Transportation Process Alternatives for Tennessee

Removing Barriers to Smarter Transportation Investments

Final Report
August 20, 2012

TDOT

Smart Growth America
Making Neighborhoods Great Together

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
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JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

August 20, 2012

Dear Fellow Tennesseans:

It is critical that our state continues to provide better services and infrastructure to our citizens and businesses, and more importantly in a financially responsible manner. I also recognize that the services provided by our transportation system are absolutely critical to sustaining and growing our state's economy. It is therefore essential that all of us plan, build and operate our transportation system in a manner that balances the needs of rural and urban areas, businesses and communities, and preserves our way of life.

While we are all concerned about maintaining the current infrastructure at an acceptable level, we must also wisely use our limited funding sources to provide a transportation system that is efficient, dependable and safe for all users of the system. TDOT is focused on planning a statewide, multimodal transportation system that enables both rural and urban communities to grow and prosper taking into account business needs, access to jobs, access to freight ports and airports, needs of transit riders, bicyclists, pedestrians, tourism and quality of life.

This report, Transportation Process Alternatives for Tennessee - Removing Barriers to Smarter Transportation Investments, will serve as a guide for our department's programs and activities as we continue to evaluate our transportation needs and priorities with the goals of better stimulating our economy, protecting our environment, and building our communities.

Many groups were involved in this planning effort - from a broad cross-section of statewide and regional community representatives, local and state officials, transportation constituency groups and many others transportation interest groups. The commitment from these groups and their representatives exceeded our expectations and their input has provided critical insight into the transportation issues and needs of our state. To all those who participated in this process, I thank you for your dedication and service to our department and the State of Tennessee.

Sincerely,

John C. Schroer
Commissioner
Tennessee Department of Transportation

JCS:AAO:mtd

Credits

This project was made possible by the following organizations and individuals.

Tennessee Department of Transportation

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Boyd Barker	**Tennessee Department of Agriculture**
Don Brown	**East Tennessee Development District**
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Mike Moyer	**Port of Memphis**
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This report was produced with the generous support of the Rockefeller Foundation.

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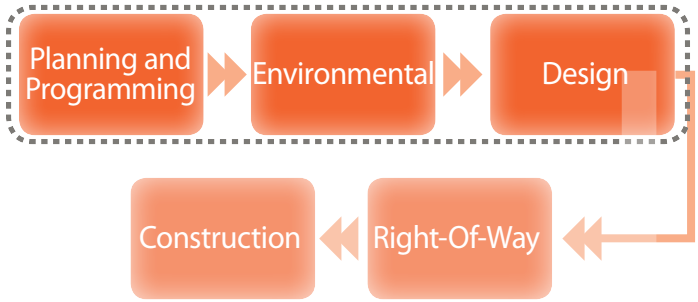
Any errors and all interpretations are the responsibility of Smart Growth America. Please direct questions about this report to Roger Millar, PE, AICP, Vice President, Smart Growth America's Leadership Institute: rmillar@smartgrowthamerica.org, (406) 544-1963.

Executive Summary

The Tennessee Department of Transportation (TDOT) and Smart Growth America partnered to find ways in which TDOT can more effectively use its limited resources to create better outcomes. The working team executed a thorough, but fast-paced process that engaged Department staff and community stakeholders from across the state to help formulate a path to removing barriers to better investment. The following are the major findings:

- TDOT currently has nine times more projects in its work plan than it has funding.
- While TDOT has been diligent about bringing national best practices into the organization, it will be important that these become a systematic part of the way the Department does business going forward.
- Most decisions that affect project outcomes are made in the first three phases of TDOT's project development process.
- TDOT is in the process of developing more rigorous metrics for the measurement of broad project benefits and better prioritization of projects. This process is important and should continue.
- TDOT should audit the existing work program to eliminate projects that are no longer needed and right-size projects that can be improved.
- TDOT should develop joint transportation/land use corridor studies that improve projects and identify beneficiaries who can bring more project dollars to the table. While local governments are solely responsible for local land use planning, it is important for TDOT to coordinate state transportation plans and projects with local land use planning agencies. This will more effectively leverage the taxpayers' investments.
- TDOT should apply its Context Sensitive Solutions (CSS) approaches consistently throughout the planning and design process in order to maximize flexibility and tailor solutions to local needs.
- TDOT should assemble multi-disciplinary project teams that follow a project through development from conception to design. The consistency and knowledge-base created by this approach will lessen the chances that good ideas "fall through the cracks."
- TDOT should make its external communications even more transparent so that any stakeholder or citizen can easily go online, find any capital or maintenance project in the program and understand its basic description, its reason for being prioritized, its current place in the development process, expected completion dates and ways to become engaged in the process.



The first three stages of TDOT's current planning and project development process presents the greatest opportunity to impact the nature and quality of TDOT's capital improvement program.

A Project Team structure will help weave best practices through all project stages.

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Introduction

Rebuilding our economy and creating new jobs is the most important issue of our generation. This paper discusses an approach by which the Tennessee Department of Transportation (TDOT) can efficiently and effectively address transportation issues while expediting job creation and economic development.

Thriving local economies need access to workers, to materials, and to markets. Transportation investment is key to economic recovery and prosperity, yet old ways of doing business often unnecessarily limit a State's investment options. This project aims to create a process within TDOT to enable and encourage flexible, lower-cost ways to increase capacity on the state's transportation system while expediting job creation and economic development in Tennessee.

This project has been guided by a Project Stakeholder Group (PSG) appointed by the Commissioner of the Tennessee Department of Transportation and comprised of representatives of stakeholder organizations statewide, including:

- Cities
- Counties
- Metropolitan Planning Organizations
- Rural Planning Organizations
- Transit agencies
- Transportation construction industry
- Design professionals
- Other transportation interests (airports, ports, railroads, etc.)
- Business interests
- Development interests
- Community interests
- Labor interests
- Others as determined by the Commissioner
- Other state agencies and departments
- Local, State, and National elected officials

The PSG guided the project team; advising on project methodology, reviewing work products, and ultimately making recommendations to the Commissioner. They also represented their constituents and communicated back to their constituents on the progress of the work. Following is the work plan that outlines the process by which the project team, working with the PSG, completed.

