Business Information
and
Systems Plan

September 1994

Appendices
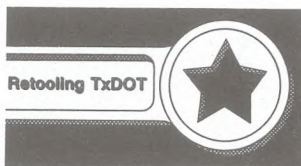
Retooling TxDOT

Texas Department of Transportation

TABLE OF CONTENTS
Business Information and Systems Plan
Appendix

• • • • • • • • • • • • •

This page intentionally left blank.

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

November 1, 1994

Texas Department of Transportation

GOVERNOR

MOTOR VEHICLE BOARD

TEXAS TRANSPORTATION COMMISSION

EXECUTIVE DIRECTOR
Bill Burnett

AUD — AUDIT OFFICE*
Owen Whitworth

Director of Staff Services
STF — Russell Harding

- MAN — Management Services Office — Joanne Walsh
- LAO — Legislative Affairs Office — Coby Chase
- IRM — Information Resource Management Office — Diane Wacker
- OGC — General Counsel Office — Ed Shaddock
- PIO — Public Information Office — Eloise Lundgren

Assistant Executive Director for Motorist Services
MSS — Jim Bisson

- CPO — Central Permit Office — Bert Lundell
- VTR — Vehicle Titles and Registration Division — Jerry Dike
- MVD — Motor Vehicle Division — Brett Bray
- TRV — Travel and Information Division — Don Clark

Assistant Executive Director for Human Resource Management **
HRS — Daffney Henry

- CIO — Continuous Improvement Office — Julie Larrimer
- HRD — Human Resources Division — Cathy Williams
- CRV — Civil Rights Division — Jana Nava
- OCC — Occupational Safety Division — Ed Sims

Deputy Executive Director for Administrative Services
ADS — Cassie Carlson Reed

- BOP — Business Opportunity Programs Office — Dom Smith (acting)
- BUD — Budget and Finance Division — Frank Smith, Jr.
- GSD — General Services Division — Larry Zatopek
- ISD — Information Systems Division — Judy Skeen

Assistant Executive Director for Multimodal Transportation
MTT — Tom Griebel

- MMO — Multimodal Operations Office — James Randall
- AVN — Aviation Division — David Fulton
- PTN — Public Transportation Division — Richard Christie

Assistant Executive Director for Field Operations
FDO — Bobbie Templeton

- RTT — Research and Technology Transfer Office — Jon Underwood
- CMD — Construction and Maintenance Division — Wayne Chambers, Jr.
- MAT — Materials and Tests Division — Katherine Hargett
- TRF — Traffic Operations Division — Gary Trietsch

Deputy Executive Director for Transportation Planning and Development
TPD — Bob Cuellar

- IRO — International Relations Office — Henry Nevares, Jr.
- TPP — Transportation Planning and Programming Division — Al Luedecke, Jr.
- ENV — Environmental Affairs Division — Dianna Noble
- ROW — Right of Way Division — Gary Bernethy
- DES — Design Division — Robert Wilson

District Engineers

- ABL — Abilene — Maribel Jaso
- AMA — Amarillo — Billy Parks
- ATL — Atlanta — Gene Adams
- AUS — Austin — Bill Garbade
- BMT — Beaumont — Walter Crook
- BWD — Brownwood — Lynn Passmore
- BRY — Bryan — Lonny Traweek
- CHS — Childress — Will Parks
- CRP — Corpus Christi — Tom Word, Jr.
- DAL — Dallas — James Huffman
- ELP — El Paso — Mary May
- FTW — Fort Worth — Wes Heald
- HOU — Houston — Milton Dietert
- LRD — Laredo — Luis Ramirez
- LBB — Lubbock — Carl Utley
- LFK — Lufkin — David Justice
- ODA — Odessa — Marshall Huffman
- PAR — Paris — Jay Nelson
- PHR — Pharr — Amadeo Saenz, Jr.
- SJT — San Angelo — Walter McCullough
- SAT — San Antonio — John Kelly
- TYL — Tyler — Bobby Evans
- WAC — Waco — Kirby Pickett
- WFS — Wichita Falls — David Peeples, Jr.
- YKM — Yoakum — Mike Behrens

♻ Recycled Paper

* Operations of Audit Office coordinated by Director of Staff Services
** The Assistant Executive Director for Human Resources Management is the Department's designated EEO Officer.

