



TESTIMONY

Allocations of State Transportation Resources

**Testimony before the
Senate Finance Committee
and
Senate Transportation and Homeland Security Committee**

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March 1, 2006**

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INTRODUCTION

Under the leadership of Governor Rick Perry, the Texas Transportation Commission (commission) has taken unprecedented steps to devolve more power to local governmental authorities. Metropolitan planning organizations, regional planning councils, and councils of government have been vested with significantly more decision-making authority with respect to the selection of projects and regional funding allocations.

Additionally, the commission challenged the eight largest metropolitan areas in the state to examine their transportation needs and devise a plan to address them. The result was the 2004 Texas Metropolitan Mobility Plan, a locally conceived, comprehensive regional mobility plan that will be used to improve congestion in the metropolitan areas.

The allocation of resources for transportation infrastructure is one of the most central tasks for which the Texas Department of Transportation (TxDOT) is responsible. As projects are developed, TxDOT works with its local partners to examine what a project will do to reduce congestion, improve safety, provide economic opportunities, improve air quality or increase the asset value of our system. In order to meet these objectives, the legislature has provided TxDOT with new funding and procurement tools. Even as federal transportation funding continues to diminish in reliability, these new tools will allow us to continue programming projects that generate the greatest impact on mobility.

The Unified Transportation Program (UTP) outlines in great detail how projects are programmed into twelve funding categories. The UTP is based on formulas agreed to by local authorities such as MPOs and elected officials. The following discusses how the department allocates transportation resources, describes each of the twelve categories, and identifies the participants involved in establishing the funding formulas for each category.

RESTRUCTURING THE UNIFIED TRANSPORTATION PLAN

In 2001, Governor Rick Perry requested the commission to simplify the project planning process and deliver highway improvements in “continuous and complete corridors.” During the 2002 interim, Senator Florence Shapiro as chair of Senate State Affairs led the committee in charging TxDOT with developing a coherent transportation vision that is measurable to the public.

The department had been using 34 funding categories in the UTP, each of which had its own formulas. The public, in turn, whether a mayor, a county commissioner, or chamber of commerce, found it difficult to understand which pot of money they were looking at when they were trying to understand how TxDOT funded highways.

After receiving public comments on our allocation methods, TxDOT made a decision to shift most of the transportation decision making authority to local community leaders. This was a very dramatic and positive change in the way the department analyzes transportation projects and allocates funding across the state. The public, communities, the legislature, and the Governor provided input during this process.

The department asked the metropolitan planning organizations (MPOs), county judges, councils of government (COGs), and regional planning council staffs in the summer of 2002 to become our partners in the restructuring of the UTP. They were asked to collaborate on the simplification of the UTP, the funding formulas for each category, and the project selection process. They agreed to twelve categories, and eight of those categories have some kind of direct local input (see Figure 1).

Thanks to this reorganization, local leaders now have more input into the selection of projects, either by directly selecting projects, or by having decided on the formulas that govern where money goes. In addition there is an annual update of projects in the UTP to reflect local needs and changing priorities for the state. The following is a discussion of each of the twelve categories.

CATEGORY 1 – PREVENTIVE MAINTENANCE AND REHABILITATION

A statewide panel from among TxDOT and selected MPOs, regional planning organizations, and COGs met to discuss the funding allocation of this category. Their recommendation was for separate funding distribution formulas for preventive maintenance and rehabilitation activities. These formulas are presented below. Programming funds are allocated to TxDOT districts based on these formulas.

Preventive Maintenance – Normal maintenance of the State Highway System

- 53% On-System Lane-Miles
- 40% 3-Year Average Lane-Miles with Pavement Distress Scores between 70 and 89
- 5% Vehicle Miles Traveled per Lane-Mile
- 2% Square Footage of On-System Span Bridge Deck Area

Rehabilitation – Preservation of the Interstate Highway System.