Work Plan

1. Defined the Problem

The team assessed the strengths and weaknesses of current approaches to transportation project identification and development.

- Reviewed PlanGo priorities and recommendations.
- Collected and analyzed existing documentation on project identification and development, particularly scoping of projects and limitations on flexible, low-cost solutions.
- Collected and analyzed existing information on funding sources for city, county, state roads, ports, airports, and transit.
- Analyzed current legal and administrative structures.

2. Explored Possible Solutions

Identified and analyzed transportation investment strategies linked to economic development being discussed nationwide and provided context for their applicability to Tennessee.

- Conducted a literature review of the tools and studies, for example, corridor management agreements, that Tennessee has today and what tools exist elsewhere.
- Conducted telephone interviews with DOT planning and project development staff around the country identified as innovators by the literature review.
- Included alternatives for determining funding allocations to different geographies and different system elements (state highway system, local street system, transit, alternative mode, and land use).
- Included strategies that could maximize return on investment and possibly decrease the need for funding (through better preservation of right-of-way, improved capital budgeting at the local level, and assessment of impact or in-lieu fees).
- Presented strengths and weaknesses assessment and alternative strategies to PSG (Meeting 1).

- Presented data and preliminary findings.
- Led discussion of alternatives.

3. Identified Solutions Appropriate for Tennessee

- Developed a matrix of alternatives for transportation investment that maximizes job creation and economic development, including an assessment of: cost saving potential; applicability to capital improvements, maintenance and/or operations; stability and sustainability; equity; and ease of implementation.
- Presented matrix to PSG (Meeting 2).
  - Presented data and findings and led discussion of promising alternatives.
  - Refined a short list of recommended alternatives in response to PSG input.
  - Presented short list to PSG (Meeting 3) for review.
  - Developed draft actions needed to implement recommendations.
  - Reviewed draft with PSG (Meeting 3).
  - Worked with PSG to develop alternative strategies for achieving TDOT objectives at lower costs and expedited schedules.

Demonstration Project Deliverable

This memorandum summarizes:

- Existing structures for transportation funding and project identification/development,
- Reviews alternative strategies available, and
- Documents alternative solutions appropriate for Tennessee.

Technical support for this demonstration project was provided by Smart Growth America through a grant from the Rockefeller Foundation. Smart Growth America is the only national organization dedicated to researching, advocating for and leading coalitions to bring smart growth practices to more communities nationwide. From providing more sidewalks to ensuring more homes are built near public transportation or that productive farms remain a part of our communities, smart growth helps make sure people across the nation can live in great neighborhoods. For additional information visit www.smartgrowthamerica.org.

Existing Processes and Challenges

TDOT has a staff that is dedicated, thorough and well-versed on the best practices from around the country in most areas that affect project delivery. For example, the Department has developed (and placed online) a multi-module training program on Context Sensitive Solutions (CSS). The Department has also developed PlanGo, a long range transportation plan that proactively considers the State's current and future challenges and identifies goals that will lead to transportation solutions for Tennessee's diverse population and to chart a course for the future.

These initiatives, however, have sometimes fallen prey to the difficulties inherent in running a large organization. Good ideas, even when present, can be difficult to apply uniformly. Such can be the case at TDOT. The Department is striving to make the best use of limited resources, always looking to optimize its transportation planning and project development processes and metrics. The Department's current planning and project development process is shown below. The first three stages of project development present the greatest opportunity to impact the quality of TDOT's capital improvement program.

TDOT's Project Development Process

Planning and Programming

It is at this early stage when municipalities, MPOs or RPOs may request that projects be studied and assessed by TDOT for consideration for inclusion in the State's Transportation Improvement Program (STIP). The initial studies conducted by TDOT may include assessments of safety, congestion, and economic development potential. For promising projects, that may be followed by studies of feasibility, location or other technical elements.

Environmental

Most capital projects overseen by TDOT must go through some level of State or Federal environmental analysis. This assessment is intended to measure the impact that a project may have on the natural and human environments in order to assist decision makers.

Design

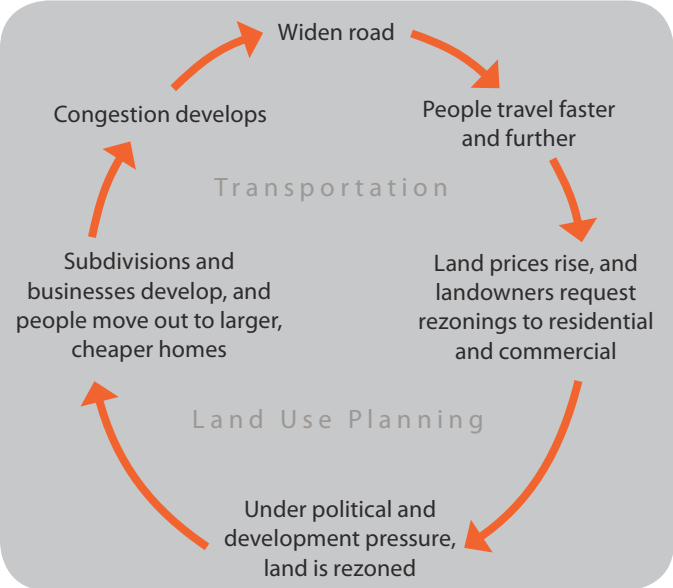
Once a project clears the Environmental phase, it moves to preliminary and final design. Decisions about number and width of lanes, vehicle speeds, sidewalks, bike lanes and other elements are made at this stage of the process.

TDOT's Challenges

1. Cost Sustainability

TDOT cannot always solve congestion by building more, wider and faster state roadways. There will never be enough financial resources to supply the endless demand for capacity. In fact, TDOT currently has nine times more projects in its project list then available funding will cover.

Further, TDOT realizes that the "wider and faster" approach to road construction cannot ultimately solve the problem. Sprawling land uses are creating congestion faster than roadway capacity can be increased. The illustration on the right depicts this never-ending cycle of transportation and land use changes. TDOT intends to work to manage capacity by better integrating land use and transportation planning. The desire to go "through" a place must be balanced with the desire to go "to" a place. Roadways have many purposes, including providing local and regional mobility, offering access to homes and businesses, and supporting economic growth.