Note: In the absence of the Executive Director, the Deputy Executive Director for Transportation Planning and Development also oversees Field Operations and Multimodal Transportation; and the Deputy Executive Director for Administrative Services also oversees Human Resources Management, Motorist Services, and Staff Services.
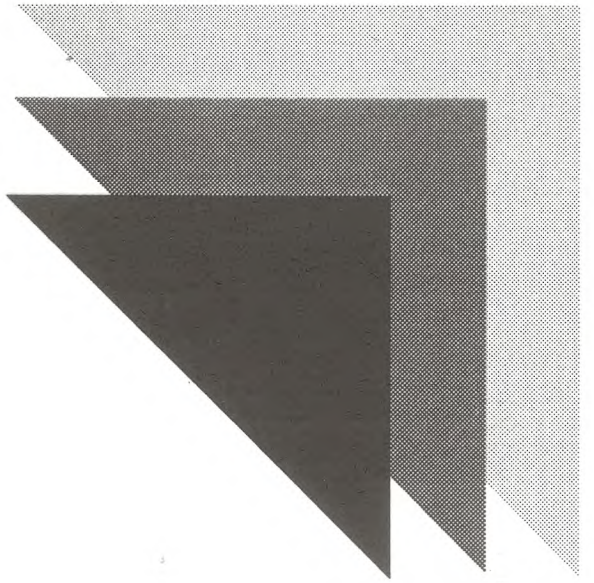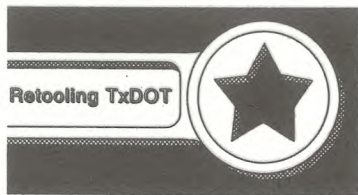
This page intentionally left blank

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

APPLICATION INVENTORY

ABUT   Abutment Detail
Automated Plan Preparation System (APP) subsystem that creates sheet details for bridge abutments.

ACR   Accumulative Count Recorders System
24-hour traffic data is collected and analyzed to provide traffic-volume counts necessary for the publication of traffic maps, travel trends, and truck traffic-flow maps.

APP   Automated Plan Preparation System
Automates plan sheet drafting functions via computer-aided design and drafting (CADD) technology.

APS   Automated Purchasing System
Allows districts and divisions to electronically transfer requisition and purchase order related documents and purchasing status information.

ARMS   Automation Resource Management System
ARMS provides standardized management information about hardware and software resources at a workstation level.

ARRS   Automated Receiving Report System
Allows users to generate Equipment Operations (EOS) and Minor Equipment System (MES) receiving reports with a minimum of effort. ARRS may also be used to inquire into EOS and MES items previously received.

ATR   Automated Traffic Recorders System
Continuous traffic data is collected using permanent, automated counters and the data is retrieved by an automated polling system. The data is used to determine the seasonal variations in traffic patterns.

B30   Continuous Beam Analysis - B30 System
Performs a complete analysis of a 'continuous' beam, which is a beam that crosses multiple bent caps, rather than just a single span.

BAMS   Bid Analysis Management System
Provides a detailed analysis of item costs. This analysis can be used to provide relationships between bidders in case of collusion and a basis for cost estimation. This is a proprietary system licensed from AASHTO and maintained by Infotech.

BDG   **Bridge Inventory, Inspection and Appraisal**
The BRINSAP file consists of all pertinent data concerning the 'On' and 'Off' system structures within the state. This includes roadway structure characteristics, traffic data, inspection data, and ratings.

BEN   **Benefits System**
Produces employee reports identifying benefits received or accrued. The benefits statement shows medical benefits, survivor's benefits, retirement benefits, and the 'hidden' paycheck.

BFAST   **Bridge Foundation and Soil Test Program**
BFAST is a soil analysis and bridge foundation design aid. It can be used solely for soil analysis, or it can do soil analysis combined with bridge foundation analysis and design.

BLS   **Bridge Layout System**
Automated Plan Preparation system (APP) subsystem that creates plan and elevation views for a project. The project is divided into a series of production drawing sheets if necessary.

BPS   **Bid Proposal System**
BPS is an information system for the production and distribution of highway construction bid proposals. A master copy of each bid is stored on DOTS. Requests for proposals are tracked, and proposals are printed on demand.

BUD   **Budget Monitoring System**
A streamlined budget creation process for the preparation of the Legislative Appropriations Request (LAR) at the district and division level. The Budget Monitoring system allows for reconciliation of expenditures and cash disbursements.

