



MEMORANDUM

TO: Management Team **DATE:** April 12, 1996

FROM: Robert Cuellar, P.E.

SUBJECT: Plan Transportation Systems Business Process Retooling (Plan BPR)
Phase 3 Report

The Plan Transportation Systems Business Process Retooling (BPR) Phase 3 report, "Initial Redesign and Implementation Strategy", is attached for your review. This document presents the initial redesign for TxDOT's retooled Plan Transportation Systems business area, the business improvement projects required to realize the redesign, and the preliminary strategy for implementation. It is important that you understand the direction that we are headed in this area.

This report documents the new transportation planning process by identifying major processes and subprocesses. This is presented in Section III, Redesign Plan Transportation Systems Business Model, with more details in Appendix B, Detailed Process Descriptions. In order to achieve and implement the new transportation planning process, sixteen business improvement projects (BIPs) have been identified for further development during Phase 4. A brief description of each is presented in Section IV, Summary of Business Improvement Projects. Detailed project charters for each BIP are included in Appendix C.

The implementation strategy for managing these changes is described in Section V, Initial Implementation Strategy. The business improvement project team members have been identified. We are anticipating beginning Phase 4 work in May.

I encourage each of you to read the attached report in its entirety and to distribute it to your staff. The directions provided by this Retooling effort have been approved by the Senior Management Team. If you have any concerns regarding this direction, please address them to me. If you have any questions about the report, please contact Tammy Stone, Project Leader, at (512) 505-5231 or Walt Bailey, Assistant Implementation Manager, at (512) 505-5236. Your continued support of Retooling TxDOT is appreciated.

Attachment

cc: Directors of Transportation Planning and Development
Retooling Coordinators
Plan BPR Core Team
Business Improvement Project Team Members
Metropolitan Planning Organizations



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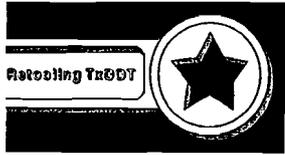
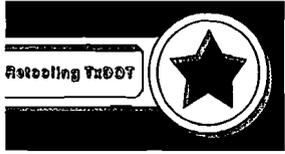


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I. Executive Summary



Executive Summary

This document completes Phase 3, Redesign, of the Plan Transportation Systems Business Process Retooling project. The objectives of this Phase were to develop the initial redesign for TxDOT's retooled Plan Transportation Systems business area in accordance with the vision developed in Phase 2 of this project, to define the business improvement projects (BIPs) required to realize the redesign, and to develop the preliminary strategy for implementation. To the extent possible, work performed during the Retooling project concentrated on multimodal and intermodal aspects of the transportation planning process. All references to transportation systems, etc. are multimodal in nature.

PROJECT BACKGROUND

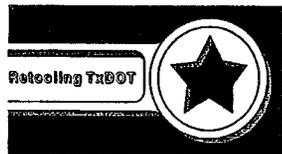
In Phase 1, The Change Imperative, several objectives were stated for the Retooling of the Plan Transportation Systems business area. These objectives were to:

- integrate a sustainable planning process that ties the long-term transportation vision to the day-to-day decisions.
- eliminate gaps in the statewide transportation planning process.
- provide programming and project prioritization mechanisms that support the implementation of long-term transportation system goals.
- develop the financial capability to undertake multimodal planning and project development.

The conclusion was that Texas' goals for its transportation system are well defined. There is strong leadership commitment to TxDOT's multimodal role. There is considerable work still required to define and stabilize the new roles for planning and to develop an integrated planning process that ties policy goals to planning and project development decisions.

In Phase 2, Create Vision and Targets, visioning workshops were held for four focus areas derived from analyses performed during Phase 1. These focus areas were:

- Integration of different planning efforts.
- The overall planning process.
- Programming and project prioritization mechanisms to support effective plan implementation.
- Funding mechanisms that support effective plan implementation.



Executive Summary

As a result of analysis performed on the information produced in the workshops, in addition to issues identified during Phase 1, ten (10) business improvement recommendations were made. These recommendations were to:

1. Develop a process that will integrate, maintain and promote the four major planning activities:
 - a. strategic policy/vision planning (goal/policy setting);
 - b. needs planning (needs determination);
 - c. financial/revenue planning (budgeting/financial resource allocation); and
 - d. program/project planning (project development/project selection/prioritization and scheduling).
2. Develop a statewide transportation planning process that includes an unconstrained needs based element and a financially constrained program/project element.
3. Develop a transportation planning process that addresses urban, rural and international issues, including land use, environmental, economic development and socio-economic impacts.
4. Establish a financial planning process that is an integral part of the transportation planning process.
5. Enhance the transportation planning process, with TxDOT and Metropolitan Planning Organizations functioning as catalysts to engage stakeholders.
6. Develop a programming process with three (short range, mid range, and long range) project/program levels that is driven by the planning process.
7. Develop a programming process that directs limited funding to those projects that most effectively meet transportation systems goals.
8. Develop a programming process that allows for flexibility in use of funding allocations at both the statewide and district levels.
9. Develop and implement programs, skills and tools that support transportation planning, including multimodal and intermodal planning, and decision making. These should include:
 - cross-training programs
 - research programs
 - traffic modeling and forecasting
 - automated planning tools
 - multimodal modeling and analysis tools.
10. Develop and implement an institutional structure to support the new transportation planning process.



PHASE 3 RESULTS

At the beginning of Phase 3, Redesign, four focus areas for redesign were selected. These areas were the:

- perform needs assessment process
- develop needs plan process
- program solutions process
- financial planning process.

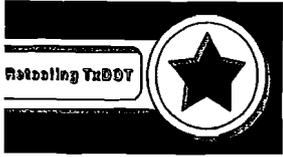
From these four processes, six (6) goals/problems were identified upon which efforts were concentrated during Phase 3. These were to:

1. Provide processes and methods for a consistent needs assessment.
2. Fully define the transportation system within the State of Texas.
3. Provide for greater involvement of stakeholders on all levels and in all processes.
4. Provide for more flexible funding; to have funding based on transportation needs and goals.
5. Develop broader criteria for evaluating alternatives to meet transportation needs.
6. Make available more tools for evaluation and analysis at the local/district level.

As the core team defined the business improvement projects (BIPs) to be further developed in Phase 4, Build, and implemented during Phase 5, Implement, these goals helped provide direction. Sixteen BIPs have been identified for further development during Phase 4. These BIPs address most of the business improvement recommendations defined in Phase 2 and the goals established in Phase 3. Benefits to be gained by moving forward with BIP development include:

- Identifying the best transportation solutions by comprehensively considering needs and fully evaluating alternatives.
- Making the transportation planning process more supportive of all modes of transportation.
- Providing a better understanding of the transportation planning process.
- Ensuring support of enhancing the transportation planning process by involving TxDOT staff department-wide and external partners.
- Optimizing the use of limited planning resources by coordinating internal and external planning efforts.

Recent Department efforts (e.g., the Project Development Plan Task Force, the Project Development Plan Formulas Task Force) have studied and presented recommendations relating to project selection, project prioritization and funding allocations. These efforts have been recent and most of these recommendations have not been implemented. Because of these and other changes required by federal legislation, Retooling emphasis in the programming area has been minimized.



Executive Summary

The recommended BIPs are listed here. A summary of each BIP is provided in Section IV, Summary of Business Improvement Projects. More details are provided in Appendix C, Business Improvement Project Charters.

Perform Needs Assessment and Develop Needs Plan Processes

Needs BIP 1 - Develop and implement needs identification methods and processes

Needs BIP 2 - Develop guidelines to identify and select alternatives and solutions that address transportation needs

Needs BIP 3 - Establish standard forecasting practices

Needs BIP 4 - Develop procedures for determining costs for preserving and expanding system components

Needs BIP 5 - Develop guidelines to account for inflation of costs

Needs BIP 6 - Designate the transportation system

Needs BIP 7 - Establish performance measures that quantify accomplishment of system goals

Needs BIP 8 - Establish a process for prioritizing transportation needs among and within transportation goal-related categories

Needs BIP 9 - Integration of needs, planning and programming

Financial Planning Process

Finance BIP 1 - Use consistent assumptions in forecasting anticipated funds

Finance BIP 2 - Incorporate revenue enhancement activities and innovative funding strategies

Finance BIP 3 - Determine funding for goal-related categories based on needs

Technology

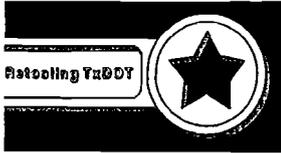
Tech BIP 1 - Data and decision support strategies for planning

Tech BIP 2 - Planning tools/applications coordination

Enablers

Enabler BIP 1 - Develop training and education programs to support the new processes

Enabler BIP 2 - Enhance public involvement in the planning process

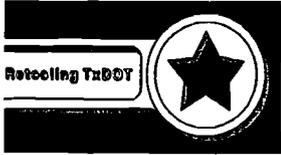


IMPLEMENTATION STRATEGY

Business improvement project teams are recommended to execute the proposed business improvement projects. These teams will consist of district, division and special office personnel, business partners and other planning and programming experts. The projects are scheduled to begin in April, 1996. Implementation will be scheduled to coincide with planning and programming cycles to ensure relevant changes and timely use of the new processes and procedures. Efforts will be made to build upon work that either has been completed or is in progress for several of the BIPs. This will ensure continuity and coordination with on-going work.

In developing the overall project implementation schedule, several key assumptions critical to a successful implementation were made:

- Strong support from the entire TxDOT management team is essential.
- The timely and effective implementation of the business improvement projects will require support and commitment from all levels and areas of the Department.
- BIP team members will consider Plan BPR activities a high priority and will dedicate the time required (10% - 80%) to the project.
- BIP work plans and cost estimates will be refined as the BIP teams carry out their responsibilities.
- BIP teams may be assigned more than one business improvement project in instances where project subject areas are similar.
- Certain BIPs may be assigned to current organizational units for development and implementation rather than to BIP teams.
- BIP teams will include personnel who would normally perform day-to-day planning and programming activities. Therefore, some impact to day-to-day operations must be anticipated during the next two phases. Where appropriate, outsourcing of some BIP work steps will be pursued in order to reduce "re-inventing the wheel," to keep implementation moving in a timely manner and to decrease the impact to current workloads. In other instances, current non-critical activities and projects may have to be stopped to free up TxDOT resources for BIP teams.
- The work steps and time frames that have been developed are preliminary and will be refined as detailed design and implementation planning takes place.
- Timely reviews and approvals must be provided. Implementation delays will slow momentum of the projects and postpone realization of benefits. Issues must be resolved quickly, while work is in progress, to enable these personnel to continue their work. The review and approval of approaches, methods, procedures, etc. will require a maximum of one month.



Executive Summary

COSTS OF IMPLEMENTATION

The estimate of the incremental costs and dedicated resources required for Phase 4, Build, is provided below:

Business Related Business Improvement Projects

Cost Element	FY96	FY97	FY98	TOTAL
Travel	\$102,814	\$157,061	\$ 475	\$ 260,350
Consultant Assistance	255,000	715,304	0	970,304
Contract Services	<u>20,800</u>	<u>62,400</u>	<u>10,400</u>	<u>93,600</u>
Total	\$378,614	\$934,765	\$10,875	\$1,324,254
Person Months (Team Members Only)	93	156	2	251

Technology Related Business Improvement Projects

Cost Element	FY96	FY97	FY98	TOTAL
Travel	\$ 12,800	\$ 21,300	\$ 1,300	\$ 35,400
Training	4,000	8,000	0	12,000
Consultant Assistance	240,000	520,000	40,000	800,000
Contract Services	<u>63,100</u>	<u>126,300</u>	<u>10,600</u>	<u>200,000</u>
Total	\$319,900	\$675,600	\$51,900	\$1,047,400

Note:

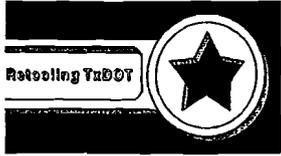
- Applications will be client server to all districts and the Transportation Planning and Programming Division by the end of Fiscal Year 1997.
- Hardware/software will be paid by the Information Services Business Process Retooling Project. These costs are not included in the above estimates.



ACTIONS REQUIRED

The Plan BPR team requests the project's executive sponsors:

- Provide the project team with their feedback regarding this document.
- Approve and sponsor the Plan BPR BIPs to move forward to Phase 4.
- Provide active support in the development and implementation of the BIPs.



II. Retooling Approach



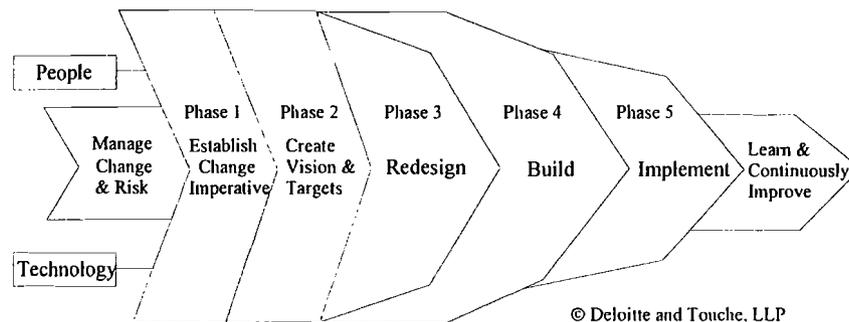
Retooling Approach

The objectives of Phase 1, Establish the Change Imperative, were to identify why planning transportation systems must be retooled and to identify the transportation planning processes that could be retooled.

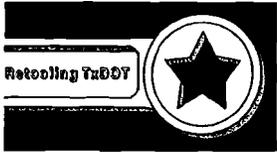
The purpose of Phase 2, Create Vision and Targets, was to create the vision of how people, processes, and technology can work together to improve the transportation planning process in the State of Texas.

In Phase 3, Redesign, the initial redesign for retooled transportation planning processes was developed from the vision. An implementation plan, including business improvement projects, resource estimates, and schedule, was developed for managing the implementation of the proposed changes.

The objectives of Phases 4 and 5, Build and Implement business improvements, are to develop the detailed design of the new processes, methodologies, technologies, reporting relationships, and roles and responsibilities necessary to embed the new requirements into the working environment, and realize and sustain the expected benefits.



TxDOT's Business Information and Systems Plan (BISP) established a framework for improving the Department's major business areas through a series of business process retooling (BPR) projects ("Retooling TxDOT"). As part of this framework, in late 1994, the Department undertook a pilot project to retool its right of way acquisition process. In addition to the objectives of streamlining the right of way acquisition process itself, a second objective of the pilot was to test the reengineering and change management tools and techniques in the TxDOT environment, and to develop a Department-specific Retooling methodology that can be applied in future Retooling efforts.



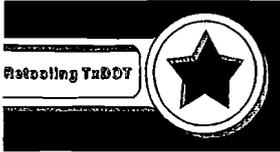
Retooling Approach

Since that time, business process retooling projects have been completed for the Human Resources Classification Process, the Information Services business area and the Minute Order Process. The Human Resources business area is currently undergoing Retooling. In mid 1995, the Determine and Analyze Transportation Needs and the Plan Transportation Systems Business Process Retooling (Plan BPR) project was initiated. This is the first business area in the "operations" area of the TxDOT business model to undergo a BPR project. Phase 1 of the Plan BPR, "Establish the Change Imperative", involved the assembly and orientation of a nine person project core team comprised of TxDOT personnel from the Aviation Division, the Transportation Planning and Programming Division, the Information Systems Division, Amarillo and Austin district transportation planning organizations and the Information Resource Management Office. The core team was assisted by consultants from Dye Management Group, Inc. During Phase 1, the project team assessed the current transportation planning business environment. The team identified the issues to be addressed through retooling and the change imperative. In order to produce this "change imperative" statement, the team (1) interviewed many stakeholders internal and external to the transportation planning process, (2) described and analyzed current processes, (3) identified issues and problems surrounding those processes, and (4) identified focus areas for retooling. The Phase 1 report set forth a business case for change and was accepted by the project's Executive Sponsors.

Phase 2 of the project, "Create Vision and Targets", involved bringing together more than 40 people from around the state to participate in four "visioning" workshops, each dedicated to particular activities within the transportation planning process. The visioning workshop participants included 18 division/special office representatives, 8 district representatives, representatives from 4 Metropolitan Planning Organizations (MPOs), and 9 other participants representing various transportation planning partners. Workshop participants developed vision statements describing the future transportation planning process. These vision statements and their associated improvement recommendations were incorporated into the Phase 2, Vision Statements and Improvement Recommendations, report, also accepted by the project's Executive Sponsors.

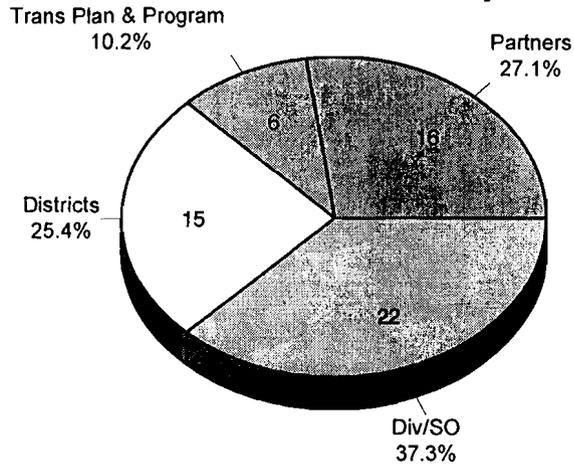
Phase 3 of the project, "Redesign", began with the identification of four processes for redesign. The proposed redesign includes making improvements to current processes, and creating new processes to realize the vision. Redesign workshops were conducted with 5 district, 10 division/special office, and 2 MPO representatives participating to help redesign the four processes. These workshops helped develop the new process flows and identified where new steps were needed or current steps needed changing to support the vision. This information was then used by the core team to draft business improvement projects (BIPs). These draft BIPs were validated by transportation planning stakeholders and refined by the core team. An implementation strategy was also developed to begin moving these projects toward implementation.

During these three phases, the future transportation planning process was developed. Multiple stakeholders were involved in the design of the future process. The charts below illustrate the widespread participation of a range of stakeholders in developing the issues, the vision and associated business improvement projects.



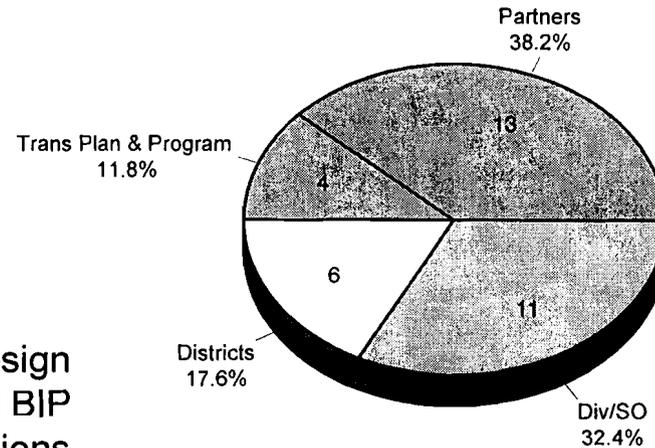
Retooling Approach

Phase 1 - Stakeholder Interviews and Surveys



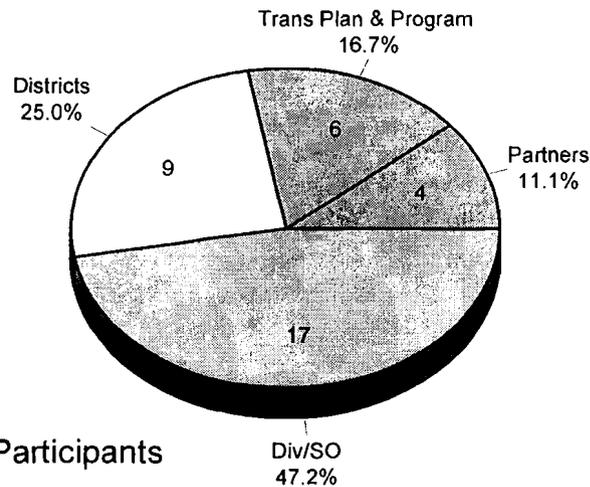
59 Participants

Phase 2 - Visioning Workshops



34 Participants

Phase 3 - Redesign Workshops and BIP Validation Sessions

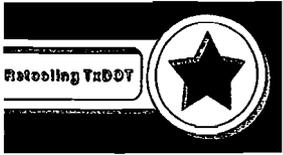


36 Participants

Note: Several participants were involved in multiple phases. The Plan BPR core team participated in all areas but the core team is not included in these totals.



III. Redesigned Plan Transportation Systems Business Model



Redesigned Plan Transportation Systems Business Model

In this section, the defined processes for the Plan Transportation Systems business area are presented. These are based upon the vision that was created in Phase 2 for the Plan Transportation Systems business area. This vision statement is presented on page 16. A diagram of the vision is presented on page 17. The business model, on pages 18-19, depicts the major processes for this area. Major subprocesses have also been identified.

Each major process for the redesigned transportation planning process is described in detail. A description of each process; descriptions of the subprocesses within each process; problem statements regarding the current way of doing business; and training, technology, methods, and organizational responsibilities to perform the new processes have all been provided. Additional information regarding the inputs and outputs to the process and subprocess definitions is provided in Appendix B, Detailed Process Definitions.

It is important to understand the redesigned processes since this information serves as input into Phase 4 of the project. In the Set Transportation System Goals Process, the current Texas Transportation Plan addresses many of these activities. However, performance measures must still be further defined. In the Evaluate Current and Future Conditions Process, the Texas transportation system must be further defined. The Perform Needs Assessment Process and Develop Transportation Needs Plan Process received the most attention since many elements/activities of the redesigned process are not currently performed in the Department for all modes. The results of this process feed back into the Set Transportation Goals process and are used as inputs into the next process. Changes to the Program Solutions Process have also been identified to make the redesigned transportation planning process complete. The Financial Planning Process has a high correlation to and impact on transportation planning. Because of this close relationship, improvements have been identified and included in this report for this area.

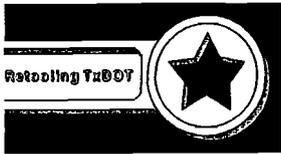


Vision Statement

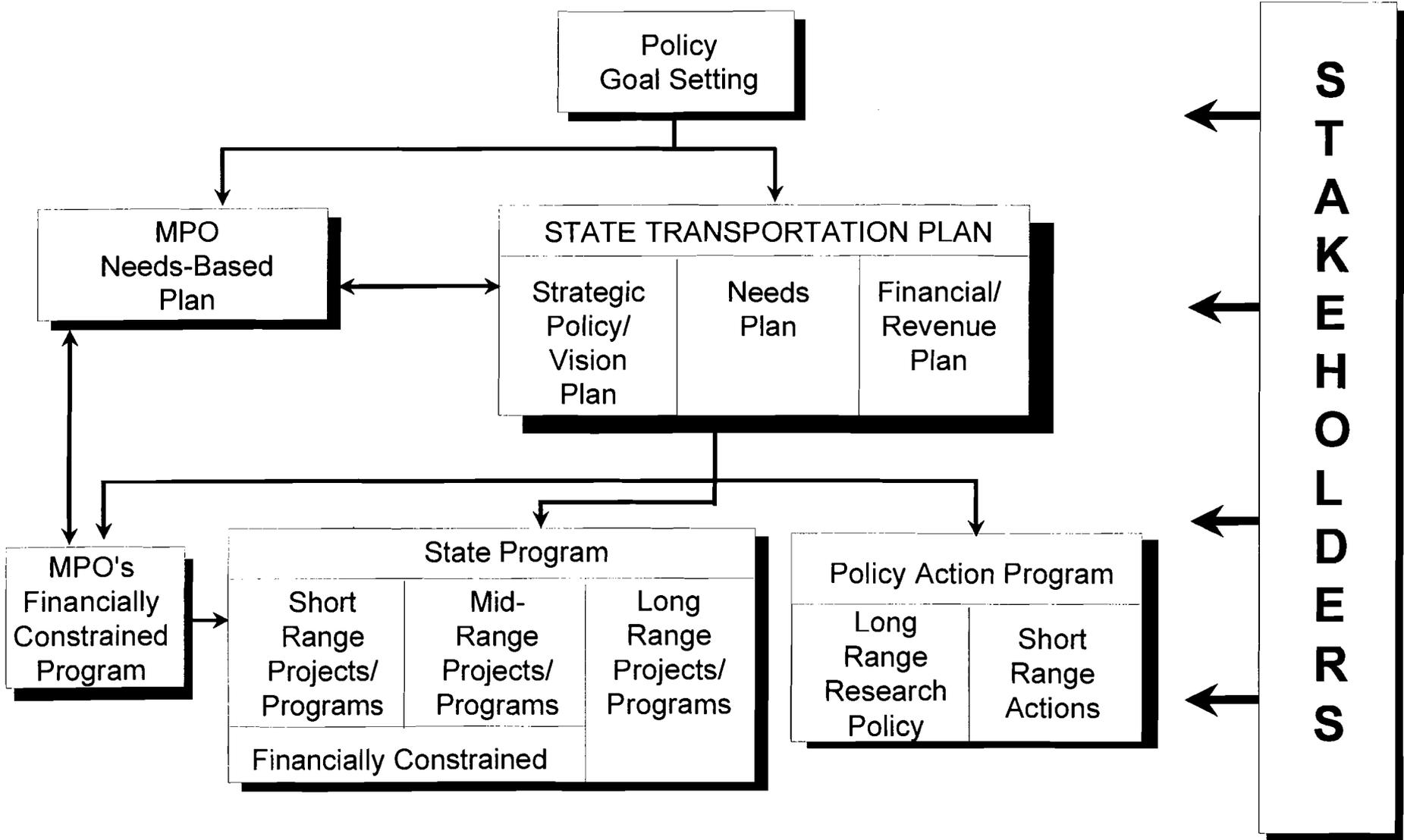
Plan Transportation Systems

We envision a customer-focused, continuous statewide planning and programming process that addresses all modes and integrates strategic, system and financial elements. This process will result in the implementation of programs and projects that optimize the effectiveness of the transportation system serving Texas. This process will also:

- foster existing and forge new partnerships through coordinated efforts with stakeholders
- develop consistent, compatible, and comprehensive transportation system goals that support international, federal, state, regional and local goals
- establish policy direction, identify system needs, guide investment decisions, and determine revenue needs
- promote a better internal and external understanding of the purpose and relationships of various departmental plans
- rely on a sound methodology to identify needs, including critical performance measures to indicate success in meeting those needs
- provide flexibility in meeting the needs of changing environments by moving the decision-making as close to the customer as possible
- use new and innovative methods of funding, as well as maximize use of existing funding sources
- track implementation of the plans to evaluate effectiveness of actions in meeting goals



Process Diagram for the Visioned Transportation Planning Process





Redesigned Business Model

This business model depicts the major processes for the future Plan Transportation Systems business area. A visual representation and a description of each process and subprocess is listed on the following pages.

Set Transportation Goals

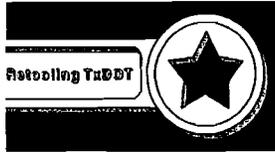
- Obtain input from public and stakeholders
- Consider current and future conditions of the transportation system within the framework of existing policy and performance goals
- Consider federal, state, and local requirements
- Review and revise current goals
- Develop performance measures
- Establish consensus and communicate policy and performance goals
- Document list of goals
- Develop financial strategies to accomplish transportation system goals

Evaluate Current and Future Conditions

- Define the transportation system
- Collect, assemble, and analyze inventory, operational and user data
- Forecast travel demand of people and goods
- Predict future system conditions
- Determine current and future revenues

Perform Needs Assessment

- Determine existing system deficiencies
- Determine future system deficiencies and identify alternatives
- Determine costs of meeting needs (deficiencies)
- Document needs



Develop Needs Plan

- Establish goal-related categories
- Categorize needs
- Select solutions (programs/projects/policies/systems)
- Finalize needs plan document

Program Solutions

- Identify programs/projects from solutions provided in the needs plan
- Prioritize programs/projects to develop long, mid, and short-range programs
- Obtain public involvement
- Allocate program/project funding
- Schedule programs/projects from short-range programs for implementation

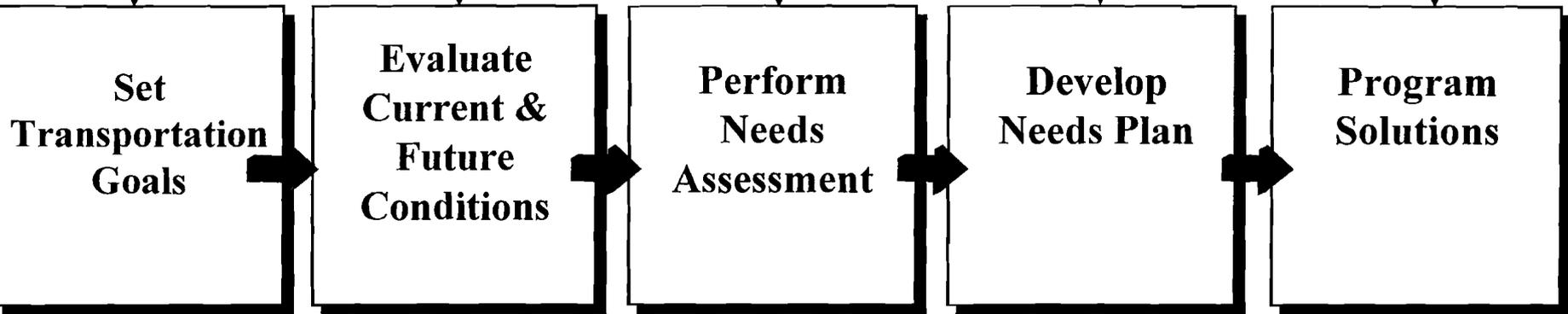
Financial Planning

- Evaluate performance levels for meeting transportation needs within goal-related categories
- Evaluate funding resources and scenarios
- Determine funding for needs within goal-related categories
- Develop funding strategies and actions to resolve funding needs



Plan Transportation Systems

Public Involvement



Financial Planning



Plan Transportation Systems

Public Involvement

Set Transportation Goals

- Obtain Stakeholder Input
- Consider Conditions
- Consider External Requirements
- Review/Revisit Goals
- Develop Performance Measures
- Establish Consensus/Agreement
- Document Goals
- Develop Financial Goals

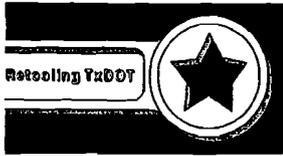
**Evaluate
Current &
Future
Conditions**

**Perform
Needs
Assessment**

**Develop
Needs Plan**

**Program
Solutions**

Financial Planning



Redesigned Business Model Process: Set Transportation Goals

Process Description:

This process establishes, reviews, and revises the overall policy goals and strategies for the Texas transportation system. These policy goals and strategies are also used for the Strategic Plan. Consistent goals are established for individual modes and corridors.

Performance measures are developed that enable the planning process to assess progress towards or away from the transportation system goals.

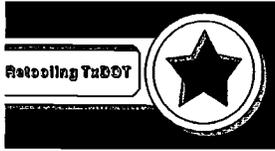
Financial goals and strategies are developed and revised as needed to help obtain the transportation goals.

Stakeholders and the public are involved throughout the process to ensure that transportation providers and users participate in developing the transportation system goals and strategies.

The result of this process is a plan document that describes the long range goals and strategies for the transportation system. These are the goals and strategies that provide the overall basis for the development of implementation actions aimed at moving the transportation system toward the established goals. The analysis of transportation system needs and experience with solution identification and implementation feed back into this process to create a continuous planning process. In this way, needs information is used to update and revise goals and strategies through the continuous planning cycle.

Old Way Problem Statement:

Currently, the process to set transportation system goals and develop overall strategies is in place through the continuous implementation of the Texas Transportation Plan (TTP). However, different transportation system goals and strategies are used in the Strategic Plan.



Redesigned Business Model Process: Set Transportation Goals

Subprocesses and Tasks:

1.1 Obtain input from public and stakeholders

In this subprocess, input and comments regarding the transportation system goals are obtained from the public and stakeholders. Through the Texas Transportation Plan, stakeholders and the public participate in the formulation of transportation system goals, strategies, and actions.

1.2 Consider current and future conditions of transportation system within the framework of existing policy and performance goals

In this subprocess, current and future conditions of the existing transportation system are evaluated to provide an information base from which to set goals and evaluate overall transportation system strategies.

1.3 Consider federal, state, and local requirements

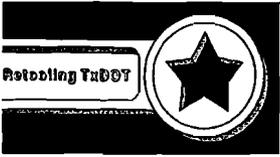
In this subprocess, the legislative requirements for the planning process are identified and reviewed. The subprocess determines where and how the requirements are addressed through the planning process. Necessary changes to the existing process to address legislative requirements are identified and designed.

1.4 Review and revise current goals

This subprocess provides the mechanism to review and revise, if necessary, current transportation system goals. It is anticipated that they will be reviewed and revised as part of the Texas Transportation Plan cycle. This subprocess should be coordinated with strategic planning efforts to ensure consistency.

1.5 Develop performance measures

This subprocess establishes and updates the performance measures that monitor progress towards the transportation system goals. The performance measures are used in the Perform Needs Assessment process. Needs are defined as the gap between the goals for the transportation system and current conditions. The performance measures provide a basis for quantifying the transportation system goals. The performance measures include physical and operational measures.



Redesigned Business Model Process: Set Transportation Goals

Subprocesses and Tasks (continued):

1.6 Establish consensus and communicate policy and performance goals

A draft of the overall transportation system vision, goals, policies, and performance measures is presented to the public and stakeholders for their input and comments. Methods used in subprocess 1.1 are also used in this subprocess to obtain input. Any changes are communicated within TxDOT and to transportation providers and users throughout the state.

1.7 Document list of goals

The final documentation of revised transportation system vision, goals, policies, objectives, and performance measures is prepared for publication.

1.8 Develop financial strategies to accomplish transportation system goals

In this subprocess, financial goals and strategies are developed to fund the transportation system.

Methods Required:

Methodologies are needed to support an effective approach for public involvement.

Organizational Responsibilities:

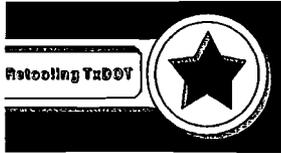
The existing organizational responsibilities for establishing transportation system goals and policies are well defined.

Training Required:

Enhanced skills are needed to more effectively involve the public and stakeholders in the process.

Technology Required:

Interactive telecommunications and learning materials would be useful to support the public and stakeholder involvement process.

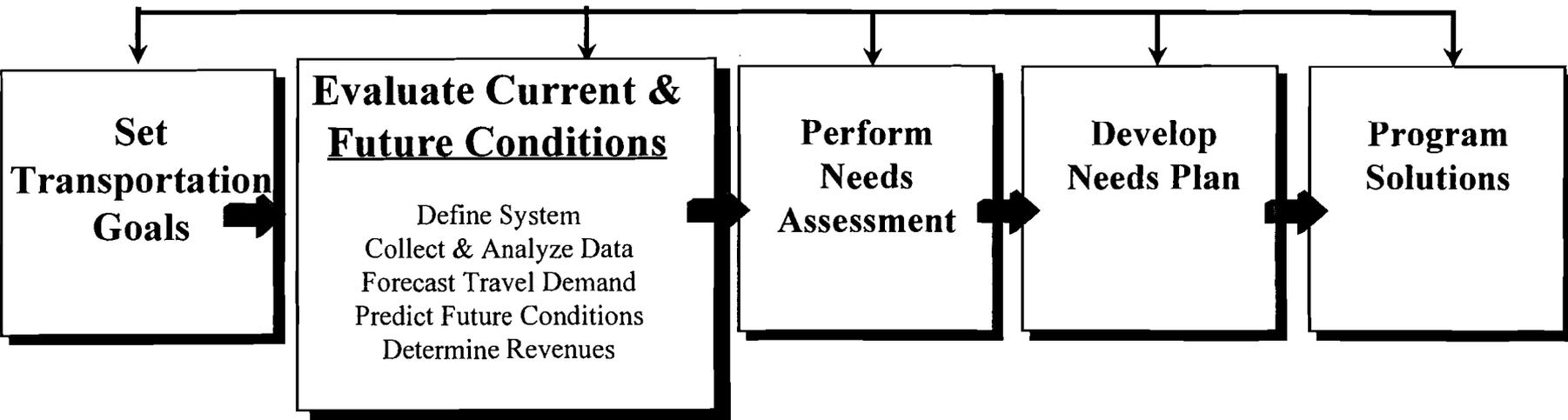


Redesigned Business Model

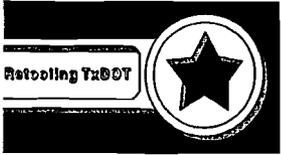
Process: Evaluate Current & Future Conditions

Plan Transportation Systems

Public Involvement



Financial Planning



Redesigned Business Model

Process: Evaluate Current & Future Conditions

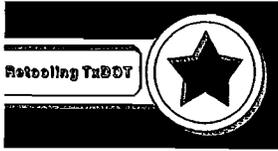
Process Description:

In this process, the current and projected condition of the existing transportation system is determined and documented. The future condition includes programmed improvements. As part of this process, the transportation system that is the subject of the planning process is designated. Using various methods and tools, the conditions of the transportation system are monitored. This includes some information collection and the assembly of data. Future system conditions are forecasted and determined using various methods and tools for the different elements of the transportation system. As part of this process current and future transportation revenues are determined and forecasted.

The Perform Needs Assessment process uses the transportation system goals and performance measures to evaluate the gap between the documented conditions identified through this process and the transportation system goals. Output from the Evaluate Current and Future Conditions process is the key input into the Perform Needs Assessment process.

Old Way Problem Statement:

Different pieces of the transportation system condition data are currently scattered across the divisions and districts, with most data items being collected and maintained by an office of primary responsibility. This situation does not ensure that relevant, cost-effective data are available for needs assessment and planning. A data administration structure is recommended to ensure that data is collected in a coordinated and consistent manner.



Redesigned Business Model Process: Evaluate Current & Future Conditions

Subprocesses and Tasks:

2.1 Define transportation system

This subprocess designates and updates the transportation system that is the subject of the planning process. This includes transportation facilities and services that are identified, inventoried, and documented.

2.2 Collect, assemble, and analyze inventory, operational and user data

In this subprocess, data regarding the current inventory, operations, and use of the existing transportation system are assembled, collected, and analyzed. The current conditions of the transportation system are documented from the collected data. These conditions are measured using the agreed performance measures.

2.3 Forecast travel demand of people and goods

To forecast conditions on the defined transportation system, transportation user, economic, demographic, and historic trend data are used to project travel demand of people and goods.

2.4 Predict future system conditions

Multiple data sources and tools are used to predict future conditions of the designated transportation system. This includes the operational condition of the inventory (for example, levels of congestion) and the physical condition (for example, pavement conditions or structural deficiencies). The projected conditions are described and documented to provide input to needs assessment and financial planning processes.