Transportation and Land Use Cycle

2. Changing Customer Preference

TDOT understands that its streets, roadways, and highways should respect the character of the community, and its current and planned land uses. The design of a roadway should change as it transitions from rural to suburban to urban areas. Changes in roadway widths, the presence or absence of parking lanes, and other factors can help accommodate the needs of specific communities. If appropriately designed, vehicular speeds should also fit local context.

Community context is much more than the physical appearance of buildings and street. At the local level, the context includes the role of the roadway in supporting active community life. The transportation context of the roadway is essential. The design of every roadway must respond to its unique circumstances. While some roadways will continue to value the mobility offered by high-speed roadways that serve motorists drawn from a larger region or heavy freight traffic, other state roadways serve mostly local traffic and can be designed to be more sensitive to the local context. By allowing a narrower roadway, TDOT's approach can also save money.

PSG Comments:

The basic problem is the lack of revenue because the gas tax in Tennessee has not been increased since 1989. In real dollar terms, it is worth roughly half of what it was in 1989. TDOT does a good job on spending what it has.

PSG Comments:

The tourism and hospitality industry is the second largest industry in the state. The ability of tourists to move around the state and around their destination (walking and transit) play a huge role in the industry's success. We need new sources of funding to maintain and grow the transportation system. The Transportation Enhancement (TE) Grant Program and CSS process have been important to tourism.

3. Communication

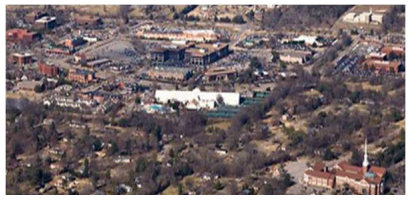
TDOT must allow its customers to better understand the good work that is underway. Clarity with regard to how decisions on project selection, prioritization, and design are made is important to local community partners and citizens.

4. Need for Tailored Solutions

Tennessee is a diverse state. Urban areas such as Nashville and Memphis are very different from rural areas such as Springville and Pinson and the solutions that fit these areas will be different as well. TDOT must have tools and processes that allow for the disparate needs of the state to be met effectively.

Rural

Suburban



Urban

Tennessee's diverse development patterns require that TDOT utilize tools and process that enable the development of tailored context sensitive transportation solutions.

State Routes by Area Type

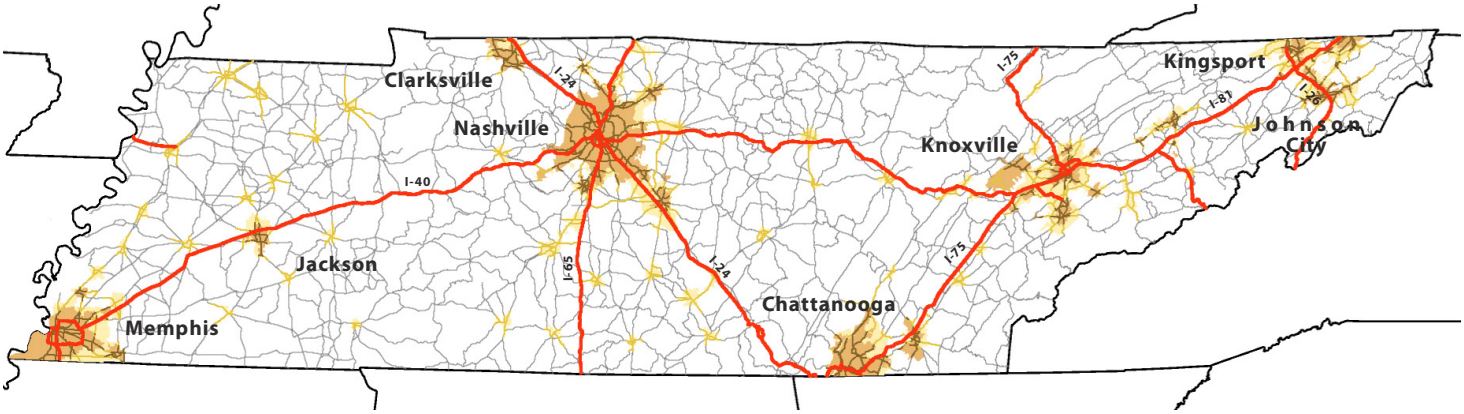
Urban Areas: 1,377 Miles (10.6%)
Suburban Areas: 2,128 Miles (16.4%)
Rural Areas: 9,437 Miles (72.9%)

Statewide Vehicle Miles Traveled

Urban Areas: 31.8M Miles (57.4%)

Rural Areas: 23.7M Miles (42.6%)

Source: TDOT Highway Performance Monitoring System



Best Practices and Alternative Strategies

Around the country, states are dealing with challenges in funding, changing preferences, and tailoring solutions. This phase of the project was about making sure transportation investments achieve multiple goals that advance Tennessee's economic prosperity and quality of life. Since people may disagree about how best to achieve these goals, documenting and communicating the project selection process is critical. Based on discussions with the PSG, literature research, telephone interviews with State DOTs, and the team's own experience, a number of options emerged. Specifically, the following options were presented for consideration:

1. PLANNING AND PROGRAMMING
a. Develop new metrics to measure and prioritize all proposed projects against broad system goals
b. Audit the current project list for opportunities to better achieve system goals
2. ENVIRONMENTAL
a. Establish a system for identifying public and private transportation/land use planning partners
b. Effectively articulate a full range of benefits tied to broad system goals
3. DESIGN
a. Identify new funding partners based on benefits
b. Broadly communicate flexible design standards for context sensitive solutions

These options were presented to the PSG as an initial menu for consideration. The options listed are independent of one another but may leverage the outcome of one or more of the others. They are based on the issues discussed at the first PSG meeting and represent different but potentially effective approaches to identification and prioritization of projects and allocation of funds. One concept that was consistent in the process is that the proposed project's context (urban scale, land use, presence of pedestrians, etc.) should be a primary consideration. The following sections discuss each of these best practice strategies in more detail.