- 15% Interstate Highway Equivalent Single Axle Loads (ESALs)
- 10% Non-Interstate Highway National Highway System (NHS) ESALs
- 5% Non-NHS ESALs
- 15% On-System Lane-Miles
- 5% On-System Vehicle Miles Traveled
- 35% 3-Year Average Lane Miles with Pavement Distress Scores less than 60
- 5% 3-Year Average Lane Miles with Pavement Ride Scores less than 2.0
- 5% On-System Bridge Deck Area with Sufficiency Rating between 50 and 80
- 2% Centerline-Miles of Operational Intelligent Transportation Systems (ITS)
- 3% Centerline-Miles of 2-Lane Highways with Average Daily Traffic Greater than 400 and Substandard Surface Width (Less than 22 Feet)

Figure 1. Summary of the twelve categories

CATEGORY	PROJECT INITIATION	FUNDING ALLOCATION METHODOLOGY	PROJECT SELECTION AUTHORITY
1 - Preventive Maintenance and Rehabilitation*	TxDOT District, with MPO input	Funds are allocated to TxDOT districts based on a formula created by the Category 1 Working Group, (MPO, Regional Planning Council, COG and TxDOT district representatives).	TxDOT districts select projects with MPO concurrence based on highway maintenance needs.
2 - Metropolitan Area Corridor Projects*	MPO	Funds are allocated to Transportation Management Areas. The formula was created by the Category 2 Working Group (representatives from the 8 MPOs and 9 districts)	MPOs approve corridors and selects projects. The commission approves projects based on MPO's plan.
3 - Urban Area Corridor Projects*	MPO	Funds are allocated to MPO based on a formula created by the Category 3 Working Group (representatives from the Urban Area MPOs and districts).	MPOs approve corridors and selects projects. The commission approves projects based on MPO's plan.
4 - Statewide Connectivity Corridor Projects*	TxDOT District, with local input	Funds are allocated to this statewide connectivity effort by the commission for the improvement of highways connecting major metropolitan centers.	Corridors are prioritized using criteria developed by the Category 4 Working Group (MPO, regional planning councils, COG and district representatives). Commission approves.
5 - Congestion Mitigation and Air Quality Improvement*	MPO	Funds are allocated to non-attainment areas based on the federal allocation formula used to distribute CMAQ funds to the states.	Projects are selected by MPOs in consultation with TxDOT and the Texas Commission on Environmental Quality.
6 - Structures Replacement and Rehabilitation	TxDOT District	Funds are allocated to bridge rehabilitation projects based on the condition of the each specific bridge.	Projects are selected using the Texas Eligible Bridge Selection System. Commission approves projects.
7 - Metropolitan Mobility/Rehabilitation*	MPO	Funds are allocated directly to Transportation Management Areas by FHWA.	Projects are selected by MPOs in consultation with TxDOT.
8 - Safety Highway Safety Improvement Program, Safe Routes to School, Railway-Highway Crossing, Safety Bond Program	TxDOT District	The commission allocates funds to districts based on specific project safety score using recognized safety evaluation formulas.	Projects are selected according to federally approved safety indices and prioritized listing. Commission approves projects.
9 - Transportation Enhancements*	Local Entities	Commission allocates funds to districts based on specific project recommendation by statewide selection committee.	Local entities nominate projects and FHWA determines eligibility. Projects are selected and approved by the commission on a per-project basis.
10 - Supplemental Transportation Projects State Park Roads, Railroad Grade Crossings Replanking, Railroad Signal Maintenance, Construction Landscaping, Coordinated Border Infrastructure Program and Congressional High Priority Projects	TxDOT District, Texas Parks and Wildlife Department, Other (federal allocation)	Commission allocates funds to districts with allocation formulas, using Texas Parks and Wildlife project selections or approves participation in federal programs selected by members of Congress and FHWA.	Projects are selected statewide by Traffic Operations Division or Texas Parks and Wildlife Department, local projects selected by districts. Federal projects are selected by Congress.
11 - District Discretionary*	TxDOT District, with local input	Funds are allocated based on a formula created by the Category 11 Working Group, made up of members of MPOs, Regional Planning Organizations, and COGs.	TxDOT districts selects projects with MPO concurrence based on the needs of the area.
12 - Strategic Priority	Commission	Commission allocates funds.	Commission selects projects that meet strategic goals.

*Local input directly considered in project selection process or funding allocation. Of the twelve categories, eight receive local input.

CATEGORY 2 – METROPOLITAN AREA CORRIDOR PROJECTS

These projects focus on adding capacity, and they originate at the local level. MPOs prioritize corridors that are important to the Transportation Management Area (TMA). TMAs are federally recognized metropolitan areas with populations exceeding 200,000. Projects are chosen by MPOs from funds allocated by the formula adopted by the Category 2 Workgroup. This group consisted of a representative from the eight TMAs (Austin, Corpus Christi, Dallas/Fort Worth, El Paso, Houston, Lubbock, the Rio Grande Valley, and San Antonio) and each TxDOT District in which the TMA is located.