CAP18   **Bent Cap Analysis Program**
The CAP18 program performs analysis for flexural design of bridge bent caps. This program is specialized for beam columns and uses the AASHTO lane loading rules.

CAiCE   **Computer Aided Civil Engineering and Surveying**
CAiCE provides coordinate geometry and digital terrain modeling features and can be used to edit, reduce, and process survey data.

CBS   **Contractor Bidding System**
Automates the process of qualifying contractors wanting to do business with TxDOT and maintains contractor information before and after the qualification process.

CCF   Current Construction File System
Tracks current and completed construction. Data includes mileage totals, dollar amounts, let date, and completion data.

CIS   Contract Information System
CIS provides the means for divisions, districts, and residencies to update, receive reports, monitor progress, and authorize payment on contracts from the time the contract is let until the work is complete.

CMCS   Construction/ Maintenance Contract System
A standardized method to process and manage the Department's maintenance contracts. It automates the preparation, pre-qualification, letting, and payment procedures for all maintenance contracts.

COSB1 Cantilever Overhead Sign Bridge
COSB1 is a program specifically designed for cantilevered bridge analysis. It includes analysis for column, base plate, and anchor bolts.

CPP   Career Planning Profile System
CPP keeps a profile for each employee consisting of data such as education, licenses, training, skills, work experience, etc.

CPS   Central Permits System
CPS provides a centralized, automated process for issuing oversize/overweight and House Bill 2060 (tolerance) permits. Allows Department of Public Safety to access permit data. Also provides accounting reports.

CSI   City Street Inventory System
An inventory of the city street mileage by surface type for cities of population of 5,000 and over.

CTS   Contract Tracking System
CTS provides the means to track correspondence on contracts from the time the contract is let until the work is complete.

CULVERT Culvert Detail System
Automated Plan Preparation System (APP) subsystem that aids in the production of culvert detail drawing sheets for standard or custom jobs.

CULV5 Concrete Box Culvert Analysis System

The CULV5 system performs analysis for box type culvert design. This system replaces its predecessor, CULV3.

DCIS   Design and Construction Information System

This system is used for preliminary engineering on construction projects. It gives engineers detailed information to manage design activities of highway facilities, produce project estimates, and plan letting schedules.

DOTS   Data on Terminal System

DOTS is a report storage system, allowing reports to be stored and printed when needed.

DRC   Drivers Record Check System

Allows the districts and divisions to obtain driving record reports from the Department of Public Safety for specified employees.

EOS   Equipment Operations System

Maintains an inventory and expense record for all TxDOT's major highway equipment and distributes total costs to the accounts and projects on which the equipment is used. Reports are also used for property management.

EPS   Economic and Planning System

Provides a highway funds forecasting model, a procedure to estimate highway maintenance and rehabilitation costs, and a model that provides maximum system-wide benefits for the dollars spent while staying within funding constraints.

EVM   Environmental System

Performs analysis of the environmental impact from actual and projected traffic flows. This is necessary to minimize harmful effects caused by air and noise pollution.

FAMS   Funds Allocation and Monitoring System

Records and tracks Federal and State appropriations made to TxDOT for construction, traffic safety, transportation, and aviation projects.

FIMS   Financial Information Management System

This system records all of TxDOT's accounting events. It is the basis for all official departmental financial information.

GPS   Geodesy, Photo and Surveying System
Calculates the geodetic position to state plan coordination conversion, and vice versa. This system is capable of measuring precise time, calculating the height of a specific point, and navigating is possible given to latitude and longitude.

HCR   Highway Condition Report
Provides daily information to the Travel and Information Division for reporting to the public conditions about highways.

HPMS   Highway Performance Monitoring System
A Federal Highway Administration system used to determine statewide rehabilitation, reconstruction, and construction requirements for the Department.

HRIS   Human Resources Information System
Collects personnel and payroll data such as employee job, deduction, and entitlement information. This maintains personnel and payroll information for TxDOT and sends data to the Comptroller via magnetic tape for updating the statewide system.

IGBENT Interactive Graphics Bent Program
Used to produce drawings of the plan, elevation and section view, and bill of reinforcing steel summaries for an interior bent (Pier) within a bridge structure.

IGRDS Interactive Graphics Roadway Design System
Combines Intergraph IGDS and TxDOT's RDS to form a system specifically designed for highway applications that rely heavily on reference to horizontal and vertical alignments and geometry referenced to these alignments by stationing.