1a. Define Wide-Ranging Measures of Success

Setting measures of success is not unique; Most road design projects measure the success of alternatives in meeting project needs and objectives. In order to create greater gains with limited dollars, DOTs have begun utilizing measures that represent the full spectrum of project needs and objectives, such as transportation for all modes, safety, economic development, community character, and land use. Wide ranging measures are used to assess alternatives against these needs and objectives.

Although broad in outlook, measures of success (MOS) can be simple to calculate, calculable from readily available data (for simple projects) and readily reproducible. It is completely acceptable for MOS to be redundant, measuring different aspects of the same qualities. For example, the "volume-to-capacity ratio" and "queue length" computations as defined in the Highway Capacity Manual are both measures of effectiveness about a single quality (traffic service) but each is useful in its own way.

A business case with a clear statement of goals related to the "ends" of economic prosperity, quality of life, and environmental protection will make project planning and programming better understood. It was suggested in the first meeting that important goals or metrics might include economic impacts, job generation, cost saving potential, applicability to capital improvements/maintenance/operations, sustainability, equity, and ease of implementation.

TDOT should refine metrics based on the Guiding Principles from its 2005 Long Range Transportation Plan as a basis for evaluating projects. Those principles are:

- Preserve and manage the existing transportation system.
- Move a growing, diverse, and active population.
- Support the state's economy.
- Maximize safety and security.
- Build partnerships for livable communities.
- Promote stewardship of the environment.
- Emphasize financial responsibility.

1b. Audit the Current Project List

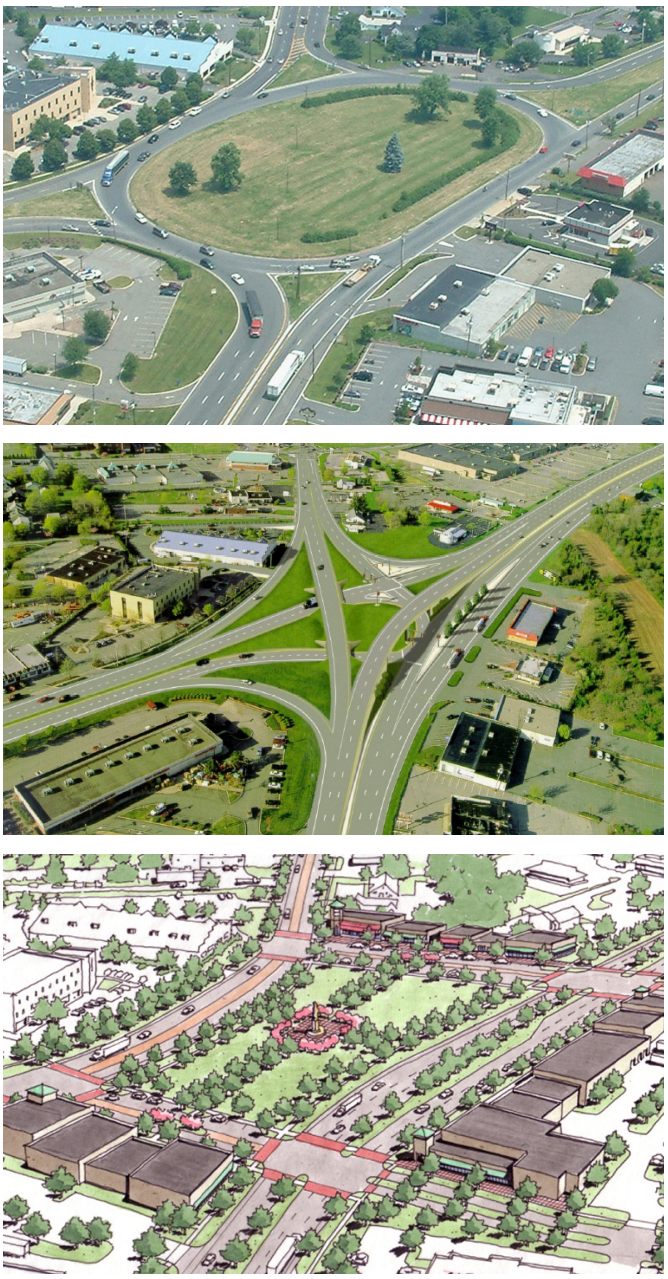
No matter how good a solution is, if it is not affordable, it will not solve the problem. Financial resources are very limited in Tennessee and throughout the country. Construction costs have increased significantly and federal and state funds are not keeping pace with demand. Wise investment in transportation infrastructure requires sensitivity to available funding. Virtually all projects offer a range of options with different costs, corresponding to different levels of value. However, the importance of understanding alternatives based on the value to price ratio is often overlooked.

Frequently, one objective is given as an absolute mandate, which must be met at all costs. The concepts of "return on investment" and "right sizing" recognize the growing importance of evaluating the value to price ratio on proposed alternatives. Performance measures such as cost per existing trip, cost per new trip, and cost per time savings for a representative trip may be used to better understand the return on a proposed investment.

Advancing projects already in the "pipeline" that were justified on outdated criteria may not lead to the most effective investment strategy for Tennessee. TDOT could analyze its long range plans to identify projects that could be "right-sized" to be more cost effective and more responsive to the goals and metrics above. An audit process should:

- Articulate TDOT criteria to help local jurisdictions better understand what project elements may and may not be funded by TDOT given current budget realities.
- Work with local or regional bodies to help identify common project prioritization criteria.
- Develop a program to reframe and broaden the technical criteria that would be considered for projects, link transportation and land use, leverage connections off of TDOT's system, and more fully consider multiple modes of transportation.

States such as New Jersey and Pennsylvania have gone through just such processes as funding became limited and difficult decisions were required.



A previously planned interchange project re-evaluated as a part of New Jersey DOT FIT to reduce cost and increase effectiveness.

2a. Identify New Planning Partners

While the Planning and Programming stage is mostly about the identification of need and proposed solutions, the Environmental stage is where projects often begin to really take shape. Critical decisions are made at this stage that will affect how the project's physical and operational elements will be implemented.