2.5 Determine current and future revenues

In this subprocess, existing funding sources and levels, historic funding trends, economic and demographic data, and trend information are used to determine the current and future revenues available to implement the transportation system goals.



Redesigned Business Model

Process: Evaluate Current & Future Conditions

Methods Required:

- A method and process is required to develop and maintain the designation of the transportation system.
- New methods may be needed to effectively collect and document current and projected conditions of the transportation system.

Organizational Responsibilities:

Good coordination between the Transportation Planning and Programming Division and other divisions with responsibility for individual modes will be required. Divisions with responsibility for non-highway modes will maintain and update modal system definitions and data. Some organizational changes may be required.

Training Required:

New skills may be required to forecast future transportation system conditions.

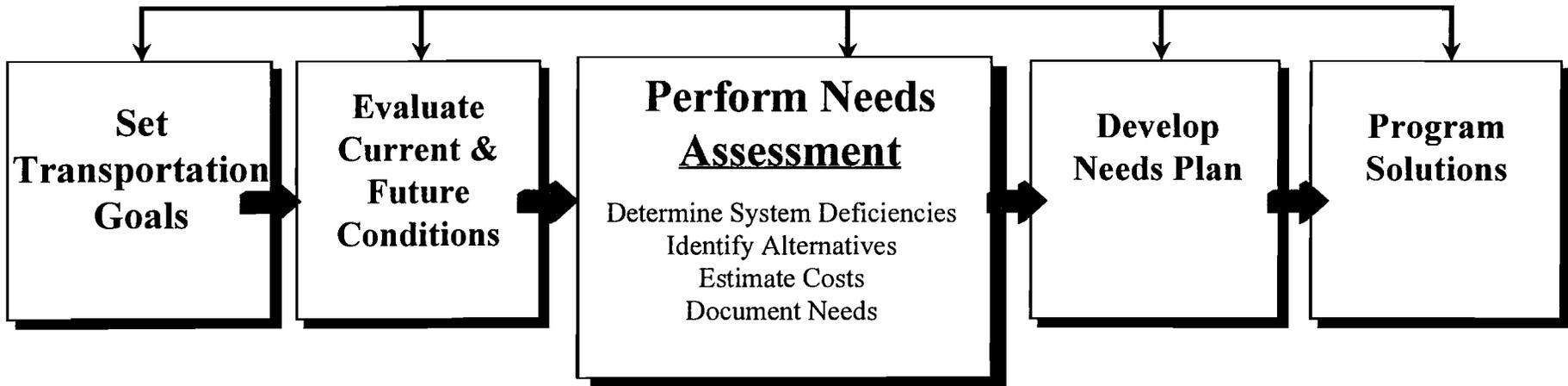
Technology Required:

An integrated data architecture, as envisioned for the ISTEAs management systems, and GIS capability, can greatly enhance the ability to analyze current and future conditions and maintain and update the designated transportation system. This integrated data architecture is being addressed by the Information Services Business Process Retooling project.

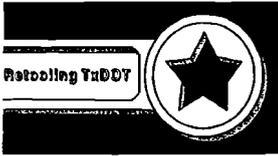


Plan Transportation Systems

Public Involvement



Financial Planning



Redesigned Business Model Process: Perform Needs Assessment

Process Description:

This new process is used to identify transportation needs by considering transportation goals, performance measures, and current and future conditions of the defined transportation system. The process uses standard methods for identifying and measuring transportation system deficiencies from which needs will be derived.

The process determines the needs for the existing system and the needs that arise from "planned" solutions for addressing future system demands. Programmed projects that are scheduled for implementation are included in the transportation system addressed by the needs assessment process. To address improvement needs during the process, viable alternatives for complex transportation deficiencies are identified and evaluated to determine the most effective alternatives to develop. Some transportation deficiencies, such as mobility in highly congested areas, may be resolved with multimodal, intermodal, or possibly, non-construction alternatives.

Credibility and accountability are maintained by the involvement of stakeholders throughout the process. The process may be performed at the statewide, modal, corridor, MPO and district levels.

Old Way Problem Statement:

- There is not a consistent approach to transportation needs assessment for all modes.
- The programs and projects resulting from the planning process are not consistently needs-based.
- Currently, there is not a direct link between implemented programs and projects and transportation system goals and performance measures.
- There is not a consistently defensible method for selecting programs and projects for implementation that directly links the programs to identified needs and transportation system goals.
- Alternatives that incorporate multimodal, intermodal, or "non-construction" solutions, where appropriate, are not identified early enough in the planning process to provide more creative and cost-effective solutions to transportation needs.
- Stakeholders are not consistently involved in the process of identifying transportation system needs.



Redesigned Business Model Process: Perform Needs Assessment

Subprocesses and Tasks:

3.1 Determine existing system deficiencies

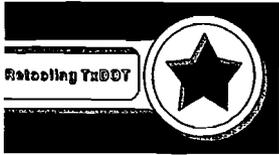
During this subprocess, current and forecasted deficiencies of the operational and physical components of the existing system are identified. The deficiencies are defined as the difference between the transportation system goals and the performance or conditions of the transportation system. For example, pavement condition indices (PCIs) and other measures are used to measure pavement performance. Pavement deficiencies are the difference between the pavement performance goals and the measured PCIs. Through this subprocess, a series of agreed performance measures are applied to the different elements of the transportation system to identify current deficiencies. Future deficiencies are determined for the system by including projects and programs that have committed funds. Future deficiencies account for travel demand growth, asset depreciation (remaining life of the pavement, transit equipment), etc.

3.2 Determine future system deficiencies and identify alternatives

During this subprocess, further analysis is performed on the current and forecasted deficiencies of the existing system identified in subprocess 3.1 to determine the programs and improvements that will help meet the transportation system goals. This subprocess identifies the potential planned programs and improvements that are needed to address the transportation system goals. For example, an alternative to resolve a congestion deficiency may include adding additional lanes to accommodate traffic growth in certain corridors. The intent of this subprocess is to define a set of technically justifiable needs (deficiencies). The process is iterative and alternatives for addressing complex transportation deficiencies will be identified and evaluated. Impacts on land use, the environment, the economy, etc. will be a part of this alternative evaluation. Some transportation deficiencies may be most effectively resolved with multimodal, intermodal, or possibly, non-construction solutions. Funding alternatives are also identified and considered at this time. Public and stakeholder involvement is increased in this subprocess to identify viable and acceptable alternatives to resolve transportation system deficiencies. The resulting list of preferred alternatives with estimated costs becomes part of the transportation needs assessment. (NOTE: Not all transportation deficiencies require consideration of multimodal, intermodal, or non-construction alternatives. Not all transportation deficiencies require evaluation of multiple alternatives.)

3.3 Determine costs of meeting needs (deficiencies)

During this subprocess, cost estimates are calculated for the preferred alternatives identified in subprocesses 3.1 and 3.2. The process will measure current and future needs in dollars. This estimate will account for inflation and can be used as a planning tool to show how postponing improvements could increase future costs.



Redesigned Business Model Process: Perform Needs Assessment

Subprocesses and Tasks (continued):

3.4 Document needs

In this subprocess, the identified system deficiencies and alternatives with cost estimates are formally documented and reviewed by the public for input. Public and stakeholder input is assessed and used to validate and modify the document before the final publication of the needs assessment. Involving the public and stakeholders at this point in the process insures that the final needs assessment is consistent with the perceptions and concerns of the primary users of the transportation system. The resulting needs assessment document is used in the planning process (Process 4) to develop a plan of solutions, actions, and strategies to address the identified transportation needs.

Methods Required:

- Consistent needs assessment methods
- Consistent forecasting methods to identify future system deficiencies
- Methods for identifying valid alternatives to address transportation deficiencies
- Procedures for determining costs for preserving and expanding transportation system components
- Methods to support an effective approach for public involvement within the needs assessment process



Redesigned Business Model Process: Perform Needs Assessment

Organizational Responsibilities:

All transportation providers carrying out planning for transportation facilities and services are involved in the process. The needs assessment process can be performed at different levels for the transportation system. The needs identified on one level can feed up to the next level to result in a statewide needs assessment. Local governments and MPOs can use the process to perform their transportation needs assessment. Districts can incorporate the documented needs of local governments and MPOs into their needs analysis to provide to the divisions. Finally, the divisions can incorporate all the documented transportation system deficiencies and preferred alternatives into a statewide list to support statewide planning for transportation systems and funding.

Linkages between stakeholders and TxDOT during the needs assessment process need to be defined and implemented. Linkages between districts and divisions during the process need to be defined and implemented. To fully implement the process, all planning groups must work cooperatively.

Training Required:

Additional training is required for (1) forecasting future conditions on the transportation system; (2) performing needs assessments; (3) identifying and evaluating alternatives that address transportation deficiencies; and (4) estimating costs for preserving and expanding transportation system components. MPOs and divisions that already perform an effective needs assessment process can provide training for other transportation planning groups. To improve public and stakeholder involvement in the process, planners will need training in public speaking, presentation, conflict resolution, and negotiation skills.

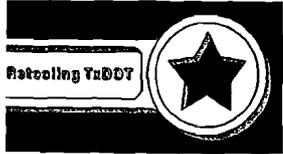
Technology Required:

Integrated databases to allow easier access to transportation condition data, costs, planning, and programming data at multiple organizational levels (being addressed by Information Services Business Process Retooling project).

Data sharing and access to the planning data by districts and MPOs.

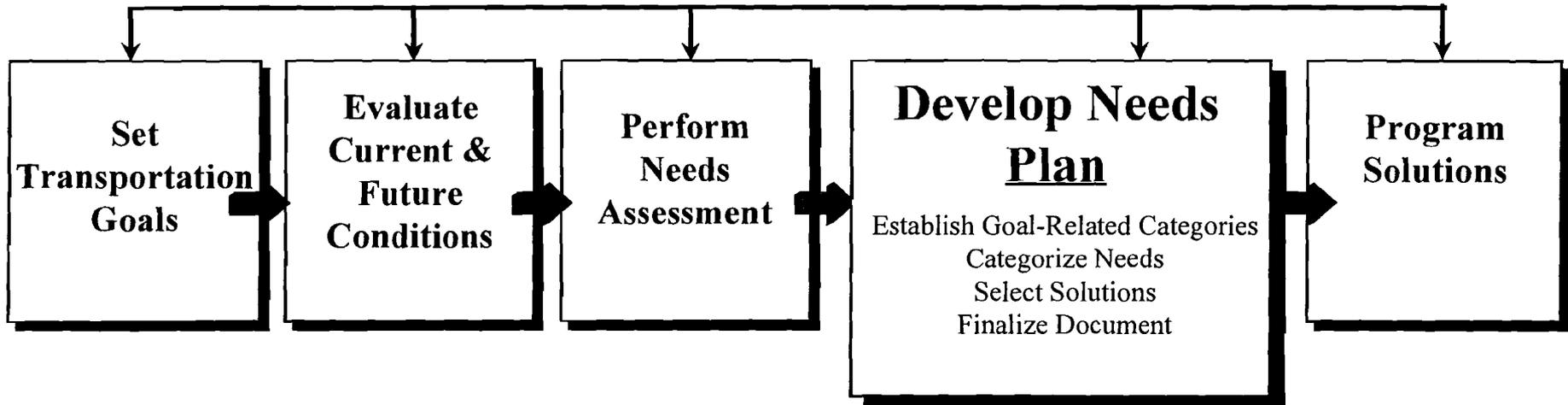
Development and implementation of GIS to support the evaluation and presentation of data regarding the transportation system conditions (being addressed by Information Services Business Process Retooling project).

Enhanced modeling capabilities to allow for modal trade-offs, address freight movement, and model peak hour demand.

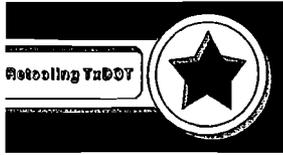


Plan Transportation Systems

Public Involvement



Financial Planning



Redesigned Business Model Process: Develop Needs Plan

Process Description:

The result of this process is a transportation needs plan that documents the planned solutions to meet the transportation system needs identified in Process 3. The solutions provide strategies, actions, improvements, and potential programs and projects that will be implemented to meet transportation system goals.

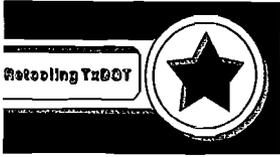
Based on the overall transportation system goals and policies, priorities are established and applied to the needs (preferred alternatives) identified in Process 3 to assist in developing the transportation needs plan. This link provides a defensible and credible justification for the selection of solutions.

The process includes the identification and evaluation of the most effective solutions to resolve identified transportation system needs. Consistent criteria and methods are used to select the most effective solutions. The solutions identify strategies, actions, and improvements that may be funded. Multimodal and intermodal solutions will be developed where appropriate. To resolve some transportation needs, alternative funding sources and non-construction strategies will be identified.

The needs planning process is performed at the statewide, modal, corridor, district, and MPO levels of the transportation system. Stakeholders and the public are involved throughout the process. The final needs plan is validated and approved by stakeholders and the Transportation Commission before proceeding to the programming process.

Old Way Problem Statement:

- Currently there is no needs-based, statewide transportation plan for all modes.
- Priorities for selecting solutions and allocating scarce resources are not sufficiently based on the evaluation of needs. In some cases, projects are prioritized for implementation based on available funding.
- Funding categories and fund allocations do not allow for the evaluation and financing of the full set of transportation solutions.
- The planning process does not include mechanisms to address intermodal linkages. Current statewide plans do not include project recommendations for statewide corridors or systems.
- Criteria do not exist to evaluate the performance potential of all proposed projects.
- Project selection criteria are inconsistent from district to district and division to district.
- Individual segments of the transportation system carry their own priority with little consideration of corridor/system impacts.



Redesigned Business Model Process: Develop Needs Plan

Subprocesses and Tasks:

4.1 Establish goal-related categories

This subprocess ensures that the Texas Transportation Plan policies, goals and strategies are the basis for establishing the categories that are used to prioritize needs. Broad categories for the preservation and development of the transportation system and modal components are established for categorization of the needs identified in the needs assessment performed in Process 3.

4.2 Categorize needs

The needs identified in Process 3 are sorted and prioritized using consistent criteria within the goal-related categories established in Process 4.1.

4.3 Select solutions (programs/projects/policies/systems)

During this subprocess, the preferred alternatives are evaluated for their effectiveness and potential to improve the performance of the transportation system. Impacts on land use, the environment, the economy, etc. are a part of this evaluation. The evaluated alternatives are reviewed and a solution is selected. The solution includes implementation plan strategies, actions, and improvements. The needs assessment and proposed solutions will enable policy makers and senior management to use needs-based information to balance system preservation, management, and improvement decisions. Justification and marketing plans for presentation of the selected solutions, strategies for bringing about the solutions, and funding requirements are identified for the solutions. The process will include the use of alternative funding strategies to implement solutions. The solutions are reviewed and approved by the stakeholders and public during this process.

4.4 Finalize needs plan document

During this subprocess, public and stakeholder input from Process 4.3 is considered and the needs plan document is prepared. Stakeholders, the public, and the Transportation Commission participate in a final review process.



Redesigned Business Model Process: Develop Needs Plan

Methods Required:

- Multimodal analysis/trade-off analysis
- Alternative solution evaluation and selection
- Prioritization method for goal-related categories and needs within the categories
- Methods to support an effective approach for public involvement within the needs planning process

Organizational Responsibilities:

All transportation providers carrying out planning for the defined transportation system are involved in the process. The needs planning process can be performed at different levels on the transportation system. The solutions identified on one level can feed up to the next level to result in a statewide transportation needs plan. Local governments and MPOs can use the process to develop their transportation needs plan.

The current organizational structure supports the process but it may require additional staffing during the early implementation of the process until staff skills and planning tools are developed well-enough to optimize the process. Training programs may alleviate the need for additional staffing. Linkages between stakeholders and TxDOT during the needs planning process need to be defined and implemented. Linkages between district and divisions during the process need to be defined and implemented. To fully implement the process, all planning groups must work cooperatively.

Training Required:

New skills are required to undertake trade-off analysis.

Cross training will be necessary to overcome current highway orientation.

Public involvement training is necessary.

Additional training will be required to train planning staff on revised categorizations, prioritization, and funding consideration methods and procedures.

Additional cross-training is required to enable planners to identify and evaluate multimodal and intermodal solutions.

Technology Required:

Integrated databases to allow easier access to transportation condition data, costs, planning, and programming data at multiple organizational levels (being addressed by Information Services Business Process Retooling project).

Sharing of data and distributed access to data across divisions and districts and by MPOs.

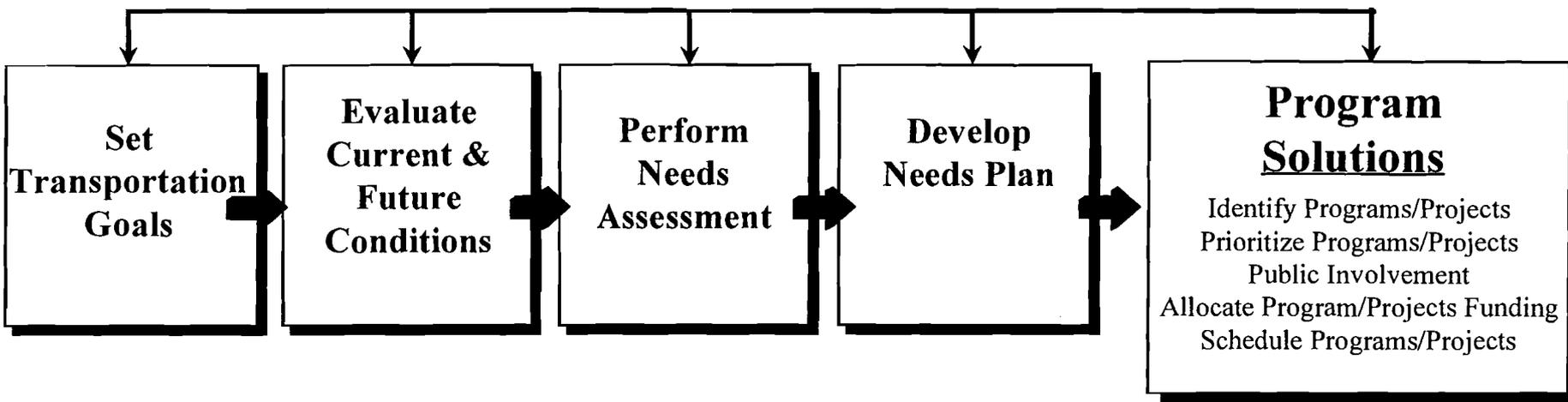
Development and implementation of GIS to support planning evaluation and data sharing (being addressed by Information Services Business Process Retooling project).

Enhanced modeling capabilities to allow for modal trade-offs, address freight movement, and model peak hour demand.



Plan Transportation Systems

Public Involvement



Financial Planning



Redesigned Business Model Process: Program Solutions

Process Description:

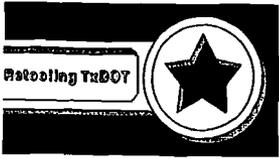
This process is used to develop programs and projects from the transportation needs plan of solutions developed in Process 4. The plan identifies broad goal-related categories (e.g. mobility, maintenance, safety, intermodal, modal, etc.) and the funding requirements for the solutions. The Program Solutions process provides a smooth flow of programs and projects from long-range planning to short-range implementation. There is a defined backlog of projects that can be advanced as resources are made available.

All programs and projects implemented from this process are tied to specific transportation goals, performance measures, and identified needs. The process provides a defensible method for the distribution of funds because the funding resources, strategies, and actions are established to implement the programs and projects defined through the planning process. New consistent methods for allocating funding to implement prioritized projects are used in the Program Solutions process. The intent is to minimize the categorical allocations currently in use and provide the maximum flexibility to implement the prioritized projects.

As with the previous processes, stakeholders and the public are involved throughout the process. The programming plan is validated and approved by stakeholders before implementation.

Old Way Problem Statement:

- In the current process, programs and projects are not consistently advanced from long-range to mid-range and into short-range implementation schedules.
- Programs and projects are not consistently needs-based because, in some instances, available funding is driving the development of the programs and projects rather than identified needs. The current funding distribution mechanisms are complicated and misunderstood. For some components of the transportation system, rigid funding categories limit the ability to address system needs and some funding categories have too little money to be used effectively.



Redesigned Business Model Process: Program Solutions

Subprocesses and Tasks:

5.1 Identify programs/projects from solutions provided in the needs plan

From the transportation needs plan, specific programs and projects are identified that implement the solutions and address the identified transportation needs. In this subprocess, the actual programs and projects required to make the solutions a reality are determined.

5.2 Prioritize programs/projects to develop long, mid, and short-range programs

After the programs and projects are determined for each solution in subprocess 5.1, the projects are prioritized and placed in a timeline to result in a programming plan with three levels:

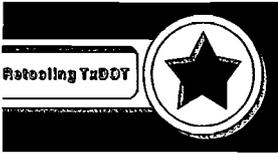
- short-range - projects with committed funding,
- mid-range - projects with anticipated funding, and
- long-range - anticipated projects

Programs and projects are prioritized consistently with the priority of the solution identified in the transportation needs plan. Projects are planned for implementation based on their dependencies to the overall implementation plan of the solution. Projects that provide the greatest benefits to the transportation system will take precedence over other projects as long as their implementation does not affect the integrity of the overall implementation of the solution. (For example, to implement a transportation solution, a frontage road and an interchange must be constructed. It does not matter which component is completed first. However, when the interchange is completed, a greater number of transportation needs will be resolved and larger benefits will be gained. The project to construct the interchange is prioritized and scheduled before the frontage road because it provides multiple benefits.)

A programming plan is prepared for review by the public and stakeholders.

5.3 Obtain public involvement

The programming plan and timeline for short and mid-range projects are reviewed and approved by the public and stakeholders before implementation begins.



Redesigned Business Model Process: Program Solutions

Subprocesses and Tasks (continued):

5.4 Allocate program/project funding

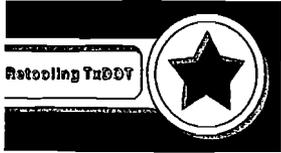
Funding from goal-related categories is allocated to specific short-range programs and projects as prioritized in the programming plan. Anticipated funding is reserved for mid-range programs and projects. Allocation methods are used that provide maximum flexibility to implement the prioritized projects. The allocations take into consideration the statewide needs and priorities as well as provide flexibility to meet local needs and priorities.

5.5 Schedule programs/projects from short-range programs for implementation

Short-range programs and projects with committed funding are scheduled for implementation. The programming documents (Statewide Transportation Improvement Program - STIP, Transportation Improvement Program - TIP, Aeronautical Capital Improvement Program - ACIP) are finalized and published.

Methods Required:

- Methods that provide the planner or decision-maker with procedures or criteria for prioritizing programs and projects into the short, mid, or long-range plans. The methods will take into consideration economic development, system continuity, staging, previous commitments and other factors. This approach will allow districts and divisions to systematically prioritize projects that meet statewide as well as local needs.
- Methods for allocating funding to implement prioritized projects. The methods minimize the categorical allocations currently in use, thereby providing maximum flexibility to implement the prioritized projects. The allocations will take into consideration the statewide needs and priorities as well as provide flexibility to meet local needs and priorities.



Redesigned Business Model Process: Program Solutions

Organizational Responsibilities:

All transportation providers carrying out programming for transportation facilities and services are involved in the process. The Program Solutions process can be performed at any level within the planning and programming organizations. The programs and projects identified and prioritized on one level can feed up to the next level to result in a statewide program.

The current organizational structure supports the process. Linkages between stakeholders and TxDOT during the Program Solutions process need to be defined and implemented. Linkages between districts and divisions during the process need to be defined and implemented. To fully implement the process, all programming groups must work cooperatively.

Training Required:

New skills are required to perform what-if analysis during the development of specific programs and projects to implement identified solutions.

Cross-training is required to help planners understand the planning process and development of solutions.

Public involvement training is required.

Training will be required to educate planning staff on new prioritization and funding allocation methods.

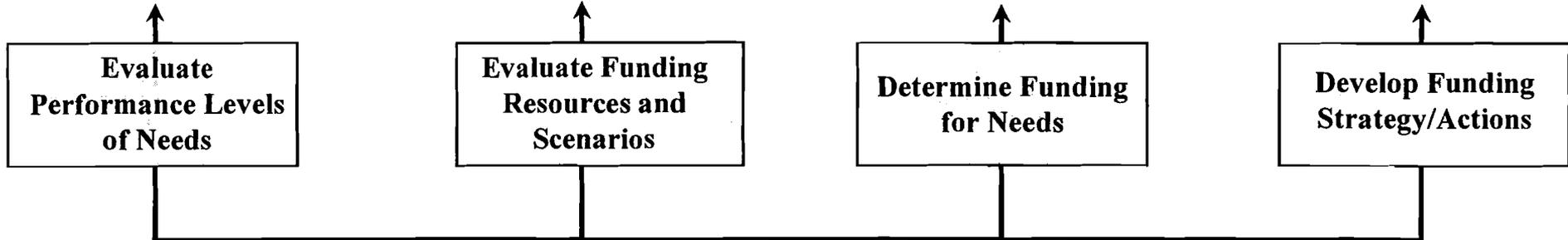
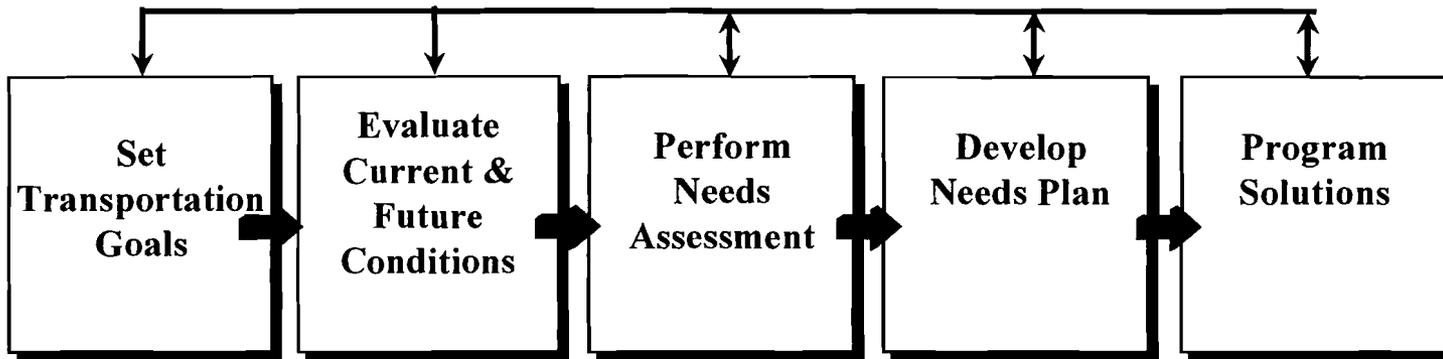
Technology Required:

Integrated databases to allow easier access to transportation condition data, costs, planning, and programming data at multiple organizational levels (being addressed by Information Services Business Process Retooling project). Project management and what-if analysis modeling software would further enhance the process.

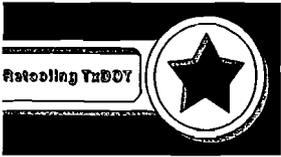


Plan Transportation Systems

Public Involvement



Financial Planning



Redesigned Business Model Process: Financial Planning

Process Description:

The Financial Planning process occurs as part of and concurrent with other processes described in the redesigned business model for TxDOT's Plan Transportation Systems. However, because the subprocesses and tasks are unique and sometimes separate from the transportation system planning and programming processes, the Financial Planning process is described separately to highlight the new and critical features of the process.

The redesigned Financial Planning process improves the integration of the continuous statewide transportation planning and programming processes with its financial element. The process encourages the development of new and innovative funding methods and maximizes existing funding sources. Funding is directly linked to planning, transportation needs, and meeting transportation system goals and performance measures. Funding requirements for all modes of transportation are more effectively addressed. Financial forecasting assumptions will be developed with the Metropolitan Planning Organizations (MPOs).

The Financial Planning process has subprocesses that parallel the overall transportation planning process. Balanced funding goals are identified and prioritized for broad transportation goal-related categories to maintain the effectiveness of the transportation system as determined by the system performance measures. Funding needs are identified from the gap between costs to resolve transportation needs and the available current and future revenues. Funding strategies and actions are developed to meet the funding needs; this includes the use of innovative funding strategies. Funding is allocated to establish and maintain the balance and priorities of the broad goal-related categories of the transportation system. The allocation of funds is needs-based, defensible and tied to the goals for the transportation system.

Old Way Problem Statement:

In the current financial planning process, the following limitations exist:

- There is little consideration of future revenues in long-range transportation planning.
- There is no ongoing process for determining need for revenue increases and alternative revenue sources.
- There is no provision for developing consistent long-range revenue forecasts with MPOs and districts.
- There is no ongoing process to build financial strategies to meet future transportation needs.
- In some cases, projects are prioritized for implementation based on available funding rather than effectiveness.
- Project prioritization does not consistently direct funding to the most needed projects.
- For some funding categories, consistent criteria do not exist to evaluate the performance potential of proposed projects.
- Current project prioritization for some funding categories does not include district and local priorities.
- Funding distribution mechanisms are complicated and misunderstood.



Redesigned Business Model Process: Financial Planning

Subprocesses and Tasks:

6.1 Evaluate performance levels for meeting transportation needs within goal-related categories

In this subprocess, senior management evaluates the relationship between funding levels and transportation system performance for broad goal-related categories. This can be presented graphically using performance curves. The performance curves are evaluated to identify and balance the level of performance (e.g. poor, marginal, adequate, best-case) expected for the broad goal-related categories within reasonable funding expectations. This supports decision making on the allocation of funds between the broad goal-related categories. Planners may initially identify funding needs in this subprocess and begin developing strategies and actions to meet the needs. The transportation needs that were identified in Process 3 and categorized and prioritized in the goal-related categories in Process 4 are applied to the performance curves to graphically represent where the transportation system is or is not meeting the expectations and goals established.

6.2 Evaluate funding resources and scenarios

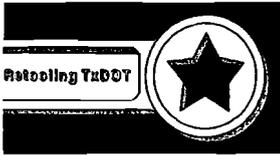
In this subprocess, senior management applies the funding performance curves developed in subprocess 6.1 to current and future revenues identified in Process 2. This subprocess further identifies funding needs where revenues are not adequate to achieve expected performance levels. Management has the opportunity to change the balance and expected performance levels of the performance curves and develop strategies and actions for enhancing revenues.

6.3 Determine funding for needs within goal-related categories

In this subprocess, funding needs are identified from the gap between costs to resolve transportation needs and the available current and future revenues. These needs are added to the funding needs identified in subprocesses 6.1 and 6.2 to determine the comprehensive funding needs for the goal-related categories.

6.4 Develop funding strategies and actions to resolve funding needs

In this subprocess, funding strategies and actions to meet the funding needs are developed. Identified funding resources are allocated to goal-related categories to maintain the balance and priorities of the categories.



Redesigned Business Model Process: Financial Planning

Methods Required:

- Method to determine current and future revenues for long-range planning purposes.
- Method to define the activities and procedures required to enhance revenues and develop innovative funding strategies on a continuing basis.
- Method and process to distribute funding to goal-related categories based on needs.
- Methods for determining costs to achieve performance levels for components of the transportation system that support goal-related categories of funding.

Organizational Responsibilities:

Senior management, transportation, strategic and financial planners will perform this redesigned process. Senior management needs to develop and adopt the financial planning process as part of their strategic and transportation planning and decision-making efforts.

Training Required:

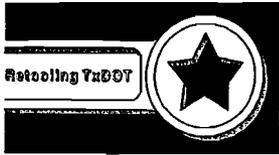
Senior management, transportation, strategic and financial planners, and Commission members may require training in financial planning methodologies based on needs assessment, performance measures, and balanced prioritization of funding.

Technology Required:

Software to perform financial analysis and develop performance curves may be needed. Several "off-the-shelf" software applications are available to provide the modeling needed for financial planning.



IV. Summary of Business Improvement Projects (BIPs)



Summary of Business Improvement Projects BIP Descriptions and Primary Benefits

The following is a summary of the Business Improvement Projects (BIPs) identified in Phase 3, Redesign, of the Plan Transportation Systems Business Process Retooling project. At the beginning of Phase 3, Redesign, four focus areas for redesign were selected from the vision business model developed in Phase 2, Create Vision and Targets. The areas selected for redesign were:

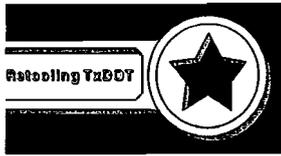
- perform needs assessment process
- develop needs plan process
- program solutions process
- financial planning process

From these four focus areas, the following goals/problems were identified to concentrate the efforts of the retooling team:

1. To provide processes and methods for a consistent needs assessment.
2. To fully define the transportation system within the State of Texas.
3. To provide for greater involvement of stakeholders on all levels and in all processes.
4. To provide for more flexible funding; to have funding based on transportation needs and goals.
5. To develop broader criteria for evaluating alternatives to meet transportation needs.
6. To make available more tools for evaluation and analysis at the local/district level.

Sixteen BIPs have been identified for further development during Phase 4, Build, and Phase 5, Implement, of the Retooling project. These BIPs address most of the business improvement recommendations defined in Phase 2 and the goals established in Phase 3. Recent Department efforts have studied and presented recommendations relating to project selection, project prioritization and funding allocations. These efforts have been recent and most of these recommendations have not been implemented. Because of these and other changes required by federal legislation, Retooling emphasis in the programming area has been minimized.

The following table provides a brief description and the expected benefits for each BIP. Detailed BIP descriptions are provided in Appendix C, Business Improvement Project Charters, of this report; the detailed descriptions include the required steps and responsibilities needed to realize the vision for the Plan Transportation Systems business model developed in Phase 2.



Summary of Business Improvement Projects BIP Descriptions and Primary Benefits

BIP No.	Description	Benefit/Result
Needs-1 Develop and implement needs identification methods and processes	This project will define a process and methods to identify needs which support the transportation system goals and policies as defined in the Texas Transportation Plan. This process will be used to identify transportation needs by considering transportation system goals, performance measures, and system conditions, both current and future. This process will focus on using consistent methods for identifying and assessing needs.	Implementation of this process will provide a consistent basis for identifying needs to support the overall transportation system and optimize its effectiveness. The output of this process will serve as the basis for the needs plan.
Needs-2 Develop guidelines to identify alternatives and select solutions that address transportation needs	This project will define guidelines for evaluating viable transportation alternatives to meet identified transportation deficiencies (needs). It will define guidelines for developing solutions to achieving the transportation system goals. This project will result in an ongoing process to evaluate and select transportation solutions and prepare a transportation needs plan. There are three major parts to this project; 1) identification of alternatives; 2) selection of solutions; and 3) development of a needs plan.	<p>Implementation of this process will provide a basis for identifying alternatives that address the identified transportation needs (deficiencies/gaps) for the overall transportation system. It will ensure that evaluating alternatives is a standard part of the needs determination process and not a process to justify a program/project.</p> <p>Implementation of this process will provide a better understanding of the impacts (socio-economic, land use, environmental, etc.) transportation decisions have on local areas and will address issues early in the planning process. Criteria for evaluating and selecting solutions will be consistent from district to district and division to district.</p> <p>The implementation of a process to develop a needs plan will enable the Department to consistently identify transportation needs (for all modes), to have defensible documentation of how needs are identified, to have a valid process for identifying needs and estimating costs to address the needs, to appropriately address transportation goals, and to provide direction for project selection and programming.</p>
Needs-3 Establish standard forecasting practices	This project will define methodologies and requirements for forecasting future conditions for all elements of the transportation system and ensure that they are used across modes, divisions, districts and, where appropriate, by MPOs. These forecasts will address operational conditions (demand for the use of the transportation facilities) and physical conditions.	Implementing consistent practices for forecasting future conditions of the transportation system will ensure that each division, district and MPO is analyzing and evaluating data in a similar manner and is using consistent forecasts. As each group begins to assess transportation needs by comparing the forecasted conditions to transportation goals, they will be building the needs list with similar, defensible inputs.



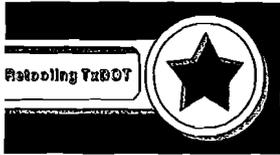
Summary of Business Improvement Projects BIP Descriptions and Primary Benefits

BIP No.	Description	Benefit/Result
Needs-4 Develop procedures for determining costs for preserving and expanding system components	This project will define a process and procedures for making preliminary cost estimates of the transportation needs for each of the different system components. The process will identify standard approaches that incorporate actual cost data from the same sources but reflect local conditions. Different costs will be used by different districts or regions to reflect local conditions but they will be arrived at through a common approach.	Implementation of this process will provide a basis for determining costs of the transportation needs. Each division, district and MPO will be determining costs in a consistent, defensible and documented manner. Implementation of this process will also provide a mechanism to realign transportation system goals, where necessary, and serve as input into the financial planning process.
Needs-5 Develop guidelines to account for inflation of costs	This project will define guidelines for inflating estimated costs to account for inflation. Since all the needs will not be implemented immediately or at the same time, a mechanism is necessary to estimate project costs that will account for inflation. This project will develop guidelines for determining the inflation as well as guidelines on applying the inflation factors to the identified needs.	Implementation of this process will provide a basis for determining costs of the transportation needs that will support the overall transportation system and optimize its effectiveness. Increased costs due to delays in implementation of identified needs will be shown.
Needs-6 Designate the transportation system	This project will define the transportation system that will be subject to a needs analysis, performance measures, condition evaluation, etc. This project requires an approach to identify the system and corridors that will support statewide, district and local/MPO goals for the transportation system. It will include all modes and intermodal connections. This project will reevaluate the system defined in the Texas Transportation Plan and add/change as necessary to meet the transportation system goals.	Implementation of this process is the critical factor in accomplishing the other steps in the planning/programming process. It will guide transportation investment decisions and provide a basis to measure progress towards meeting the transportation system goals.
Needs-7 Establish performance measures that quantify accomplishment of system goals	This project will identify and define/redefine appropriate transportation system performance measures from existing plans, management systems, and ongoing research. It will also define and/or redefine minimum thresholds and goals for transportation system performance. This project will define procedures to develop performance measures when transportation system goals and policies are updated.	Implementation of this process will provide a basis for evaluating the transportation system and determining the needs to support the overall transportation system goals. The performance measures will be used to determine whether the transportation system needs are being met. Implementation of this process will also provide a mechanism to reevaluate transportation system goals, redefine where necessary, and serve as the driving force for identifying needs.