IGSEG Interactive Graphics Segment Program
Performs geometry computations and produces detailed plan view drawings and summaries for dimensions for a prestressed concrete segmental bridge.

INA   Insurance Support and Worker's Compensation
Worker's compensation management and reporting system.

INS   Group Insurance System
Updates employee insurance coverage consisting of Health, Life, AD&D, Disability, and Dependent Life coverage. It also updates TexFlex information for premium conversion, health care, and dependent care.

IRP   **International Registration Plan System**

Section 4008 of the Motor Carrier Act of 1991 pertains to states which participate in the International Registration Plan (IRP). IRP is a program for licensing commercial vehicles (trucks, trailers, and busses) engaged in Interstate operations among member jurisdication (U.S. states and provinces of Canada).

JAT   **Job Applicant Tracking System**

Tracks applicants for Department job openings and Job Vacancy notices statewide. Initial screening is done to determine if employee meets minimum requirements for the job.

LET   **Letting System**

Records and tabulates the low bidders for highway construction contracts.

MCC   **Manual Classification Count System**

Analysis of vehicle classification data. Data is collected at approximately 1200 sites across the state, and consists of counts of thirteen classes of vehicles for each hour of the 24- or 48-hour observation period.

MCS   **Material Control System**

Formalizes test results of all material submitted to the Materials and Tests Division for quality testing. Results are available on-line to all interested parties.

MDC   **Master Data Controller**

Coordinates the database update processes of the MIS subsystems. (FIMS, EOS, SLD, etc.) Allows subsystems to share data in a coordinated manner. Also provides error recovery for batch transaction processing.

MES   **Minor Equipment System**

Provides information about all aspects of minor equipment from requisition, receipt, assignment, payment, transfer, and retirement. Minor equipment is defined as any non-consumable implement, tool, or device.

MMIS   **Maintenance Management Information System**

Provides statistics on roadway maintenance. It provides simplified data recording, input and retrieval, produces data on workload and operational planning efforts, and provides a tool to analyze maintenance activities.

MPE   **Milepoint Equivalency System**

Provides automated update of county-control-section-milepoints in any data set that is tied to this reference base.

MSMS   Material and Supply Management System

Inventory management and purchasing of stock, parts, and supplies. MSMS includes inventory and accounting of all items purchased and used by the districts and maintenance section warehouses.

NCS   Natural Control System

Controls access to the Department's NATURAL and ADABAS resources.

OPA   Operations Plan for Automation

A planning tool used to define automation projects in the districts/divisions. The OPA standardizes the format and content of the project, facilitates reporting, and verifies that the Planning and Justification System (PJS) requests support the OPA.

OSB6   Overhead Sign Bridge Analysis Program

OSB6 is a program designed for overhead sign bridge analysis.

PAY   Payroll System

Creates TxDOT's payroll and the tapes, reports, and error messages that are needed to process, monitor, and audit payroll.

PCACOL PC Column

This Windows-based program will design and analyze reinforced concrete columns. The systems allows the use of any arbitrary cross section as well as the analysis of slender columns.

PDL   Program Documentation Log

Documentation of the resources required by TxDOT computer systems.

PER   Personnel System

Tracks personnel information on each employee. Data includes personnel codes, work location, salary group and class, and longevity.

PIF   Permanent Index File System

Information about employee's worker compensation claims and maintains a history of these claims.

PJS   Planning and Justification System

Ensures the cost effective procurement of automation hardware and software.

PLANV Plan View System
Automated Plan Preparation System (APP) subsystem which subdivides a roadway into a series of production plan sheet drawings at specified scales with complete annotation.

PMIS   Pavement Management Information System
Automates highway network-level activities of the Department's overall pavement management system and addresses pavement-related functions including planning, rehabilitation, reconstruction, and major maintenance of the state's pavements.

POSTADT Post Average Daily Traffic System
Using an existing map file created from Texas Road Inventory Mapping System (TRIMS), the POSTADT program is used to create a station map on which it places (posts) labels that show average daily traffic counts.

PPE   Milepoint/ Reference Marker Equivalency System
Implements a department-wide single location reference key and establishes responsibilities for continued monitoring, support, and coordination.