TDOT could develop a formal methodology to coordinate state transportation planning with local land use planning and permitting. Such a methodology should include the expected steps in the process, the role of the various partners and stakeholders, and the anticipated outcomes. Among the outcomes should be the expectation of preservation of capacity, locally-driven land use and right-of-way/connectivity, coordination with state roadways, and a clear understanding of TDOT and local financial and project development responsibilities.

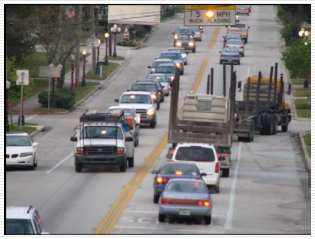
Once the process is developed, TDOT will need to train its partners, project managers and consultants in these methods. For example, Texas DOT has developed a method for Corridor Management Plans that are replicable and can be executed by staff or consultants in conjunction with local land use partners (TDOT is currently finalizing two pilot Corridor Management Agreements). The Ada County Highway District in Idaho undertook a process known as the Transportation Land Use Integration Plan in order to develop a systematic, countywide process for consideration and planning of these systems. A part of this effort involved training modules for agency and consultant project to execute concept studies.

2b. Effectively articulate project benefits tied to broad system goals

Another potential outcome of joint/complementary transportation and land use efforts is the articulation of benefits, which can provide the basis for a financial partnership. If a given project will increase property values (resulting in higher local tax receipts), create a more attractive street (benefiting local businesses) and improve mobility (in furtherance of TDOT's mission), then the basis for a partnership is in place.

City of Newberry/FDOT District 2

SR 26 Long Term Agreement



Elements of MOA

- ☐ Thoroughfare plan and parallel relievers
- ☐ Developer "fair share" contributions
- ☐ Access management
- ☐ Right-of-Way preservation
- ☐ Coordination on transit, mitigation plans
- ☐ Context sensitive solutions

Example of a multi-party memorandum of understanding in Florida.

3a. Identify new funding partners based on benefits

Building on the project benefits identified above, TDOT's dollars might stretch farther if there were a formal opportunity to re-program the project after the environmental phase to pull in new funding partners. As additional partners such as private land developers, transit agencies or local municipalities are identified, TDOT should seek to bring them into the process as financial partners as well. TDOT could work with these partners to develop funding agreements that would tend to generate more money (and potentially more effective projects) into the work program. This is not so different from the practice of having local communities fund right-of-way acquisition or engineering costs on projects of particular local interest—quantifying benefits simply expands and adds rigor to this practice.

This would involve TDOT utilizing the leverage that its investments represent to incentivize other investment partners who may have more flexibility in funding. There is an opportunity to identify flexibility in state and federal funding or seek to "bundle" investments by a variety of parties into a single, integrated project. TDOT is in a position to be a leader on both of these fronts.

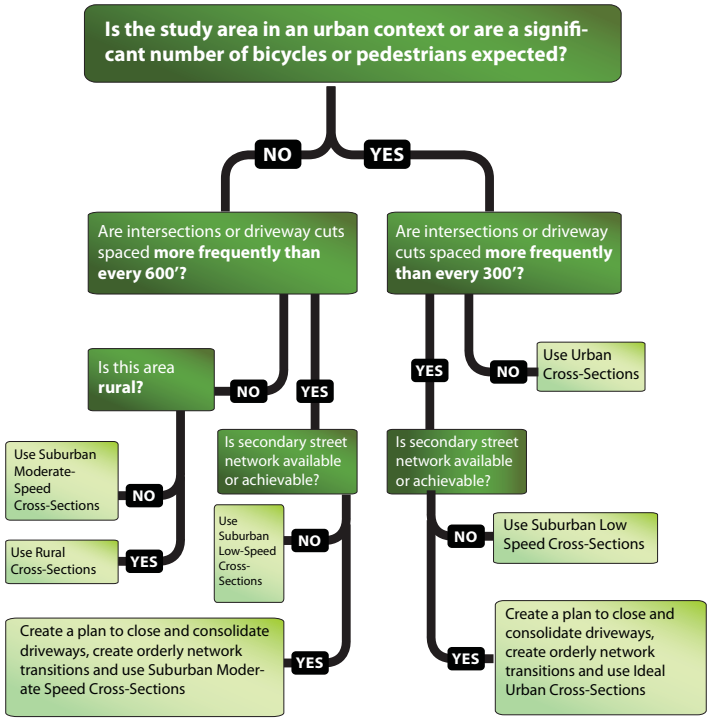
States including Florida, Oregon, Maine, and Minnesota have developed programs that either match public funding more effectively to needs or bring additional funding partners into the process based on benefits received.

3b. Communicate Flexible Design Standards for Context Sensitive Solutions

The purpose of the investment must be defined by project stakeholders from the beginning. Sufficient information must be gathered to understand the problem and its context, issues and opportunities, potential solutions and estimated costs, and draft implementation schedule. What is the transportation problem? How much money is available for this problem? Is the problem related to safety, capacity, or roadway or bridge condition? Is the project intended to provide access for a specific economic development opportunity? Is it consistent with regional and state priorities? What is the role of the roadway within the study area?

TDOT has developed context appropriate design criteria as well as a process for their application. Projects developed for urban areas will have very different design drivers than those developed for rural areas. In urban areas, for example, fatalities are more likely when more vulnerable system users (bicyclists and pedestrians) are mixed with high-speed vehicular traffic. On-street parking, transit vehicles and objects next to the traveled way are also much more common in these urban environments.

In rural areas where bicyclists and pedestrians are less common, the presence of closely spaced driveways along high-speed corridors is the strongest physical indicator of high crash rates.



A decision tree developed in Georgia to point designers to the right set of context-specific guidelines.

These different contexts have different needs that can be effectively addressed in functional design. TDOT should systematically communicate its design flexibility to project stakeholders and develop protocols to incorporate the desires of local government and other partners into the functional design of projects. Given the desire to leverage transportation investment to achieve multiple goals, TDOT should communicate its willingness to accept non-traditional transportation performance standards and criteria if broader state objectives are achieved.

PSG Comments:

A process for building public-private partnerships does not exist, for example, working with Norfolk Southern in East Tennessee.

Response:

Building public-private partnerships is critical. For example, if private property owners along Lamar Avenue in Memphis contributed some of the needed right-of-way (ROW), it could help reduce the $500 million project by upwards of $150 million.