Summary of Business Improvement Projects BIP Descriptions and Primary Benefits

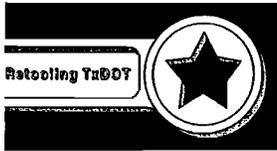
BIP No.	Description	Benefit/Result
Needs-8 Establish a process for prioritizing transportation needs among and within transportation goal-related categories	This project will establish the method for determining goal-related categories, establish criteria for prioritizing transportation needs between and within goal-related categories, and establish a process for reevaluating the goal-related categories and their relative priorities.	A priority list of solutions grouped and ranked by goal-related category will assist TxDOT staff in allocating resources to work toward meeting the goals identified in the Texas Transportation Plan. It will provide solutions which balance the various transportation needs of the state.
Needs-9 Integration of needs, planning and programming	This project will incorporate existing programming procedures and processes, including recommendations from special task force initiatives, as much as possible to link the decisions made during programming and program/project implementation with information provided in the needs plan. This project involves reviewing the processes of identifying projects for implementation, prioritizing projects/programs into short, mid, and long range plans, and allocating funds to implement the selected projects.	Current efforts and direction by recent Department initiatives relating to the programming area will continue.
Finance-1 Use consistent assumptions in forecasting anticipated funds	This project will establish procedures to communicate financial information to MPOs and districts.	This process will provide consistent financial information to various stakeholders to promote better decision-making.
Finance-2 Incorporate revenue enhancement activities and innovative funding strategies	This project will provide a mechanism for initiating and implementing revenue enhancement strategies and will build on existing efforts to: <ul style="list-style-type: none"> - ensure that revenue enhancement strategies are addressed as part of TxDOT's ongoing planning process. - evaluate alternative financial strategies to meet future funding needs. - determine the adequacy of revenues from existing sources and identify new sources to meet future funding needs. - identify innovative funding strategies at a project level. 	This process will analyze revenue generation activities and develop new funding mechanisms to enhance existing revenue sources to address identified transportation needs.



Summary of Business Improvement Projects

BIP Descriptions and Primary Benefits

BIP No.	Description	Benefit/Result
Finance-3 Determine funding for goal-related categories based on needs	This project will establish processes to determine the costs associated with different levels of service for all goal-related categories, develop procedures for determining and balancing levels of service among goal-related categories, and develop procedures for determining funding levels to achieve specified performance for components of the transportation system.	This process will base funding on identified needs and tie funding to the goals set as part of the planning process so that limited resources are distributed to maximize the benefits to the state.
Tech-1 Data and decision support strategies for planning	This project will develop requirements, specifications, relationships, and logical models for data used by methods and processes developed for the transportation planning process.	The primary benefit of this project is an integrated data structure that will provide a common foundation for the flow of information from one process to another. Planners and decision makers at all levels, including the MPOs, will be able to "seamlessly" access a common database and use consistent data to support the planning process.
Tech-2 Planning tools / applications coordination	This project will gather requirements, research, define, and implement automated tools available on the market as prepackaged software to support the transportation planning process. If prepackaged software is unavailable, this project will define and coordinate development of applications to support the transportation planning process.	Software tools and applications will be available to help streamline the redesigned planning process, providing convenient access to and use of Department data. The resulting transportation planning information systems will facilitate the flow of work and information from the highest level of planning down through the implementation of a project in the short-range plan.
Enabler-1 Develop training and education programs to support the new processes	This project will develop and deliver an educational program that increases TxDOTs and its partners understanding of planning processes, policies and procedures. Dissemination of this information is an essential element of the Plan Transportation Systems Retooling efforts.	This process will provide means to educate, train and communicate the redesigned processes, procedures and policies in transportation planning. These processes, procedures and policies will be documented. This education program will ensure the ongoing success of the redesigned processes during and after the implementation phase of the Retooling project.
Enabler-2 Enhance public involvement in the planning process	This project will enhance and formalize the opportunity for public involvement within the transportation planning process.	This process will meet federal guidelines for public involvement; provide proactive and appropriate interaction between the Department, stakeholders and the public; and promote the use of different methods for involving the public.



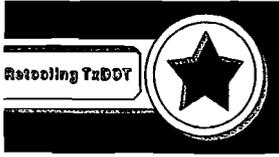
Summary of Business Improvement Projects

Relationship Between the Texas Transportation Plan and the Strategic Plan

One of the key issues that the executive sponsors asked the Plan Transportation Systems Business Process Retooling core team to address is the relationship between the Department's Strategic Plan and the Texas Transportation Plan.

The recommended transportation planning process addresses this issue as follows:

- Through the Set Transportation System Goals process, the Texas Transportation Plan establishes the statewide policy goals for the transportation system. These are the transportation system goals to be incorporated into the Strategic Plan document.
- The Set Transportation System Goals process establishes performance measures that quantify transportation system conditions in Texas with respect to the transportation system goals. These transportation system performance measures should be incorporated into the Strategic Plan document.
- The strategies and actions established by the Texas Transportation Plan correspond to the solutions identified through the redesigned Perform Needs Assessment and Develop Transportation Needs Plan processes. These strategies and actions for the transportation system should be incorporated into the Strategic Plan document.
- The Perform Needs Assessment and the Develop Transportation Needs Plan processes develop statewide, modal, and other needs information. This needs information should be incorporated into the Strategic Plan document.

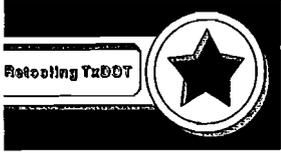


Summary of Business Improvement Projects

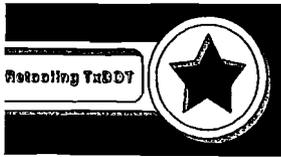
Relationship Between the Texas Transportation Plan and the Strategic Plan (cont.)

The Plan BPR core team recognizes that the Strategic Plan document must meet a number of state reporting requirements. Therefore, a requirement for the redesigned transportation planning processes is that their output meets these reporting requirements and is incorporated into the Strategic Plan.

The Plan BPR core team recommends that this direction and responsibility be provided to the Transportation Planning and Programming Division and the Management Services Office for implementation. We do not feel a Business Improvement Project (BIP) is warranted.



V. Initial Implementation Strategy



Initial Implementation Strategy

This report defines the business improvement projects (BIPs) that are required to develop and implement most of the previously recommended process improvements to the Plan Transportation Systems business area. The business improvement projects require developing new planning procedures prior to implementing the redesigned planning processes. The overall objective for the new transportation planning process is to establish a clear connection from the development of policy goals, through needs assessment, to the selection and programming of solutions. The recommended improvements to the current process will affect different divisions, each district, Metropolitan Planning Organizations, and TxDOT's other partners. The individual BIPs provide the methodologies and processes that must be in place to achieve these improvements. The "build phase" (Phase 4) will provide the approaches and methodologies to be implemented into the current cycle of plan and program development. Implementation may result in significant change to the current way of doing business. While this change is being developed, TxDOT must continue with existing planning and programming work within the existing cycle of planning and program development.

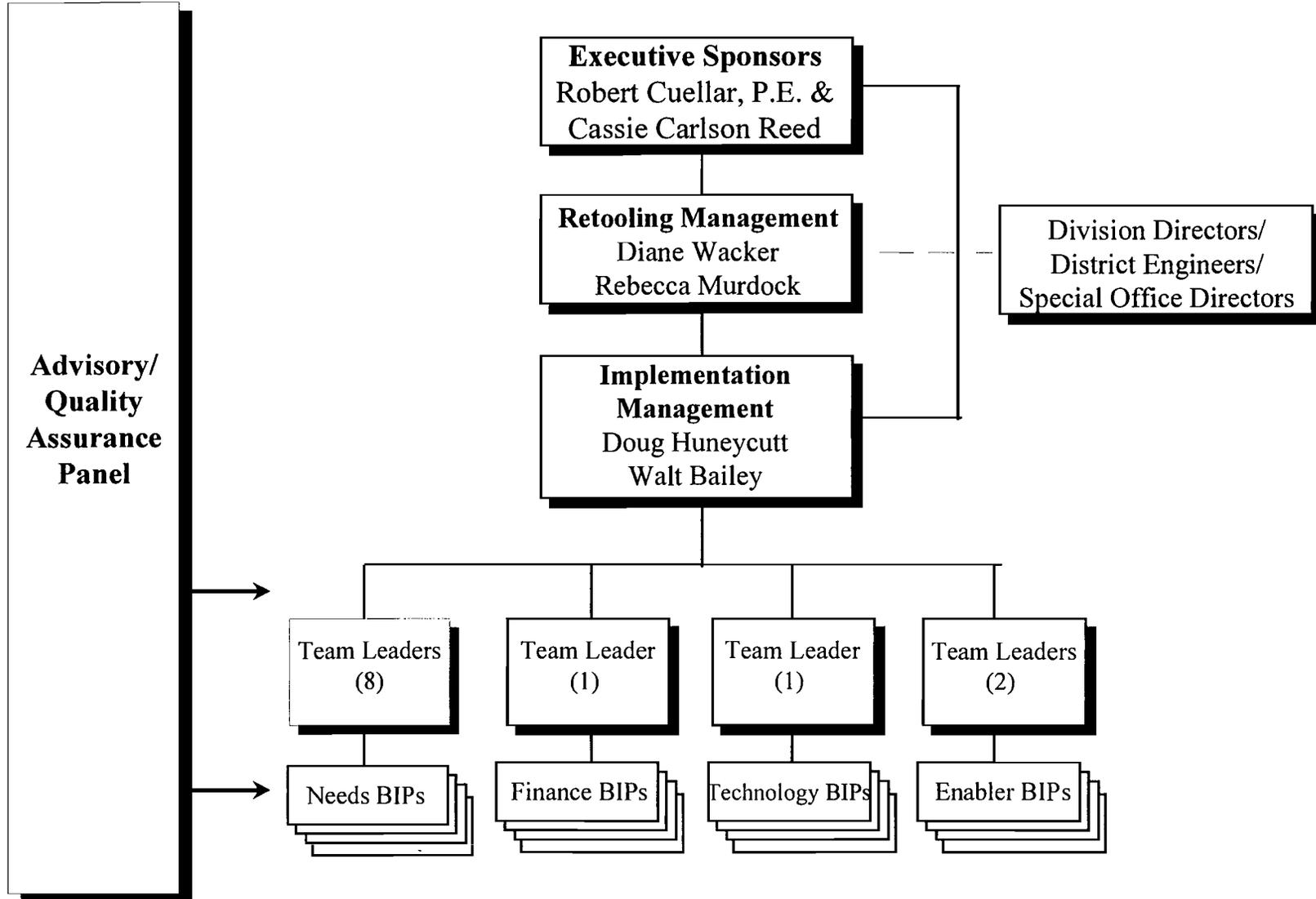
Management Structure

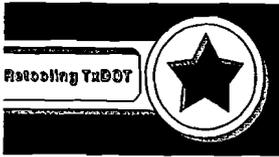
Given the complexity of the current business environment, that many of the BIPs involve developing new methodologies, the extent of on-going change, and that much of the agency will be affected by these changes, strong project management and quality assurance is essential. The Implementation Project Management diagram depicts the recommended approach for managing implementation. The implementation manager will be supported by the team leaders from each of the business improvement projects. These team leaders, under the direction of the implementation manager, will oversee the work of the business improvement project teams as they develop the new processes, methodologies, and procedures.

To ensure quality and provide additional practitioner and management perspectives, an advisory panel will be established to provide input to the implementation management team as well as the BIP teams as necessary.



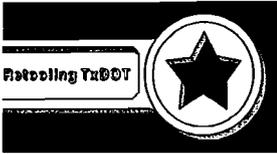
Initial Implementation Strategy Project Management





Roles and Responsibilities

- Executive Sponsor:** Provides overall direction and approval for business improvement projects.
- Retooling Management:** Manages and ensures integration of all retooling efforts.
- Advisory / Quality Assurance Panel:** Provides quality assurance oversight and input for the content of the processes and methods developed in each BIP. The members will review deliverables for content, provide input into methodologies, and validate the new processes. This panel will consist of Plan BPR core team members, Metropolitan Planning Organization representatives, district engineers, division directors and others. Level of commitment is expected to be less than 10%.
- Implementation Management:** Manages the implementation of the Plan Transportation Systems BIPs.
- Ensures that BIPs are coordinated and integrated with other processes.
 - Ensures the quality and applicability of the individual BIP methodologies.
 - Monitors project budget and staff loading schedules and participates in the selection of individual BIP team members.
 - Provides direction to the implementation team leaders concerning scope and requirements of the projects.
 - Resolves implementation issues including change management issues.



Roles and Responsibilities (cont.)

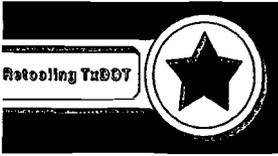
Implementation Management (cont.):

- Develops overall project budget and work plan.
- Ensures careful coordination with existing process owners to plan for the implementation of the new processes into the existing planning and programming cycles once the "build" BIPs are completed.
- Manages change by involving stakeholders and district/division/special office champions.
- Ensures that performance measures are established to facilitate evaluation of process and project results and outcomes.

BIP Team Leaders:

The BIP team leader will:

- Direct BIP teams in carrying out project work and preparing deliverables.
- Develop detailed work plans and determine implementation schedule for the projects.
- Coordinate with related BIPs, manage scope and ensure that the BIPs requirements are addressed.
- Report BIP status.
- Handle project issues and escalate if necessary.



Initial Implementation Strategy

Roles and Responsibilities (cont.)

BIP team leaders will be supported by individual BIP teams staffed with 3 to 7 team members. In some cases, the same team may address more than one BIP. Detailed staff loading requirements will be determined by the implementation manager and the BIP team leader.

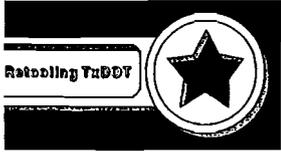
BIP Teams:

Under the direction of the BIP team leader, BIP teams are responsible for implementing a BIP as defined in the BIP descriptions. BIP teams will:

- Develop detailed work plans.
- Perform project work and prepare project deliverables.
- Report project status.
- Handle project issues and escalate if necessary.
- Be responsible for project team communications.
- Manage contracts, as applicable.

Implementation Schedule

The implementation schedule provides an initial assessment of the BIP time frames. The assessment is based upon the analysis of BIP dependencies and the elapsed time required to complete the BIPs. The timetable is preliminary and addresses the "build" phase only. The timetable for the implementation of the new approaches and methodologies will have to be developed by the BIP team in close coordination with the process owners in order to ensure a smooth integration of the new approaches and redesigned processes.



Initial Implementation Strategy

It is important to note that the following project management work steps will be taken by each BIP team once they are assembled:

- Further develop the work plan approach
- Determine if outsourcing is appropriate
- Develop BIP time lines
- Identify stakeholder involvement and change management requirements
- Assess when the new processes will replace existing process cycles

Dependencies

The Plan Transportation Systems BPR recommendations aim to improve the connections between existing processes and the new processes. In a number of cases, closely related work is already underway. Consequently, the dependencies between these current efforts and the individual BIPs are recognized in the implementation strategy.



Assumptions

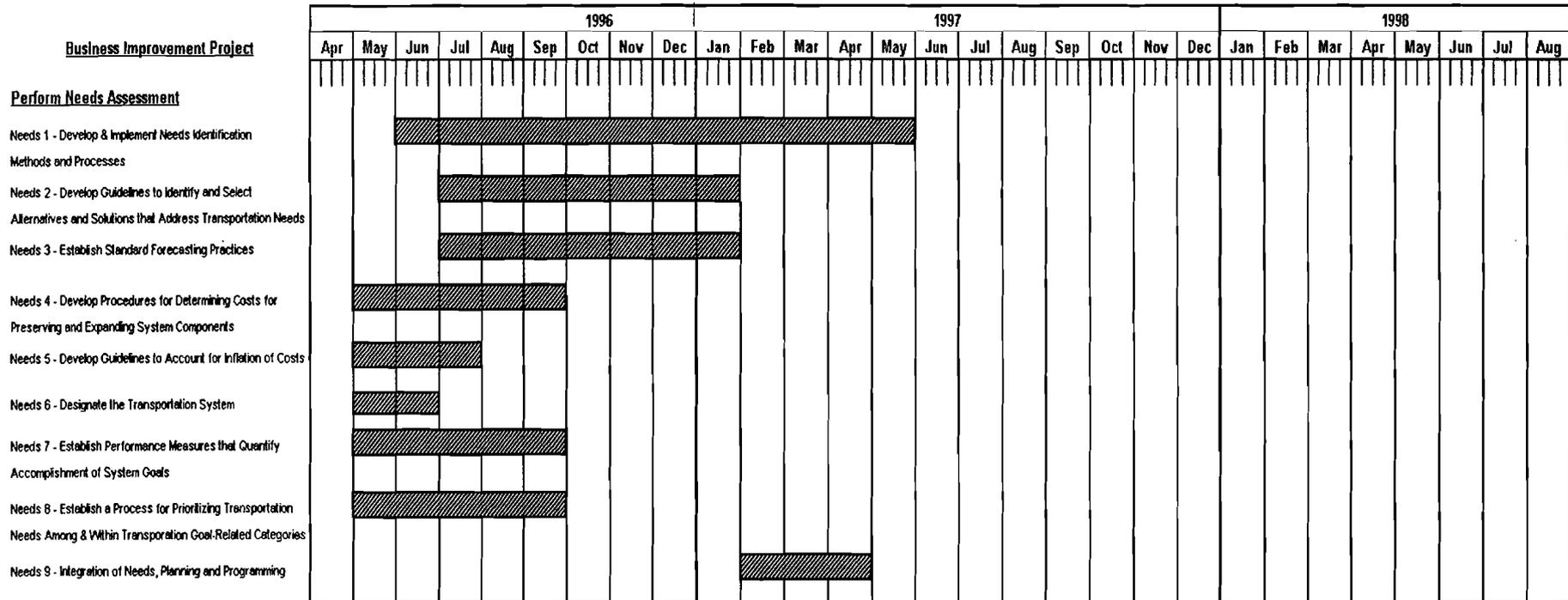
The following assumptions were used to develop the implementation strategy defined in this report. These assumptions are necessary to assure that each business improvement project is built and implemented in a timely and efficient manner.

- Strong support from the entire TxDOT management team is essential.
- The timely and effective implementation of the business improvement projects will require support and commitment from all levels and areas of the Department.
- BIP team members will consider Plan BPR activities a high priority and will dedicate the time required (10% - 80%) to the project.
- BIP work plans and cost estimates will be refined as the BIP teams carry out their responsibilities.
- BIP teams may be assigned more than one business improvement project in instances where project subject areas are similar.
- Certain BIPs may be assigned to current organizational units for development and implementation rather than to BIP teams.
- BIP teams will include personnel who would normally perform day-to-day planning and programming activities. Therefore, some impact to day-to-day operations must be anticipated during the next two phases. Where appropriate, outsourcing of some BIP work steps will be pursued in order to reduce "re-inventing the wheel," to keep implementation moving in a timely manner and to decrease the impact to current workloads. In other instances, current non-critical activities and projects may have to be stopped to free up TxDOT resources for BIP teams.
- The work steps and time frames that have been developed are preliminary and will be refined as detailed design and implementation planning takes place.
- Timely reviews and approvals must be provided. Implementation delays will slow momentum of the projects and postpone realization of benefits. Issues must be resolved quickly, while work is in progress, to enable these personnel to continue their work. The review and approval of approaches, methods, procedures, etc. will require a maximum of one month.

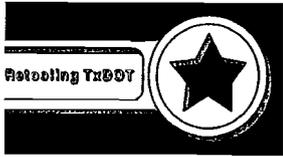


Initial Implementation Strategy Phase 4 Schedule

Business Improvement Project Build Schedule

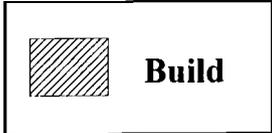
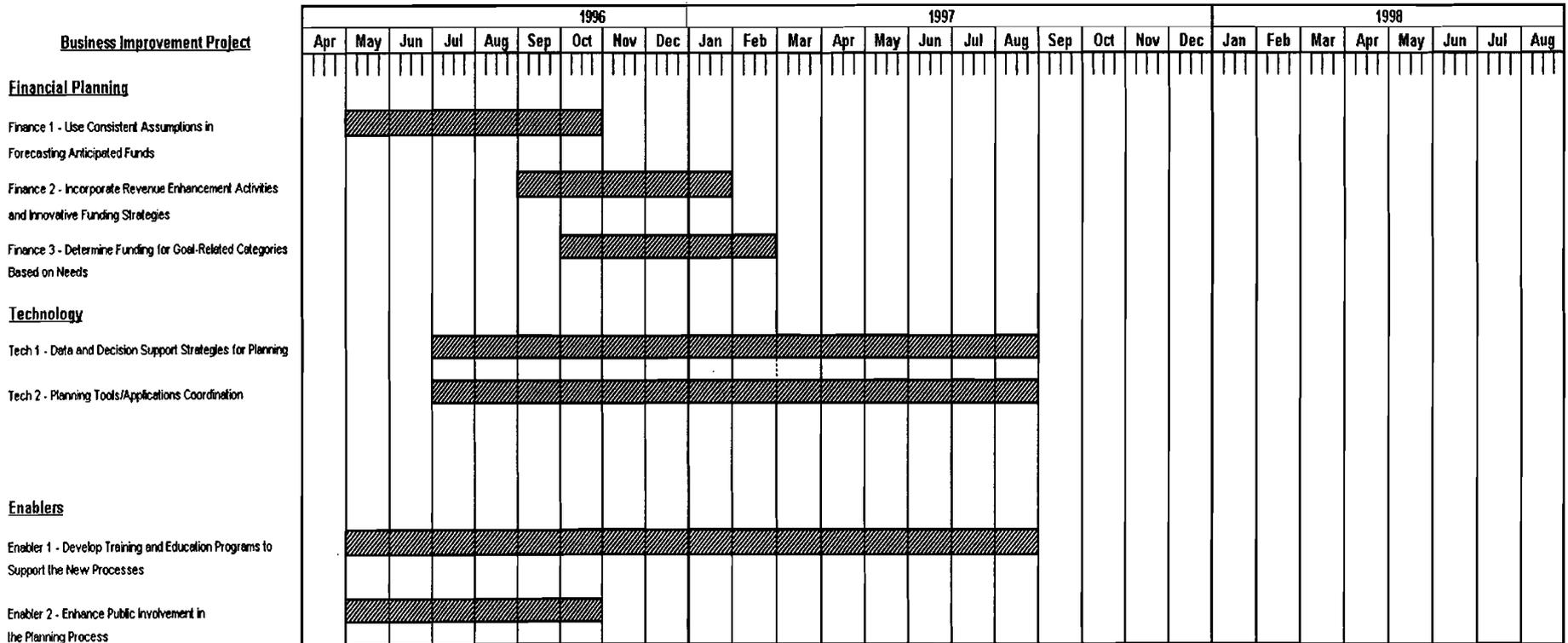


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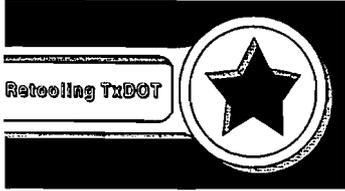


Initial Implementation Strategy Phase 4 Schedule

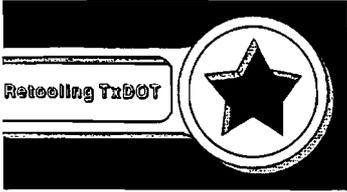
Business Improvement Project Build Schedule



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VI. Appendices



A. Glossary

Appendix A, Glossary

Redesigned Plan Transportation Systems

Allocate To set apart for a specific purpose, such as to set aside funds to implement improvement projects for the transportation system.

Alternative A proposed general action or set of actions to resolve an identified deficiency of a transportation component or the transportation system. For example, the needs assessment process has identified that the condition of a section of pavement on the highway is not acceptable when measured by the transportation system performance measures. An alternative to resolve the deficiency could be replacing the pavement with concrete pavement.

Approve To accept as satisfactory.

Assemble To put parts together.

Business Model A graphic representation of the business processes involved in delivering TxDOT's products and services. The business model depicts business activity rather than organizational structure and defines the business areas of the department.

Business Improvement Project (BIP) A project to build detailed procedures and organizational infrastructure needed to implement new business processes defined during Business Process Retooling analysis and design. The BIPs can be assigned to an organizational unit or cross-functional team for implementation.

Business process A set of subprocesses/activities that take input and create one or more outputs that are of value to the user/customer.

Constrain To impose structure, restriction, or limitation.

Database A collection of data (information) organized especially for rapid search and retrieval.

Deficiency In general, the difference (or gap) between the performance of a component(s) of the transportation system and a transportation goal, as measured with the use of performance measures.

Document To create an official record.

Evaluate To judge the worth or value of.

Forecast To calculate a future state.

Goal A specific, measurable performance expectation of the facilities and operations of the transportation system.

Goal-related categories Broad categories for the preservation and development of the transportation system and modal components. The categories directly reference the transportation system goals, policies, and strategies as identified in the Texas Transportation Plan and the Strategic Plan; they are used in the financial planning process and the process to develop a transportation needs plan.

Input Resources or information applied to execution of a business process.

Integrated Coordinated or blended into a functioning or unified whole. For example, an integrated database would be the unified collection of multiple databases to provide more direct and streamlined access to business information for analysis and decision making.

Intermodal Surface Transportation Efficiency Act (ISTEA) The ISTEA of 1991 implemented broad changes in the way transportation decisions are made by emphasizing diversity and balance of modes and preservation of existing systems with construction of new facilities. It provided a series of social, environmental, and energy factors that must be considered in transportation planning, programming, and project selection.

Intermodal Refers to a plan or program or facilities that address the needs of passengers or freight changing their mode of transportation. For example, an airport is an intermodal facility where freight and passengers make transfers between motor vehicles and airplanes.

Justification The presentation of a compelling case to decision makers for acceptance of a proposed implementation plan, strategies, and actions to resolve identified transportation system deficiencies. The justification should prove how the proposed plan will most effectively resolve the deficiency.

Methodology A body of methods, rules and tools employed by a discipline; a particular procedure or set of procedures.

Metropolitan Planning Organization (MPO) An agency designated by the Governor to serve as a forum for cooperative transportation decision making for a metropolitan planning area. An MPO is required to be in place for each urbanized area over 50,000 population (as determined by the Bureau of Census). The MPO in cooperation with the State and with operators of publicly owned transit services are responsible for carrying out the metropolitan transportation planning process. The MPO is responsible to develop, in cooperation with the State and public transit operators, and approve a financially constrained, multimodal Metropolitan Transportation Plan (MTP). The MPO, in cooperation with the State and public transit operators, are to develop and approve, together with the Governor, a financially constrained transportation improvement program (TIP).

Modal Refers to a plan or program that encompasses the needs and goals of a specific mode (method of transportation). Highways or aviation are examples of modes.

Multimodal Refers to a plan or program that encompasses the needs and goals of more than one mode, for example, highways and public transportation.

Multimodal Planning Team (MMPT) The MMPT was established in 1994 to assist with the development of the Texas Transportation Plan (TTP) and the implementation of actions for planning and preservation of the Texas transportation system over the next 20 years. It is the focal point for the coordination of multimodal and intermodal planning activities within the Department. The team is comprised of members from the Senior Management Team, Division Directors, and selected District Engineers.

Need In general, the difference (or gap) between the performance of a component(s) of the transportation system and a transportation goal, as measured with the use of performance measures. The term "need" may be used to refer to a *deficiency* of the transportation system, an *alternative* to resolve the deficiency, and/or the *solution* to implement a selected alternative.

Needs assessment The process of determining the deficiencies of the transportation system, identifying viable alternatives to resolve the deficiencies, and selecting the most effective alternatives preferred by the stakeholders; the document that describes the findings in the needs assessment process.

Output The end product or outcome of a business process; physical or informational product of completing activities to execute the process.

Performance curves The graphical representation of the relationship between funding levels and transportation system performance.

Performance measure Quantifiable information to indicate a desirable state or predict success of goals and objectives.

Performance standard A definite rule, principle or measure established by authority that may be used to measure quality based on specified quantities or values.

Performance The functional effectiveness of a transportation component.

Policy A general statement of principle designed to provide broad guidance in fulfilling the agency's mission and in maintaining an agency work environment conforming to federal and state laws. Policy requires, guides and restricts present and future decisions and actions of the agency. A definite course or method of action.

Procedure A detailed description of required or allowable actions to be executed in delivering agency services or in supporting the delivery of services. Procedures establish sequence, timing, coordination and specify what shall be done by whom. Procedures translate policies, plans and programs into action.

Process dependencies Dependencies include necessary or required linkages between business activities, process, inputs or approvals.

Process flow model A graphical depiction of the flow of activities and responsibilities which comprise a business process.

Process map See *process flow model*.

Program A staged, multi-year implementation of multiple improvement projects for the transportation system.

Project An action that improves the condition of one or more components of the transportation system.

Project Development Plan (PDP) A 10-year plan to guide and control development and implementation of federal and state funded highway projects.

Reconcile To make consistent or congruent.

Select To choose or pick.

Software application Automated computer programs that enhance and support the activities to execute business processes.

Software tool Automated software that can be purchased.

Solution Implementation plans, strategies, and actions necessary to bring about selected alternatives to resolve transportation system deficiencies.

Stakeholder Anyone who has a stake in the performance of the business process, including those who initiate a process, provide inputs to the process, those who perform process activities, and those who receive the outputs or value from the process.

Statewide Transportation Improvement Program (STIP) The STIP is a federally mandated three-year statewide transportation improvement program that provides a prioritized list of all major transportation projects throughout the state for which funding is available during the three-year period. By law, it includes all transportation improvement programs (TIP) prepared by MPOs.

Strategic Plan A five-year planning document that provides the framework for funding requests and appropriations for the Department. It supports the strategic vision of the Department and is divided into three major goals and 15 budget strategies encompassing all activities of the Department.

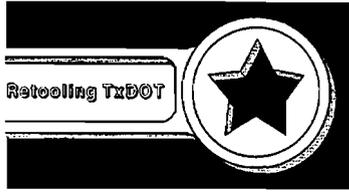
The Texas Transportation Plan (TTP) The TTP, adopted by the Texas Transportation Commission in December 1994, establishes the vision, goals, strategies, and actions for a statewide, long-range, multimodal transportation planning process. The 1994 edition of the plan sets the policy direction and vision for the development of the state transportation system in Texas.

Transportation Improvement Program (TIP) The TIP is a federally mandated three-year transportation investment strategy that lists all major transportation projects within an MPO for which funding is available during the three-year period.

Transportation component Any transportation related facility or service.

Transportation system The identified, inventoried, and documented transportation components (facilities and services) that support the transportation goals and performance measures.

Vision A clear and concise image of the future that is results-oriented. A vision holds value for customers and stakeholders and motivates others to action. It is a statement of direction that provides a vivid picture of a desired state that is both challenging and achievable.



B. Detailed Process Descriptions

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Process #: 1	Set Transportation Goals
<p>Overall Process Description:</p> <p>This process establishes, reviews, and revises the overall policy goals and strategies for the Texas transportation system. These policy goals and strategies are also used for the Strategic Plan. Consistent goals are established for individual modes and corridors.</p> <p>Performance measures are developed that enable the planning process to assess progress towards or away from the transportation system goals.</p> <p>Financial goals and strategies are developed and revised as needed to help obtain the transportation goals.</p> <p>Stakeholders and the public are involved throughout the process to ensure that transportation providers and users participate in developing the transportation system goals and strategies.</p> <p>The result of this process is a plan document that describes the long range goals and strategies for the transportation system. These are the goals and strategies that provide the overall basis for the development of implementation actions aimed at moving the transportation system toward the established goals. The analysis of transportation system needs and experience with solution identification and implementation feed back into this process to create a continuous planning process. In this way, needs information is used to update and revise goals and strategies through the continuous planning cycle.</p>	

Subprocesses and Tasks:	
1.1	Obtain input from public and stakeholders
1.2	Consider current and future conditions of transportation system within the framework of existing policy and performance goals
1.3	Consider federal, state, and local requirements
1.4	Review and revise current goals
1.5	Develop performance measures
1.6	Establish consensus and communicate policy and performance goals
1.7	Document list of goals
1.8	Develop financial strategies to accomplish transportation system goals

From Processes:	Inputs:
2. Evaluate Current and Future Conditions	Comments, public open houses, public hearings, TTP Issue Committees, customer hotline, newsletters, Web site Evaluation of current and future transportation system conditions Federal, state, and local legislation Existing TxDOT planning documents
3. Perform Needs Assessment	Transportation needs assessment
4. Develop Needs Plan	Transportation needs plan
5. Program Solutions	Plan for long-range, mid-range, and short-range programs and projects
6. Financial Planning	Funding needs assessment

Outputs:	To Processes:
Transportation system goals that state vision, policies, and strategies for the system Performance measures Financial strategies	2. Evaluate Current and Future Conditions 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions 6. Financial Planning

Process #: 1.1	Obtain Input From Public and Stakeholders
<p>Description: In this subprocess, input and comments regarding transportation system goals are obtained from the public and stakeholders. Through the Texas Transportation Plan, stakeholders and the public participate in the formulation of transportation system goals, strategies, and actions.</p>	

Subprocesses and Tasks:
<p>1.1.1 Design, prepare, and conduct public open houses and hearings and evaluate comment 1.1.2 Design, prepare, and distribute press releases and other media alerts for public open houses and hearings 1.1.3 Define issue committee topics, carry out and provide staff support for issue committees 1.1.4 Design, prepare, and carry out stakeholder meetings and focus groups and evaluate comment 1.1.5 Design, prepare, and distribute newsletters and attached surveys and evaluate survey results 1.1.6 Design, prepare, and install Web site information and evaluate comment received 1.1.7 Evaluate comment received from telephone hotline</p>

From Processes:
<p>Issue committee staff support will at times use results of needs assessment process.</p>

Inputs:
<p>Comment from public open houses and hearings for various long, medium, and short term planning efforts Comment from stakeholder focus groups for various long, medium, and short term planning efforts Comment from Texas Transportation Plan Issue Committees Comment from the customer telephone hotline Comment from TP&P Web site Comment from Momentum, the TTP newsletter surveys</p>

Outputs:
<p>Draft vision, policy goals, and performance goals for the Texas Transportation System.</p>

To Processes:
<p>1.2. Consider current and future conditions of transportation system within the framework of existing policy and performance goals</p>

Process #: 1.2	Consider Current and Future Conditions of Transportation System within the Framework of Existing Policy and Performance Goals
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Description:

In this subprocess, current and future conditions of the existing transportation system are evaluated to provide an information base from which to set goals and evaluate overall transportation system strategies.

Subprocesses and Tasks:

- 1.2.1 Review current and future conditions of the existing transportation system
- 1.2.2 Determine need for revisions to policy and performance goals based on gap

From Processes:

- 1.5. Develop performance measures
- 1.7. Document list of goals
- 2. Evaluate Current and Future Conditions

Inputs:

- Existing performance measures
- Existing policy and performance goals
- Description of current and forecast future conditions:
 - Statewide
 - Modal
 - Intermodal
 - Corridor

Outputs:

Revised draft of policy and performance goals with overview of current/future conditions serving as basis for policy and performance goal definition.

To Processes:

- 1.3. Consider federal, state, and local requirements

Process #: 1.3	Consider Federal, State, and Local Requirements
Description: In this subprocess, the legislative requirements for the planning process are identified and reviewed. The subprocess determines where and how the requirements are addressed through the planning process. Necessary changes to the existing process to address legislative requirements are identified and designed.	

Subprocesses and Tasks:
1.3.1 Monitor new legislation and rule making for transportation impacts 1.3.2 Determine whether the planning process and current policy goals comply with any new legislation 1.3.3 Meet any new requirements through the planning process by amending the process and methodologies as necessary

From Processes:
1.7. Document list of goals

Inputs:
Federal, state, local legislation

Outputs:
Approach for addressing any new requirements through the cycle of plan updates and policy review.

To Processes:
1.4. Review and Revise Current Goals

Process #: 1.4	Review and Revise Current Goals
-----------------------	--

Description:
 This subprocess provides the mechanism to review and revise, if necessary, current transportation system goals. It is anticipated that they will be reviewed and revised as part of the Texas Transportation Plan cycle. This subprocess should be coordinated with strategic planning efforts to ensure consistency.

Subprocesses and Tasks:

- 1.4.1 Review existing strategies and plan direction and assess impact on transportation goals and policies
- 1.4.2 Determine whether changing transportation system conditions, external trends, or policy priorities require changes to transportation system goals

From Processes:

- 1.7. Document list of goals
- 1.8. Develop financial strategies to accomplish transportation system goals
- 3. Perform Needs Assessment
- 4. Develop Needs Plan
- 5. Program Solutions
- 6. Financial Planning

Inputs:

- Planning process products
- Policy committee direction

Outputs:

Revised transportation goals and policies.

To Processes:

- 1.5. Develop performance measures
- Commission action to amend policy goals and strategies

Process #: 1.5	Develop Performance Measures
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Description:

This subprocess establishes and updates the performance measures that monitor progress towards the transportation system goals. The performance measures are used in the Perform Needs Assessment process. Needs are defined as the gap between the goals for the transportation system and current conditions. The performance measures provide a basis for quantifying the transportation system goals. The performance measures include physical and operational measures.

- Subprocesses and Tasks:**
- 1.5.1 Define and redefine performance measures from existing plans, management systems, and research
 - 1.5.2 Identify conditions and forecasting information required for application of performance measures
 - 1.5.3 Define and redefine minimum thresholds and goals

- From Processes:**
- 1.7. Document list of goals
 - 2. Evaluate current and future conditions

Inputs:

Existing performance measures and goals from:

- Existing plans
- Management systems
- Different program areas, safety, rail etc

Potential new performance measures and goals

Overall transportation system goals and policies

Condition and forecasting information

Outputs:

Consistent set of performance measures

- To Processes:**
- 3. Perform needs assessment

Process #: 1.6	Establish Consensus and Communicate Policy and Performance Goals
<p>Description: A draft of the overall transportation system vision, goals, policies, and performance measures is presented to the public and stakeholders for their input and comments. Methods used in subprocess 1.1 are also used in this subprocess to obtain input. Any changes are communicated within TxDOT and to transportation providers and users throughout the state.</p>	

Subprocesses and Tasks:
<p>1.6.1 Compile draft visions, policy goals, and performance measures developed from subprocesses 1.1-1.5</p> <p>1.6.2 Solicit public and stakeholder comment, using methods described under subprocess 1.1</p>

From Processes:
<p>1.1-1.5 The output of changes to transportation systems vision, goals, policies, and objectives from all subprocesses in the process to Set Transportation Goals</p>

Inputs:
<p>Draft vision, goals, performance measures based on all subprocesses under 1.1-1.5</p> <p>Public and stakeholder comment</p>

Outputs:
<p>Consensus vision, policy goals and objectives, performance measures and goals</p>

To Processes:
<p>1.7. Document list of goals</p>

Process #: 1.7	Document List of Goals
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Description:
 The final documentation of revised transportation system vision, goals, policies, objectives, and performance measures is prepared for publication.

