cherokee Indians	Bryson City, NC
Eastern Shawnee Tribe Of Oklahoma	Wyandotte, OK
Kialegee Tribal Town	Wetumka, OK
Muscogee (Creek) Nation	Okmulgee, OK
Poarch Band Of Creek Indians	Atmore, AL
Quapaw Tribe Of Oklahoma	Quapaw, OK
Shawnee Tribe	Miami, OK
Thlopthlocco Tribal Town	Weleetka, OK
United Keetoowah Band Of Cherokee Indians In Oklahoma	Tahlequah, OK

APPENDIX III

Resource Agencies and Locations

Resource Agency	Location
National Park Service - Big South Fork National Recreation Area	Oneida, TN
National Park Service - Great Smoky Mountains National Park	Gatlinburg, TN
National Park Service - Natchez Trace Parkway	Tupelo, MS
National Park Service - Obed Wild and Scenic River	Wartburg, TN
National Park Service - Southeast Regional Office	Atlanta, GA
National Park Service - Stones River National Battlefield	Murfreesboro, TN
Tennessee Dept. of Environment & Conservation	Nashville, TN
Tennessee State Historic Preservation Office TN Historical Commission, State Historic Preservation Office	Nashville, TN
Tennessee Valley Authority	Knoxville, TN
Tennessee Wildlife Resources Agency	Nashville, TN
US Army Corps of Engineers - Memphis District	Memphis, TN
US Army Corps of Engineers - Nashville District	Nashville, TN
US Coast Guard - Marine Safety Unit	Paducah, KY
US Environmental Protection Agency - Region 4	Atlanta, GA
US Fish and Wildlife Service - Tennessee Field Office	Cookeville, TN
USDA Forest Service - Cherokee National Forest	Cleveland, TN
USDA Forest Service - Land Between the Lakes	Golden Pond, KY
USDA Forest Service - Region 8 (Southern Region)	Atlanta, GA