Tailoring Solutions for Tennessee

Following discussions with the PSG about the best practices shared from around the U.S., a group of those best practices were selected as best fits for Tennessee. The following pages describe those recommended solutions and how they apply to TDOT's current processes.

SOLUTION 1: Develop new metrics to measure and prioritize all proposed projects against broad system goals.

Current TDOT Status

TDOT has an adopted set of Guiding Principles from its 2005 Long Range Transportation Plan.

Next Steps

TDOT should establish a set of metrics around each of the Guiding Principles to more thoroughly prioritize projects. Potential metrics that could be applied include those listed in the table below. These principles and metrics should also carry through all stages of project development (such as Needs Assessment and Transportation Planning Reports).

Remaining Challenges

There are resource challenges associated with the collection and analysis of this type of data. While some information likely resides in databases either within TDOT or local government partners, other data will need to be generated and all data should be synthesized via tools such as geographic information systems (GIS). While none of this represents a significant cost relative to the overall construction program, it may involve a commitment of time or skill sets that are currently unavailable.

PRINCIPLE	SUGGESTED METRICS	TOOLS
Preserve and manage the existing transportation system	• **Age and or sufficiency of road or bridge asset** • **Existing and expected levels of traffic congestion** • Surrounding street network and connectivity	• **Database** • **Database or Model** • GIS
Move a growing, diverse, and active population	• Degree of bicycle and pedestrian mode accommodation • Responsiveness to transportation need (income may be proxy)	• Project Design • GIS
Support the state's economy	• **Land value potential** • **Temporary and permanent jobs associated** • **Role in goods movement**	• **GIS** • **Economic Analysis** • **Freight Plan**
Maximize safety and security	• **Crash rates** • Environmental safety elements • Role in hazardous goods movement • Evacuation role	• **Database** • Project Design • GIS • GIS
Build partnerships for livable communities	• Potential to affect community desires • **Walking and biking accessibility** • Access to public open space	• Public Outreach • **GIS** • GIS
Promote stewardship of the environment	• **Improve water quality** • **Improve air quality**	• **GIS** • **Model**
Emphasize financial responsibility	• Life-cycle cost • **Potential for partner funding** • Potential economic return (either dollars or jobs)	• Database and Project Design • **Stakeholder Outreach** • Economic Analysis

Orange = Factor is already being considered by TDOT

SOLUTION 2: Audit the current project list for opportunities to better achieve system goals.

Current TDOT Status

TDOT has begun reviewing its current project backlog to identify those which do not sufficiently meet the State's goals and to modify or remove them from the project list.

Next Steps

If this type of reassessment is beneficial when applied to some projects, a more systematic application of these methods to the overall work program could streamline and clarify TDOT's work and tie projects effectively to its mission. In addition to the elimination of projects with lower benefits, at least two types of project modifications should be considered as well:

A. "Dieting" Projects.

While this measure can take many forms, at its heart it involves finding large reductions in project costs that entail very few reductions in project benefits. For example, two intersection turn lane projects that cost $500,000 may provide 80% of the congestion relief of a $20 million corridor widening that is currently programmed.

B. Increased Partner Equity.

Communities that provide a local contribution of funding reduce the project cost attributable to TDOT and may merit priority over others. Reducing TDOT's cost in this way has the same net effect as the "dieting" approach.

Remaining Challenges

Among the challenges to a comprehensive reworking of the project list to match stated goals would be:

A. Not meeting the expectations of local partners.

While a thorough analysis would give TDOT the ability to effectively communicate the logic behind any deletions or redesigns, local leaders may still be disappointed with project changes.

Road/Extent	*Capacity-Adding Alternative*	*Capacity-Adding Outcome LOS*	*Operations Alternative*	*Operations Outcome LOS*
SR 54 McDonough Road to Clayton County Line	Total Cost: $23,359,000	LOS C	Total Cost: $8,782,000	LOS D-E
SR 85 Price Road to Bernhard Road	Total Cost: $23,812,000	LOS A	Total Cost: $3,204,000	LOS D
SR 85 Bernhard Road to SR 74	Total Cost: $18,642,000	LOS A-B	Total Cost: $6,214,000	LOS B-C
SR 92 Jeff Davis Parkway to Antioch Road	Total Cost: $18,613,120	LOS B-C	Total Cost: $10,293,000	LOS D-E

Comparison of programmed widening projects to intersection projects along one metric, Level of Service (LOS), in Fayette County, GA.

B. Potential repayments of federal dollars already spent.

The unwillingness to send back federal dollars that have already been spent or to "waste" money that has already been spent on design is often an impediment to making these types of decisions. While these moves will require explanation, the goal of aligning the project list with the Department's principles will be compelling.

PSG Comments:

Adequate access for economic development can mean a good 2-lane highway rather than always a 4-lane highway. Spot improvements will often the make the difference, instead of a 4 or 6-lane road.

SOLUTION 3: Establish a system for identifying public and private transportation/land use planning partners.

Current TDOT Status

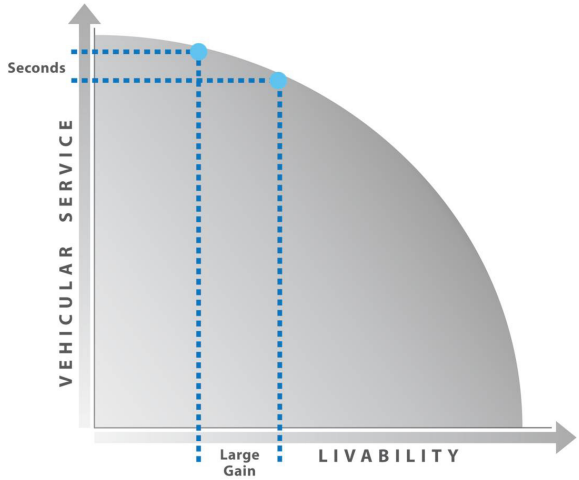
TDOT is establishing an Office of Community Transportation that will be charged with better linking TDOT's projects and designs to local needs and aspirations. Many communities already have groups focused on quality of life and economic competitiveness issues, and through public outreach, can readily become planning partners. This office will be charged with understanding upcoming local development and working to lessen any negative impacts on TDOT's system and finances.