Subprocesses and Tasks:

1.7.1 Finalize draft vision, policy goals and objectives, performance measures and goals based on input received under process 1.6

From Processes:

1.6. Establish consensus/ agreement

Inputs:

Synthesis of outputs from subprocesses 1.1-1.6

Outputs:

Documentation of vision, policy goals and objectives, performance measures and goals

To Processes:

- 1.8. Develop Financial Strategies to Accomplish Transportation System Goals
- 2. Evaluate Current and Future Conditions
- 3. Perform Needs Assessment
- 4. Develop Needs Plan
- 5. Program Solutions
- 6. Financial Planning

Process #: 1.8	Develop Financial Strategies to Accomplish Transportation System Goals
Description: In this subprocess, financial goals and strategies are developed to fund the transportation system.	

Subprocesses and Tasks:
1.8.1 Review current/future revenues, funding needs, and current funding strategies and actions to determine the extent to which the Texas Transportation Plan can be implemented
1.8.2 Revise and adjust the financial goals and strategies if needed

From Processes:
2.5 Determine Current and Future Revenues
6. Financial Planning

Inputs:
Listing of existing funding sources and levels
Listing of existing and projected funding gaps
Listing of potential new and expanded funding sources

Outputs:
Policy level description of funding sources and levels to support vision, policy goals and objectives, performance goals
High level funding policy strategies

To Processes:
6. Financial Planning

Process #: 2	Evaluate Current and Future Conditions
<p>Overall Process Description:</p> <p>In this process, the current and projected condition of the existing transportation system is determined and documented. The future condition includes programmed improvements. As part of this process, the transportation system that is the subject of the planning process is designated. Using various methods and tools, the conditions of the transportation system are monitored. This includes some information collection and the assembly of data. Future system conditions are forecasted and determined using various methods and tools for the different elements of the transportation system. As part of this process current and future transportation revenues are determined and forecasted.</p> <p>The Perform Needs Assessment process uses the transportation system goals and performance measures to evaluate the gap between the documented conditions identified through this process and the transportation system goals. Output from the Evaluate Current and Future Conditions process is the key input into the Perform Needs Assessment process.</p>	

Subprocesses and Tasks:
<p>2.1 Define transportation system</p> <p>2.2 Collect, assemble, and analyze inventory, operational and user data</p> <p>2.3 Forecast travel demand of people and goods</p> <p>2.4 Predict future system conditions</p> <p>2.5 Determine current and future revenues</p>

From Processes:	Inputs:
1. Set Transportation Goals	<p>Transportation system goals and policies</p> <p>Transportation system performance measures</p> <p>Inventory, operational, and transportation user data</p> <p>Transportation user, economic, and demographic data</p> <p>Time series data, current travel demand, projected travel demand, historic trends for facilities and services</p> <p>ISTEA management system information</p> <p>Existing funding sources/levels</p> <p>Trend information on existing funding sources/levels</p> <p>Economic/demographic and trend information regarding revenues</p>

Outputs:	To Processes:
<p>(Revised) System designation that identifies the system facilities, services, components, and inventory.</p> <p>Current condition and current demand on existing transportation system</p> <p>Projected condition and demand on existing transportation system</p> <p>Current and projected funding revenues</p>	<p>1. Set Transportation Goals</p> <p>3. Perform Needs Assessment</p> <p>6. Financial Planning</p>

Process #: 2.1	Define Transportation System
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Description:
This subprocess designates and updates the transportation system that is the subject of the planning process. This includes transportation facilities and services that are identified, inventoried, and documented.

Subprocesses and Tasks:
2.1.1 Identify transportation services and facilities that support the transportation goals and performance measures
2.1.2 Establish and revise (if necessary) system designation criteria, apply criteria to update system
2.1.3 Document the services and facilities to designate the transportation system

From Processes:
1. Set Transportation Goals
2.2 Collect, Assemble, and Analyze Inventory, Operational, and User Data

Inputs:
Transportation system goals and policies
Performance Measures
Current conditions and demand for the existing designated transportation system

Outputs:
(Revised) System designation that identifies the system facilities, services, components, and inventory.

To Processes:
1. Set Transportation Goals
2.2 Collect, Assemble, and Analyze Inventory, Operational, and User Data
2.3 Forecast Travel Demand of People and Goods
2.4 Predict Future System Conditions
3. Perform Needs Assessment
4. Develop Needs Plan
5. Program Solutions
6. Financial Planning
Program areas Bridge, Pavement
Management system administrators

Process #: 2.2	Collect, Assemble, and Analyze Inventory, Operational, and User Data
Description: In this subprocess, data regarding the current inventory, operations, and use of the existing transportation system are assembled, collected, and analyzed. The current conditions of the transportation system are documented from the collected data. These conditions are measured using the agreed performance measures.	

Subprocesses and Tasks:
2.2.1 Assemble and collect transportation facility and service inventory data 2.2.2 Assemble, collect and update transportation facility and service operational data 2.2.3 Collect transportation system user data through traffic surveys and other means 2.2.4 Analyze inventory, operational, and user data to document current conditions and demands on the transportation system

From Processes:
2.1 Define Transportation System ISTEAs management systems Travel demand modeling process

Inputs:				
(Revised) System designation that identifies the system facilities, services, components, and inventory. Inventory, operational, user data from: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">- ISTEAs management systems</td> <td style="width: 50%;">- Traffic monitoring and modeling</td> </tr> <tr> <td>- User surveys</td> <td>- HPMS</td> </tr> </table>	- ISTEAs management systems	- Traffic monitoring and modeling	- User surveys	- HPMS
- ISTEAs management systems	- Traffic monitoring and modeling			
- User surveys	- HPMS			

Outputs:
Current condition of transportation facilities and services Current demand for transportation facilities and services

To Processes:
2.1 Define Transportation System 2.3 Forecast Travel Demand of People and Goods 3. Perform Needs Assessment

Process #: 2.3	Forecast Travel Demand of People and Goods
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Description:

To forecast conditions on the defined transportation system, transportation user, economic, demographic, and historic trend data are used to project travel demand of people and goods.

Subprocesses and Tasks:

- 2.3.1 Combine current transportation system user data and travel demand trend data
- 2.3.2 Collect and forecast current and trend economic and demographic data
- 2.3.3 Adjust travel projections based on travel demand, economic, and demographic data
- 2.3.4 Forecast future travel demand based on adjusted trend projections

From Processes:

- 2.1 Define Transportation System
- 2.2 Collect, Assemble, and Analyze Inventory, Operational, and User Data

Inputs:

(Revised) System designation that identifies the system facilities, services, components, and inventory.

Current conditions and demand for transportation system

Outputs:

Forecast travel demand for people and goods

To Processes:

- 2.4 Predict Future System Conditions

Process #: 2.4	Predict Future System Conditions
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Description:
 Multiple data sources and tools are used to predict future conditions of the designated transportation system. This includes the operational condition of the inventory (for example, levels of congestion) and the physical condition (for example, pavement conditions or structural deficiencies). The projected conditions are described and documented to provide input to needs assessment and financial planning processes.

Subprocesses and Tasks:

- 2.4.1 Review time series data, projected travel demand, projected changes to facilities and services, trends for transportation system facilities and services
- 2.4.2 Determine impacts on condition of transportation system from collected data
- 2.4.3 Describe future conditions of transportation system

From Processes:

- 2.1 Define Transportation System
- 2.2 Collect, Assemble, and Analyze Inventory, Operational, and User Data
- 2.3 Forecast Travel Demand of People and Goods

Inputs:

(Revised) System designation that identifies the system facilities, services, components, and inventory.
 Current conditions; current demand on transportation system
 Inventory, operational, and user data - time series
 Projected travel demand of people and goods
 Projected changes to transportation facilities and services
 Trends for transportation facilities and services
 Results of management system analysis for example future pavement conditions or bridge conditions.

Outputs:

Projected future system conditions

To Processes:

- 3. Perform Needs Assessment

Process #: 2.5	Determine Current and Future Revenues
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Description:

In this subprocess, existing funding sources and levels, historic funding trends, economic and demographic data, and trend information are used to determine the current and future revenues available to implement the transportation system goals.

Subprocesses and Tasks:

- 2.7.1 Determine current revenue sources and levels and trends leading to current revenue levels
- 2.7.2 Determine economic and demographic trends impacting current revenue sources
- 2.7.3 Determine future trends of funding levels for existing funding sources

From Processes:

None identified

Inputs:

Data on existing transportation funding sources and levels
 Trend information on existing transportation funding sources and levels
 Economic and demographic data and trend information

Outputs:

Current and future revenue sources and levels

To Processes:

- 1. Set Transportation Goals
- 3. Perform Needs Assessment
- 6. Financial Planning

Process #: 3	Perform Needs Assessment
<p>Overall Process Description:</p> <p>This new process is used to identify transportation needs by considering transportation goals, performance measures, and current and future conditions on the defined transportation system. The process uses standard methods for identifying and measuring transportation system deficiencies from which needs will be derived.</p> <p>The process determines the needs for the existing system and the needs that arise from “planned” solutions for addressing future system demands. Programmed projects that are scheduled for implementation are included in the transportation system addressed by the needs assessment process. To address improvement needs during the process, viable alternatives for complex transportation deficiencies are identified and evaluated to determine the most effective alternatives to develop. Some transportation deficiencies, such as mobility in highly congested areas, may be resolved with multimodal, intermodal, or possibly, non-construction alternatives.</p> <p>Credibility and accountability are maintained by the involvement of stakeholders throughout the process. The process may be performed at the statewide, modal, corridor, MPO and district levels.</p>	

Subprocesses and Tasks:
<p>3.1 Determine existing system deficiencies</p> <p>3.2 Determine future system deficiencies and identify alternatives</p> <p>3.3 Determine costs of meeting needs (deficiencies)</p> <p>3.4 Document needs</p>

From Processes:	Inputs:
1. Set Transportation Goals	<p>Transportation Goals</p> <p>Goals include</p> <ul style="list-style-type: none"> - Strategic goals - Other plan goals (TTP, PDP, etc.) - Stakeholder goals <p>Performance measures, which are</p> <ul style="list-style-type: none"> - Transportation system measures that include physical and operational measures for the different components of the system - Specific; clearly defined - Statements that define what is measured, the level of measurement, when the performance measure should be met, and cost estimates for meeting the performance measure <p>Design standards</p> <p>Defined transportation system</p>
2. Evaluate Current and Future Conditions	Current conditions, future conditions, external impacts
4. Develop Needs Plan	Transportation needs plan
5. Program Solutions	<p>Short and mid-range programs and projects selected for implementation</p> <p>Cost information for estimating costs to resolve needs</p>

Outputs:	To Process:
Needs assessment document, which includes: <ul style="list-style-type: none">- Statewide system deficiencies- Modal system deficiencies- Intermodal deficiencies- Non-goal related deficiencies- Estimated costs- Funding needs- Alternatives to meet deficiencies	<ol style="list-style-type: none">1. Set Transportation Goals3. Perform Needs Assessment4. Develop Needs Plan6. Financial Planning

Process #: 3.1	Determine Existing System Deficiencies
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Description:
 During this subprocess, current and forecasted deficiencies of the operational and physical components of the existing system are identified. The deficiencies are defined as the difference between the transportation system goals and the performance or conditions of the transportation system. For example, pavement condition indices (PCIs) and other measures are used to measure pavement performance. Pavement deficiencies are the difference between the pavement performance goals and the measured PCIs. Through this subprocess, a series of agreed performance measures are applied to the different elements of the transportation system to identify current deficiencies. Future deficiencies are determined for the system by including projects and programs that have committed funds. Future deficiencies account for travel demand growth, asset depreciation (remaining life of the pavement, transit equipment), etc.

- Subprocesses and Tasks:**
- 3.1.1 Assess current and future physical conditions of modal systems within the existing transportation system
 - 3.1.2 Assess current and future operational performance of modal systems within the existing transportation system
 - 3.1.3 Apply performance measures to current and future conditions
 - 3.1.4 Assemble current and future needs for existing transportation system
 - 3.1.5 Obtain public input and comments

From Processes:	Inputs:
1. Set Transportation Goals	Performance measures Design standards Defined transportation system
2. Evaluate Current and Future Conditions	Current system conditions (operational, physical) Future system conditions (operational, physical)
5. Program Solutions	Short and mid-range programs and projects

Outputs:	To Processes:
Current and future needs for existing transportation system, which include: - Modal needs - Intermodal linkage needs	3.2 Determine Future System Deficiencies and Identify Alternatives 3.3 Determine Costs of Meeting Needs (Deficiencies)

Process #: 3.2	Determine Future System Deficiencies and Identify Alternatives
<p>Description:</p> <p>During this subprocess, further analysis is performed on the current and forecasted deficiencies of the existing system identified in subprocess 3.1 to determine the programs and improvements that will help meet the transportation system goals. This subprocess identifies the potential planned programs and improvements that are needed to address the transportation system goals. For example, an alternative to resolve a congestion deficiency may include adding additional lanes to accommodate traffic growth in certain corridors. The intent of this subprocess is to define a set of technically justifiable needs (deficiencies). The process is iterative and alternatives for addressing complex transportation deficiencies will be identified and evaluated. Impacts on land use, the environment, the economy, etc. will be a part of this alternative evaluation. Some transportation deficiencies may be most effectively resolved with multimodal, intermodal, or possibly, non-construction solutions. Funding alternatives are also identified and considered at this time. Public and stakeholder involvement is increased in this subprocess to identify viable and acceptable alternatives to resolve transportation system deficiencies. The resulting list of preferred alternatives with estimated costs becomes part of the transportation needs assessment. (NOTE: Not all transportation deficiencies require consideration of multimodal, intermodal, or non-construction alternatives. Not all transportation needs require evaluation of multiple alternatives.)</p>	

Subprocesses and Tasks:	
3.2.1	Identify alternatives to resolve current and future system deficiencies
3.2.2	Evaluate impact of alternative solutions
3.2.3	Evaluate estimated costs of alternatives
3.2.4	Determine how well alternatives resolve identified transportation needs
3.2.5	Apply performance measures to future system to identify how well proposed system will meet performance measures
3.2.6	Present alternatives to public and stakeholders to identify acceptable alternatives
3.2.7	Obtain public and stakeholder comments
3.2.8	Assess and address public and stakeholder input and comments to modify alternatives
3.2.9	Select preferred alternatives

From Processes:	Inputs:
1. Set Transportation Goals	Performance measures
2. Evaluate Current and Future Conditions	Defined transportation system Future system conditions (operational, physical) Current and future revenues
3.1 Determine Existing System Deficiencies	Current and future needs for existing system
4. Develop Needs Plan	Transportation Needs Plan Cost information

Outputs:	To Processes:
List of acceptable and viable alternatives to meet needs of future transportation system. The alternatives include estimated costs. Funding alternatives may also be included.	3.3 Determine Costs of Meeting Needs (Deficiencies) 3.4 Document Needs

Process #: 3.3	Determine Costs of Meeting Needs (Deficiencies)
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Description:

During this subprocess, cost estimates are calculated for the preferred alternatives identified in subprocesses 3.1 and 3.2. The process will measure current and future needs in dollars. This estimate will account for inflation and can be used as a planning tool to show how postponing improvements could increase future costs.

Subprocesses and Tasks:

- 3.3.1 Determine unit costs for capital improvements.
- 3.3.2 Determine unit costs for operational improvements
- 3.3.3 Obtain unit costs for maintenance
- 3.3.4 Forecast unit costs for capital improvements
- 3.3.5 Forecast unit costs for operational improvements
- 3.3.6 Forecast unit costs for maintenance
- 3.3.7 Apply unit costs to identified needs

From Processes:	Inputs:
3.1 Determine Existing System Deficiencies	Current and future needs for existing system - Modal - Intermodal linkages
3.2 Determine Future System Deficiencies and Identify Alternatives	List alternative solutions Historical cost data (modal)

Outputs:	To Processes:
Costs of current and future identified needs	3.4 Document Needs

Process #: 3.4	Document Needs
<p>Description:</p> <p>In this subprocess, the identified system deficiencies and alternatives with cost estimates are formally documented and reviewed by the public for input. Public and stakeholder input is assessed and used to validate and modify the document before the final publication of the needs assessment. Involving the public and stakeholders at this point in the process insures that the final needs assessment is consistent with the perceptions and concerns of the primary users of the transportation system. The resulting needs assessment document is used in the planning process (Process 4) to develop a plan of solutions, actions, and strategies to address the identified transportation needs.</p>	

Subprocesses and Tasks:
<p>3.4.1 Document modal needs</p> <p>3.4.2 Consolidate modal needs into statewide needs plan</p> <p>3.4.3 Obtain public input and comments</p> <p>3.4.4 Assess and address public input and comments</p> <p>3.4.5 Reconcile needs assessment</p>

From Processes:	Inputs:
3.1 Determine Existing System Deficiencies	Current and future needs for existing system - Modal - Intermodal linkages
3.2 Determine Future System Deficiencies and Identify Alternatives	List alternative solutions
3.3 Determine Costs of Meeting Needs (Deficiencies)	Costs of current and future identified needs

Outputs:	To Processes:
Needs assessment with estimated costs. The document includes: - Statewide needs - Modal needs - Multimodal needs - Intermodal needs - Funding needs - Non-goal related needs	<p>1. Set Transportation Goals</p> <p>3. Perform Needs Assessment</p> <p>4. Develop Needs Plan</p> <p>6. Financial Planning</p>

Process #: 4	Develop Needs Plan
<p>Overall Process Description:</p> <p>The result of this process is a transportation needs plan that documents the planned solutions to meet the transportation system needs identified in Process 3. The solutions provide strategies, actions, improvements, and potential programs and projects that will be implemented to meet transportation system goals.</p> <p>Based on the overall transportation system goals and policies, priorities are established and applied to the needs (preferred alternatives) identified in Process 3 to assist in developing the transportation needs plan. This link provides a defensible and credible justification for the selection of solutions.</p> <p>The process includes the identification and evaluation of the most effective solutions to resolve identified transportation system needs. Consistent criteria and methods are used to select the most effective solutions. The solutions identify strategies, actions, and improvements that may be funded. Multimodal and intermodal solutions will be developed where appropriate. To resolve some transportation needs, alternative funding sources and non-construction strategies will be identified.</p> <p>The needs planning process is performed at the statewide, modal, corridor, district, and MPO levels of the transportation system. Stakeholders and the public are involved throughout the process. The final needs plan is validated and approved by stakeholders and the Transportation Commission before proceeding to the programming process.</p>	

Subprocesses and Tasks:
<p>4.1 Establish goal-related categories</p> <p>4.2 Categorize needs</p> <p>4.3 Select solutions (programs/projects/policies/systems)</p> <p>4.4 Finalize needs plan document</p>

From Processes:	Inputs:
1. Set Transportation Goals	Goals Performance measures Priorities for broad goal-related categories, e.g. safety, mobility, preservation, etc.
2. Evaluate Current and Future Conditions	Demographic, economic, environmental data
3. Perform Needs Assessment	Needs assessment document with estimated costs - Assume all needs are broken down into systems and system components; needs analysis includes environmental and socio-economic factors; statewide, regional, and local needs are addressed; preferred alternatives for resolving transportation system deficiencies have been identified with estimated costs.
6. Financial Planning	Funding considerations for broad goal-related categories Funding strategies and actions

Outputs:	To Processes:
<p>Transportation Needs Plan, which includes</p> <ul style="list-style-type: none"> - Modal solutions - Multimodal solutions - Intermodal solutions - Impacts of solutions - Non-construction solutions - Benefits (what is performance potential of solutions) - Unaddressed needs <p>Each solution in the plan identifies</p> <ul style="list-style-type: none"> - how well the solution will address the need - the level of performance to expect from the solution - costs (economic, social, environmental, financial) - risks - benefits - strategies and actions for implementation 	<ol style="list-style-type: none"> 1. Set Transportation Goals 3. Perform Needs Assessment 4. Develop Needs Plan (for next level of responsibility, e.g. district to division) 5. Program Solutions

Process #: 4.1	Establish Goal-Related Categories
<p>Description: This subprocess ensures that the Texas Transportation Plan policies, goals and strategies are the basis for establishing the categories that are used to prioritize needs. Broad categories for the preservation and development of the transportation system and modal components are established for categorization of the needs identified in the needs assessment performed in Process 3.</p>	

Subprocesses and Tasks:
4.1.1 Confirm overall priorities 4.1.2 Formulate goal-related categories 4.1.3 Evaluate goal-related categories

From Processes:	Inputs:
1. Set Transportation Goals	Policy goals, strategies

Outputs:	To Processes:
Goal-related categories	4.2 Categorize Needs

Process #: 4.2	Categorize Needs
Description: The needs identified in Process 3 are sorted and prioritized using consistent criteria within the goal-related categories established in Process 4.1.	

Subprocesses and Tasks:	
4.2.1	Categorize needs within goal-related categories
4.2.2	Establish priorities among goal-related categories
4.2.3	Prioritize needs within goal-related categories
4.2.4	Obtain public input and comments to validate prioritizations
4.2.5	Assess and address public input and comments in prioritization of needs within categories

From Processes:	Inputs:
3. Perform Needs Assessment	Needs assessment document
4.1 Establish Goal-Related Categories	Goal-related categories Priorities for categories

Outputs:	To Processes:
Prioritized and categorized needs list identifying : <ul style="list-style-type: none"> - needs to be addressed - needs sorted into goal-related categories - prioritized categories - prioritized needs within categories 	4.3 Select Solutions (programs/projects/policies/systems)

Process #: 4.3	Select Solutions (programs/projects/policies/systems)
<p>Description: During this subprocess, the preferred alternatives are evaluated for their effectiveness and potential to improve the performance of the transportation system. Impacts on land use, the environment, the economy, etc. are a part of this evaluation. The evaluated alternatives are reviewed and a solution is selected. The solution includes implementation plan strategies, actions, and improvements. The needs assessment and proposed solutions will enable policy makers and senior management to use needs-based information to balance system preservation, management, and improvement decisions. Justification and marketing plans for presentation of the selected solutions, strategies for bringing about the solutions, and funding requirements are identified for the solutions. The process will include the use of alternative funding strategies to implement solutions. The solutions are reviewed and approved by the stakeholders and public during this process.</p>	

Subprocesses and Tasks:	
4.3.1	Identify planning solutions
4.3.2	Apply selection criteria
4.3.3	Evaluate impacts of solutions (include economic, social, and environmental impacts)
4.3.4	Refine cost estimates of solutions
4.3.5	Identify strategies for selected solutions
4.3.6	Apply funding considerations to selected solutions
4.3.7	Prepare justification and marketing plan for selected solutions
4.3.8	Obtain public input and comments
4.3.9	Assess and address public input and comments

From Processes:	Inputs:
1. Set Transportation Goals	Goals Performance measures
2. Evaluate Current and Future Conditions	Demographic, environmental, economic data
3. Perform Needs Assessment	Modal, intermodal, multimodal alternatives from needs assessment document
4.2. Categorize Needs	Prioritized and categorized Needs List
6. Financial Planning	Funding for goal-related categories Funding strategies and actions

Outputs:	To Processes:
<p>Selected solutions document</p> <p>For each solution, the document identifies</p> <ul style="list-style-type: none"> - how well the solution will address the need and meet transportation goals - level of performance to expect from solution - costs (economic, social, environmental, financial) - risks - benefits - justification for why this solution is recommended - proposed programs, projects, policies, and implementation strategy 	<p>3.2 Determine Future System Deficiencies and Identify Alternatives</p> <p>4.4 Finalize Needs Plan Document</p>

Process #: 4.4	Finalize Needs Plan Document
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Description:
 During this subprocess, public and stakeholder input from Process 4.3 is considered and the needs plan document is prepared. Stakeholders, the public, and the Transportation Commission participate in a final review process.

Subprocesses and Tasks:

- 4.4.1 Assemble needs plan document
- 4.4.2 Obtain public comments
- 4.4.3 Assess and address public input and comments
- 4.4.4 Obtain Commission approval

From Processes:	Inputs:
4.3 Select solutions (programs/projects/policies/systems)	Selected solutions document with stakeholder & public comments

Outputs:	To Processes:
Assembled and approved transportation needs plan	<ul style="list-style-type: none"> 1. Set Transportation Goals 3. Perform Needs Assessment 5. Program Solutions

Process #: 5	Program Solutions
<p>Overall Process Description:</p> <p>This process is used to develop programs and projects from the transportation needs plan of solutions developed in Process 4. The plan identifies broad goal-related categories (e.g. mobility, maintenance, safety, intermodal, modal, etc.) and the funding requirements for the solutions. The Program Solutions process provides a smooth flow of programs and projects from long-range planning to short-range implementation. There is a defined backlog of projects that can be advanced as resources are made available.</p> <p>All programs and projects implemented from this process are tied to specific transportation goals, performance measures, and identified needs. The process provides a defensible method for the distribution of funds because the funding resources, strategies, and actions are established to implement the programs and projects defined through the planning process. New consistent methods for allocating funding to implement prioritized projects are used in the Program Solutions process. The intent is to minimize the categorical allocations currently in use and provide the maximum flexibility to implement the prioritized projects.</p> <p>As with the previous processes, stakeholders and the public are involved throughout the process. The programming plan is validated and approved by stakeholders before implementation.</p>	

<p>Subprocesses and Tasks:</p>
<p>5.1 Identify programs/projects from solutions provided in the needs plan</p> <p>5.2 Prioritize programs/projects to develop long, mid, and short-range programs</p> <p>5.3 Public involvement</p> <p>5.4 Allocate program/project funding</p> <p>5.5 Schedule programs/projects from short-range programs for implementation</p>

From Processes:	Inputs:
1. Set Transportation Goals	Transportation goals, which include: <ul style="list-style-type: none"> - Strategic goals - Other plan goals (TTP, PDP, etc.) - Stakeholder goals Performance measures, which are <ul style="list-style-type: none"> - Transportation system measures which include physical and operational measures - Specific, clearly defined statements that define what is measured, the level of measurement (e.g. poor, marginal, adequate, best-case), the estimated cost to achieve the level of measurement, and when the performance measure should be met Design standards
4. Develop Needs Plan	Transportation needs plan (solutions), which includes: <ul style="list-style-type: none"> - Modal solutions - Multimodal solutions - Intermodal solutions - Impacts of solutions - Non-construction solutions - Benefits (what is performance potential of solutions) Each solution in the plan identifies: <ul style="list-style-type: none"> - how well the solution will address the need - the level of performance to expect from the solution - costs (economic, social, environmental, financial) - risks - benefits - strategies and actions (both system and funding) for implementation
6. Financial Planning	Available funds to program for short-range projects Project development considerations External factors and priorities from outside TxDOT

Outputs:	To Processes:
Prioritized programs/projects documents, which include: <ul style="list-style-type: none"> - Program/project implementation plans and priorities - Program/project financing schedule - Levels <ul style="list-style-type: none"> - Long-range programs/projects (long-range plan) - Mid-range programs/projects - Short-range programs/projects with implementation schedules 	1. Set Transportation Goals 2. Evaluate Current and Future Conditions 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions (Advanced Planning - Project Development Implementation)

PLAN TRANSPORTATION SYSTEMS

Process Redesign

Process #5.1	Identify Program/Projects from Solutions Provided in the Needs Plan
Description: From the transportation needs plan, specific programs and projects are identified that implement the solutions and address the identified transportation needs. In this subprocess, the actual programs and projects required to make the solutions a reality are determined.	

Process #5.2	Prioritize Programs/Projects to Develop Long, Mid, and Short-Range Programs
Description: After the programs and projects are determined for each solution in subprocess 5.1, the projects are prioritized and placed in a timeline to result in a programming plan with three levels: short-range - projects with committed funding, mid-range - projects with anticipated funding, and long-range - anticipated projects Programs and projects are prioritized consistently with the priority of the solution identified in the transportation needs plan. Projects are planned for implementation based on their dependencies to the overall implementation plan of the solution. Projects that provide the greatest benefits to the transportation system will take precedence over other projects as long as their implementation does not affect the integrity of the overall implementation of the solution. (For example, to implement a transportation solution, a frontage road and an interchange must be constructed. It does not matter which component is completed first. However, when the interchange is completed, a greater number of transportation needs will be resolved and larger benefits will be gained. The project to construct the interchange is prioritized and scheduled before the frontage road because it provides multiple benefits.) A programming plan is prepared for review by the public and stakeholders.	

Process #5.3	Obtain Public Involvement
Description: The programming plan and time line for short and mid-range projects are reviewed and approved by the public and stakeholders before implementation begins.	

Process #5.4	Allocate Program/Project Funding
Description: Funding from goal-related categories is allocated to specific short-range programs and projects as prioritized in the programming plan. Anticipated funding is reserved for mid-range programs and projects. Allocation methods are used that provide maximum flexibility to implement the prioritized projects. The allocations take into consideration the statewide needs and priorities as well as provide flexibility to meet local needs and priorities.	

Process #5.5	Schedule Programs/Projects from Short-Range Programs for Implementation
Short-range programs and projects with committed funding are scheduled for implementation. The programming documents (Statewide Transportation Improvement Program-STIP, Transportation Improvement Program-TIP, Aeronautical Capital Improvement Program-ACIP) are finalized and published.	

Process #: 6	Financial Planning
<p>Overall Process Description:</p> <p>The Financial Planning process occurs as part of and concurrent with other processes described in this redesigned business model for TxDOT's Plan Transportation Systems. However, because the subprocesses and tasks are unique and sometimes separate from the transportation system planning and programming processes, the Financial Planning process is described separately to highlight the new and critical features of the process.</p> <p>The redesigned Financial Planning process improves the integration of the continuous statewide transportation planning and programming processes with its financial element. The process encourages the development of new and innovative funding methods and maximizes existing funding sources. Funding is directly linked to planning, transportation needs, and meeting transportation system goals and performance measures. Funding requirements for all modes of transportation are more effectively addressed. Financial forecasting assumptions will be developed with the Metropolitan Planning Organizations (MPOs).</p> <p>The Financial Planning process has subprocesses that parallel the overall transportation planning process. Balanced funding goals are identified and prioritized for broad transportation goal-related categories to maintain the effectiveness of the transportation system as determined by the system performance measures. Funding needs are identified from the gap between costs to resolve transportation needs and the available current and future revenues. Funding strategies and actions are developed to meet the funding needs; this includes the use of innovative funding strategies. Funding is allocated to establish and maintain the balance and priorities of the broad goal-related categories of the transportation system. The allocation of funds is needs-based, defensible and tied to the goals for the transportation system.</p>	

Subprocesses and Tasks:
<p>6.1 Evaluate performance levels for meeting transportation needs within goal-related categories</p> <p>6.2 Evaluate funding resources and scenarios</p> <p>6.3 Determine funding for needs within goal-related categories</p> <p>6.4 Develop funding strategies and actions to resolve funding needs</p>

From Processes:	Inputs:
<p>1. Set Transportation Goals</p> <p>2. Evaluate Current and Future Conditions</p> <p>3. Perform Needs Assessment</p> <p>4. Develop Needs Plan</p>	<p>Performance measures for defining levels of service, which include:</p> <ul style="list-style-type: none"> - transportation system measures that include physical and operational measures - specific, clearly defined statements that define what is measured, the level of measurement (e.g. poor, marginal, good, excellent), when the performance measure should be met, and estimated costs to attain each identified level of service. <p>Current and future revenues</p> <p>Estimated costs of current and future transportation needs</p> <p>Prioritized, categorized needs within goal-related categories</p>

Outputs:	To Processes:
<p>Funding performance curves for goal-related categories that identify the balance and performance level priorities identified by senior management.</p> <p>Funding needed to maintain balance and performance levels based on estimated costs of identified transportation needs compared to current and future revenue sources.</p> <p>Plans for funding strategies and actions to meet funding needs.</p> <p>Funding resources identified and distributed to goal-related categories to maintain balance and performance level priorities determined by performance curves.</p>	<ol style="list-style-type: none"> 1. Set Transportation Goals 2. Evaluate Current and Future Conditions 4. Develop Needs Plan 5. Program Solutions

Process #: 6.1	Evaluate Performance Levels for Meeting Transportation Needs within Goal-Related Categories
<p>Description:</p> <p>In this subprocess, senior management evaluates the relationship between funding levels and transportation system performance for broad goal-related categories. This can be presented graphically using performance curves. The performance curves are evaluated to identify and balance the level of performance (e.g. poor, marginal, adequate, best-case) expected for the broad goal-related categories within reasonable funding expectations. This supports decision making on the allocation of funds between the broad goal-related categories. Planners may initially identify funding needs in this subprocess and begin developing strategies and actions to meet the needs. The transportation needs that were identified in Process 3 and categorized and prioritized in the goal-related categories in Process 4 are applied to the performance curves to graphically represent where the transportation system is or is not meeting the expectations and goals established.</p>	

Subprocesses and Tasks:
<p>6.1.1 Develop funding performance curves for goal-related categories</p> <p>6.1.2 Evaluate funding performance curves</p> <p>6.1.3 Establish funding performance balance between goal-related categories</p>

From Processes:	Inputs:
<p>1. Set Transportation Goals</p> <p>4. Develop Needs Plan</p>	<p>Performance measures for defining levels of service, which include:</p> <ul style="list-style-type: none"> - transportation system measures that include physical and operational measures - specific, clearly defined statements that define what is measured, the level of measurement (e.g. poor, marginal, good, excellent), when the performance measure should be met, and estimated costs to attain each identified level of service. <p>Prioritized, categorized needs within goal-related categories</p>

Outputs:	To Processes:
<p>Funding performance curves for goal-related categories that identify the balance and performance level priorities identified by senior management.</p>	<p>6.2 Evaluate Funding Resources and Scenarios</p>

Process #: 6.2	Evaluate Funding Resources and Scenarios
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Description:
 In this subprocess, senior management applies the funding performance curves developed in subprocess 6.1 to current and future revenues identified in Process 2. This subprocess further identifies funding needs where revenues are not adequate to achieve expected performance levels. Management has the opportunity to change the balance and expected performance levels of the performance curves and develop strategies and actions for enhancing revenues.

Subprocesses and Tasks:

- 6.2.1 Apply funding performance curves to current and future revenues
- 6.2.2 Develop performance and funding scenarios

From Processes:	Inputs:
2. Evaluate Current and Future Conditions	Current and future revenues
6.1 Evaluate Performance Levels for Meeting Transportation Needs within Goal-Related Categories	Performance curves

Outputs:	To Processes:
Performance/funding scenarios	6.3 Determine Funding for Needs within Goal-Related Categories

Process #: 6.3	Determine Funding for Needs within Goal-Related Categories
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Description:
 In this subprocess, funding needs are identified from the gap between costs to resolve transportation needs and the available current and future revenues. These needs are added to the funding needs identified in subprocesses 6.1 and 6.2 to determine the comprehensive funding needs for the goal-related categories.

Subprocesses and Tasks:

- 6.3.1 Determine funding levels for goal-related categories
- 6.3.2 Evaluate funding levels for goal-related categories
- 6.3.3 Reconcile funding levels
- 6.3.4 Document funding levels for goal-related categories
- 6.3.5 Obtain Commission approval

From Processes:	Inputs:
3. Perform Needs Assessment	Estimated costs of current and future transportation needs
6.2 Evaluate Funding Resources and Scenarios	Performance and funding scenarios

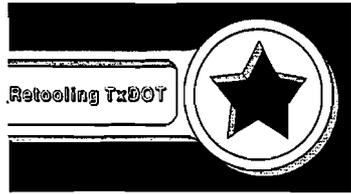
Outputs:	To Processes:
Funding needed to maintain balance and performance level priorities based on estimated costs of identified transportation needs compared to current and future revenue sources.	6.4 Develop Funding Strategies and Actions to Resolve Funding Needs

Process #: 6.4	Develop Funding Strategies and Actions to Resolve Funding Needs
Description: In this subprocess, funding strategies and actions to meet the funding needs are developed. Identified funding resources are allocated to goal-related categories to maintain the balance and priorities of the categories.	

Subprocesses and Tasks:
6.4.1 Evaluate funding levels 6.4.2 Determine funding options 6.4.3 Determine funding strategies 6.4.4 Develop funding actions

From Processes:	Inputs:
6.3 Determine Funding for Needs within Goal-Related Categories	Funding needed to maintain balance and performance level priorities based on estimated costs of identified transportation needs compared to current and future revenue sources

Outputs:	To Processes:
Plans for funding strategies and actions to meet funding needs. Funding resources identified and distributed to goal-related categories to maintain balance and performance level priorities determined by performance curves.	1. Set Transportation Goals 2. Evaluate Current and Future Conditions 4. Develop Needs Plan



C. Business Improvement Project Charters

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BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-1	Title: Develop and Implement Needs Identification Methods and Processes
Related Process #: 3.1- 3.4 Process Name: Perform Needs Assessment	
Old Way Problem Statement:	
Currently, there is not a consistent approach across all modes to identifying needs. The programs and projects resulting from the current planning process, therefore, are not consistently needs-based.	
Type of BIP: (<i>Business only; Business & Technology; Technology Only</i>)	
	Business Only
A. Project Description: (<i>Project objectives; summarized project description</i>)	
<u>PROJECT</u>	
<p>This project involves defining a process and methods for identifying needs to support the transportation system goals and policies as defined in the Texas Transportation Plan. This process will be used to identify transportation needs by considering transportation system goals, performance measures, and system conditions, both current and future. This process will focus on using consistent methods for identifying and assessing needs.</p> <p>This project's team will be composed of five TxDOT division, special office, and district personnel and one MPO representative. The team will determine if parts of the project will require outside assistance. Implementation of this project will also require research to identify practices currently in use within TxDOT and MPOs, and, possibly, other states.</p> <p>The project will define roles and responsibilities to support the new process and methods to be used by the divisions, districts, MPOs and other applicable [key] transportation providers. The project will include training and a schedule for implementation of the new processes.</p>	
<u>PROCESS</u>	
<p>The needs identification process resulting from this project will assess current and forecasted demand on the current system (existing system plus committed system improvements). Gaps between the goals and current and future system conditions, as measured by the performance measures, will determine deficiencies (or needs) for the existing and future transportation system. Preferred alternative actions to resolve the identified deficiencies will be developed to provide the definition and direction for planning (refer to Needs BIP 2).</p> <p>The needs identification process will determine criteria to be used by all modes, divisions and districts to measure system conditions, both present and future. It will also establish criteria to measure the difference between the transportation system goal or performance measure and the current and future system conditions. The approach will distinguish between current and future needs. The process will identify more than just system expansion needs, it will also identify system preservation needs, multimodal and intermodal opportunities, operational and capital needs and non-system needs, ie public awareness, training, etc. Coordination with Needs BIP 7, Establish performance measures that quantify accomplishment of system goals, must occur.</p> <p>The primary product of this process will be a documented needs assessment with a preliminary listing of alternatives or solutions (including corridors and systems) that will address the gap deficiencies. The needs assessment will then be evaluated for alternatives (Needs BIP 2). Depending on the level of applicability, MPO/local, district, modal and statewide needs can be identified as separate sections in the document.</p>	

B. Project Goals: *(What will be the outcome of the BIP; what should be accomplished)*

When fully implemented, the Department will have a defensible, documented and consistent process for determining transportation system needs. Implementation will ensure that each division, district and MPO is analyzing and evaluating needs in a consistent manner. The deliverable from this process (identify needs) will be a documented list of transportation needs(deficiencies) that will serve as input for the rest of the needs determination process, including alternative evaluation, selection of solutions and cost estimation, all of which lead to the needs plan. The needs plan will serve as input for the financial planning process and will be the basis for prioritizing(programming) projects for implementation. This process will also provide a mechanism to reevaluate transportation system goals and strategies.