It was decided that each area should independently select its projects using locally developed criteria, and the group developed a formula to make a statewide distribution of projected available construction dollars. The MPO, with the concurrence and support of TxDOT, recommends projects to the commission for selection based on statewide scoring criteria.

Scoring Criteria

32.63 %	Total vehicle miles traveled (on and off the state highway system)
22.35 %	Population
17.04 %	Lane miles (on system)
14.22 %	Vehicle miles traveled (trucks only)
7.04 %	Percentage of population below the federal poverty level
6.72 %	Fatal and incapacitating crashes

CATEGORY 3 – URBAN AREA CORRIDOR PROJECTS

These projects originate at the local level, and the MPO prioritizes corridors important to the area. Projects are chosen by the MPO and ranked according to a formula adopted by the Category 3 Workgroup. The workgroup was made up of people from both the TxDOT and urban area MPOs representing each of the seventeen urban areas in Texas. The MPO, with the concurrence and support of TxDOT, recommends projects to the commission. The workgroup decided on the following criteria used to fund the urban areas of Texas.

Scoring Criteria

22 %	On and Off-System Vehicle Miles Traveled (VMT)
15 %	On-System Truck VMT
26 %	Population (MPO Planning Boundary)
6 %	On-System Centerline Miles
11 %	On-System Lane Miles
11 %	Fatal and Incapacitating Accident Rate (MVMT)
9 %	Percent of Population Under the Federal Poverty Level

CATEGORY 4 – STATEWIDE CONNECTIVITY CORRIDORS

This category addresses statewide mobility and added capacity projects on major state highway system corridors which provide statewide connectivity between urban areas and corridors which serve mobility needs throughout the state. The highway connectivity network is composed of the Texas Trunk System, National Highway System (NHS), and those connections to major ports. Representatives from TxDOT, all MPO areas, county judges, COGs and regional planning councils decided these projects should be ranked based on the following criteria:

- 29% Gap completion
- 21% Accommodate traffic volumes
- 19% Alleviate congestion attributed to truck traffic
- 17% Provide reasonable quality of service
- 8% The importance of military / disaster preparedness and response
- 6% Connect ports of entry to the recommended Category 4 network

CATEGORY 5 - CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENTS

Congestion Mitigation and Air Quality Improvement (CMAQ) projects are selected by MPOs in consultation with TxDOT and the Texas Commission on Environmental Quality. Projects must also have final approval by the Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA).

This category addresses the attainment of the national ambient air quality standard in the non-attainment areas of the state which are currently Dallas, Fort Worth, Houston, Beaumont and El Paso.

Allocations are distributed to these districts using a formula set by federal legislation, which is based on a percentage of non-attainment county population and air quality factors within an MPO divided by total factored population within all non-attainment counties in the state.

CATEGORY 6 - STRUCTURES REPLACEMENT AND REHABILITATION

TxDOT inspects bridges, ranks each one, and makes project selection recommendations to the commission. On and off-state system bridge projects are selected using a statewide prioritization process that utilizes a calculated score for each candidate bridge. These scores consider average daily traffic, damage cost per type of vehicle, bridge condition, adequacy of roadway width and overall bridge sufficiency. The actual scoring process is referred to as the Texas Eligible Bridge Selection System (TEBSS). Bridges that are evaluated by TxDOT as having a "critical condition" may be selected regardless of the TEBSS score.

Also eligible for this category are railroad underpass rehabilitation or replacement projects on the State Highway System. Locations are evaluated based on a cost-benefit index that takes possible improved traffic flow and accident reduction into consideration.

CATEGORY 7 - METROPOLITAN MOBILITY AND REHABILITATION

The federal government provided an allocation to each of the 8 TMAs based on population. Each metropolitan area with a population in excess of 200,000 is considered a TMA (Austin, Corpus Christi, Dallas/Fort Worth, El Paso, Houston, Lubbock, The Rio Grande Valley, and San Antonio). Projects are selected by the local MPO in consultation with the TxDOT districts. This money is used for increased capacity and rehabilitation of area transportation facilities. MPOs have more flexibility with the type of projects that can be funded using category 7 money compared to category 2.