Next Steps

Other states that have successfully undertaken similar processes have been able to do three things systematically:

A. Identify projects that can benefit from a joint transportation/land use study.

"Benefit" has generally been defined as either reducing cost while improving effectiveness or reducing cost substantially while reducing effectiveness minimally. While local governments are solely responsible for local land use planning, it is important for TDOT to coordinate state transportation plans and projects with local land use planning agencies in order to maximize public investments.



Communication of outcomes will require explanation of acceptable tradeoffs.

B. Marshall the resources and technical capability needed to achieve the desired results.

These technical resources are usually some combination of transportation planning, land use or urban design, market economics and stakeholder or public engagement. The skills may reside within the partner agencies or may require retention of consultants.

C. Communicate outcomes of the study.

Effective communication must include accountability for outcomes. Communication of the benefits can include preservation of capacity which results in large scale, long-term cost savings.

Remaining Challenges

Depending on the scale of the issue to be dealt with, these studies may involve a team of three professionals in a one-day workshop setting (costing as little as $3,500) to a fully realized study including traffic modeling and in-depth market economic analysis ($60,000 to $150,000). Decisions about the level of attention and resources should be based on the potential for benefit (particularly cost reduction) to be gained via such a process. In some cases, this cost could be covered by funding currently dedicated to Needs Assessment or Transportation Planning Reports.

A second challenge involves not allowing these processes to become "value engineering" exercises which tend to strip all of the non-automobile focused elements out of a project to reduce cost. Done properly, the transportation/land use studies will draw conclusions across the range of benefits outlined in the 2005 Long Range Transportation Plan.

PSG Comments:

How can communities and TDOT work together to develop corridors?

Response:

TDOT plans to be much more involved with communities in local plans through the new Office of Community Transportation. Also, having specific funds set aside can encourage coordination.

SOLUTION 4: Articulate a full range of benefits and identify new funding partners based on benefits.

Current TDOT Status

TDOT has historically pulled in funding partners on the basis of broad agreements. Local participation in right-of-way (ROW) acquisition or development of engineering plans, for example, is a means of partnering with local beneficiary communities.

Next Steps

To the degree that TDOT's analysis of project metrics or transportation/land use plans identify some of the benefits as opposed to the impacts of a project, costs can be allocated based on those benefits. For example, if a substantial increase in property value is identified as a project driver, the land owners or the local government who will receive increased tax revenue from that change might contribute more to the project cost. If water quality is a potential benefit, a local water/sewer authority or water quality management district could be a participant. Some example programs include:

A. Fair Share (example: Florida)

Project ultimate land development scenario.

Measure ultimate system need and cost.

Determine distribution of costs by scale of development.

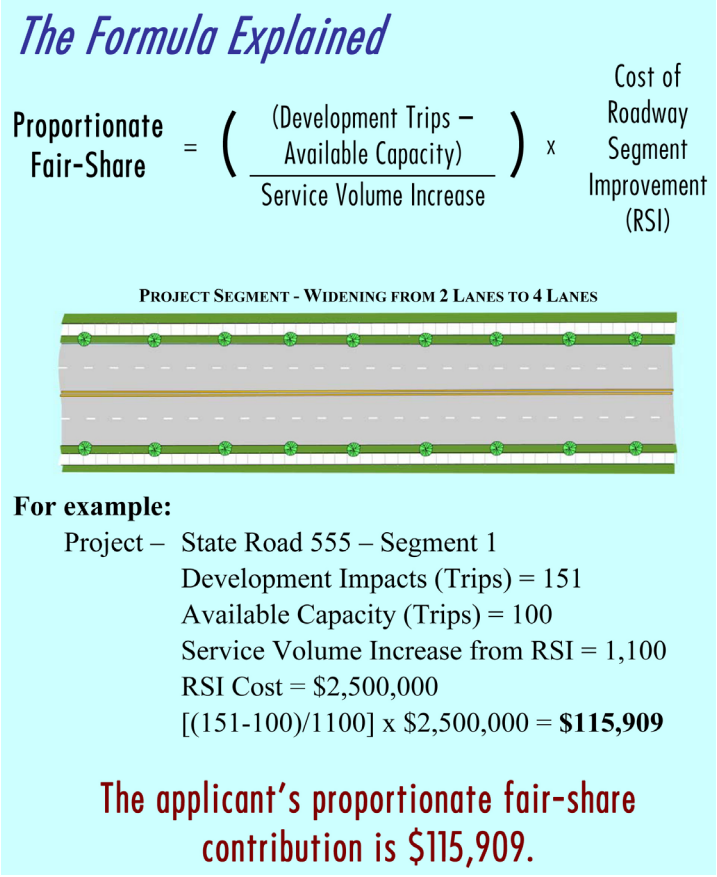
Measure impacts (usually traffic) of new development and assess costs.

B. Off-System Agreements (Street Master Plans)

Determine potential for supporting street networks through development.

Agree with local communities to require supporting network.

Match DOT investment to supporting network.



An explanation of one type of cost sharing system (a "fair-share" formula from Florida DOT).

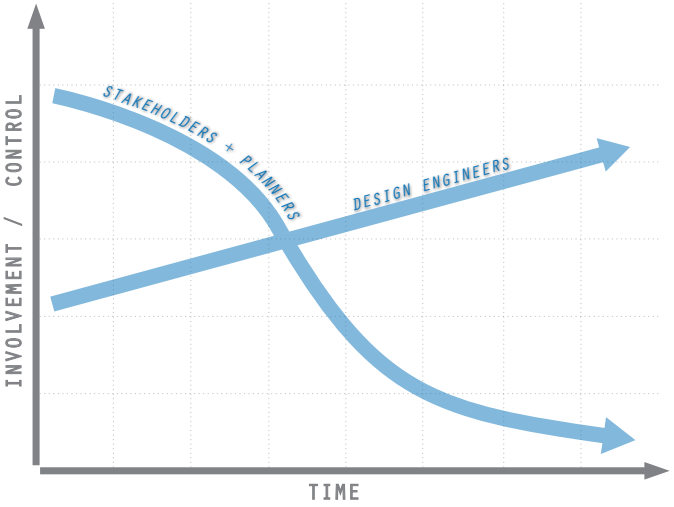
C. Pay to Play

Negotiation with local communities regarding additional funding.