C. Expected Benefits: *(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)*

Implementation of this project will provide a basis for identifying needs to support the overall transportation system and optimize its effectiveness. Each division, district and MPO will be identifying needs in a consistent, defensible and documented manner. As each group begins to assess transportation needs by comparing system conditions with the transportation goals, they will be building the needs list with similar, defensible inputs. Communication and credibility between levels and groups will be improved because they will determine needs using similar methods and baselines.

Implementation of this process will also provide a mechanism to realign transportation system goals, where necessary, and serve as the basis for the needs plan.

Implementation of this process is the critical factor in accomplishing the other steps in the needs determination process.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Senior Management Team, strategic planners, division transportation planners (all modes), district transportation planners, MPO planners, and other key modal transportation system planners.

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Initial implementation of this process may impact division and district staff workloads as they become familiar with new information and capture the data for and perform the needs assessment. This may require a greater level of effort, including time, for the needs assessment and may require more devoted individual time. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

TxDOT, MPOs and other transportation providers are willing to use this process in identifying needs as well as agree upon the performance measures to be used in determining the need. In so doing, they will have greater access to system condition data, that is used by TxDOT planning groups, to provide a consistent base of information.

Skills within the larger urban districts and MPOs are adequate to perform the elements required.

Transportation system goals have been established as well as quantitative performance measures (Needs BIP 7).

A transportation system will have been initially defined from the planning process and includes the existing system plus committed improvements (Needs BIP 6).

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Smaller MPOs and small urban and rural districts may not have data available nor the skill sets necessary to adequately analyze and evaluate the transportation system. Additional training and hands-on assistance will be required to assist with implementation of the methods to insure that all levels are capable of and using similar methods to determine needs.

The process needs to build upon existing modal and other needs assessment methodologies. This includes the aviation and management system assessments (ie. bridge, pavement, safety and public transportation).

Risks: Length of time to implement process as well as length of time required to perform tasks may impact the support and desire to incorporate this change into our current way of doing business.

MPOs may not want to buy into the process because they may feel it takes too much time and effort for what little they can get out of it in the way of federal or state dollars.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

To fully implement this process at the district and MPO levels, access to the Department's integrated database will be required. This will provide the MPOs and districts using GIS or other data analysis/processing capabilities the ability to utilize and monitor the shared transportation data (ie system conditions and forecasts). Without GIS capabilities, analysis time will be lengthened considerably.

Additional technology that will be beneficial for implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting, project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None known at this time

J. Expected Costs:

One-time

- ✓ Research &/or consultants (potential)
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Internet access to statewide database
- ✓ Revising and maintaining procedures

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current needs identification methods used by TxDOT, MPOs or other states and/or to assist with development of methods.
6. Review effective needs identification methods used by other states and transportation system organizations to identify possible models for needs identification methods.
7. Review strengths/weaknesses of TxDOT's existing needs assessment methods for all modes and system components to determine what can be built upon.
8. Review transportation system definition(s) to determine whether more clarification is required. (See Needs BIP 6)
9. Identify modes and major transportation elements that are applicable for meeting the transportation goals and will require needs identification methods to be developed or built upon.
10. Assign method development by mode and major transportation element.
 11. Define minimum requirements for any needs identification methods developed by this project.
 12. Establish criteria and method for measuring system conditions.
 13. Establish criteria and method for measuring the difference between transportation system goals and conditions.
 14. Establish minimum requirements for activities and procedures to perform the method.
 15. Define roles and responsibilities and decision-points.
 16. Document and define activities.
 17. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
 18. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See Tech BIP 2, Planning Tool/Application Coordination).
 19. For each method, develop and document procedures.
20. Review all developed methods, activities, and procedures for consistency and compatibility.
21. Set up access to integrated database.
22. Test methods, activities, and procedures.
23. Evaluate effectiveness of methods, activities, and procedures.
24. Revise methods, activities, and procedures as needed.
25. Develop procedures to implement needs identification process.
26. Develop training program and materials.
27. Develop internal and external communication linkages.
28. Implement training program.
29. Implement needs identification process.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

- ✓ Portions of Designation of the Transportation System (Needs BIP 6) must be completed before work step 8 can be started.
- ✓ Portions of Development of Performance Measures(Needs BIP 7) must be completed before work step 13 can be started.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

Before full implementation of this process, the IS BIP for data management and Tech BIP 1, Data & Decision-Support Strategies for Planning must be completed.

Texas Transportation Plan identified actions:

- 17.1.2 Fund projects that improve or maintain evacuation routes.
- 17.1.4 Ensure passenger transportation services are adequate to meet evacuation demands.
- 18.1.2 Develop program to accelerate rail crossing protection projects.
- 19.2.1 Include all modes in advance planning.
- 20.1.2 Use Commission authority as last resort to site needed projects.
- 13.1.5 Develop corridor plans supporting economic development.
- 5.2.2 Maintain rural airport system
- 5.1.4 Give priority to projects that provide links to major tourist attractions.
- 5.1.5 Address intermodal facility needs and issues.
- 9.1.3 Implement statewide toll road system.
- 1.1.1 Designation of Texas Transportation System
- 6.1.1 Encourage closer integration of land use and transportation.
- 14.1.3 Develop capital improvement program for border crossings.
- 14.1.4 Construct new highways to ensure north-south system continuity.
- 14.1.6 Evaluate north-south rail to ease traffic on IH-35.
- 14.3.2 Address border transportation needs.
- 16.1.1 Address hazardous materials transportation needs.
- 2.3.7 Identification of suitable bike routes.

Needs BIPs 3, 6 & 7 need to be completed before this BIP can be fully implemented.

- ✓ Needs BIP 3 - Establish Standard Forecasting Procedures
- ✓ Needs BIP 6 - Designate the Transportation System
- ✓ Needs BIP 7 - Establish Performance Measures that Quantify Accomplishment of System Goals

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

TxDOT districts(3), division/special office(2) & MPO(1)

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person(team leader) @ 60% for 12 months

5 persons @ 60% for 12 months (2 persons also serve on other BIP teams)

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented policies and procedures for determining needs per mode and major transportation elements will be available in each division, district, and MPO organization.
- ✓ Training program and materials

Process Performance Measures

- ✓ Planning staff will have been trained and using methods consistently 6 months after full implementation.
- ✓ A consistent and defensible process that produces a documented list of transportation needs.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

This business improvement project (BIP) will establish methodologies for determining current and future transportation needs. The needs identification will establish criteria for different modes, divisions, and districts to use to measure the difference between transportation system goals and current and future system conditions. The approach will distinguish between current and future needs. Both current and future needs will involve system preservation as well as increased demand. The needs identification methods will also reflect the needs arising from programmed system improvements. In some cases these would be multimodal, in other cases modal. For example, the needs assessment would identify those corridors that are currently severely congested and identify those corridors with forecasted future levels of congestion.

This business improvement project will initially entail a large effort and needs to take as its starting point the existing criteria or process and measures that are used to measure conditions. Existing criteria and measures which meet the process requirements may not warrant change. The key new feature is that the process will result in a consistent approach to needs identification and measurement that quantifies goals.

It will be critical that this process, as an integral part of the needs plan, drive the financial planning and programming processes.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-2	Title: Develop Guidelines to Identify and Select Alternatives and Solutions that Address Transportation Needs
Related Process #: 3.2, 4.3 Process Name: Determine Future System Deficiencies and Identify Alternatives; Select Solutions	
<p>Old Way Problem Statement: Currently, there is not a requirement to use a consistent approach for assessing needs or selecting solutions. The programs and projects resulting from the current planning process are not consistently needs-based nor does the process adequately address modal and intermodal options. Although alternatives analysis are currently performed for some projects, they are not usually performed early in the needs determination process. Selection criteria are inconsistent from district to district and division to district. Individual segments of the transportation system may carry their own priority with little consideration of corridor/system impacts.</p>	
<p>Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only</p>	
<p>A. Project Description: <i>(Project objectives; summarized project description)</i></p> <p><u>PROJECT</u> This project involves defining guidelines for evaluating viable transportation alternatives for meeting identified transportation deficiencies (needs) (See Needs BIP 1). It also involves defining guidelines for developing plans, projects, actions and/or strategies that will become the solutions to achieving the transportation system goals. This project will result in an ongoing process to evaluate and select transportation solutions and prepare a transportation needs plan. There are three major parts to this project; 1) identification of alternatives; 2) selection of solutions; and 3) development of a needs plan.</p> <p>The project team will include division, district and MPO representatives. The team will determine whether outside assistance is required. It will also require research to identify practices currently in use by other states.</p> <p>The project will define roles and responsibilities for the divisions, districts, MPOs and other applicable [key] transportation providers to support the guidelines. The project will include training and a schedule for implementation of the new guidelines for divisions, districts and MPOs.</p> <p>This project is dependant upon other BIPs [needs assessment (Needs BIP 1), system identification (Needs BIP 6), forecasting guidelines (Needs BIP 3), costing procedures (Needs BIP 4 &5), and establishing performance measures (Needs BIP 7)] to be completed before this BIP can be fully implemented.</p> <p><u>Identification of Alternatives</u> This portion of the project will establish guidelines for different modes, divisions, districts, MPOs or other transportation providers to use to evaluate the different transportation alternatives that best meet system needs. This approach will allow transportation planners to identify more than just system expansion alternatives, it will also identify system preservation alternatives, multimodal and intermodal opportunities, and non-construction alternatives (ie. public awareness, training, access management, etc.).</p> <p>It is not intended that this process replace the FHWA required Major Investment Study (MIS), but rather provide a basis for evaluating alternatives/strategies at an early point in the planning process. This process would supplement the required MIS process, providing initial alternative evaluation. Coordination with other state agencies and local entities will be increased to assess potential impacts of alternatives prior to transportation decisions being made.</p>	

A. Project Description(*Continued*)

Selection of Solutions

This portion of the project involves the development of methods, procedures and tools that will support the application of trade-off analysis to assist in the evaluation of solutions. Trade-off analysis methods should include factors that produce life-cycle cost and cost/benefit analysis results. Some transportation system deficiencies can best be resolved with multimodal and/or intermodal solutions. The trade-off analysis methods will enable the planner to consider and evaluate multimodal and/or intermodal solutions when appropriate. The methods should include a description of the types of transportation system deficiencies that will require the consideration of multimodal and/or intermodal solutions. The evaluation of impacts on land use, the environment, the economy, etc. are also a part of the evaluation of solutions.

Development of a Needs Plan

This portion of the project involves developing methods, criteria, and procedures to identify implementation (phasing, etc.) strategies for those solutions that will move them forward into the programming process for funding and implementation. This will enable the transportation planner to identify and evaluate the strategies necessary for implementing the selected solutions.

The project will include a strategy to ensure that the methods and procedures developed are incorporated into the redesigned planning process. The implementation strategy will include training and a schedule for implementation of the new process and methods for divisions, districts, and MPOs.

PROCESS

Identification of Alternatives

This process will be used to address those transportation needs(deficiencies/gaps) identified in the needs identification process (Needs BIP 1) that can be resolved with multiple alternatives. Reasonable and acceptable alternatives will be identified and evaluated to select alternatives that best resolve the identified transportation need and meet stakeholder approval. Evaluation of impacts on land use, the environment, the economy, etc. will be a part of this alternative evaluation process. Once a preferred alternative is selected through consideration of public input, initial trade-off analysis, etc., estimated costs can be calculated to determine funding requirements, or the necessity to consider other alternatives.

Although modal alternatives will certainly be a part of the alternative identification process where appropriate, alternatives within the modes should also be evaluated. An evaluation process is necessary to identify alternatives that best meet the need in addition to providing for the best use and timing of available funding.

The primary product of this portion of the process will be viable modal and/or multimodal alternatives that will fill the deficiency/gap between the transportation system goal and the transportation system condition, both present and future.

Selection of Solutions

This part of the process will involve making the difficult decisions about system improvements, programs and strategies that may be implemented. It will use the preferred alternatives identified earlier in the process to develop viable solutions.

This part of the process will use consistent criteria, processes and procedures to assist in the identification, evaluation and selection of the most effective and appropriate solutions. This includes the consideration of non-construction strategies and the investigation and consideration of alternative and/or non-traditional funding sources that will assist TxDOT in addressing future transportation needs.

The process will be developed in such a way that it can be applied at various levels within the transportation network (i.e., applicable to projects that address system, modal, corridor, district or MPO transportation needs).

A. Project Description(*Continued*)

Development of a Needs Plan

The primary output of this process is a documented transportation needs plan that identifies the selected solutions (plans, projects, actions, and strategies to implement preferred alternatives). Each solution in the needs plan should describe the following:

- how well the solution will address the transportation system deficiencies/gaps
- the level of performance to expect from the solution
- estimated costs (incl. economic, social, environmental, financial)
- risks and benefits of the solution
- strategies and actions for implementation of the solution

The transportation needs plan may also include the following sections:

- Modal solutions
- Multimodal solutions
- Intermodal solutions
- Impacts of solutions
- Non-construction solutions
- Benefits (what is performance potential of solutions)

An integral part of the process is the involvement of stakeholders and the public. Once the needs plan is validated and approved by the stakeholders, it should be used as the basis for the programming process.

B. Project Goals: (*What will be the outcome of the BIP; what should be accomplished*)

When fully implemented, the Department will have defensible, documented and consistent processes, methods, and procedures for identifying and evaluating transportation alternatives and selecting transportation solutions. The result of the implemented process will be a transportation needs plan that will establish priorities and identify solutions (projects, strategies, actions, and plans) that most effectively resolve identified transportation needs (deficiencies/gaps) and meet transportation system goals.

C. Expected Benefits: (*List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.*)

Implementation of this project will provide a basis for identifying alternatives that address the identified transportation needs (deficiencies/gaps) for the overall transportation system. Implementation will ensure that each division, district and MPO is identifying and evaluating alternatives and selecting solutions in a consistent, defensible and documented manner. It will also ensure that evaluating alternatives is a standard part of the needs determination process and not a process to justify a program/project. As each group begins to assess transportation needs (deficiencies/gaps) by evaluating reasonable and viable alternatives, they will be building the needs list with similar, defensible inputs. Communication and credibility between levels and groups will be improved because they will identify alternatives and select solutions using similar methods.

Implementation of this process will provide a better understanding of the impacts (socio-economic, land use, environmental, etc.) transportation decisions have on local areas and will address issues early in the planning process. The process will result in more effective solutions that are directly linked to transportation goals and identified needs (deficiencies/gaps). This link provides a defensible and credible justification for the selection of solutions and provides the most effective use of transportation dollars. Criteria for evaluating and selecting solutions will be consistent from district to district and division to district.

The implementation of a process to develop a needs plan will enable the Department to consistently identify transportation needs (for all modes), to have defensible documentation of how needs are identified, to have a valid process for identifying needs and estimating costs to address the needs, to appropriately address transportation goals, and to provide direction for project selection and programming.

TxDOT staff will have a better understanding of how alternatives are evaluated and solutions selected that will meet the transportation system goals.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Division planners (all modes), district planners, MPO planners, Senior Management Team, other key modal transportation system planners

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Initial implementation of this process may impact division and district staff workloads as it may require a greater level of effort, including time, for the needs assessment and may require more devoted individual time. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions. This process will also require staff to document and justify the evaluation and selection of alternatives and solutions to meet identified needs.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

TxDOT, MPOs and other transportation providers are willing to use this process in their evaluation of alternatives and selection of solutions. In so doing, they will have greater access to system condition data that is used by TxDOT planning groups to provide a consistent base of information.

A transportation system will have been initially defined from the planning process and includes the existing system plus committed improvements (See Needs BIP 6). Transportation system goals have been established and future conditions have been forecasted (See Needs BIP 3). A needs assessment (Needs BIP 1) has been completed.

Skills within the larger urban districts and MPOs are adequate to perform the elements required.

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: The level of detail in the evaluation of alternatives. How much analysis will be necessary at this level versus during the identification of solutions?

Need to address alternatives at the needs determination level rather than waiting until programming.

How to assign value among and between mode choices (e.g., vehicle trips vs. person trips vs. ton/miles).

Need to address the full range of alternatives, including non-construction alternatives.

Some smaller MPOs and rural districts may not have adequate data available to adequately analyze and evaluate alternatives for the transportation system. Additional training and hands-on assistance will be required to assist with implementation of the methods to insure that all levels are adequately evaluating alternatives.

Risks: Length of time to implement process as well as length of time required to perform tasks may impact the support and desire to incorporate this change into our current way of doing business.

Process may seem too cumbersome for smaller projects, thus some may attempt to bypass this part of the process.

MPOs may not want to buy into the process because they may feel it takes too much time and effort for what little they can get out of it in the way of federal or state dollars.

Not using information from the needs plan to make strategic, financial and programming decisions.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

Technology needed includes trade-off analysis tools, alternative solution evaluation and selection tools, land use evaluation tools, freight movement evaluation tools, and tools to perform cost/benefit analysis and life-cycle costing.

To fully implement this process at the district and MPO levels, access to the Department's integrated database will be required. This will provide the MPOs and districts utilizing GIS or other data analysis/processing capabilities the ability to utilize the shared transportation data (ie. system conditions and forecasts, revenue forecasts, etc.). Without GIS capabilities, analysis time will be lengthened considerably.

Additional technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting, project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None known at this time

J. Expected Costs:

One-time

- ✓ Research &/or consultants (potential)
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Access to statewide database(Internet)
- ✓ Revising and maintaining procedures

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current methods used by other states and/or MPOs to develop a needs plan and/or to assist with development of guidelines.
6. Review/research effective procedures used by other states and/or MPOs to develop a needs plan.
7. Develop guidelines to identify alternatives.
 8. Review effective alternative identification methods used by other states and transportation system organizations to identify possible models for alternative identification methods.
 9. Review transportation system definition(s) to determine whether more clarification is required. (See Needs BIP 6)

K. Primary Work Steps (*Continued*)

10. Identify modes and major transportation elements that are applicable to meeting the transportation goals and provide viable alternatives.
11. Define minimum requirements for evaluating any alternative.
12. Assign guideline development by mode and major transportation element.
 13. For each method, review and confirm requirements for input alternatives and documented needs from the needs assessment. Determine what information is required from the needs assessment descriptions to evaluate alternatives.
 14. For each method, establish criteria for evaluating each alternative.
 15. For each method, establish minimum requirements for activities and procedures to perform the evaluation.
16. Develop methods for evaluating and selecting transportation solutions.
 17. Identify modes and major transportation elements that will need solution evaluation and selection methods.
 18. Define minimum requirements for all evaluation and selection methods.
 19. Define base level criteria common to all evaluation and selection methods.
 20. Assign method development by mode and major transportation element.
 21. For each method, review and confirm requirements for input alternatives and documented needs from the needs assessment. Determine what information is required from the needs assessment descriptions to develop the solutions.
 22. Develop best fit evaluation and selection criteria.
 23. For each method, establish minimum requirements for activities and procedures to perform the method.
24. Coordinate identified methods from steps 7 and 16 with current requirements of performing a Major Investment Study (MIS).
25. Develop procedures for assembling the needs plan.
 26. Review and confirm requirements for documented needs from the needs assessment, including evaluating alternatives and selecting solutions.
 27. Determine what information is required from the needs assessment to develop the needs plan.
 28. Define minimum requirements for needs plan content.
 29. Define minimum public involvement process (from Enabler BIP 2).
 30. Define the review and update process including the frequency of a formal update.
31. For each method, define activities.
32. For each method, define roles and responsibilities and decision-points.
33. Determine if current organizational structure supports the new process.
34. For each method, define communication linkages and transfer of information mechanisms both internal and external to TxDOT planning groups performing method, as needed.
35. Develop linkages and requirements of related methods and processes, and sub-processes in the Set Transportation Goals, Needs Assessment, Develop Needs Plan, Financial Planning, and Program Solutions processes, as needed.
36. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
37. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2, Planning Tool/Application Coordination).
38. For each method, develop and document procedures.
39. Review all developed guidelines, activities, and procedures for consistency and compatibility.
40. Set up access to integrated database.
41. Develop implementation plan and strategies for implementing methods.
42. Develop performance standards for measuring success of implementation.
43. Test guidelines, activities, and procedures.
44. Evaluate effectiveness of guidelines, activities, and procedures.
45. Revise guidelines, activities, and procedures as needed.
46. Develop training program and materials.
47. Implement training program.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

- ✓ Designation of the Transportation System (Needs BIP 6) must be completed before work step 9 can be started.
- ✓ Initial identification of transportation needs (deficiencies/gaps)(Needs BIP 1), including forecasted conditions (Needs BIP 3) and cost estimates (Needs BIP 4&5) must be completed before alternatives can be identified and evaluated.
- ✓ Development of performance measures(Needs BIP 7) must be completed before work step 13 can be started.
- ✓ Prioritizing Needs (Needs BIP 8) must be completed before assembly of needs plan.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

Needs BIP 1(Develop & Implement Needs Identification) and Needs BIP 3(Standard Forecasting Practices) must be underway before this BIP can be started.

Texas Transportation Plan identified actions:

- 15.2.2 Promote awareness of environmental costs of transportation decisions.
- 19.2.1 Include all modes in advance planning.
- 19.2.3 Incorporate MIS(Major Investment Studies) into advanced planning.
 - 1.1.1 Designation of Texas Transportation System
 - 6.1.1 Encourage closer integration of land use and transportation.
- 14.1.6 Evaluate north-south rail to ease traffic on IH-35.
- 2.3.7 Identification of suitable bike routes.
- 2.2.3 Implement HOV-lanes.

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

Divisions (Environmental, Traffic & modal)(3), district planners(2), Texas Turnpike Authority(1), & MPO(1)

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person(team leader) @ 60% for 7 months
6 persons @ 50% for 7 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented policies and procedures for each mode and major transportation element will be available in each division, district, and MPO organization.
- ✓ Training program and materials.

Process Performance Measures

- ✓ Information contained in the needs plan will be used to make strategic, financial and programming decisions.
- ✓ Number of projects/programs implemented that meet planning standards (are/were listed in the needs plan).

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

This BIP will involve developing guidelines to determine transportation alternatives for meeting identified transportation needs (deficiencies/gaps). Some identified transportation needs (deficiencies/gaps) could be resolved with multiple alternatives. Acceptable alternatives should be identified and evaluated to select the alternative(s) that best resolve the need (deficiencies/gaps) and meet with stakeholder approval. When these alternatives are selected, estimated costs can be calculated to determine funding requirements, or the necessity to consider another funding or transportation system related alternative, to meet the transportation needs (deficiencies/gaps). Evaluation guidelines are required to identify valid alternatives and establish criteria for determining the preferred alternative(s). This BIP also involves identifying procedures that guide the selection of solutions that describe the strategies, actions, and proposed improvements to address identified transportation system deficiencies.

New methods, selection criteria, procedures, and tools for each mode and major transportation system component are required to assist in the evaluation and selection of effective solutions. These new methods will enable planners to identify and develop multimodal and intermodal solutions where appropriate. Alternative funding sources and non-construction strategies may also be identified with the methods and selection criteria developed in this business improvement project.

The product from these processes will be a documented needs plan. The needs plan provides a list of solutions that will bridge the gap between the transportation system conditions(current & future) and the transportation goals and provides a defensible and credible justification for funding and programming decisions. Implementation of this process will also provide a better understanding of the impacts of transportation alternatives before final decisions are made. It will also bring any issues into the planning process earlier rather than during the programming stage. The resulting programs and projects, when identified from the needs plan, will have a direct link to transportation system goals and identified needs.

The processes developed and implemented by this project will be applied at the division, district, regional, and MPO levels. Criteria for evaluating alternatives and selecting solutions will be consistent from district to district and from division to district.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-3	Title: Establish Standard Forecasting Practices
Related Process #: 2.4 Process Name: Predict Future System Conditions	
Old Way Problem Statement: The implementation of the needs assessment process requires forecasting and evaluation of future conditions on the existing transportation system. In the current environment of transportation planning, there are no consistent practices for forecasting future conditions per mode and transportation system elements, e.g. bridges, interchanges. Planners are unable to consistently analyze and evaluate needs because the needs are not always determined using documented, consistent methods.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only	
A. Project Description: <i>(Project objectives; summarized project description)</i>	
<u>PROJECT</u> This project involves defining methodologies and requirements for forecasting future conditions for all elements of the transportation system and ensuring that they are used across modes, divisions and districts, and, where appropriate, by MPOs. These forecasts need to address operational conditions (demand for the use of the transportation facilities) and physical conditions. This project will establish policies and procedures for forecasting future conditions on the existing transportation system for each mode and major element of the transportation system. A consistent methodology for forecasting demand as well as the forecasting of the physical condition of the facility will be the product(s) of this project. Although the modeling effort to forecast travel demand in urban areas is well developed, the procedures for forecasting demand outside the urban areas and for other modes, need to be defined and/or developed. Included in this project is development of a practice or procedure to evaluate the impact of the predicted conditions in order to forecast a future transportation need. The project will include evaluation of the existing management systems to determine if the management systems will provide the necessary level of detail to be used in this process. The project team will be composed of division, district and MPO representatives. The team will determine if parts of the project will be outsourced or performed in-house. It will also require research to identify practices currently in use by TxDOT and other states. The project will define the roles and responsibilities of the divisions, districts, MPOs, and other transportation providers to support the new practices. The project will include training and a schedule for implementation of the practices in each division, district, and MPO. The practices developed in this project are required inputs to Needs BIP 1, Develop and Implement Needs Identification Methods and Processes and Needs BIP 2, Develop Guidelines to Identify and Select Alternatives and Solutions that Address Transportation Needs.	
<u>PROCESS</u> The forecasting practices developed by this project will enable planners to forecast both operational and physical transportation system conditions to determine future transportation system needs. By comparing the future transportation system conditions to the performance measures and transportation system goals, future needs can be determined. The procedure will also enable planners to determine if the transportation system elements need to be redefined to respond to external impacts, such as predicted socioeconomic or environmental factors. The output or product of this process will be combined with current system needs (Needs BIP 1) and be used in the next step to consider alternatives to meet the needs (Needs BIP 2).	

B. Project Goals: *(What will be the outcome of the BIP; what should be accomplished)*

When the project is fully implemented, the Department will have documented, defensible, and common practices for forecasting future transportation system conditions to use in the larger needs determination process (See *Needs BIP 1*). The deliverable from this project will be a documented practice for forecasting transportation system conditions, including the accompanying training necessary to implement this process.

Implementation of this project will build upon ongoing work initiated under the management systems (ie. safety, pavement, bridge and public transportation).

C. Expected Benefits: *(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)*

Implementing consistent practices for forecasting future conditions of the transportation system will ensure that each division, district, and MPO is analyzing and evaluating data in a similar manner and is using consistent forecasts. As each group begins to assess transportation needs by comparing the forecasted conditions to transportation goals, they will be building the needs list with similar, defensible inputs. Communication between levels and groups will be improved because they will be determining future system needs using similar practices.

The product from the implementation of this process will provide input into the needs assessment process (Needs BIP 1). It will also provide input for programming projects and provide a basis for the financial planning process that will determine financial needs based on identified transportation needs.

Implementation of this process is a critical factor in accomplishing the other steps in the planning/programming process.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Division planners, district planners, MPO planners, Senior Management Team, strategic planners

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Division, district, and MPO planners will be required to document forecasts of future system conditions. Initial implementation of this process may impact division and district staff workloads as it may require a greater level of effort, including time, for the needs assessment and may require more devoted individual time. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

Existing methods for forecasting bridge, pavement, and aviation and public transportation facility conditions, and existing procedures for travel demand forecasting will be evaluated to determine applicability.

Before full implementation of this process, the IS Business Improvement Project to integrate the databases currently used by the planning process is completed.

TxDOT, MPOs and other transportation providers are willing to use this process to forecast transportation system conditions in order to identify future needs. In so doing, they will have greater access to system condition data that is used by TxDOT planning groups, to provide a consistent base of information.

Skills within the larger urban districts and MPOs are adequate to perform the elements required.

Transportation system goals, including performance measures (Needs BIP 7), have been established.

A transportation system will have been initially defined from the planning process and includes the existing system plus committed improvements (Needs BIP 6).

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Smaller MPOs and small urban and rural districts may not have data available nor the skill sets necessary to adequately forecast future conditions of the transportation system. Additional training and hands-on assistance may be required to assist with implementation of the practices to insure that all levels are using similar methods to forecast conditions.

Need to ensure that existing forecasting condition/demand approaches for different modes are built upon.

Risks: Length of time to implement the process as well as length of time required to perform tasks may impact the support and desire to incorporate this change into our current way of doing business.

MPOs may not want to buy into the process because they may feel it takes too much time and effort for what little they can get out of it in the way of federal or state dollars.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

To fully implement this process at the district and MPO levels, access to the Departments integrated database will be required. This will provide the MPOs and districts utilizing GIS or other data analysis/processing capabilities the ability to use the shared transportation data (ie. system conditions and forecasts, revenue forecasts, etc.). Without GIS capabilities, analysis time will be lengthened considerably.

Modeling software and training may be necessary to forecast demand and physical conditions.

Additional technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting / project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None identified at this time

J. Expected Costs:

One-time

- ✓ Research &/or consultants (potential)
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Internet access to statewide database
- ✓ Revising and maintaining procedures

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current practices for forecasting conditions used by other states and/or to assist with development of procedures.
6. Review effective forecasting practices used by TxDOT, other states and transportation system organizations to identify possible practices or models.
7. Review transportation system definition(s) to determine whether more clarification is required. (See BIP Needs 6)
8. Identify modes and major transportation elements that are applicable to meeting the transportation goals and require the development of forecasting practices.
9. Develop standard forecasting practices.
10. Define minimum requirements for any forecasting procedures developed by this project.
11. Assign practice development by mode and major transportation element.
12. For each practice, establish minimum requirements for activities and procedures to perform the method.
13. For each practice, define roles and responsibilities and decision-points.
14. For each practice, define activities.
15. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
16. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2 Planning Tools/Applications Coordination)
17. For each practice, develop procedures.
18. Review all developed practices, activities, and procedures for consistency and compatibility.
19. Set up access to integrated database.
20. Test practices, activities, and procedures.
21. Evaluate effectiveness of practices, activities, and procedures.
22. Revise practices, activities, and procedures as needed.
23. Develop procedures to implement forecasting process.
24. Develop training program and materials.
25. Develop internal and external communication linkages.
26. Implement training program.
27. Implement system condition forecasting process.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

- ✓ Designation of the transportation system (Needs BIP 6) must be completed before work step 8 can be started.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

IS Business Improvement Project to integrate the databases currently used by the planning process.

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

Planning & Programming Division(1), Construction & Maintenance Division(1), urban district(1), rural district(1), large MPO(1) & small MPO(1)

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person (team leader) @ 80% for 7 months
5 persons @ 60% for 7 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

Documented forecasting practices and procedures for each mode and major transportation element will be available in each division, district and MPO organization.

Training program and materials.

Process Performance Measures

Planning staff will have been trained and using methods consistently 6 months after full implementation.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

The implementation of a needs determination process requires effective forecasting and evaluation of future conditions on the existing transportation system. The future conditions forecasted by various transportation groups (divisions, districts, MPOs) must be derived using similar methods in order to establish consistency and validity to the information used throughout the needs determination process. If similar methods are not used to forecast future conditions of the transportation system, the resulting identified needs may not be fully valid and defensible. The costs and risks of implementing this project are minimal compared to the benefits of defensible forecast information derived from consistent practices.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-4	Title: Develop Procedures for Determining Costs for Preserving and Expanding System Components
Related Process #: 3.3 Process Name: Determine Costs of Meeting Needs	
Old Way Problem Statement: Currently, there is not a consistent approach to determining costs to preserve or expand the transportation system. Consequently, the programs and projects resulting from the current planning process are not consistently evaluated or prioritized and the financial needs are not based on transportation system needs.	
Type of BIP: (<i>Business only; Business & Technology; Technology Only</i>) Business Only	
A. Project Description: (<i>Project objectives; summarized project description</i>)	
<p><u>PROJECT</u></p> <p>This project involves defining a process and procedures for making preliminary cost estimates of the transportation needs for each of the different system components. For example, highway type needs may be based on a cost-per-mile basis for certain highway treatments, public transportation capital improvements may use cost per certain type bus, etc. This project requires establishing procedures for the different modes and functions. The process will identify standard approaches that incorporate actual cost data from the same sources (ie. latest bid tabs, etc.) but reflect local conditions. Different costs will be used by different districts or regions to reflect local conditions but they will be arrived at through a common approach.</p> <p>This project will also determine the data source for historical cost data as well as how it should be used in developing costs to apply to the needs.</p> <p>The project team will be composed of division, district and MPO representatives. The team will determine if parts of the project will use outside assistance or be performed in-house. The project will also require research to identify practices currently in use by TxDOT and other states.</p> <p>The project will define roles and responsibilities of the divisions, districts, MPOs and other applicable [key] transportation providers to support the new procedures. The project will include training and a schedule for implementation of the new procedures in each division, district and MPO.</p> <p><u>PROCESS</u></p> <p>The process will require the development of standard cost information based on historical cost data applicable to the area or mode. Units of cost would be consistent between districts and MPOs but the dollar amount for the unit of cost would vary depending on local factors. For example, the unit of cost measure to be used by all districts might be “annual cost per mile to maintain a 4-lane Interstate Highway”, but the actual amount, as determined by the district or MPO, would be different for the Texas Panhandle than in the Gulf Coast region. The district or MPO would determine that figure by using historical construction, operation and maintenance cost data following a procedure developed by this project.</p> <p>Once the unit cost data has been determined, it would be applied to the identified need, as developed by Needs BIPs 1-3. Inflation guidelines (Needs BIP 5) would be applied as appropriate. The primary product of this process will be a documented and consistent process of determining preliminary costs associated with the identified transportation improvement.</p> <p>The implementation of the procedures developed by this project will be dependent upon implementation of Needs BIP 2 (Develop Guidelines to Identify Alternatives that Address Transportation Needs), Needs BIP 3 (Establish Standard Forecasting Practices), and Needs BIP 6 (Designate the Transportation System).</p>	

B. Project Goals: *(What will be the outcome of the BIP; what should be accomplished)*

When fully implemented, the Department will have documented procedures for determining transportation system costs. Implementation will ensure that each division, district and MPO is using the same basis (unit of cost measure) to estimate the cost of each improvement. The deliverable from this process will serve as input to the inflation of costs BIP (Needs BIP 5) as well as the financial planning process.

C. Expected Benefits: *(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)*

Implementation of this project will provide a basis for determining costs of the transportation needs. Each division, district and MPO will be determining costs in a consistent, defensible and documented manner. As each group begins to assess the costs of transportation needs and forecast them into future dollars (Needs BIP 5), they will be building the needs list with similar, defensible inputs. Communication and credibility between levels and groups will be improved because they will determine costs using similar procedures and units of measure.

Implementation of this process will also provide a mechanism to realign transportation system goals, where necessary, and serve as input into the financial planning process.

Implementation of this process is a critical factor in determining the financial requirements for implementing the projects and programs that fulfill the transportation system goals.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Senior management, strategic planners, Budget & Finance Division, division transportation planners (all modes), district transportation planners, MPO planners, and other key modal transportation system planners.

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Potential division and district impacts to staff member work loads upon initial implementation as staff becomes familiar with the process. Required level of effort by staff may be greater as process is first implemented. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions. Initial startup may require additional support to establish a usable historic base. Division, district, MPO & other transportation system planners will be required to document and justify determination of costs.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

Historic project cost information is available to the divisions, districts and MPOs.

TxDOT, MPOs and other transportation providers are willing to use this process in estimating costs of the needs. In so doing, they will have greater access to data that is used by TxDOT planning groups to provide a consistent base of information.

A transportation system will have been initially defined from the planning process and includes the existing system plus committed improvements (See Needs BIP 6).

A preliminary list of needs has been identified. (See Needs BIP 1)

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Preliminary costs developed during this process will be acceptable for long range planning purposes but must be refined for project development and implementation.

Additional training and hands-on assistance may be required from larger MPOs or divisions to assist with implementation of the methods to insure that all levels are using similar methods to determine costs.

Technical issues to be resolved include inflating historical cost data into present values.

Risks: Misuse of cost information to increase worthiness of project to obtain higher ranking.

Length of time to implement process as well as length of time required to perform tasks may impact the support and desire to incorporate this change into our current way of doing business.

MPOs may not want to buy into the process because they may feel it takes too much time and effort for what little they can get out of it in the way of federal or state dollars.

Infrequent or unreliable updates of historical data.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

Additional technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting / project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

Access to historical cost data by districts and MPOs.

J. Expected Costs:

One-time

- ✓ Research &/or consultants (potential)
- ✓ Startup costs to gather historical cost data
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Internet access to statewide database
- ✓ Revising and maintaining procedures with system definition changes and new cost information.

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current cost estimation procedures used by other states and/or to assist with development of methods.
6. Review effective costing procedures used by other states and transportation system organizations to identify possible models for use in determining costs.
7. Review identified transportation system need(s) to determine whether more clarification is required. (See Need BIPs 1-3)
8. Identify modes and major transportation elements that are applicable to costing the identified needs.
9. Develop methods for determining costs.
10. Define minimum requirements for determining costs.
11. Assign procedure development by mode and major transportation element.
12. For each procedure, establish criteria for developing units of costing measures.
13. For each procedure, establish minimum requirements for activities and historical data needed to perform the procedure.
14. For each procedure, define roles and responsibilities.
15. For each procedure, define activities necessary to obtain historical data.
16. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
17. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2 Planning Tools/Applications Coordination)
18. For each procedure, develop application guidelines.
19. Review all developed methods, activities, and procedures for consistency and compatibility.
20. Set up access to integrated database.
21. Test methods, activities, and procedures.
22. Evaluate effectiveness of methods, activities, and procedures.
23. Revise methods, activities, and procedures as needed.
24. Develop procedures to implement determining costs process.
25. Develop training program and materials.
26. Develop internal and external communication linkages.
27. Implement training program.
28. Implement determining costs process.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

- ✓ Identification of the needs (Needs BIPs 1(part), 2-3) must be completed before cost estimates can be initiated.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

- ✓ Identification of the needs (Needs BIP 1) must be started and run concurrently with this BIP
- ✓ Inflation of costs (Needs BIP 5) must be completed prior to implementation of this BIP.