CATEGORY 8 – SAFETY

This category encompasses the Highway Safety Improvement Program (HSIP), High Risk Rural Roads (HRRR), the Safety Bond Program, Safe Routes to School Program (SRS) and the Federal Railway-Highway Crossing Program.

The projects are selected statewide for HSIP, HRRR and Safety Bonds Programs by a federally approved safety index called the Safety Improvement Index (SII). Projects are evaluated based on three years of crash data, and ranked by the SII, which is a cost/benefit ratio. The Railway-Highway Crossing program is based on an index called the Railroad Crossing Index (RCI), which looks at trains per day, train speed, existing warning devices, and five years of crash history.

For each of these programs, a call for projects is sent to the TxDOT districts and proposals are evaluated for eligibility. Projects are selected for funding based on the SII/RCI score (see Figure 2).

The SII formula was developed by the Texas Transportation Institute (TTI) and approved for use in 1974. Current literature and research is reviewed and the SII methodology is continuously analyzed for necessary revisions.

Figure 2. Safety Improvement Index

$$S = \frac{R(C_f F + C_i I + C_p P)}{Y} - M$$

$$Q = \left(\frac{A_a - A_b}{A_b} \div L \right) S$$

$$B = \frac{S + \frac{1}{2}Q}{1.08} + \sum_{i=2}^L \left[\frac{(S + \frac{1}{2}Q) + (i-1)Q}{(1.08)^i} \right]$$

$$SII = \frac{B}{C}$$

S = annual savings in accident costs (equal to accident cost savings per year less annual maintenance costs)

R = percentage reduction factor

F = number of fatal and/or incapacitating injury accidents

C_f = cost of a fatal and/or incapacitating injury accident

I = number of non-incapacitating and/or possible injury accidents

C_i = cost of a non-incapacitating and/or possible injury accident

P = number of property-damage-only (PDO) accidents

C_p = cost of a PDO accident

Y = number of years of accident data

M = change in annual maintenance costs for the proposed project relative to the existing situation

Q = annual change in accident cost savings

A_a = projected average annual ADT at the end of the project service life

A_b = average annual ADT during the year before the project is implemented

L = project service life

B = present worth of project benefits over its service life

C = initial cost of the project

Federal Safe Routes to School Program

The commission approves the program's allocation. Notification of the call for project proposals is sent to TxDOT Districts, MPOs, County Judges and School District Superintendents.

All proposals are evaluated for eligibility. Eligible projects are evaluated and scored by the Safe Routes to School Advisory Committee made up of department personnel and representatives of identified user groups and other affected parties. The scoring criteria for this process is currently being developed in consultation with the TTI Safety Center.

Railway-Highway Crossing Program

TxDOT administers the Railway-Highway Crossing Program under an oversight agreement with the FHWA. Cost participation on these projects is typically split between state and federal sources. Additional cost participation by the railroad company or the local road authority (i.e. city or county government) may be necessary if other work, such as lighting, signals, roadway, curb and gutter, or raised medians is required.

Projects are ranked using the Texas Priority Index Formula:

$$PI = V \times SV_f \times T \times (S \times 0.10) \times P_f \times A^{1.15} \times 0.01$$

where:

V = average daily traffic — number of vehicles per day

SV_f = average daily school bus traffic – a factor weighted according to the range of school bus traffic reported as follows:

- 0 buses = 1.00
- 1 - 3 buses = 1.20
- 4 - 10 buses = 1.60
- 11 + buses = 2.0

T = number of trains in a 24-hour period

S = speed — maximum speed of the trains

P_f = protection factor — a factor weighted according to the type of existing traffic control device as follows:

- gates = 0.10
- cantilever flashers = 0.15
- mast flashers = 0.70
- crossbuck, other = 1.00

A = number of auto-train involved crashes in the last five years to the 1.15 power (when A = 0 or A = 1, then A = 1)

EXAMPLE COMPUTATION:

V = 5000 v.p.d.

SV_f = 1.6 (6 school buses/day)

T = 12 trains/day

$S \times 0.10 = 6.0$ (S = 60 mph)

$P_f = 0.70$ (mast flashers)

A = 2.22 (2 crashes in last five years to the 1.15 power)

$$PI = 5000 (1.6) (12) (6.0) (0.70) (2.22) (0.01) \quad PI = 8,951$$

CATEGORY 9 – TRANSPORTATION ENHANCEMENTS

The Transportation Enhancement Program is a federal reimbursement program that is primarily used by local communities to enhance their current transportation system. The allocation is based on a federal apportionment. To be eligible for consideration, all projects must demonstrate a relationship to the surface transportation system by either physically tying into the system, or by positively impacting the system in some way. The project must go above and beyond standard transportation activities.