Factor local equity Into prioritization decisions.

Remaining Challenges

In order to codify these cost/benefit arrangements, the execution of interagency agreements will be critical. The presence of such agreements as a condition of project advancement by TDOT can be a powerful lever to bring parties to the negotiating table in earnest and with a sense of purpose. Some of these cost sharing models may also require legislative changes.



As involvement of parties varies over the course of project development, written communication of key aspects is important to accountability.

SOLUTION 5: Broadly communicate flexible design standards for context sensitive solutions.

Current TDOT Status

TDOT not only has a context sensitive solutions process, but has an advanced program for internal communication of the flexibility available in its design.

Next Steps

A. The program should be better understood by local government partners and design engineering consultants. Therefore, TDOT should widely communicate the existence of this program, including the Department's bicycle and pedestrian policy, and highlight its specific applicability and some examples of past successes.

B. This approach should be more thoroughly woven throughout all stages of project development.

C. The department should strive to make these practices more systematic and less driven by individuals (more discussion on this in the next section, titled "Integration").

A cross-section with reduced lane widths in Jackson, TN reflects TDOT's flexibility.

Remaining Challenges

TDOT's guidance on CSS states, "With CSS fully integrated into TDOT's business approach, TDOT will serve as a partner with the citizens of Tennessee in creating cost effective transportation investments that consider all modes of transportation and complement the natural beauty, economic vitality and livability of the state."

This is a powerful and progressive policy that may, depending on context, be applied to allow local communities to narrow vehicle lanes to make room for bike lanes, create more space for pedestrians, promote on-street parking to support local businesses or any number of other complete street functions that serve to further the goals of the State and local communities. Such a collaborative policy is not the norm in most states and Tennessee's residents and local municipalities are fortunate to have access to this policy.

It remains a challenge, however, to weave these practices into all phases of project development. Furthermore, the equal application of any policy across a large organization made up of individuals is a challenge.

Implementation and Integration

Current TDOT Status

While it is clear many of the preceding options already exist in some form or are in development at TDOT, many are not fully integrated throughout the process. Project elements that have been defined as important at one stage of the process might be dropped by different individuals at a later stage. Some projects, such as roadway resurfacing, go through an entirely different process, and may never have the opportunity to be considered for rigorous prioritization or Context Sensitive Solutions.

A Project Team structure will help weave best practices through all project stages.

Next Steps

TDOT may consider approaches in three areas to improve the integration of the improvement options:

1. Project Teams

Once a decision has been made to program a project, a multidisciplinary team should be assigned to follow the project through its life. This team would ideally include: an engineer or roadway designer from the Design Division; a planner from the Long Range Planning or Project Planning Divisions; an environmental planner from the Environmental Division; and a project manager from the Project Management Office. It may also be worthwhile to consider partners from MPOs, RPOs, and/or local governments as part of these teams. This team would be involved in prioritization, scoping of the project, early design decisions, environmental permitting and continued involvement through final design. Allowing such a shared history will provide for greater communication and accountability than would likely occur under a more linear, silo–to-silo system.

A multidisciplinary team approach to transportation projects will enable TDOT to improve the integration of the improvement options.

2. Programmatic Projects

Projects such as bridges and roadway resurfacing projects currently do not have regular access to the types of options and tools discussed in this report. This can represent a great loss – for example, the opportunity to reduce vehicle lane widths during re-striping to make room for bike lanes or on-street parking (depending on the context). TDOT may consider assigning cross-discipline "Region Teams" (similar to the Project Teams in the previous paragraph) to collaborate on the programming, prioritization, and design of these programmatic elements.

3. Transparency

TDOT is already in the process of documenting its projects and improving online communication. This is an important step. The Department should strive to make information on all capital and programmatic projects in its purview available online and easily accessible to its end customers.

Tracking Metrics

The following is a suggested set of the time frames and responsible parties for implementation of the solutions

SOLUTION	NEXT STEPS	RESPONSIBLE	TIME FRAME
1	Develop and adopt a set of measurable metrics and a methodology for the evaluation of projects.	TDOT STAFF	Close of 2012
	Organize, assign, or hire staff to execute the evaluation process for the upcoming STIP.	TDOT MANAGEMENT	Mid-2013
2	Select a cutoff date in the project development process and evaluate all projects not yet to that milestone with the adopted process. ("Dieting" projects may take longer to evaluate due to data needs).	TDOT STAFF	Close of 2012
	Develop a plan to reach out to local partners to communicate the results of the evaluation.	TDOT MANAGEMENT	First Half of 2013
	Make adjustments to STIP and Long-Range Program.		Second Half of 2013
3	Program required funding or identify partners to meet funding/staffing needs.	TDOT MANAGEMENT	Next Fiscal Budget Cycle
	Develop a process for identification of project study candidates, identification of partners, evaluation and budget/staffing needs.	TDOT OFFICE OF COMMUNITY TRANSPORTATION	Close of 2012
	Execute a series of pilot studies.		Second Half of 2013
4	Develop a draft of the components and responsible parties to a corridor management plan and interagency agreement.	TDOT STAFF	Close of 2012
	Identify any legal or legislative challenges to the sample agreement.	TDOT LEGAL	Next Fiscal Budget Cycle
	Expand program of corridor management agreements, including funding shares.	TDOT OFFICE OF COMMUNITY TRANSPORTATION	Following one or more of the pilot transporttation / land use plans
5	Clearly communicate the CSS plan development process, including the current bicycle and pedestrian policy, as the Department's standard way of doing business across all phases of project development.	TDOT MANAGEMENT	Close of 2012
	Continue training and awareness campaign with internal staff, local governments and consultants.	TDOT STAFF	Next Two Years
	Work in good faith with TDOT to build success stories and improve overall effectiveness.	LOCAL PARTNERS	On-going
Integration	Develop project team structures.	TDOT STAFF	End of 2012
	Make all projects accessible online.	TDOT STAFF	End of 2013