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

Budget & Finance Division(1), division (2), & district(1).

**** Same team to be used on Needs BIP 5 ****

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person (team leader) @ 80% for 5 months
3 persons @ 60% for 5 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented policies and procedures per mode and major transportation element will be available in each division, district and MPO organization.
- ✓ Documented reliable cost estimates.

Process Performance Measures

- ✓ Planning staff will have been trained and using methods consistently 6 months after full implementation.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

This BIP involves developing procedures for determining the cost of our transportation needs for the different system components, for example, cost per mile for different types of highway treatments or cost for a 45 passenger transit vehicle. It requires establishing agreed upon approaches for different modes and functions. The intention is to use consistent approaches that incorporate actual cost data from the same sources but reflect local conditions. Therefore, there will be different costs in different districts or regions but they will be arrived at through a common approach.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-5	Title: Develop Guidelines to Account for Inflation of Costs
Related Process #: 3.3 Process Name: Determine Costs of Meeting Needs	
<p>Old Way Problem Statement: Currently, there is not a consistent approach to determining costs of identified needs. Some MPOs and districts may use costs in today’s dollars, others may use today’s costs but apply an inflation factor, etc. Consequently, the programs and projects resulting from the current planning process are not consistently based on similar assumptions resulting in an unequal basis for prioritization and the financial needs are not determined consistently throughout.</p>	
<p>Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only</p>	
<p>A. Project Description: <i>(Project objectives; summarized project description)</i></p> <p><u>PROJECT</u> This project involves defining guidelines for inflating estimated costs to account for inflation. Since all the needs will not be implemented immediately or at the same time, a mechanism is necessary to estimate project costs that will account for inflation.</p> <p>This project will develop guidelines for determining the inflation as well as guidelines on applying the inflation factors to the identified needs.</p> <p>The team will be composed of representatives from the Budget and Finance Division, districts and MPOs. The team will determine if parts of the project will need outside assistance. It will also require research to identify practices currently in use by TxDOT and other states.</p> <p>The project will define roles and responsibilities to support the new methodologies by the divisions, districts, MPOs and other applicable [key] transportation providers. The project will include training and a schedule for implementation of the new methodologies in each division, district and MPO.</p> <p><u>PROCESS</u> Implementation of the guidelines developed in this project will allow planners to evaluate and plan more effectively based on realistic cost estimates for the needs identified.</p> <p>This process will require the cost estimates derived by the “Determining Costs Process” (Needs BIP 4) to be inflated using the guidelines established in this BIP. For example, a need that has been identified and a cost estimate determined, would cost \$xx to implement today. If the implementation of that need is delayed 10 years, the cost would be \$xxx, and so forth. This allows for more realistic planning and provides a basis for the financial planning process.</p>	
<p>B. Project Goals: <i>(What will be the outcome of the BIP; what should be accomplished)</i></p> <p>When fully implemented, the Department will have documented guidelines for inflating costs to be used in transportation planning. Implementation will ensure that each division, district and MPO is inflating the estimated costs in a similar manner. The deliverable from this process will serve as input for the “Determining Costs Process” (Needs BIP 4) and for prioritizing (programming) projects for implementation. The goal is to have consistency within and between modes.</p>	

C. Expected Benefits: *(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)*

Implementation of this project will provide a basis for determining costs of the transportation needs that will support the overall transportation system and optimize its effectiveness. Each division, district and MPO will be determining costs in a consistent manner. As each group begins to assess the costs of transportation needs and forecasts them into future dollars, they will be building the needs list with similar, defensible inputs. Communication and credibility between levels and groups will be improved because they will determine costs using similar procedures and information.

Increased costs due to delays in implementation of identified needs will be shown with the implementation of this process.

Implementation of this process is the critical factor in accomplishing the other steps in the determining costs process.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Strategic planners, Budget & Finance Division, division planners (all modes), district planners, MPO planners, and other key modal transportation system planners.

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Potential division and district impacts to staff member work loads upon initial implementation as skills required may be new to staff and require increased levels of effort. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

TxDOT, MPOs and other transportation providers are willing to use this process in inflation of costs. In so doing, they will have greater access to system condition data that is used by TxDOT planning groups, to provide a consistent base of information.

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Preliminary costs developed during this process will be acceptable for long range planning purposes but must be refined for project development and implementation.

Additional training and hands-on assistance will be required from larger MPOs or divisions to assist with implementation of the methods to insure that all levels are using similar methods to forecast costs.

Risks: Inadequate and unreliable inflation characteristics.

Infrequent and/or unreliable updates.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

Technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting / project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None known at this time.

J. Expected Costs:

One-time

- ✓ Research &/or consultants (potential)
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Internet access to statewide database
- ✓ Revising and maintaining procedures with system definition changes, new cost data and changes in inflation

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current cost inflation methods used by other states and/or to assist with development of methods.
6. Review effective methods used by other states and transportation system organizations to identify possible models to account for inflation of costs.
7. Review current inflation rates for transportation system.
8. Identify modes and major transportation elements that would have modal characteristic inflation factors.
9. Develop guidelines to account for inflation of costs.
10. Define minimum requirements for accounting for the inflation of costs.
11. Assign guideline development by mode and major transportation element.
12. For each guideline, establish minimum requirements for activities and procedures to accomplish the guideline.
13. For each guideline, define activities.
14. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.

K. Primary Work Steps (Continued)

15. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2 Planning Tools/Applications Coordination)
16. Develop procedures to implement guidelines to account for inflation of costs.
17. Review all developed guidelines and procedures for consistency and compatibility.
18. Set up access to integrated database.
19. Test guidelines and procedures.
20. Evaluate effectiveness of guidelines and procedures.
21. Revise guidelines and procedures as needed.
22. Develop training program and materials.
23. Develop internal and external communication linkages.
24. Implement training program.
25. Implement guidelines and procedures to account for inflation of costs.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

None identified

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

None identified

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

Budget & Finance Division(1), division (2), & district(1).

**** Same team to be used on Needs BIP 4 ****

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person (team leader) @ 80% for 5 months

3 persons @ 60% for 5 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented policies and procedures per mode and major transportation element will be available in each division, district and MPO organization.

Process Performance Measures

- ✓ Planning staff will have been trained and using methods consistently 6 months after full implementation.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

This BIP will involve developing agreed upon guidelines for inflating costs to account for inflation. The intent is for a consistency of inflation factors across modes and districts.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-6	Title: Designate the Transportation System
Related Process #: 2.1	Process Name: Define Transportation System
<p>Old Way Problem Statement: The transportation system to be addressed by our transportation goals, needs determination, performance measures, current and future conditions, etc. is not clearly defined for all modes.</p>	
<p>Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only</p>	
<p>A. Project Description: <i>(Project objectives; summarized project description)</i></p> <p><u>PROJECT</u> This project involves defining the transportation system that will be subject to a needs analysis, performance measures, condition evaluation, etc. The product of this process is required as input to the other BIPs. This project requires an approach to identify the system and corridors that will support overall statewide, district and local/MPO goals for the transportation system. It will include all modes and intermodal connections.</p> <p>The Texas Transportation Plan(TTP) has initially identified a transportation system based on an inventory of the existing facilities. This project, using the TTP as a base, will reevaluate the system defined in the TTP and add/change as necessary to meet the transportation system goals. It will also require close coordination with Transportation Planning and Programming Division's efforts along this same topic as well as with the management systems' activities.</p> <p>The project will define roles and responsibilities of the divisions, districts, MPOs and other applicable [key] transportation providers to identify and keep current the designated transportation system.</p> <p><u>PROCESS</u> The transportation system designated by this project will serve as the basis for the needs determination, financial planning, programming and all other elements of the transportation planning process. It will be multimodal and reflect at the appropriate level, the statewide transportation system, regional(district) transportation systems and local/MPO transportation systems. Corridors and systems(ie airport, rail, etc.) will also be included.</p> <p>The transportation system designated in this process will include the existing system and those committed improvements from the present planning process.</p> <p>The product of this process will be reviewed and redefined on a continuous basis as the external factors(economic development, etc) change over time and improvements are implemented.</p>	
<p>B. Project Goals: <i>(What will be the outcome of the BIP; what should be accomplished)</i></p> <p>When fully implemented, the Department and MPOs will have a documented transportation system on which to base the needs determination and other elements of the transportation planning process.</p>	
<p>C. Expected Benefits: <i>(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)</i></p> <p>Implementation of this process is the critical factor in accomplishing the other steps in the planning/programming process. It will also guide transportation investment decisions and provide a basis to measure progress towards meeting the transportation goals.</p>	
<p>D. Potential Users: <i>(When the project is implemented, who will be the primary users of the new systems, processes, outputs)</i></p> <p>Senior management, division planners(all modes), district planners, MPO planners, and other key modal transportation system planners.</p>	

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Minimal impacts at the division or district, however, the divisions, districts, MPOs & other transportation system planners will be required to document the designation of the transportation system.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

TxDOT, MPOs and other transportation providers are willing to use this process to define the transportation system. In so doing, they will have greater access to system data, that is used by TxDOT planning groups, to provide a consistent base of information.

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Criteria need to be developed for system inclusion or entry by mode.

Risks: Perception that inclusion in the designated system is a basis for funding rather than a basis to determine need.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

Although this project does not require special "enabling technology" to implement, to obtain maximum benefit at the district and MPO levels, access to the Departments electronic database will be desirable. This will allow those MPOs or districts with GIS capabilities or other data analysis/processing capabilities the ability to use the shared transportation data, ie system conditions and forecasts, revenue forecasts, etc.

Additional technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting / project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None known at this time, however see "H. Enabling Technology" comments above.

J. Expected Costs:

One-time

- ✓ None identified

On-going

- ✓ Internet access to statewide database
- ✓ Revising and maintaining system definition changes

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).

NOTE: For each level of applicability (statewide, regional, local/MPO or mode):

5. Review/coordinate TTP activities concerning this topic.
6. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
7. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2, Planning Tools/Applications Coordination)
8. Review transportation system definition(s) to determine whether more clarification is required.
9. Identify criteria for inclusion into the designated system.
10. Identify committed improvements that will impact system definition.
11. Review transportation system goals to determine adequacy of designated system.
12. Revise/document designated system (including systems/corridors).
13. Set up Internet access to data.
14. Develop internal and external communication linkages.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

Texas Transportation Plan, Action Item 1.1.1, Designation of Texas Transportation System

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

Texas Transportation Plan identified actions:

- 17.1.2 Fund projects that improve or maintain evacuation routes
- 17.1.4 Ensure passenger transportation services are adequate to meet evacuation demands
- 18.1.2 Develop program to accelerate rail crossing protection projects
- 19.2.1 Include all modes in advance planning
- 13.1.5 Develop corridor plans supporting economic development
- 5.2.2 Maintain rural airport system
- 5.1.4 Give priority to projects that provide links to major tourist attractions
- 5.1.5 Address intermodal facility needs and issues
- 9.1.3 Implement statewide toll road system
- 12.1.5 Prioritization of investment in intermodal facilities
- 14.1.3 Develop capital improvement program for border crossings
- 14.1.4 Construct new highways to ensure north-south system continuity
- 14.1.6 Evaluate north-south rail to ease traffic on IH-35
- 14.3.2 Address border transportation needs
- 16.1.1 Address hazardous materials transportation needs
- 2.3.7 Identification of suitable bike routes
- 2.2.3 Implement HOV-lanes

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

BIP to be assigned to Transportation Planning and Programming Division.

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person @ 60% for 2 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented transportation system designation per mode and major transportation elements will be available in each division, district, and MPO organization.
- ✓ Documented process to allow for review/update of transportation system designation.

Process Performance Measures

- ✓ Planning staff will be using designated system consistently 6 months after full implementation of planning process.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

This BIP will involve identifying/designating a transportation system that will be subject to a needs analysis. It will also identify criteria for inclusion into the defined system. This requires an approach to identify and keep current the transportation systems that support overall statewide, district and MPO goals for the transportation system.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-7	Title: Establish Performance Measures that Quantify Accomplishment of System Goals
Related Process #: 1.5 Process Name: Develop Performance Measures	
Old Way Problem Statement: The Texas Transportation Plan (TTP) set transportation system goals. The Strategic Plan includes performance measures, as do some modal plans and the ISTEA management systems. A consistent approach and set of performance measures are required to adequately quantify system goals.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only	
A. Project Description: <i>(Project objectives; summarized project description)</i>	
<u>PROJECT</u> This project involves identifying and defining/redefining appropriate transportation system performance measures from existing plans, management systems, and ongoing research. It will also define and/or redefine minimum thresholds and goals for transportation system performance. This project will define procedures to develop performance measures when transportation system goals and policies are updated. Performance measures to be defined through this process will include transportation system measures that include physical as well as operational measures; are clearly defined and specific; and include statements that define <u>what</u> is to be measured, the <u>level</u> of measurement, <u>when</u> the measurement is to be performed, and <u>when</u> the performance measure should be met. This project's team will be composed of TxDOT staff and MPO representatives. The team will determine if parts of the project will require outside assistance. It may also require research to identify practices currently in use by other states. The project will define roles and responsibilities of the divisions, districts, MPOs and other applicable [key] transportation providers to support the development of transportation performance measures. The project will include training and a schedule for implementation of the performance measures.	
<u>PROCESS</u> The process will develop performance measures to be used in defining/redefining the transportation system, determining transportation system needs, and programming of projects/programs. The measures will also be used to determine whether the transportation system needs are being met. The performance measures will be coordinated with the Texas Transportation Plan and Strategic Plan so one set of measures will be used throughout the Department. The process will define performance measures that include physical as well as operational measures; are clearly defined and specific; and include statements that define <u>what</u> is to be measured, the <u>level</u> of measurement, <u>when</u> the measurement is to be performed, and <u>when</u> the performance measure should be met. The process will also identify conditions and forecasting information required for the application of the performance measures.	

B. Project Goals: *(What will be the outcome of the BIP; what should be accomplished)*

When fully implemented, the Department will have documented performance measures for determining transportation system needs (deficiencies/gaps) as well as determining whether the transportation needs are being met. Implementation will ensure that each division, district and MPO is analyzing and evaluating data in a similar manner to arrive at a transportation need. The deliverable from this process will serve as input for the needs determination process and financial planning process; will be used in prioritizing (programming) projects for implementation; and will be one set of measures used throughout the Department.

C. Expected Benefits: *(List the major benefits to be realized by implementing this project. What Vision recommendation(s) does the project help fulfill.)*

Implementation of this project will provide a basis for evaluating the transportation system and determining the needs to support the overall transportation system goals and optimizing its effectiveness. Each division, district and MPO will be identifying needs in a consistent, defensible and documented manner, using agreed upon performance measures as a basis. As each group begins to assess transportation needs by comparing system conditions with the transportation goals and related performance measure(s), they will be building the needs list with similar, defensible and agreed upon inputs. The performance measures will also be used to determine whether the transportation system needs are being met. Communication and credibility between levels and groups will be improved because they will be determining needs using similar performance measures.

Implementation of this process will also provide a mechanism to reevaluate transportation system goals, redefine where necessary, and serve as the driving force for identifying needs.

Implementation of this process is the critical factor in accomplishing the other steps in the planning and programming processes.

D. Potential Users: *(When the project is implemented, who will be the primary users of the new systems, processes, outputs)*

Senior management, divisions, districts, MPO planners, and key modal transportation system planners

E. Organizational Impact: *(How is the organization affected by the implementation of the project)*

Minimal impact in the districts and MPOs in developing the performance measures. Changes in the “way of doing things” for using performance measures to determine needs, etc. may impact planning staff in divisions and districts. Staff may need to be temporarily reassigned or outsourcing may be necessary. Ongoing impacts should be minimal as staff becomes familiar with the process and incorporates it into their normal job functions.

F. Assumptions: *(What assumptions are made about available technology, organizational structure, policies, etc.)*

TxDOT, MPOs and other transportation providers are willing to use performance measures in identifying needs and determining whether needs are being met. In so doing, they will have greater access to system condition data that is used by TxDOT planning groups, to provide a consistent base of information.

Transportation system goals have been established.

A transportation system will have been initially defined and includes the existing system plus committed improvements (See Needs BIP 6, Designate the transportation system).

G. Issues/Risks: *(What are the major issues to be resolved during the implementation of the project; indicate potential action steps to resolve issues. If this project is implemented, what are the major risks to the enterprise; indicate potential action steps to take during implementation to reduce the risks.)*

Issues: Project will build upon existing activities and performance measures (Strategic Plan, Texas Transportation Plan, ISTE Management Systems, Executive Information System, etc.) and accompanying progress when appropriate.

Importance and role of performance measures may not be understood.

Consistent performance measurements will be agreed upon and used across divisions, districts and MPOs.

Risks: Length of time to implement process as well as length of time required to perform tasks may impact the support and desire to incorporate this change into our current way of doing business.

MPOs may not want to buy into the process because they may feel it takes too much time and effort for what little they can get out of it in the way of federal or state dollars.

H. Enabling Technology: *(What technology is needed as part of this project's implementation)*

Technology that may be beneficial upon implementation of this BIP is:

- ✓ Client / server network capabilities, quality desktop PC & peripheral availability
- ✓ Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- ✓ Geographic Information Systems (GIS), common location referencing system
- ✓ Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- ✓ Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- ✓ Document storage/distribution - scanning, imaging, CD ROM, desktop publishing capabilities
- ✓ Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting / project tracking, etc.)

I. Impact on Existing Information Systems: *(What existing information systems must be changed to complete the implementation of this project.)*

None known at this time.

J. Expected Costs:

One-time

- ✓ Research and/or consultants (potential)
- ✓ Revised policies and procedures
- ✓ Education and communication with divisions, districts, MPOs and other transportation providers
- ✓ Travel for training and meetings
- ✓ Training program development and implementation

On-going

- ✓ Training for new employees and managers
- ✓ Internet access to statewide database
- ✓ Revising and maintaining performance measures upon transportation goal changes

K. Primary Work Steps: *(What are the major work steps to be completed to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps.
3. Revise work steps and cost estimates as necessary.
4. If consensus groups will be used, identify and confirm the participants in the required group(s).
5. Determine whether consultant or outside research group is needed to help conduct search of current system performance measures used by other states and/or to assist with development of performance measures.
6. Review existing performance measures as used in the Strategic Plan, Texas Transportation Plan, ISTE Management Systems, Executive Information System, etc.
7. Review effective performance measures used by other states and transportation system organizations.
8. Review transportation system goals to determine whether more clarification is required.
9. Identify modes and major transportation elements that are applicable to meeting the transportation goals and will require performance measures to be developed.
10. Define minimum requirements for any performance measures.
11. Assign measure development by mode and major transportation element.
12. For each measure, establish criteria for measuring the difference between transportation system goals and conditions.
13. For each measure, establish minimum requirements.
14. For each measure, define when and how measure is to be applied.
15. Review available data resources to identify any additional data requirements. If additional data is required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
16. Review applicable tools/applications. Coordinate needs with Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling. (See also Tech BIP 2, Planning Tools/Application Coordination)
17. For each measure, develop a standard.
18. Review all developed measures and applications for consistency and compatibility.
19. Develop procedures to establish performance measures.
20. Set up access to integrated database.
21. Test performance measures.
22. Evaluate effectiveness of performance measures.
23. Revise measures as needed.
24. Develop procedures to implement performance measures.
25. Develop training program and materials.
26. Develop internal and external communication linkages.
27. Implement training program.
28. Implement performance measures.

L. Dependencies: *(What other efforts(BIPs and outside initiatives) must be completed before this project is started)*

None identified.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

- ✓ Integration of the Strategic Plan and the Texas Transportation Plan in so far as the transportation system goals have been determined.

Texas Transportation Plan identified actions:

- 17.1.4 Ensure passenger transportation services are adequate to meet evacuation demands
- 18.1.2 Develop program to accelerate rail crossing protection projects
- 19.2.1 Include all modes in advance planning
- 13.1.5 Develop corridor plans supporting economic development
- 5.2.2 Maintain rural airport system
- 5.1.4 Give priority to projects that provide links to major tourist attractions
- 5.1.5 Address intermodal facility needs and issues
- 1.1.1 Designation of Texas Transportation System
- 14.1.4 Construct new highways to ensure north-south system continuity
- 14.1.6 Evaluate north-south rail to ease traffic on IH-35
- 14.3.2 Address border transportation needs
- 16.1.1 Address hazardous materials transportation needs

N. Team: *(Who will be a part of the implementation team for this project, i.e. which stakeholder types by current position.)*

Division (1) & district (2)

O. Schedule & Resources: *(What is the time frame, e.g. 4 months. Refer to the implementation schedule Gantt Chart for start/end time frames. For the team identified above, indicate the level of effort required for team members, e.g. full-time, half-time, etc.)*

1 person(team leader) @ 60% for 5 months
2 persons @ 60% for 5 months

P. Performance Measures: *(How will management know that the BIP is successful)*

Project Deliverables

- ✓ Documented performance measures for each mode and major transportation element will be available in each division, district, and MPO organization.

Process Performance Measures

- ✓ Planning staff will have been trained and using transportation performance measures consistently 6 months after full implementation.

Q. Summation: *(Make a closing statement to justify the acceptance and implementation of the BIP. State how the benefits sufficiently outweigh the costs and risks to present a compelling case for acceptance of the BIP.)*

The needs assessment will require the development of performance measures that quantify accomplishment of transportation goals. This project will develop performance measures to be used in the determination of needs (deficiencies/gaps) and in the evaluation of alternatives.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Need-8	Title:	Establish a Process for Prioritizing Transportation Needs Among and Within Transportation Goal-Related Categories
Related Process #: 4.1 & 4.2 Process Name: Establish Goal-Related Categories; Categorize Needs		
Old Way Problem Statement: Priorities for implementing solutions are not sufficiently based on addressing transportation needs. In some cases, solutions are prioritized for implementation based on available funding. Needs are prioritized inconsistently or in a way that is difficult to reproduce. For some funding categories, consistent criteria do not exist to evaluate the performance potential of proposed solutions.		
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i>		Business Only
A. Project Description: <i>(Project objectives and project description)</i> Because resources (manpower, funding, time to do projects, etc.) will always be limited, the setting of priorities is a means to channel available resources to meet the goals of the Texas Transportation Plan. The transportation needs document will contain a large and diverse list of programs, improvements, strategies and actions from which the Department must choose a select number to proceed on to the next stage of development. <u>PROJECT</u> This project will be the first step in the process to move projects from the transportation needs assessment to the next step toward implementation. The project will develop a process where transportation needs (identified solutions) are assigned to and prioritized between and within major transportation categories (i.e., mobility, system preservation, environmental, safety, modes, etc.) that relate back to goals contained in the Texas Transportation Plan. Also, the project will provide a mechanism to periodically review the major transportation goal-related categories for possible modifications. In short, this project will: (1) establish the method for determining goal-related categories, (2) establish criteria for prioritizing transportation needs between and within goal-related categories, and (3) establish a process for reevaluating the goal-related categories and their relative priorities. <u>PROCESS</u> To establish the method for determining goal-related categories (number 1 above), this phase of the project will develop a process from which preferred alternatives, programs, improvements, actions and strategies identified in the transportation needs assessment will be assigned to major goal-related categories. The process will include the development of procedures and criteria that will assist TxDOT staff to determine the appropriate number and type of goal-related categories (mobility, system preservation, environmental, safety, etc.) likely to meet the goals outlined in the Texas Transportation Plan. Consideration should be made to not explicitly follow federal funding categories when developing goal-related categories for state-funded activities, unless a federal category meets a goal of the Texas Transportation Plan. To establish criteria for prioritizing transportation needs <u>between</u> and <u>within</u> goal-related categories (number 2 above), this project will: (a) develop a process and appropriate criteria from which needs will be prioritized <u>within</u> the major goal-related categories, and (b) develop a process and appropriate criteria to prioritize needs <u>between</u> all categories (e.g., how to rank the number 2 safety category need with the number 4 mobility category need). Consideration should be given on how to prioritize solutions which are multimodal or intermodal and other projects which could be included or ranked in more than one goal-related category. As goals from the Texas Transportation Plan are revisited, the process will also include a procedure which outlines how the initial set of categories and the process for priority ranking will be reevaluated for possible addition, deletion or modification (number 3 above).		

B. Project Goals: *(The expected outcome of the BIP.)*

This process will ensure that the policy goals and strategies outlined in the Texas Transportation Plan are the basis for establishing the priorities of identified transportation needs for funding and programming purposes.

C. Expected Benefits: *(The major benefits to be realized by implementing this project.)*

A priority list of solutions grouped and ranked by goal-related categories will assist TxDOT staff in allocating resources to work toward meeting the goals identified in the Texas Transportation Plan.

It will provide solutions which balance the various transportation needs of the state.

From the vision recommendations, this process will assist in fulfilling the following:

- (1) provides approaches to prioritizing programs and projects within available resources (by providing the first step in prioritizing solutions).
- (2) provides increased credibility and buy-in of the planning process (by providing a process that is documented and open for review).
- (3) provides a better linkage between statewide planning and programming (by providing a method to prioritize transportation needs which shows relative ranking for the many solutions).

D. Potential Users: *(The primary users of the new systems, processes, and outputs when the project is implemented.)*

District planners and program managers, division planners and program managers, MPO planners, senior management, strategic and financial planners, Texas Transportation Commission, local planners and decision makers.

E. Organizational Impact: *(How the organization will be affected by the implementation of the project)*

There will be a need for a different set of skills and a different way of thinking on how to prioritize transportation needs. This process will harmonize planning at local and state levels.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

The Texas Transportation Plan goals provide the basis for the development of the categories.

Before implementation of this project, a statewide transportation needs assessment must be in place.

Information from the ISTEA management systems will be of assistance in developing the priority list of categories.

The goal-related categories will be used by decision makers when making transportation planning and programming decisions.

There are no financial policies or procedures restricting implementation.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Issues: How to ensure the categories reflect the goals of the Texas Transportation Plan.

Need Texas Transportation Commission support of the categories as the basis for funding transportation improvements.

Consideration should be given on how to prioritize solutions which are multimodal or intermodal and other modal projects which could be included or ranked in more than one goal-related category.

G. Issues/Risks (*Continued*)

Risks: Will prohibit projects not identified in the needs plan from being implemented.

How to ensure that the categories are not more restrictive than existing practices.

H. Enabling Technology: (*Technology needed to fully implement the project.*)

None identified.

I. Impact on Existing Information Systems: (*Existing information systems that must be changed to complete the implementation of this project.*)

None identified.

J. Expected Costs:

One-time

- Development of policies and procedures
- Education and communication support for training personnel

On-going

- Training for new managers and staff
- Revising and maintaining procedures with system changes, goal changes, etc.

K. Primary Work Steps: (*The major work steps required to implement the project*)

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP).
3. Evaluate cost estimates and project implementation approach as presented in the work steps. Revise work steps and cost estimates as needed. If consensus groups are needed to implement project, identify and confirm participants in the required groups.
4. Determine whether consultant or outside research group is needed to help conduct search of categorization and prioritization methods used by other states in needs-based planning processes and/or to assist with the development of the methods.

Work Steps for Determining Goal-Related Categories

5. Review the Texas Transportation Plan and Strategic Plan. Develop recommendations for appropriate broad categories (e.g. mobility, system preservation, safety, etc) needed to meet the goals outlined in the plans.
6. Develop detailed process designs for establishing and maintaining goal-related categories. In the process designs, identify the roles and responsibilities and decision-points required to select, maintain, and communicate the goal-related categories.
7. Develop linkages and requirements of related processes that will use the goal-related categories.
8. Assemble consensus groups to present recommendations and gain consensus on recommendations and process definitions.
9. Obtain approval of Senior Management Team for recommended goal-related categories and process definitions.
10. Define activities for determining and maintaining goal-related categories.
11. Develop procedures for determining, maintaining, and communicating goal-related categories.

K. Primary Work Steps: *(continued)*

Work Steps for Assigning Needs to Categories

12. Develop methodology for assigning needs to categories. The methodology should define minimum requirements and base level criteria for all assignment strategies.
13. Develop an appropriate assignment strategy for each goal-related category.
14. For each strategy, establish minimum requirements for activities and procedures to perform the method.
15. For each strategy, define roles and responsibilities and decision-points.
16. For each strategy, define activities.
17. Review available data resources to identify any additional data requirements. Identify potential software applications required to enhance the developed methods and resulting process. If additional data and/or applications are required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
18. For each strategy, develop procedures.

Work Steps for Prioritizing Needs within and between Categories

19. Define minimum requirements for all prioritization methods.
20. Define base level criteria common to all needs prioritization methods.
21. Assign method development by goal-related category.
22. Develop best fit prioritization criteria by goal-related category for prioritizing needs **within** categories.
23. Develop best fit prioritization criteria by goal-related category for prioritizing needs **between** categories. Different methods may be required by mode and major transportation element.
24. Assemble consensus groups to present recommendations for prioritization criteria and gain consensus on recommendations.
25. For each method, establish minimum requirements for activities and procedures to perform the method.
26. For each method, define roles and responsibilities and decision-points.
27. For each method, define activities.
28. For each method, define communication linkages and transfer of information mechanisms both internal and external to TxDOT planning group performing method, as needed.
29. Develop linkages and requirements of related methods and subprocesses in the needs assessment, program solutions, and financial planning processes, as needed.
30. Review available data resources to identify data requirements. Coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
31. For each method, develop procedures.
32. Review all developed methods, criteria, activities, and procedures for consistency and compatibility.
33. Develop implementation plan and strategies for implementing methods and process.
34. Develop performance standards for measuring success of implementation.
35. Test methods, criteria, activities, and procedures.
36. Evaluate effectiveness of methods, criteria, activities, and procedures.
37. Revise methods, criteria, activities, and procedures as needed.
38. Develop training program and materials. Coordinate with BIP team for Enabler BIP-1 (Develop Training and Education Programs to Support the New Processes).

L. Dependencies: *(Other efforts (BIPs and outside initiatives) that must be completed before this project is started)*

None identified.

M. Linkages: *(Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project)*

Needs BIP 1 - Develop and Implement Needs Identification Methods and Processes
Enabler BIP 1 - Develop Training and Education Programs to Support the New Processes

N. Team: *(Proposed participants of the implementation team, i.e. which types of stakeholders by current position.)*

Division(1), districts(2), MPO(2)

O. Schedule & Resources: *(The time frame and the level of effort required for team members.)*

Team leader 80% for 5 months
4 persons @ 60% for 5 months

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

Procedures and criteria for developing goal-related categories and assigning priorities of projects/programs between and within the categories.

Process Performance Measures

Use of prioritized needs by goal related categories to make programming and funding decisions.

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

Currently, priorities for implementing solutions are not sufficiently tied to goals identified in the Texas Transportation Plan. In some cases, solutions are prioritized for implementation based on available funding.

A process which categorizes and prioritizes transportation needs will enable TxDOT staff to channel limited resources to the most effective projects and programs which will achieve the goals set forth in the Texas Transportation Plan.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Needs-9 Title: Integration of Needs, Planning and Programming	
Related Process #: 5 Process Name: Program Solutions	
Old Way Problem Statement: Currently, the identification of highway-related programs/projects is not closely driven by the planning process. The Department's programming process is not well integrated for all modes and categories of work. Currently, the prioritization of highway-related programs/projects is fragmented between the districts and divisions with each using different programming assumptions and selection criteria. As a result, highway-related programs and projects are not consistently advanced from needs identification to long range planning to final implementation. The Department's Project Development Plan (PDP) does not address prioritizing project/programs in modes and categories other than highway expansion. Prioritization of projects is often based on available funding levels in certain categories or programs which works against the advancement of needs-based projects through the transportation planning process. Consequently, the programming process does not explicitly allocate funds based on transportation system goals or a consistent statewide needs assessment. Current funding categories are rigid and limit the ability to address system needs and creates some categories with too little funding to be effective. Finally, current funding distribution mechanisms are complicated and/or misinterpreted, thereby affecting TxDOT's credibility at the local level for long and short range planning.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business only	
A. Project Description: <i>(Project objectives and project description)</i> The approach to be used in this project will be to incorporate existing programming procedures and processes, including recommendations from special task force initiatives, to link the decisions made during programming and program/project implementation with information provided in the Needs Plan. This project involves using the processes of identifying projects for implementation, prioritizing projects/programs into short, mid, and long range plans, and allocating funds to implement the selected projects. The business improvement project team will identify existing programming procedures and processes that: <ul style="list-style-type: none"> • meet the requirements for implementing programs/projects from the Needs Plan; • require minor changes to effectively implement programs/projects from the Needs Plan; and • do not appropriately link the implementation of programs/projects with the Needs Plan. The business improvement project team should look at how current methods to identify and select projects for long range plan status link with programs/projects identified in the Needs Plan and recommend enhancements to existing procedures. This information will be provided to the Executive Sponsor for further deliberation and direction. Approval of any changes to the programming procedures will include defining the roles and responsibilities of divisions, districts and MPOs to support the recommended processes. The project will also include a training and development schedule for the implementation of any additional changes in the programming process.	
B. Project Goals: <i>(The expected outcome of the BIP.)</i> To be able to integrate needs identification, planning decisions, financial allocations and programming decisions by incorporating current programming procedures and processes.	
C. Expected Benefits: <i>(The major benefits to be realized by implementing this project.)</i> Current efforts and direction by recent Department initiatives relating to the programming area will continue.	
D. Potential Users: <i>(The primary users of the new systems, processes, and outputs when the project is implemented.)</i> Division, district and MPO transportation planners, transportation programming staff	

E. Organizational Impact: *(How the organization will be affected by the implementation of the project)*

There should be little organizational impact.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

Current efforts relating to the Program Solutions Process (Project Development Plan Task Force, Formulas Task Force, corridor study) are consistent with the direction established in the Perform Needs Assessment Process and the Develop Needs Plan Process. The Needs Plan is necessary for the Program Solutions Process as it provides the transportation solutions for identifying programs and projects for implementation.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Issues

The issues that must be resolved as part of this project include:

- Incorporating recent task force recommendations / actions.
- Stakeholders and partners are not aware of these enhancements in the programming area that are under development.
- Many recent changes have occurred within the Department in the programming area. Any additional changes may be perceived as overwhelming to the transportation planning staff. At the time of the Phase 3 report, there was not support at the upper level of Department management to proceed with any additional changes in the programming area.
- Related task force efforts have occurred in recent years which may appear to deteriorate the need for this project.

Risks

- Transportation partners and stakeholders and Department staff identified dissatisfaction with current programming procedures and practices. Not addressing this area may cause some disillusionment.
- Some recommendations from the Phase 2, Vision Statements and Improvement Recommendations, report will not be implemented.
- If no changes are allowed, programming may continue to be done separately and differently for the different modes.
- Project implementation may not be associated with transportation goals and needs.
- If programming is not tied to planning, special interests or funding availability will continue to drive programming decisions.
- A major risk associated with this project is failure to agree or accept any revisions to categorical funding levels based on a needs driven process.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

None identified at this time.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

None identified at this time.

J. Expected Costs:

One-time

- Development of revised/new policies and procedures.
- Communication of new procedures to districts, divisions, MPOs and other participants in the programming process.

On-going

- Training for new managers and staff.
- Revising and maintaining procedures.

K. Primary Work Steps: *(The major work steps required to implement the project)*

1. Assemble team.
2. Review objectives and scope of Business Improvement Project (BIP). Evaluate cost estimates and project implementation approach as presented in these work steps. Revise work steps and cost estimates as needed. If consensus groups are needed to implement the project, identify and confirm the participants in the required groups.
3. Review current procedures, roles and responsibilities for identifying programs/projects, prioritizing projects and allocating funding.
4. Determine what links need to be in place to integrate needs identification, planning and programming by incorporating current programming procedures and processes.
5. Identify what links or requirements are currently in place to integrate needs identification and planning with programming.
6. Identify what links or requirements are currently in place but need minor modification to integrate needs identification and planning with programming.
7. Identify what links or requirements are not currently in place but are necessary to integrate needs identification and planning with programming.
8. Review these links and requirements with the Executive Sponsor to determine what further actions should be taken.
9. Re-evaluate work steps, cost estimates and implementation approach based upon direction provided.
10. Develop detailed process design of the Program Solutions Process.
11. Develop performance standards for measuring success of implementation.

L. Dependencies: *(What other efforts (BIPs and outside initiatives) must be completed before this project is started)*

Needs BIP 1, Develop and implement needs identification methods and process, and Needs BIP 2, Develop guidelines to identify alternatives that address transportation needs, must be underway before this project can begin.

M. Linkages: *(What other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

None identified at this time.

N. Team: *(Proposed participants of implementation team, ie. which types of stakeholders by current position.)*

Divisions (3-different modes), districts (2), MPO (2)

O. Schedule & Resources: *(The time frame and level of effort required for team members.)*

1 person (Team Leader) @ 80% for 3 months
6 persons @ 60% for 3 months

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

Requirements and linkages necessary to integrate needs identification, planning and programming.

Process Performance Measures

The number of programs/projects implemented which address transportation solutions identified in the Needs Plan.

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

Recent Department efforts have studied and presented recommendations relating to project selection, project prioritization and funding allocations. These efforts have been recent and most of the recommendations have not yet been implemented. Because of these and other changes required by federal legislation, Retooling emphasis in the programming area has been minimized.

However, because of the many comments we received during the Retooling project, it is very important that programming decisions reflect the planning direction established in the Texas Transportation Plan. To positively address and link strategic policy / vision planning, needs planning, financial / revenue planning, and program / project planning, relationships between the different processes need to be established. This project will identify those linkages and relationships required with the programming process. Further action to establish these linkages and relationships will be determined at a later date.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Finance-1 Title: Use Consistent Assumptions in Forecasting Anticipated Funds
Related Process #: 2.5 Process Name: Determine Current and Future Revenues
Old Way Problem Statement: There is no systematic process for including consideration of future revenues in long-range planning. There is no consistent provision of long-range financial forecasts to MPOs and districts.
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business only
A. Project Description: <i>(Project objectives and description)</i> The objectives of this project are to: <ul style="list-style-type: none"> • establish a consistent, systematic approach to financial forecasting for all MPOs • establish procedures to communicate financial information used to develop financially constrained plans to districts and MPOs. <p>The project will provide an approach and procedures to disseminate the financial information to districts, MPOs and other parties identified during the project. The districts will provide the information to the MPOs. Once the approach is determined, the project will consider the subprocesses defined in the “Determine Current and Future Revenues” process redesign to validate and/or determine additional process requirements needed to support dissemination of the financial forecasts to districts and MPOs.</p> <p>The project will identify new and/or additional skills required to support the procedures developed.</p> <p>The project will develop performance measures needed to monitor implementation and control of the project objectives.</p> <p>The project will coordinate with the Budget and Finance Division to provide guidelines to generate revenue forecasts needed by districts and MPOs.</p>
B. Project Goals: <i>(The expected outcome of the BIP.)</i> When the project is fully implemented, the districts will have consistent procedures for determining future revenues and establishing communication of revenue information to MPOs.
C. Expected Benefits: <i>(The major benefits to be realized by implementing this project.)</i> This project will provide for more realistic and informed programming. It will provide consistent financial information to various stakeholders to promote better decision-making.
D. Potential Users: <i>(The primary users of the new systems, processes, and outputs when the project is implemented.)</i> Districts, MPOs
E. Organizational Impact: <i>(How the organization will be affected by the implementation of the project)</i> There should be little organizational impact. Financial forecasting is currently being carried out at some level; however, the information is not always consistent or consistently provided to the end users.
F. Assumptions: <i>(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)</i> Existing technology, organizational structure, and policies are sufficient to allow this project to occur. Will need to be consistent with assumptions that Budget and Finance Division is using to prepare financial forecasts for funding categories.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Risks: Potentially false expectations for future revenues.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

No new technology is needed.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

Existing information systems may require changes to capture data needed to forecast revenues. Additionally, the revenue forecast information will need to be accessible to the districts to enable them to provide information to the MPOs.