PSTRS14 Prestressed Concrete Beam Design/Analysis System
The PSTRS14 program performs calculations for the design or analysis of simple span beams of pretensioned, prestressed concrete for use in highway and railroad bridges.

RDS   Roadway Design System
An integrated program of over 400 computer processes developed to aid engineers in the design of highways and bridges. Utilizes a project database to store terrain, design, and geometry information for a design project.

RGN   Registrar/N System
A computer-based training, record keeping, and scheduling system that handles daily activities of class and student record storage and maintenance, logistics management, class registration processing, and training correspondence.

RIA   Road Inventory System
Contains roadway characteristics, and traffic and design data for designated under maintenance state highway system and federal-aid system, country roads, functional classified city streets, and interstate highway frontage roads.

RIS   **Roadway Information System**
Combination of coordinated data files containing roadway characteristics, structure descriptions, traffic counts, grade crossing inventory, and traffic accidents.

RL1   **Road Life File System**
Warehouse of information about construction jobs. The RL1 file stores construction job costs, work type, and other job related data.

ROW   **Right-of-Way Records System**
Allows the display of information to monitor the Right-of-Way parcel acquisition process.

RRA   **Registration Report Audit System**
Reports vehicle registrations, by county, to the state. RRA provides the recording and auditing of registration reports (Form 158), payments made by counties for these reports, and maintenance of county inventories of registration items.

RRX   **Railroad Grade Crossing System**
Information pertaining to each crossing on the state highway system, city streets, and county roads.

RTS   **Registration and Title System**
A point-of-sale system to be used by the state's 254 county tax offices for the registration and titling of motor vehicles.

RWALL Retaining Wall Program
Produces the bill of reinforcing steel and quantities for each panel of retaining wall. Used in conjunction with the Text program to add this information on an Intergraph design file to produce the finished plan sheet.

SDA   **Safe Driver Awards System**
Prints safety awards for employees meeting qualifications for safe drivers and/or equipment operators.

SDMS   **Survey Data Management System**
This AASHTOWare product runs on DOS-based surveying data collectors, allowing for the systematic collection and storage of survey data.

SES   Single Entry Screen System
Provides input of Salary and Labor Distribution (SLD), Material and Supply
Management System (MSMS), Equipment Operations System (EOS), and
Maintenance Management Information System (MMIS) information to be entered into
a single entry point.

SIGNAL Traffic Signal Pole Assemblies Program
Program designed for traffic signal assembly analysis.

SIGNSZ Interstate Sign Sizing Program
Sizes and locates copy on interstate highway sign panels, producing both graphics and
a report of sign dimensions and materials.

SKD   Skid Test Program
Stores skid data collected from skid trucks throughout the state highway system. Used
by Highway Design Engineers to assist with roadway decision making when building
or rehabilitating highways.

SLD   Salary and Labor Distribution System
SLD is responsible for assimilating and reconciling employee time sheet records.

SMBS   Small and Minority Business System
Monitors the participation of disadvantaged business enterprises (DBEs) in the
Department's purchasing and contracting operations.

SMS   Subcontractor Monitoring System
Facilitates compliance with Federal Highway Administration (FHWA) regulations
concerning small and minority participation quotas on construction projects. This
ensures continued funding of Federal Aid projects.

SPAN   Span Detail System
Automated Plan Preparation System (APP) subsystem that produces span detail
drawing sheets, with complete annotation, for prestressed concrete bridges.

SPC   Special License Plates System
Maintains data pertinent to the issuance, renewal and inquiry of Special license plates
issued in accordance with the registration laws enacted by the Texas legislature.

SSS   Speed Survey System
Reports the state's degree of compliance with the 55 mile per hour national speed
limit.

STAAD-III/ISDS Structural Analysis and Design - Integrated Structural Design Systems
This system is used for the design and analysis of structural systems. It is used primarily for its 2-D finite-element modeling capabilities. STAAD has an automatic mesh generator to allow complex shapes to be modeled with ease.

STAMINA Noise Barrier Cost Reduction Program
In conjunction with the OPTIMA program, this system constitutes a system for traffic noise prediction modeling. The STAMINA program is used to predict and abate highway traffic noise.

SWS   Statewide Safety Improvements System (Title II)
Provides a cost/benefit analysis of federally funded safety projects, both before and after construction.

TACS   Tables and Characteristics System
Stores table information that is used by numerous applications throughout the Department.