TxDOT receives an allocation from the federal government and then releases a call for projects. Local entities may nominate projects, and apply for money to reimburse 80% of the costs to construct it. The local entity must pay 20% of the project cost. FHWA reviews each application for eligibility first, then its reviewed by the Transportation Enhancement Program Evaluation Committee made up of the executive director of the department, or designee; State Land Commissioner, or designee; and the executive director, or designee, of each of the following state agencies: the of the Governor's Economic Development and Tourism Division; the Texas Historical Commission; the Texas Parks and Wildlife Department; and the Texas Commission on

Environmental Quality. Projects are reviewed and either approved or denied by the Transportation Commission.

The Transportation Enhancement program was created in 1992 by removing billions of dollars nationwide for highway congestion relief and putting it into such things as hike and bike trails and tourism projects. This category represents a significant portion of federal funds which do not go into addressing the foremost transportation issues of the day – congestion, safety, economic opportunity, air quality, and transportation assets.

CATEGORY 10 – SUPPLEMENTAL TRANSPORTATION PROJECTS

This category includes miscellaneous state and federal projects. However the bulk of the funds are derived by Congressional High Priority Projects, also known as earmarks. It should be noted that when a Congressional earmark provides funding for unplanned projects, other category funding is displaced and planned projects may be delayed.

Other programs funded through Category 10 are:

State: State Park Roads, Railroad Grade Crossing Replanking Program, Railroad Signal Maintenance Program, Curb Ramp Program, Construction Landscape Program, Landscape Cost Sharing Program, Landscape Incentives Awards Program, Green Ribbon Landscape Improvement Program, Travel Information Centers, and Truck Weight Stations.

Federal: The Ferry Boat Discretionary Program, Federal Lands Highways Program, Indian Reservation Highways, Forest Highways, Coordinated Border Infrastructure Program, and Congressional High Priority Projects.

CATEGORY 11 – DISTRICT DISCRETIONARY

This category addresses projects selected at the TxDOT district engineer's discretion. The minimum funding allocation of \$2.5 million is addressed in Rider 17 of TxDOT's General Appropriation.

For any additional funds, a statewide panel from among TxDOT and selected MPOs, regional planning organizations, and COGs met to discuss the funding allocation. Their recommended funding allocation consensus was for funding distribution to districts by formulas based on the following criteria:

- 70% On-system vehicle miles traveled
- 20% On-system lane miles
- 10% Annual truck vehicle miles traveled

CATEGORY 12 – STRATEGIC PRIORITY

This category provides the commission some flexibility in selecting projects for construction throughout the state which may not meet other program criteria. These projects generally promote economic development and opportunity, provide system continuity with adjoining states and Mexico, increase efficiency on military deployment routes, or address other strategic needs as determined by the commission. Projects such as roads around the new San Antonio Toyota facility and projects serving Fort Bliss, Fort Hood, and the Red River Army Depot have been funded using strategic priority money.

Additionally, the commission has identified this category of funding to be used to implement the pass-through financing program. This program allows local entities (public or private) to construct a project sooner than what would be possible under traditional funding sources. After constructing the project, the state would reimburse the local entity over a period of time based on the level of usage of the facility. For example, Williamson County has agreed to finance expansion of several state highways to four-lane divided facilities. Other projects include realignments and grade separations that will improve safety and mobility on the state highway system.

CONCLUSION

Each of these categories has been reviewed in depth by members of the local communities, transportation planners, and elected officials, and reviewed annually to make sure they are still suitable. Each member who worked on this project thought about the needs for their areas and the needs of the state, and balanced them in a fair and just manner. They agreed on the categories and formulas which share a distinct purpose: to improve transportation infrastructure. The department will continue to empower local and regional leaders to solve local and regional transportation problems.

Multiple categories can be used to fund a given project. In these instances, the funding formulas and decision making processes work in concert to develop project programming. Programming is the basis through which we address our transportation needs as we seek to improve safety, reduce congestion, expand economic opportunity, improve air quality, and increase the value of our transportation assets.