J. Expected Costs:

One-time

- Costs associated with procedures development
- Costs associated with information system enhancements
- Implementation of communication network to provide revenue information

On-going

- Maintenance of communications process and dissemination of revenue information

K. Primary Work Steps: *(The major work steps required to implement the project)*

1. Assemble team.
2. Review current methods of forecasting revenues by the districts and determine requirements of a consistent methodology to forecast revenues for the planning process.
3. Review current procedures, roles and responsibilities for communicating revenue forecasts.
4. Consult with MPOs to determine their revenue forecast requirements.
5. Research methodologies internal and external to TxDOT.
6. Evaluate and select revenue forecasting methodology appropriate for the districts to use.
7. Define roles and responsibilities of the districts, divisions and MPOs.
8. Analyze existing process and validate new process.
9. Develop new procedures.
10. Evaluate effectiveness of procedures.
11. Revise procedures as needed.
12. Review available data resources to identify data requirements.
13. Determine if current organizational structure supports the new process.
14. Develop implementation plan and strategy.
15. Develop performance measures.
16. Implement new procedures.

L. Dependencies: *(Other efforts(BIPs and outside initiatives) that must be completed before this project is started)*

This project can be completed independent of other projects.

M. Linkages: *(Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project)*

Information from this project is necessary as input into the Program Solutions Process.

N. Team: *(Proposed participants of the implementation team, i.e. which types of stakeholders by current position.)*

Management Services Office (1), Budget and Finance Division (1), Transportation Planning & Programming Division (1), Design Division (1), district planners (2), & MPO (1)

*** Same team for all Finance BIPs ***

O. Schedule & Resources: *(The time frame and level of effort required by team members.)*

Team leader 50% for 10 months
6 persons @ 50% for 10 months

*** Same team for all Finance BIPs ***

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

Written procedures for communicating revenues and documenting roles and responsibilities.

Communication mechanism for providing revenue information to MPOs.

Methodology for the districts to use to forecast revenues.

Process Performance Measures

Access and timeliness of revenue information at all levels. (surveys)

Accuracy of projected revenue forecasts within defined tolerances. (historical data)

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

Programs for various time-frames (short, mid, long-range) and for various transportation planners (districts and MPOs) will be based on expected revenues and will be more realistic and credible with the use of consistent assumptions in making financial forecasts.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Finance-2	Title: Incorporate Revenue Enhancement Activities and Innovative Funding Strategies
Related Process #: 6.4 Process Name: Develop Funding Strategies and Actions to Resolve Funding Needs	
Old Way Problem Statement: The Texas Transportation Plan evaluated the need for revenue increases and alternative revenue strategies; however, no on-going process exists to work on implementing the revenue strategies and innovative financial strategies to meet transportation needs.	
Type of BIP: (<i>Business only; Business & Technology; Technology Only</i>) Business only	
A. Project Description: (<i>Project objectives and project description</i>) This project will provide a mechanism for initiating and implementing revenue enhancement strategies and will build on existing Texas Transportation Plan, Budget and Finance Division and Management Services Office efforts to: <ul style="list-style-type: none"> • define the activities and procedures that will ensure that revenue enhancement strategies are addressed as part of TxDOT's ongoing planning process. • establish processes to evaluate alternative financial strategies to meet future funding needs. • establish procedures to determine the adequacy of revenues from existing sources to meet future funding needs. <p>The project will coordinate with ongoing efforts to determine alternative financial strategies.</p> <p>The project will use consistent financial forecasting information to incorporate revenue forecasting into the new revenue enhancement activities and procedures.</p> <p>The project will coordinate with strategic planning efforts to develop procedures to incorporate financial strategies into the Texas Transportation Plan.</p> <p>The project will reevaluate all potential revenue sources identified previously (e.g. revenue bonding, leveraging, tolling, development agreements with private entities, sponsorship arrangements, etc.) and assess their feasibility (IE. cost/benefit) for consideration as funding strategies and will identify new sources, if possible.</p> <p>The project will identify what types of projects will be suitable for what types of funding (IE. sets of criteria for type of projects and sets of criteria for type of funding).</p> <p>The project will need to consider transportation demand and revenue supply-side financing.</p> <p>The project will develop communication mechanisms to get the information to the right people.</p>	
B. Project Goals: (<i>The expected outcome of the implemented BIP.</i>) When the project is fully implemented, the Department will have a mechanism for initiating and implementing strategies to enhance revenue generation on a prescribed schedule. Innovative funding strategies will also be identified for use on various types of projects.	
C. Expected Benefits: (<i>The major benefits to be realized by implementing this project.</i>) This BIP will develop a process to analyze revenue generation activities and develop new funding mechanisms to enhance existing revenue sources to address identified transportation needs.	

D. Potential Users: *(The primary users of the new systems, processes, and outputs when the project is implemented.)*

Budget and Finance Division, Transportation Planning and Programming Division, Management Services Office, district planners, modal planners, Senior Management Team, Transportation Commission

E. Organizational Impact: *(How the organization will be affected by the implementation of the project)*

There should be little organizational impact.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

Existing technology, organizational structures, and policies are sufficient to allow this project to occur.

A needs assessment should occur to justify the need for revenue enhancements.

Revenue financing (IE. borrowing and leveraging) will be acceptable.

Legislative changes may be required.

The process will create new partnerships.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Risks: The public's perception that the transportation system is already functioning well may not support legislative action for additional revenues.

Increased scrutiny by the public may occur regarding how and where money is spent.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

None identified at this time.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

None identified at this time.

J. Expected Costs:

One-time

- Costs associated with procedure development

On-going

- Educational materials
- TxDOT/MPO education
- Maintaining staff education and skill levels

K. Primary Work Steps: *(The major work steps required to implement the project)*

1. Assemble team.
2. Review objectives and scope of BIP.
3. Review work steps.
4. Re-estimate BIP costs and report to implementation manager.
5. Identify and confirm external participants.
6. Review and assess current approach/processes for evaluating funding levels and determining funding options.

K. Primary Work Steps (Continued)

7. Research existing methodologies internal and external to TxDOT.
8. Review and assess current task force and research results on funding alternatives.
9. Identify and coordinate with current ongoing efforts.
10. Complete detailed design of new funding evaluation process.
11. Develop activities and procedures that are necessary to incorporate revenue enhancement into the TxDOT planning process on a regular and continuous basis.
12. Develop linkages/requirements to related processes where necessary.
13. Define roles and responsibilities of the districts, divisions, and MPOs.
14. Determine organizational requirements to support the new process.
15. Identify skill sets and education criteria required to support the new process.
16. Determine ongoing costs.
17. Review available data resources to identify data requirements. Identify potential software applications required to enhance the developed method(s). If additional data and/or applications are required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
18. Test procedures.
19. Evaluate effectiveness of procedures.
20. Revise procedures as needed.
21. Develop implementation plan and strategies.

L. Dependencies: *(Other efforts (BIPs and outside initiatives) that must be completed before this project is started)*

None identified

M. Linkages: *(Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project)*

- Needs BIP 1, Develop and implement needs identification methods and processes
- Other task force and research efforts. (A current effort is underway by the Management Services Office to do this; however, it is not based on a standardized, in place, needs assessment, nor is it updated on a regular schedule.)
- Texas Transportation Plan Finance Committee evaluation of revenues and funding strategies.

N. Team: *(Proposed participants of the implementation team, i.e. which types of stakeholders by current position.)*

Management Services Office (1), Budget and Finance Division (1), Transportation Planning & Programming Division (1), Design Division (1), district planners (2), & MPO (1)

*** Same team for all Finance BIPs ***

O. Schedule & Resources: *(The time frame and level of effort required by team members.)*

7 persons @ 50% for 10 months

*** Same team for all Finance BIPs ***

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

A process to routinely evaluate, enhance or develop revenue-generating and innovative funding strategies at the Department and project levels.

Process Performance Measures

Percentage of needs being met due to available funding.

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

Currently, efforts to enhance revenue generation are sporadic and not based on a defensible, consistent needs assessment. Implementation of this BIP would validate revenue generating activities and tie them to Department planning activities. This BIP will also introduce new, non-traditional funding strategies to be used at the project level.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Finance-3	Title: Determine Funding for Goal-Related Categories Based on Needs
Related Process #: 6.3 Process Name: Determine Funding for Needs within Goal-Related Categories	
Old Way Problem Statement: Project prioritization does not consistently direct funding to the most needed projects.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Business Only	
<p>A. Project Description: <i>(Project objectives and project description)</i></p> <p>The objectives of this project are to:</p> <ul style="list-style-type: none"> • establish processes to determine the costs associated with different levels of service for all goal-related categories • develop procedures for determining and balancing levels of service among goal-related categories • develop procedures for determining funding levels to achieve specified performance for components of the transportation system. <p><u>PROJECT</u></p> <p>The project will develop funding performance curves for goal-related categories which relate desired performance to expected costs.</p> <p>The project will apply transportation needs to funding performance curves to identify performance levels of transportation system components within goal-related categories.</p> <p>The project will develop procedures to distribute funds to goal-related categories and to determine revenue needs.</p> <p>The project will coordinate with the Needs BIPs to incorporate needs-based information and requirements into the newly developed financial planning process.</p> <p><u>PROCESS</u></p> <p>The process will address modal, rural and urban issues so that statewide priorities are adequately addressed.</p> <p>The process will consider statewide interests (e.g. corridors) as well as local interests.</p> <p>The process must be needs-based not project based.</p> <p>The process will include performance measures to determine whether transportation goals are being met.</p> <p>The process will allocate/distribute funding resources to goal-related categories by balancing the desired level of performance with funding.</p>	
<p>B. Project Goals: <i>(The expected outcome of the BIP.)</i></p> <p>When the project is fully implemented, the Department will have mechanisms for determining funding for goal-related categories based on needs identified in previous processes.</p>	
<p>C. Expected Benefits: <i>(The major benefits to be realized by implementing this project.)</i></p> <p>This project will base funding on identified needs and tie funding to the goals set as part of the planning process so that limited resources are distributed to maximize the benefits to the state.</p>	
<p>D. Potential Users: <i>(The primary users of the new systems, processes, and outputs when the project is implemented.)</i></p> <p>Transportation and financial planners, Senior Management Team & Texas Transportation Commission</p>	

E. Organizational Impact: *(How the organization will be affected by the implementation of the project.)*

There should be little organizational impact. This activity can be performed within the existing structure.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

Transportation system goals will be prioritized.

Senior Management Team and the Texas Transportation Commission will use the results as a basis for funding allocation.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Issues: Senior Management Team and Texas Transportation Commission understanding and support will be necessary.

Policies regarding current categorical funding may have to be changed and more flexibility will be required.

Not all categories will be fully funded and expectations of performance may have to be lowered.

Implementation may require Texas Transportation Commission action.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

Software to perform financial analysis/modeling and develop performance curves may need to be evaluated and procured.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

Changes may be needed to the existing systems to provide cost information needed for financial analysis/modeling and performance information.

J. Expected Costs:

One-time

- Costs associated with procedure development
- Costs for financial analysis/modeling software
- Possible research or consultant costs
- Costs for performance analysis software
- Costs for existing system enhancements

On-going

- Software maintenance
- Educational materials
- TxDOT/MPO education
- Maintaining staff education and skill levels

K. Primary Work Steps: *(The major work steps required to implement the project.)*

1. Assemble team.
2. Review and assess current approach/processes for allocating funds.
3. Research, review and assess current task force results on funding allocations.
4. Develop activities and procedures that are necessary to incorporate the results of the needs assessment into the TxDOT funding allocation process.
5. Complete detailed design of new funding allocation process.

K. Primary Work Steps (*Continued*)

6. Re-estimate project costs.
7. Develop linkages/requirements to related processes where necessary.
8. Define roles and responsibilities of the districts, divisions, and MPOs.
9. Determine organizational requirements to support the new process.
10. Set up communication linkages and stakeholder involvement process.
11. Identify skill sets and education criterion required to support the new process.
12. Determine ongoing costs.
13. Review available data resources to identify data requirements. Identify potential software applications required to enhance the developed methods and process. If additional data and/or applications are required, coordinate with the Information Systems Specialist assigned to Phase 4 of Plan Transportation Systems Retooling.
14. Test procedures.
15. Evaluate effectiveness of procedures.
16. Revise procedures as needed.
17. Develop implementation plan and strategies.
18. Obtain Texas Transportation Commission approval.
19. Implement procedures

L. Dependencies: (*Other efforts(BIPs and outside initiatives) that must be completed before this project is started*)

Definition of goal-related categories (Needs BIP 8, Part 1, Establish a process for prioritizing transportation needs among and within transportation goal-related categories)

M. Linkages: (*Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project*)

Needs BIP 7, Establish performance measures that quantify accomplishment of system goals
Needs assessment BIPs (Needs BIPs 1-5)
Texas Transportation Plan goal development/refinement

N. Team: (*Proposed participants of the implementation team, i.e. which types of stakeholders by current position.*)

Management Services Office (1), Budget and Finance Division(1), Transportation Planning & Programming Division (1), Design Division (1), district planners (2), & MPO (1)
*** Same team for all Finance BIPs ***

O. Schedule & Resources: (*The time frame and level of effort required for team members.*)

Team leader 50% for 10 months
6 persons @ 50% for 10 months
*** Same team for all Finance BIPs ***

P. Performance Measures: (*Indicators that the BIP is successful*)

Project Deliverables

Funds for needed projects

Process Performance Measures

To be determined

Q. Summation: (*Closing statement to justify the acceptance and implementation of the BIP.*)

Currently, there is little linkage between actual needs and funding requirements. In addition, there is little linkage between the goals delineated in the Texas Transportation Plan and mechanisms to address these goals. This BIP will link funding resources to needs.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Tech-1	Title: Data and Decision-Support Strategies for Planning
Related Process #: All Process Name: Plan Transportation Systems	
Old Way Problem Statement: The data supporting transportation planning, particularly in the support of decision-making, is scattered across various systems and platforms, preventing effective data access, sharing, and management.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Technology Only	
<p>A. Project Description: <i>(Project objectives and description)</i></p> <p>This BIP will focus on the data required for use in transportation planning processes and applications. These processes require the use of large volumes of decision-support data, compiled, often summarized, and originating from various processes internal and external to TxDOT. Additionally, the Plan BPR was the first “operations” BPR to start, and will therefore be the first to define operational data requirements and relationships with other business areas for the provision of that data. The data defined will be part of the foundation of the planned enterprise-wide business data structure for TxDOT.</p> <p>Initially, this BIP will function as a collector of data requirements from the Plan Transportation Systems BPR process-related BIPs, and will further define the specifications of the data required and the data relationships. Coordination with the IS Data Management BIP will produce logical data models for planning processes, tools, and applications, identifying linkages and dependencies with other TxDOT processes for data. As the data is defined, the BIP team will then begin to focus on decision-support data requirements, and will construct a business case and plan for the implementation and population of a comprehensive planning decision-support data structure. This decision-support structure may use data warehousing or other similar technologies, and will require coordination with the IS BPR to ensure the availability of these technologies before the implementation of these data structures can take place.</p> <p>Other objectives of this BIP will include the assembly and documentation of business terms to be included in TxDOT’s enterprise glossary.</p> <p>This effort will also incorporate the systems integration effort previously undertaken for the ISTE Management Systems, and will eventually expand upon that effort to integrate and coordinate all data required in support of all systems and applications required for transportation planning. It will build upon the data documentation and technology recommendations produced by the ITWG and Management Systems Steering Committees. It will include any data required for Management System capabilities to be implemented under Plan BPR Tech BIP 2 (Tools/Applications).</p>	
<p>B. Project Goals: <i>(The expected outcome of the implemented BIP)</i></p> <p>This BIP will result in comprehensive detailed logical data models, data definitions, and glossary terms related to transportation planning to be added to the department’s data architecture and glossary. It will also define data for and produce a decision-support data structure for transportation planning. The final result of this project should be the definition, coordination and integration of all data required for or produced by transportation planning.</p>	
<p>C. Expected Benefits: <i>(The major benefits to be realized by implementing this project)</i></p> <p>The primary benefit of this project will be an integrated data structure. This will enhance the ability of different business processes to share common data and contribute output to a common database without programmed update cycles, while potentially reducing the types and amount of data being collected. Data integration is the basis for integration of automated systems, and provides a common foundation for the flow of information from one process to another. This BIP primarily addresses Vision Recommendation 9 (development of programs, skills and tools that support transportation planning). It may also contribute to the process-related recommendations (1-8), as an efficient and coordinated information system will help to streamline the process.</p>	

D. Potential Users: *(The primary users of the new systems, processes, and outputs when the project is implemented.)*

At this level, the potential users of the data structure will include all personnel involved in transportation planning processes or the use of automated tools and applications, at the district and division levels.

E. Organizational Impact: *(How the organization will be affected by the implementation of the project)*

Impacts during implementation will focus primarily on data management-related personnel from the IS area. After implementation, while some resources may be required for support and maintenance of planning data, the effective integration of databases should result in less time spent on data retrieval and use.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

- Appropriate and adequate personnel, training, and policy support will be provided for the design, implementation and use of the operational and decision-support data structures.
- The organizational structure of the overall planning organization will be adjusted as necessary, based on clearly defined roles and responsibilities.
- Appropriate underlying technology will be made available as required.
- The ISTE Management Systems integration effort will be incorporated into this project, and will provide the initial focus and pilot for the data warehousing strategy.
- This BIP will coordinate all efforts with the IS BPR Implementation Team to ensure compliance with IS technology directions, and will document the business case for the use of technologies that are not specific to transportation planning and forward it to the IS BPR for consideration and possible implementation.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Issues during implementation

- 1) Timing conflicts with IS BPR regarding implementation of supporting technologies
To Address: Close coordination with IS BPR, and adjustment of Plan BPR implementation schedule when necessary.
- 2) Timing conflicts with Plan process BIPs regarding implementation of related processes and tools / applications.
To Address: Close coordination between related process, data, and tool / application BIPs, as well as coordination between Tech BIP Leader and Plan BPR Implementation Manager. Adjustment of schedules as necessary.

Risks after implementation

- 1) Planning dependency on other business areas for provision of required data.
To Address: Provide for point of data coordination external to planning or other involved business areas. Create interim plan for provision of required data not already collected for use until other areas are retooled.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

This BIP may require the following:

- Client / server network capabilities, quality desktop PC & peripheral availability
- Relational database management system (RDBMS), data warehousing, database integration, automated data collection
- Geographic Information Systems (GIS), common location referencing system
- Internet/Website/BBS capabilities
- Document storage/distribution capabilities - scanning, imaging

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

The database structures of existing information systems will be evaluated against planning process needs, resulting in a migration strategy for integrating this data into the new data structures. Which systems will be affected is not known at this time.

J. Expected Costs:

One-time

- Resources (personnel, technology) for modeling, design, and construction of new data structures.
- Resources for creation and storage of data models and structure designs.
- Initial training program and associated travel costs.
- Development and implementation of migration strategies for the conversion of existing data.

On-going

- Resources for user support, maintenance and upgrades of new data structures.
- Ongoing training program for new users and managers.
- Resources for storage, maintenance and upgrades of data models and designs.

K. Primary Work Steps: *(The major work steps required to implement the project.)*

1. Assemble BIP team.
2. Validate BIP scope, objectives, work steps, and costs. Revise as necessary within original intent.
3. Work with process BIPs (attend meetings and monitor documentation, as required) to identify data requirements.
4. Develop data specifications and create data models for planning processes.
5. Review existing data resources to define migration requirements and identify additional data needs.
6. Work with Plan BPR Tool/Application BIP (Tech-2) to develop data models for each defined tool / application.
7. Resolve process and tool / application data models and submit to IS BPR Data Management BIP (Std-4) for addition to the Enterprise Data Model.
8. Provide tool / application data models and planning process data models to Tech-2 for analysis of tool / application match-up to process requirements.
9. Identify decision-support data used in planning processes and supporting tools / applications, and use to define a decision-support data structure for planning.
10. Determine whether current organizational structure adequately supports the use, maintenance, and user support of the newly-defined data structures. Make recommendations.
11. Request approval to proceed with new decision-support data structure.
12. Develop procedures for the use, support, maintenance, and upgrade of the data structures, including roles and responsibilities of the districts, divisions, and MPOs.
13. Work with IS BPR Data Management BIP (Std-4) to design, pilot and implement operational and decision-support data structures supporting transportation planning.

L. Dependencies: *(Other efforts(BIPs and outside initiatives) that must be completed before this project is started)*

- Definition and development of the data structures are dependent upon detailed definition of the supported processes and supporting tools / applications.
- Development of enabling technologies will be required before implementation of any data structures requiring them.

M. Linkages: *(Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project)*

- The Plan BPR Tech BIP 2 (Tools / Applications) will run parallel to this BIP, and will require the definition of data requirements and data models for tools / applications, information systems, and processes.
- Training requirements defined within this BIP for BIP teams and permanent staff must be forwarded to Plan BPR Enabler BIP 1.
- Progress on this BIP will be directly tied to progress on Plan BPR process BIPs.
- Implementation of new data structures under this BIP may provide a pilot or initial application for enabling data technologies being developed under the IS BPR, and will require close coordination of schedules.

N. Team: *(Proposed participants of the implementation team, i.e. which types of stakeholders by current position.)*

Initially, one FTE at a 50 - 80% commitment will be sufficient for the collection of data requirements and definition of data specifications. The full team, however, should include 1 - 2 additional IS-related FTEs from ISD, planning divisions, and/or districts at a 60 - 100% commitment each. These personnel primarily provide data modeling, data definition, and decision-support structure research and design on this BIP.

This BIP may also require consultant services, specializing and having considerable hands-on experience in the business application of client / server relational databases and data warehouses. The consultant resource(s) must provide productive services to assist the team with the work involved, and may act in an advisory role to the team leader regarding the application of relational database management system (RDBMS) and data warehousing technologies, being developed under the Information Services Business Process Retooling (IS BPR) project, to the transportation planning business area.

O. Schedule & Resources: *(The time frame and level of effort required for team members.)*

The time frame of this BIP will be dependent on the total time frame for development of the planning processes and supporting tools / applications. During periods when only data requirements definition is ongoing, one FTE at a commitment of 50 - 80% may be sufficient. During active development, however, the full team will be active on a 60 to 100% commitment level. Consultant resources should be used as necessary to balance the workload.

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

- Implementation of a comprehensive, integrated operational data structure supporting transportation planning.
- Implementation of an efficient, effective decision-support data structure supporting transportation planning decision-making.

Process Performance Measures

- Completed training and productive use of the data structures within 6 months of implementation.

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

This BIP is necessary to prevent the continued fragmented construction of various process-supporting data structures without a common focus and method of coordination. It will also prevent the redundant development of data requirements that may apply to more than one process. This BIP will provide a relatively unique opportunity to connect and coordinate existing databases with new data structures in support of the overall transportation planning process. It will also enable the coordination of modal, intermodal and multimodal planning systems, based on the common use of data. The cost of implementing these data structures will easily be justified in the elimination of data access and sharing problems that TxDOT transportation planners have endured for many years.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Tech-2	Title: Planning Tools / Applications Coordination
Related Process #: All Process Name: Plan Transportation Systems	
Old Way Problem Statement: The tools and applications currently supporting transportation planning are not capable of communicating with one another, preventing effective hand-offs between planning processes and often causing duplication of effort.	
Type of BIP: <i>(Business only; Business & Technology; Technology Only)</i> Technology Only	
A. Project Description: <i>(Project objectives and description)</i>	
<p>This BIP has three primary objectives: 1) to gather requirements, research, and identify automated planning tools available on the market that satisfy the needs of transportation planning processes, 2) to define and spin off BIPs for the development of applications to support transportation planning when appropriate tools are not available for purchase, and 3) to define and spin off BIPs for the implementation of purchased planning tools and developed applications in conjunction with the transportation planning processes they support. This BIP, in conjunction with the Plan BPR IS Specialist, will be responsible for ensuring that the planning tools and applications implemented are coordinated with and work well together in supporting the transportation planning process. The overall strategy will be to construct systems that can easily interrelate and share data with other Department systems, based on a sound underlying data structure and a Department-wide perspective.</p> <p>The planning tools and applications to be researched will include, but not be limited to:</p> <ul style="list-style-type: none"> -- planning-specific tools and applications that use Geographic Information Systems (GIS), where they are appropriate and useful; -- high-level project tracking tools, to assist in tracking transportation projects from their inception to their submission for letting, and potentially on into design and construction; -- modal planning tools / applications that will support the planning requirements of each individual mode of transportation; -- integrated, automated traffic modeling and analysis tools that directly support modal / multimodal, centralized / decentralized transportation planning; -- multimodal planning tools / applications that: <ul style="list-style-type: none"> a) enable mode-independent transportation planning and evaluation / planning of modal trade-offs and multimodal solutions, b) enable planning for linkages between modes (intermodal connections), c) coordinate and correlate the input, output, and processes of the individual modal planning tools / applications; -- tools / applications that provide: <ul style="list-style-type: none"> a) functional components to support both district and division planning; b) functions currently performed by existing automated tools / applications that will still be required in support of the new planning process; c) functions originally specified as required components of the ISTEA Management Systems which are useful to TxDOT's planning process. Consistent, appropriate levels of functionality should be made available for all transportation modes addressed by TxDOT, and should be integrated into the recommended systems without designation as ISTEA Management System requirements. <p>Various other objectives of this BIP are as follows:</p> <ul style="list-style-type: none"> -- Individually evaluate automated tools / applications currently used in support of transportation planning. -- Design, model, program and implement integrating components of the transportation planning information system that are not delegated to a specific tool / application BIP. -- Work with the Plan BPR Tech BIP 1 (Data) to complete data models for the transportation planning information system. -- Communicate identified technology needs to the IS BPR Implementation Manager, and coordinate with the IS BPR Implementation Team, to ensure the compatibility of planning tools and applications with the technology directions of the IS BPR and TxDOT. 	

A. Project Description: *(Cont'd)*

This effort will absorb the general oversight and coordination, and possibly direct development, of the ISTEA Management Systems efforts previously underway, and will expand that effort to integrate and coordinate all tools / applications required in support of transportation planning. It will include any planning-related tools / applications required for Management System capabilities considered potentially beneficial to TxDOT's transportation planning process, and will forward to other business areas any Management System capabilities that are not planning-related.

B. Project Goals: *(The expected outcome of the BIP)*

The outcome of this BIP will be the implementation of transportation planning tools and/or applications required for a streamlined, cohesive automated transportation planning information system, which provides for convenient access to and use of Department data.

In the process of developing this automated system, this BIP will also produce additional BIPs. Each "spin-off" BIP will be focused on the development of a specific component or application for inclusion in the final transportation planning information system.

C. Expected Benefits: *(The major benefits to be realized by implementing this project.)*

The primary benefit of this BIP will be the creation of a transportation planning information system. This information system should facilitate the flow of work and information from the highest level of planning down through project submission for letting and on to other business areas. This BIP primarily addresses Vision Recommendation 9 (development of programs, skills and tools that support transportation planning). It may also contribute to the process-related recommendations (1-8), as an efficient and coordinated information system will help to streamline the process.

D. Potential Users: *(The primary users of the new systems, processes, outputs when the project is implemented.)*

At this level, the potential users of the automated system will include all personnel involved in planning processes that use automated tools and applications, at the district and division levels. Users will be more specifically defined for each of the tool / application BIPs.

E. Organizational Impact: *(How the organization will be affected by the implementation of the project)*

Impacts during implementation will focus primarily on IS-related personnel from IS and planning areas. After implementation, while some resources will be required for support and maintenance of the system, the effective automation of business processes should result in less demand for personnel to perform those processes.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc.)*

- Appropriate and adequate personnel, training, and policy support will be provided for the design, implementation and use of the resulting information system.
- The organizational structure of the overall planning organization will be adjusted as necessary.
- Appropriate underlying technology will be made available as required.
- ISTEA Management Systems development efforts will be incorporated into this project.
- This BIP will coordinate all efforts with the IS BPR Implementation Team to ensure compliance with IS technology directions, and will document the business case for the use of technologies that are not specific to transportation planning and forward it to the IS BPR for consideration and possible implementation.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

Issues during implementation

- 1) Timing conflicts with IS BPR regarding implementation of supporting technologies
To Address: Close coordination with IS BPR, and adjustment of Plan BPR implementation schedule when necessary.
- 2) Timing conflicts with Plan process BIPs regarding implementation of related processes and tools / applications.
To Address: Close coordination between related process, data, and tool / application BIPs, as well as coordination between Tech BIP Leader and Plan BPR Implementation Manager. Adjustment of schedules as necessary.

Risks after implementation

- 1) Heavy dependency of planning process on technology (e.g., possible inability to work when network is down)
To Address: Design processes independent of tools / applications first, then apply technology. Include redundant manual work paths in critical planning process areas, with update of information system after technology is restored.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

This BIP will implement an information system that may require the following:

- Client / server network capabilities, quality desktop PC & peripheral availability
- Relational database management system (RDBMS), Data Warehousing, database integration, automated data collection
- Geographic Information Systems (GIS), common location referencing system
- Video/Teleconferencing, automated presentation capabilities, Internet/Website/BBS capabilities
- Electronic communications, internal / external (E-mail, voice mail, dial-in access)
- Document storage/distribution - Scanning, Imaging, CD ROM, desktop publishing capabilities
- Specialized tools and applications for the automation of technical planning functions (e.g., travel demand and condition / performance modeling / forecasting, project tracking, etc.)

This BIP will base the development of planning tools and applications on the technology architecture and standards developed by the IS BPR.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of this project.)*

Existing information systems will be evaluated against planning processes, and will either be incorporated intact into the new information system, or necessary capabilities will be migrated to the new information system. Which systems will be affected is not known at this time.

J. Expected Costs:

One-time

- Resources (personnel, equipment) for design and programming of new information system. (potential outsourcing)
- Purchase of required planning-specific tools.
- Initial training program and associated travel costs.
- Process, application and data modeling and design.

On-going

- Personnel and equipment for user support, maintenance and upgrades of new information system.
- Ongoing training program for new users and managers.
- Maintenance and upgrades of purchased tools.
- Storage, maintenance and upgrades of process, application, and data models / designs.

K. Primary Work Steps: *(The major work steps required to implement the project)*

1. Assemble BIP team.
2. Validate BIP scope, objectives, work steps, and costs. Revise as necessary within original intent.
3. Work with process BIPs (attend meetings and monitor documentation, as required) to identify planning tool / application needs.
4. Develop specific user requirements for planning tool / application needs as processes are designed.
5. Work with Plan BPR Data BIP (Tech-1) to identify data requirements and develop a data model for each defined tool / application, based on the data model for the supported business process.
6. Research and evaluate available transportation planning tools for support of user and data requirements, including analysis of data requirements for planning tool / application against planning process data requirements.
7. Get approval, procure acceptable transportation planning tools, and perform acceptance testing / evaluation.
8. Create new Technology Application BIPs to design and develop applications that will fulfill any defined tool / application need for which there does not appear to be an acceptable tool on the market.
9. Request approval to proceed with new Technology Application BIPs.
10. Identify and define any programming required to integrate purchased tools and/or developed applications into the information system.
11. Determine potential need and time frame for outsourcing, if any, then locate funding, resolve logistics, and procure contract programming resources.
12. Design and develop system integration program segments.
13. Develop procedures for the use, support, maintenance, and upgrade of the information system, including roles and responsibilities of the districts, divisions, and MPOs.
14. Determine whether current organizational structure adequately supports the use, maintenance, and user support of the newly-defined tool / application. Make recommendations.
15. Create new Technology Implementation BIPs for the piloting and implementation of purchased planning tools, developed applications, and/or integration segments, in close coordination with the implementation of the planning processes they support.
16. Participate in the piloting and implementation of the information system.

L. Dependencies: *(Other efforts(BIPs and outside initiatives) that must be completed before this project is started)*

- Definition and development of the information system is dependent upon detailed definition of the supported processes and identification of automation needs.
- Development and implementation of enabling technologies by the IS BPR will be required before implementation of any planning tools / applications requiring them.

M. Linkages: *(Other efforts (BIPs and outside initiatives) must run concurrent and tie into this project)*

- The Plan BPR Tech BIP 1 (Data) will run parallel to this BIP, and will help define data requirements and provide data modeling services for tools / applications, information systems, and processes.
- Training requirements defined within this BIP for BIP teams and permanent staff must be forwarded to Plan BPR Enabler BIP 1.
- Progress on this BIP, and succeeding Technology Application BIPs, will be directly tied to progress on Plan BPR process BIPs.
- Implementation of new technologies under this BIP may provide a pilot or initial application for enabling technologies being developed under the IS BPR, and will require close coordination of schedules.

N. Team: *(Proposed participants of implementation team, i.e. which types of stakeholders by current position.)*

Initially, one FTE at a 50 - 80% commitment will be sufficient for the collection of tool / application needs and definition of user requirements. The full team, however, should include 3 - 4 additional IS-related FTEs from ISD, planning divisions, and districts at a 60 - 100% commitment each. These personnel will function as researchers and programmers on this BIP, as well as project leaders for subsequently defined Technology Application BIPs. Some time commitment for programming may be substituted out with contract programmers.

O. Schedule & Resources: *(Time frame and level of effort required by team members)*

The time frame of this BIP will be dependent on the total time frame for development of the planning processes. During periods when no tools / applications are actively under development, one FTE at a commitment of 50 - 80% may be sufficient. During active development, however, the full team will be active on an 80 to 100% commitment level. Contract programming services should be used as necessary to balance the workload.

P. Performance Measures: *(Indicators that the BIP is successful)*

Project Deliverables

-- Implementation of a comprehensive, integrated transportation planning information system.

System Performance Measures

-- Completed training and productive use of the system within 9 months of implementation.

Q. Summation: *(Closing statement to justify the acceptance and implementation of the BIP.)*

This BIP, while initially very large in scope, is necessary to prevent the continued fragmented implementation of various process-supporting tools / applications without a common focus and method of coordination. It will also prevent the redundant investigation of tools / applications that may apply to more than one process. This BIP will provide a relatively unique opportunity to connect and coordinate existing applications, new tools on the market, and new applications in support of the overall transportation planning process, and will enable the coordination of modal, intermodal and multimodal planning. The cost of implementing this information system will easily be justified in the elimination of problems that TxDOT planners have endured for many years.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Enabler-1 Title: Develop Training and Education Programs to Support the New Processes	
Related Process #: All Process Name: Plan Transportation Systems	
Old Way Problem Statement: There is not an adequate function to continually educate and train the planning community on the planning process. Additionally, there are no current planning and/or programming manuals used.	
Type of BIP: <i>(Business only; Business & Technology; Technology only)</i> Business only	
A. Project Description: <i>(Project objectives and description)</i>	
<p>The objective of this business improvement project is to develop and deliver an educational program that increases TxDOTs and its partners understanding of transportation planning processes, policies and procedures. A working understanding of this information is an essential element in the success of the Plan Transportation Systems Retooling efforts.</p> <p>As part of the educational program implementation strategy, the project will define career planning profiles for planning personnel which support the skill sets needed for the redesigned transportation planning process.</p> <p>This project team will be responsible for the initial delivery of the educational program. Ongoing responsibility for developing and delivering continuous education through the educational program will be established as part of the project deliverables.</p> <p>This project team will be responsible for coordinating with the other Plan Transportation System business improvement projects for initial delivery of a transportation planning manual. The project team will define roles and responsibilities to develop and deliver manual updates on a continuous basis.</p> <p>The project will establish a planning education and manual update function with the following considerations:</p> <ul style="list-style-type: none"> • use external assistance to plan the education courses and, if needed, to instruct the courses • coordinate with efforts to institutionalize the Texas Transportation Plan • technical writers should develop the initial transportation planning manual(s) • recommend to the Management Team personnel needed to support the development and delivery of the education modules • identify and outline the education curriculum for the planning courses • course descriptions and outlines will be developed to support all areas of the transportation planning process • education curriculum will include training modules developed internally, along with vendor and outside agency/university courses already in existence • course instructors may be identified from experienced district and division personnel • outline career planning profiles for planning personnel by discipline • identify education tracking requirements to support career planning profiles • identify communication strategy for new transportation planning processes, procedures and policies 	
B. Project Goals: <i>(The expected outcome of the implemented BIP.)</i>	
<p>The outcome of this project will be:</p> <ul style="list-style-type: none"> • the establishment of an ongoing education and manual update function to train and educate transportation planners and partners about transportation planning processes, procedures and policies • an outline of career planning profiles for planning personnel by discipline • an understanding of the redesigned transportation planning processes 	
C. Expected Benefits: <i>(The major benefits to be realized by implementing this project.)</i>	
<p>An education and training function will be established to train planning personnel and partners on the redesigned transportation planning processes, procedures and policies. These processes, procedures and policies will be documented. This education program will ensure the ongoing success of the redesigned processes during and after the implementation phase of the Retooling project.</p>	

<p>D. Potential Users: <i>(The primary users of the new systems, processes, and outputs when the project is implemented.)</i></p> <ul style="list-style-type: none"> • All transportation planning employees • Other TxDOT staff • MPOs • Transportation planning partners
<p>E. Organizational Impact: <i>(How the organization will be affected by the implementation of the project.)</i></p> <ul style="list-style-type: none"> • Development and initial delivery of this educational program is the responsibility of the central planning organization working with other modal divisions • May need to reassign FTEs to support education and manual update function
<p>F. Assumptions: <i>(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)</i></p> <ul style="list-style-type: none"> • Available training regarding transportation planning policies/procedures does not satisfy the need for these educational requirements. • Current internal training courses are not adequate to educate and prepare personnel to perform their new and current responsibilities. • Human Resources Division is available for technical guidance.
<p>G. Issues/Risks: <i>(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)</i></p> <p>Issues: How other modal planning training and education requirements are incorporated.</p>
<p>H. Enabling Technology: <i>(Technology needed to fully implement the project.)</i></p> <p>None identified at this time.</p>
<p>I. Impact on Existing Information Systems: <i>(Existing information systems that must be changed to complete the implementation of the project.)</i></p> <p>None identified at this time.</p>
<p>J. Expected Costs:</p> <p><u>One-time</u></p> <ul style="list-style-type: none"> • Use of outside assistance to develop education courses and possibly to teach subject matter • Communication media (i.e. video, posters, etc) • Development of training modules
<p>K. Primary Work Steps:</p> <ol style="list-style-type: none"> 1. Assemble team. 2. Refine project plan. 3. Re-estimate project costs and report to the Implementation Manager. 4. Develop roles and responsibilities. 5. Determine the recipients of the education program. 6. Review all processes, policies and procedures pertinent to subject area. 7. Determine contents of training modules.

K. Primary Work Steps (*Continued*)

8. Determine ongoing costs.
9. Develop the educational program.
10. Coordinate educational program with training process.
11. Identify education tracking system needs.
12. Provide outline for career planning profiles by discipline.
13. Determine communication media.
14. Finalize implementation plan and strategy.
15. Pilot the training.
16. Deliver training.

L. Dependencies: (*Other efforts (BIPs and outside initiatives) that must be completed before this project is started*)

This project is dependent on the training needs and skill sets identified in the other Plan Transportation Systems Retooling projects.

M. Linkages: (*Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project.*)

- Texas Transportation Plan Action Item 21.1.2 (Provide coaching and training for metropolitan planning organizations, cities, counties, and councils of government to undertake planning)
- Human Resources Business Process Retooling project results

N. Team: (*Proposed participants of implementation team, i.e. which types of stakeholders by current position.*)

Representatives from Human Resources Division, Training Section (1), Management Services Office (1), Transportation Planning and Programming Division (1), and modal division (1)

O. Schedule & Resources: (*The time frame and level of effort required by team members.*)

The schedule of this BIP is dependent on other BIPs for Plan Transportation Systems completing their training and skill set assessments.

4 persons @ 40% for 16 months

P. Performance Measures: (*Indicators that the BIP is successful.*)

Project Deliverables

- An education and training program for the transportation planning process
- Career planning profiles for planning personnel
- A transportation planning manual

Process Performance Measures

The educational program is successful when transportation planning employees exhibit knowledge and awareness of Department policies and procedures regarding the new transportation planning process.

Q. Summation: (*Closing statement to justify the acceptance and implementation of the BIP.*)

Given the distribution of responsibilities and information and decision linkages across divisions, districts, MPOs, and transportation providers, careful understanding, explanation and communication is essential. This is especially important as processes and current ways of doing business are changed. This understanding and communication will be largely accomplished by the development of training programs and a transportation planning manual.

Some planning groups will not be familiar with the new ways of doing business. This will require training programs which would enable planners to have an increased understanding of the processes, procedures and policies.

Once the manual has been developed, there will be a need to establish a function to keep the manual current.

BUSINESS IMPROVEMENT PROJECT CHARTER

BIP #: Enabler-2	Title: Enhance Public Involvement in the Planning Process
Related Process #: All	Process Name: Plan Transportation Systems
Old Way Problem Statement:	
<p>A public involvement process was established for the Texas Transportation Plan. The public involvement process needs to be enhanced and institutionalized as a result of the new processes, procedures and policies developed as a result of the Plan Transportation Systems Business Process Retooling business improvement projects.</p>	
Type of BIP: (Business only; Business & Technology; Technology only)	
	Business only
A. Project Description: (Project objectives and description)	
<p>The objectives of this business improvement project are to:</p> <ul style="list-style-type: none"> • enhance and formalize the public involvement process, including the requirements from the Retooled transportation planning process. • identify tools to support the new public involvement process . • determine effective methods for involving stakeholders and the general public in the new transportation planning processes. <p>The project will:</p> <ul style="list-style-type: none"> • determine if outsourcing of this business improvement project and subsequent public involvement activities is appropriate. • coordinate with and build on the public involvement efforts established in the Texas Transportation Plan. • establish processes, policies and/or procedures for public involvement in all phases of the new transportation planning process. • establish policy and procedures for early and continuous public involvement in the new transportation planning process. • define the relationships and roles with the MPOs and other transportation providers in the new public involvement process. • identify tools, support and communication media to present Department transportation plans to the public. • coordinate with the other Plan BPR BIPs to determine their public involvement requirements. • determine how the transportation planning process will use/respond to the results of the public involvement process. <p>The public involvement process will:</p> <ul style="list-style-type: none"> • meet federal guidelines for public involvement. • be proactive and promote the use of different methods for involving the public. • include steps to amend and revise the process. • keep the public better informed about TxDOT transportation planning activities. 	
B. Project Goals: (The expected outcome of the implemented BIP.)	
Develop and define an ongoing public involvement process to support the transportation planning process.	
C. Expected Benefits: (The major benefits to be realized by implementing this project.)	
<p>The resulting integrated and enhanced public involvement process will meet federal guidelines for public involvement; provide proactive, appropriate interaction between the Department, stakeholders, and the public; and promote the use of different methods for involving the public.</p>	

D. Potential Users: *(The primary users of the new systems, processes, and outputs when the project is implemented.)*

- Transportation planners
- MPOs

E. Organizational Impact: *(How the organization will be affected by the implementation of the project.)*

- May need to assign FTEs to support the new public involvement process.
- Clarification of division and district roles may result in a shift of responsibilities.

F. Assumptions: *(Assumptions regarding available technology, organizational structure, policies, etc. that affect the project.)*

- The Texas Transportation Plan has established a baseline public involvement process for transportation planning.
- The Retooled transportation planning process requires an enhanced public involvement process.
- This project will build upon existing work and work in progress.

G. Issues/Risks: *(The major issues to be resolved during the implementation of the project; the major risks to successfully implement the project.)*

- The new public involvement requirements may make the transportation planning process longer.
- It is important to build on the existing public involvement processes that are in place.
- Public involvement methods are well known to the Department, the project does not need to reinvent the wheel.

H. Enabling Technology: *(Technology needed to fully implement the project.)*

No enabling technologies have been identified at this time.

I. Impact on Existing Information Systems: *(Existing information systems that must be changed to complete the implementation of the project.)*

There is no impact on existing systems.

J. Expected Costs:

One-time

- Communication media (i.e. video, posters, etc)
- Use of consultant to help in developing the public involvement process (potential)

On-going

- Staffing to support the public involvement process
- Any consultant assistance required in the public involvement process (potential)

K. Primary Work Steps: *(The major work steps required to implement the project.)*

1. Assemble BIP team.
2. Validate BIP scope, objectives, work steps, and costs.
3. Determine if project will be outsourced.
4. If project outsourced, prepare Request for Proposal and assist in contract development. Consultant may be responsible for performing work steps 6-18.
5. Re-estimate BIP costs and report to the Implementation Manager.
6. Work with other BIP teams to identify any requirements for public involvement.
7. Identify customers/stakeholders in the process.
8. Review all processes, policies and procedures currently in place that are pertinent to this subject area.
9. Survey other agencies/states for innovative practices.
10. Identify public involvement approaches and determine cost/benefits.

K. Primary Work Steps (*Continued*)

11. Select public involvement approaches.
12. Determine communication media needs.
13. Develop detailed process redesign of the public involvement process.
14. Develop policies and procedures to support public involvement process, including roles and responsibilities of the districts, divisions, and MPOs.
15. Determine if current organizational structure adequately supports the new public involvement process.
16. Determine ongoing costs of the new public involvement process.
17. Pilot the process.
18. Finalize implementation plan and strategy.

L. Dependencies: (*Other efforts (BIPs and outside initiatives) that must be completed before this project is started.*)

None identified

M. Linkages: (*Other efforts (BIPs and outside initiatives) that must run concurrent and tie into this project.*)

- Texas Transportation Plan efforts to institutionalize the transportation planning process.
- Existing public involvement activities and Public Information Office activities.

N. Team: (*Proposed participants of implementation team, i.e. which types of stakeholders by current position.*)

Representatives from Public Information Office (1), districts (2) and MPOs (2).

O. Schedule & Resources: (*The time frame and level of effort required by team members.*)

5 persons @ 40% for 6 months

P. Performance Measures: (*Indicators that the BIP is successful.*)

Project Deliverables

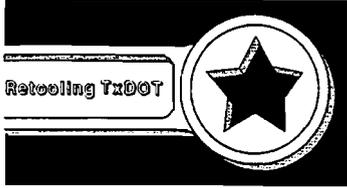
- to be determined by project team

Process Performance Measures

- public participation in the process
- public satisfaction with the process (can be captured by survey)

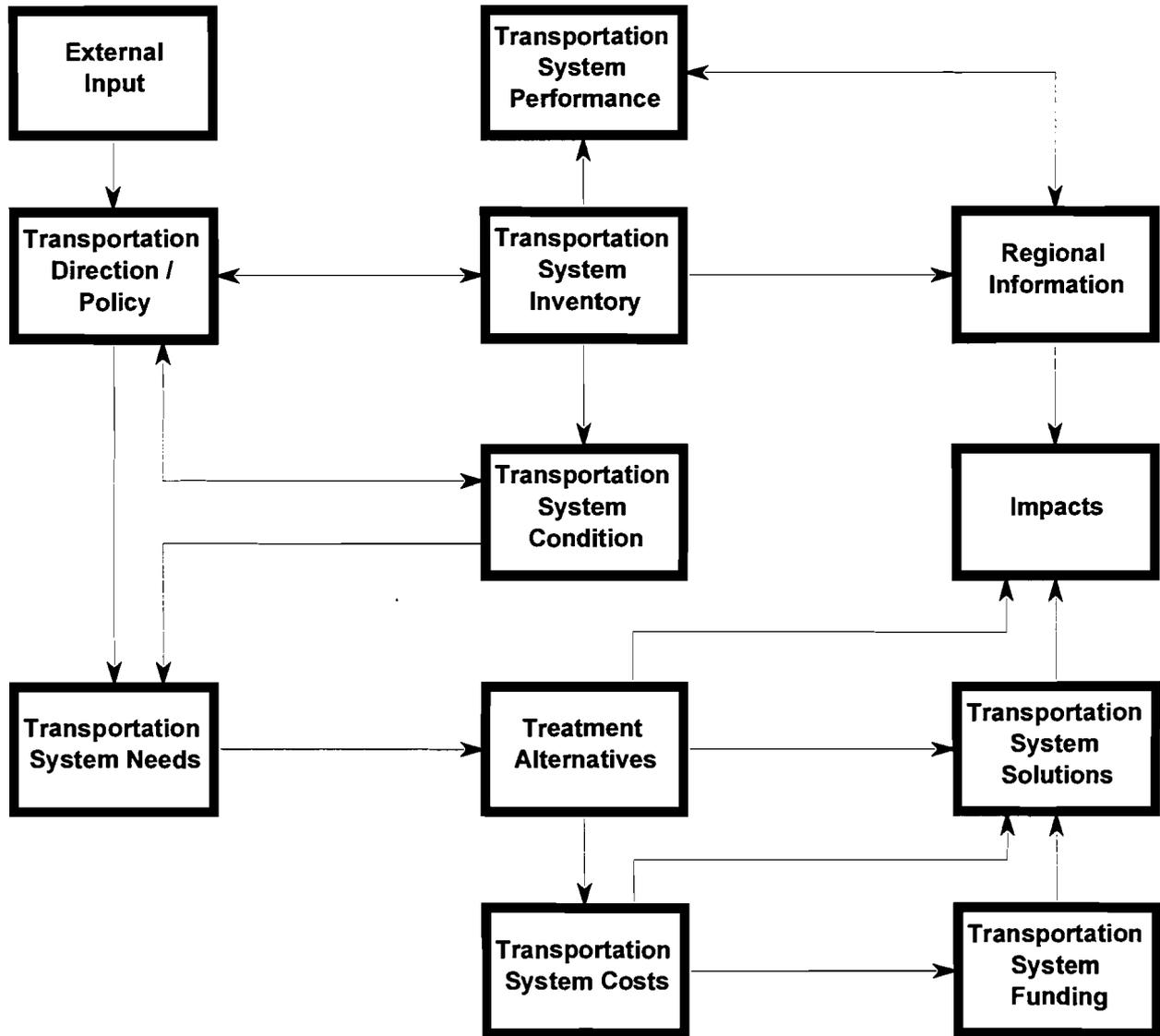
Q. Summation: (*Closing statement to justify the acceptance and implementation of the BIP.*)

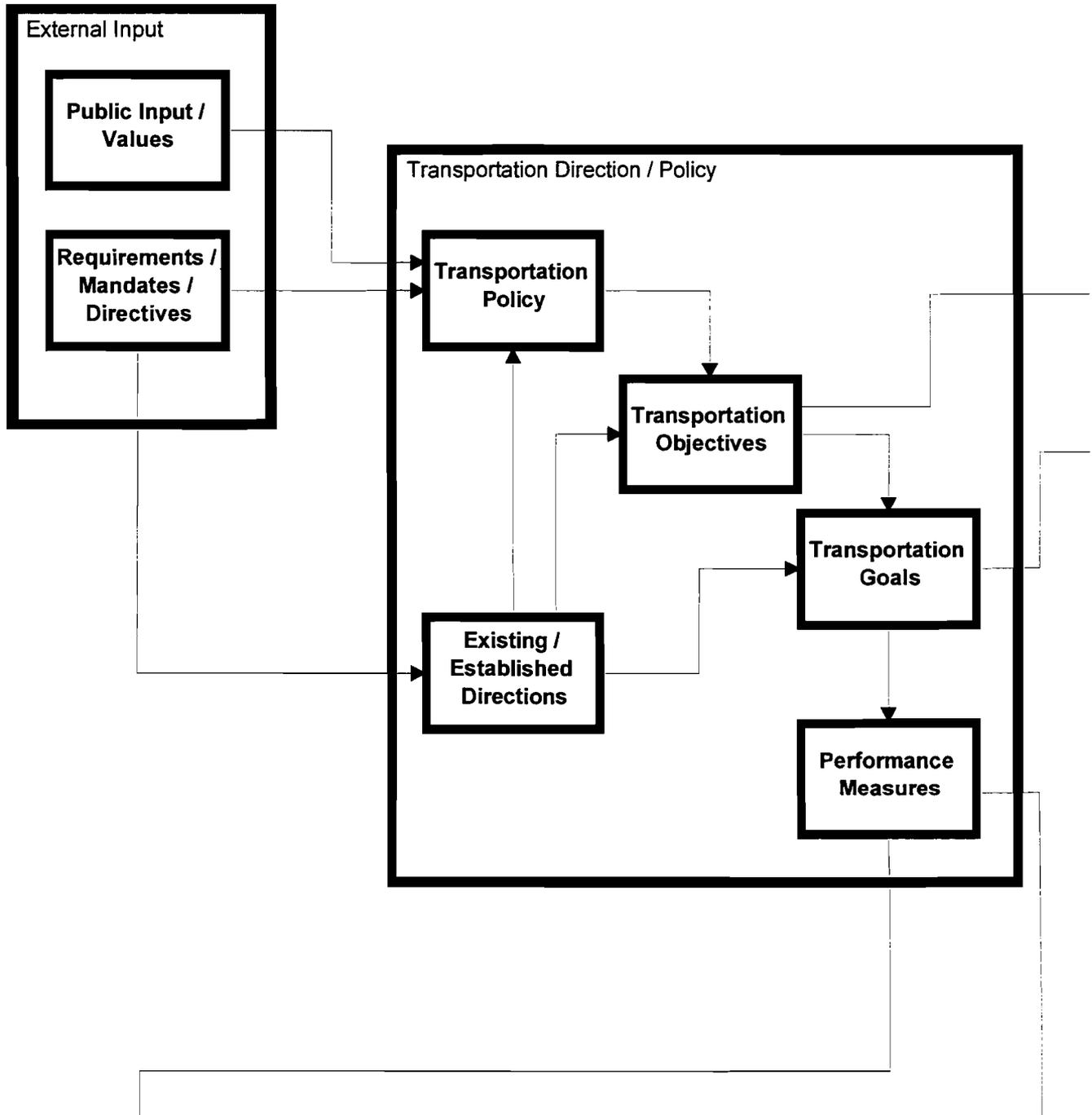
Developing a public involvement process that is proactive and involves the public throughout the transportation planning process increases communication with the public and permits these entities to work with the Department to achieve desired goals and objectives. When the public is involved, the direction and content of planning efforts are more likely to address the wide range of issues that impact decision makers. Involving the public during the planning phases of any project will reduce the eventual time and cost of project implementation.

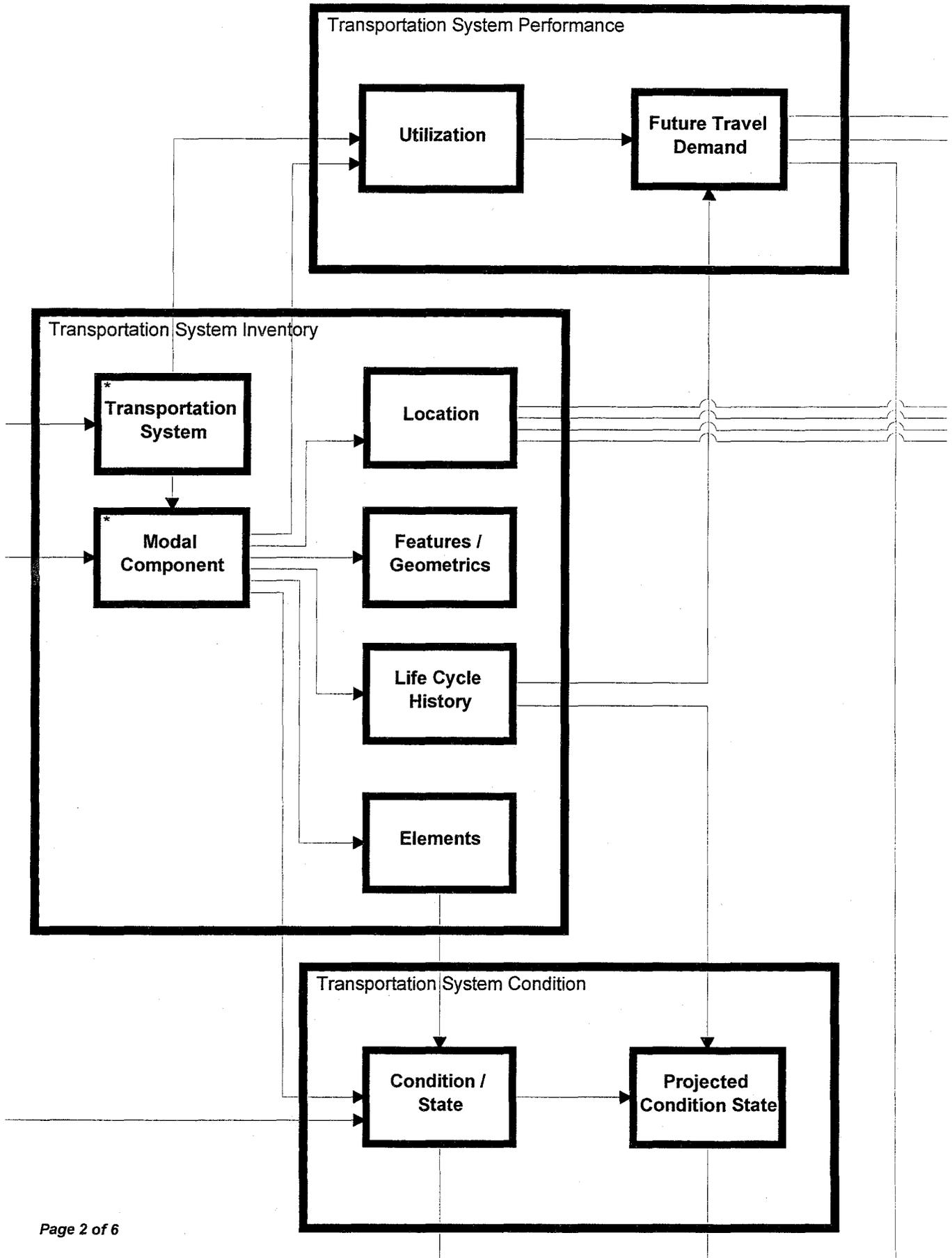


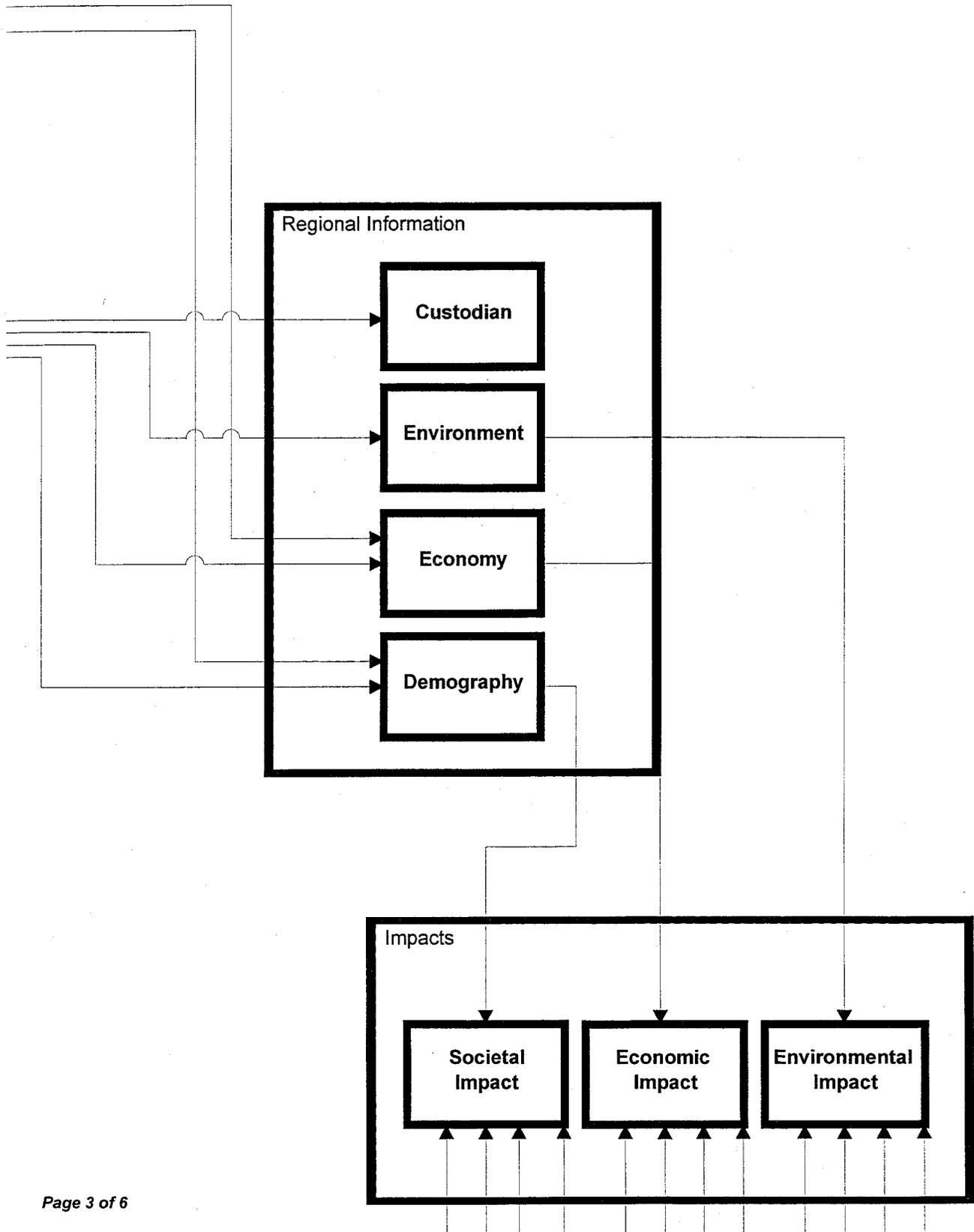
D. Entity Relationship Diagram

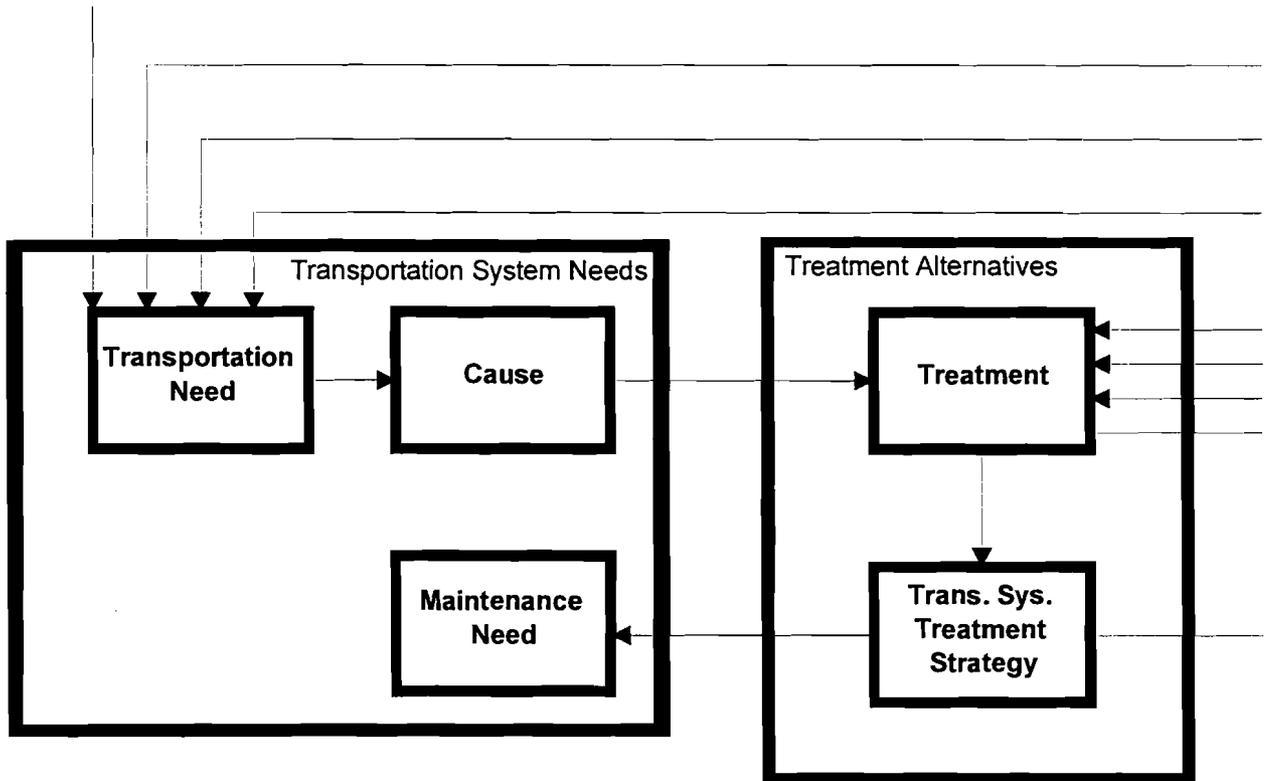
Plan BPR Subject Level Data Model

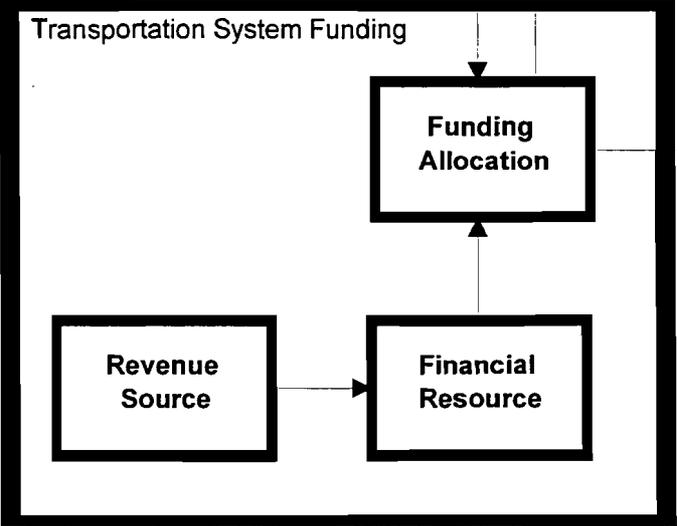
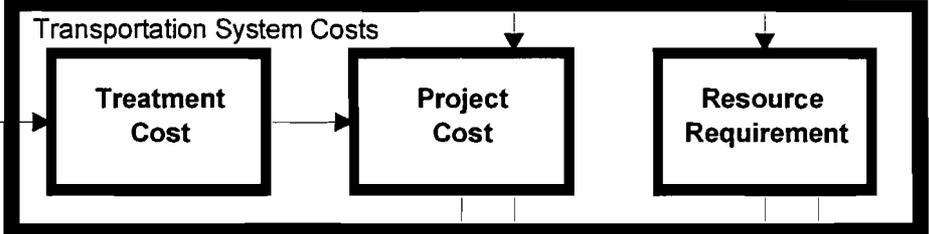


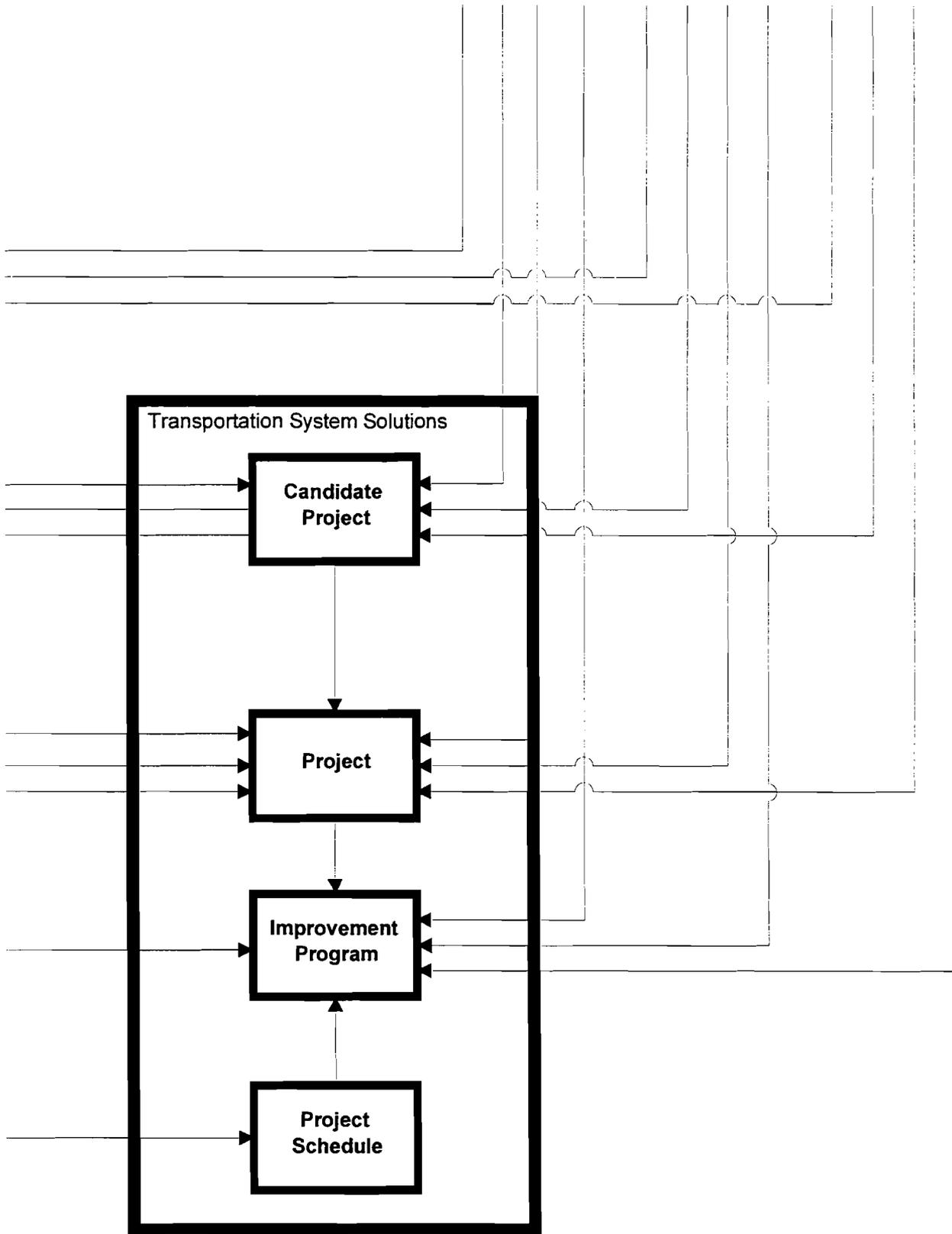


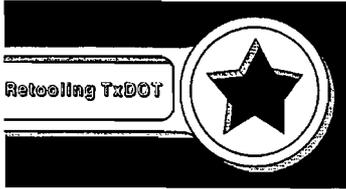












E. Summary of Methods Required for Processes

Appendix E

Summary of Methods Required for Redesigned Plan Transportation Systems

The following chart summarizes the new methods required for the redesigned Plan Transportation Systems business processes:

Method Required	Redesigned Process
<ul style="list-style-type: none"> • Methodologies to support an effective approach for public involvement. 	<ol style="list-style-type: none"> 1. Set Transportation Goals 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions
<ul style="list-style-type: none"> • A method and process is required to develop and maintain the designation of the transportation system. • New methods may be needed to effectively collect and document current and projected conditions of the transportation system. 	<ol style="list-style-type: none"> 2. Evaluate Current and Future Conditions
<ul style="list-style-type: none"> • Consistent needs assessment methods. • Consistent forecasting methods to identify future system deficiencies. • Methods for identifying valid alternatives to address transportation deficiencies. • Procedures for determining costs for preserving and expanding transportation system components. 	<ol style="list-style-type: none"> 3. Perform Needs Assessment
<ul style="list-style-type: none"> • Multimodal analysis/trade-off analysis methods. • Alternative solution evaluation and selection methods. • Prioritization method for goal-related categories and needs within the categories. 	<ol style="list-style-type: none"> 4. Develop Needs Plan
<ul style="list-style-type: none"> • Methods that provide the planner or decision-maker with procedures or criteria for prioritizing programs and projects into the short, mid, or long-range plans. The methods will take into consideration economic development, system continuity, staging, previous commitments and other factors. This approach will allow districts and divisions to systematically prioritize projects that meet statewide as well as local needs. • Methods for allocating funding to implement prioritized projects. The methods minimize the categorical allocations currently in use, thereby providing maximum flexibility to implement the prioritized projects. The allocations will take into consideration the statewide needs and priorities as well as provide flexibility to meet local needs and priorities. 	<ol style="list-style-type: none"> 5. Program Solutions

- Method to determine current and future revenues for long-range planning purposes.
- Method to define the activities and procedures required to enhance revenues and develop innovative funding strategies on a continuing basis.
- Method and process to distribute funding to goal-related categories based on needs.
- Methods for determining costs to achieve performance levels for components of the transportation system that support goal-related categories of funding.

6. Financial Planning



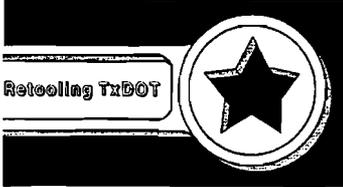
F. Summary of Training Required for Processes

Appendix F

Summary of Training Required for Redesigned Plan Transportation Systems

The following chart summarizes the new training requirements for the redesigned Plan Transportation Systems business processes:

Training Required	Redesigned Process
<ul style="list-style-type: none"> • Enhanced skills are needed to more effectively involve the public and stakeholders in the process. 	<ol style="list-style-type: none"> 1. Set Transportation Goals 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions
<ul style="list-style-type: none"> • New skills may be required to forecast future transportation system conditions. 	<ol style="list-style-type: none"> 2. Evaluate Current and Future Conditions
<ul style="list-style-type: none"> • Additional training is required for forecasting future conditions on the transportation system. • Training is required for performing needs assessments. • Additional skills may be needed for identifying and evaluating alternatives that address transportation deficiencies. • Training is required for estimating costs for preserving and expanding transportation system components. 	<ol style="list-style-type: none"> 3. Perform Needs Assessment
<ul style="list-style-type: none"> • New skills are required to undertake trade-off analysis. • Cross-training is necessary to overcome current highway orientation. • Additional training is required to train planning staff on revised categorizations, prioritization, and funding consideration methods and procedures. • Additional cross-training is required to enable planners to identify and evaluate multimodal and intermodal solutions. 	<ol style="list-style-type: none"> 4. Develop Needs Plan
<ul style="list-style-type: none"> • New skills are required to perform what-if analysis during the development of specific programs and projects to implement identified solutions. • Cross-training is required to help planners understand the planning process and development of solutions. • Training will be required to educate planning staff on new prioritization and funding allocation methods. 	<ol style="list-style-type: none"> 5. Program Solutions
<ul style="list-style-type: none"> • Senior management, transportation, strategic and financial planners, and Commission members may require training in financial planning methodologies based on needs assessment, performance measures, and balanced prioritization of funding. 	<ol style="list-style-type: none"> 6. Financial Planning



G. Summary of Technology Enablers Required for Processes

Appendix G
Summary of Technology Enablers Required for
Redesigned Plan Transportation Systems

The following chart summarizes the technology enablers identified for the redesigned Plan Transportation Systems business processes:

Technology Enablers	Redesigned Process
<ul style="list-style-type: none"> • Interactive telecommunications and learning materials would be useful to support the public and stakeholder involvement process. 	<ol style="list-style-type: none"> 1. Set Transportation Goals 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions
<ul style="list-style-type: none"> • An integrated data architecture, as envisioned for the ISTEA management systems, and GIS capability, can greatly enhance the ability to analyze current and future conditions and maintain and update the designated transportation system. (This integrated data architecture is being addressed by the Information Services Business Process Retooling project). 	<ol style="list-style-type: none"> 2. Evaluate Current and Future Conditions 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions 6. Financial Planning
<ul style="list-style-type: none"> • Data sharing and access to the planning data by districts and MPOs. • Development and implementation of GIS to support the evaluation and presentation of data regarding the transportation system conditions. (GIS This integrated data architecture is being addressed by the Information Services Business Process Retooling project). • Enhanced modeling capabilities to allow for modal trade-offs, address freight movement, and model peak hour demand. 	<ol style="list-style-type: none"> 3. Perform Needs Assessment 4. Develop Needs Plan 5. Program Solutions
<ul style="list-style-type: none"> • Project management and what-if analysis modeling software. 	<ol style="list-style-type: none"> 5. Program Solutions
<ul style="list-style-type: none"> • Software to perform financial analysis and develop performance curves may be needed. Several “off-the-shelf” software applications are available to provide the modeling needed for financial planning. 	<ol style="list-style-type: none"> 6. Financial Planning