TAF   Traffic Assignment and Forecasting System
The Texas Trip Distribution package and the Large Network package are designed to perform trip distributions and assign current and future traffic to a large transportation network in urban areas.

THYSYS Texas Hydraulic System
Performs hydraulic calculations used in highway hydraulic design and analysis.

TLG   Traffic Log System
The Traffic Log File is a file of current, historical, and 20-year traffic design data. Data is assimilated to produce design data such as KIPS, ATHWLD, 20-year projection for the AADT, etc.

TRA   Traffic Accident Report System
Contains all 'ON' and 'OFF' system accidents and is a coordinated effort between the Department of Public Safety and TxDOT. DPS collects and inputs the data, and TxDOT updates roadway characteristics and traffic.

TRFSGN Traffic Control Signing Options
This Microstation 32 traffic sign tutorial application provides a Microstation 32 user with the ability to create various sign layouts using sign cell libraries accessed through screen tutorials.

TRIMS Texas Roadway Inventory Mapping System
TRIMS provides the tools necessary to generate county and district maps.

TRM Texas Reference Marker System
Implements a single location reference key statewide and continued monitoring and coordination of roadway inventory data.

TVL Travel Literature System
Tracks distribution of travel literature.

TXH Texas Highways Magazine Subscription System
Maintains the subscription system for TEXAS HIGHWAYS, the official State travel magazine. This system provides mailings, renewals, billings, gift cards, address changes, nightly updates, donor/recipient relations, and presorting.

TXTOM Texas Truck Offtrack Modeling System
A computer model that simulates the offtracking characteristics of a truck (or any vehicle combination) negotiating a simple circular curve.

USF Universal Specifications File System
Provides a defined center of information for all construction specifications and details of the materials referenced in these specifications.

UVD Universal Vendor Description System
Used to store and retrieve information on vendors and contractors.

VPS Vendor Payment System
Provides inquiry into the voucher/vendor information of the Financial Information Management System (FIMS).

VSL Vacation/Sick Leave System
Used to update vacation, sick leave, other leave, and compensatory time for Department employees.

WIM Weight In Motion System
Truck-weight data is collected at various sites throughout the state for development of the 18-KIP equivalency file and the Federal Highway Administration's Highway Performance Monitoring System (HPMS).

ISD APPLICATIONS BY BUSINESS AREA

Determine and Analyze Transportation Needs

ACR	Accumulative Count Recorders System
ATR	Automated Traffic Recorders System
BDG	Bridge Inventory, Inspection and Appraisal
CSI	City Street Inventory System
EVM	Environmental System
HPMS	Highway Performance Monitoring System
MCC	Manual Classification Count System
MPE	Milepoint Equivalency System
PMIS	Pavement Management Information System
POSTADT	Post Average Daily Traffic
PPE	Milepoint/ Reference Marker Equivalency System
RIA	Road Inventory
RIS	Roadway Information System
RRX	Railroad Grade Crossing System
SKD	Skid Test Program
SSS	Speed Survey System
TAF	Traffic Assignment and Forecasting System
TLG	Traffic Log System
TRA	Traffic Accident Report System
TRIMS	Texas Roadway Inventory Mapping System
TRM	Texas Reference Marker
WIM	Weight In Motion System

Plan Transportation Systems

DCIS	Design and Construction Information System
EPS	Economic and Planning System
EVM	Environmental System
FAMS	Funds Allocation and Monitoring System
HPMS	Highway Performance Monitoring System
PMIS	Pavement Management Information System
STAMINA	Noise Barrier Cost Reduction Program
SWS	Statewide Safety Improvements System (Title II)
TAF	Traffic Assignment Forecast

Design Transportation Systems

ABUT	Abutment Detail
APP	Automated Plan Preparation System
B30	Continuous Beam Analysis - B30 System

BFAST	Bridge Foundation and Soil Test Program
BLS	Bridge Layout System
BPS	Bid Proposal System
CaiCE	Computer Aided Civil Engineering and Surveying
CAP18	Bent Cap Analysis Program
COSB1	Cantilever Overhead Sign Bridge
CULVERT	Culvert Detail System
CULV5	Concrete Box Culvert Analysis System
DCIS	Design and Construction Information System
GPS	Geodesy, Photo, and Surveying System
IGBENT	Interactive Graphics Bent Program
IGRDS	Interactive Graphics Roadway Design System
IGSEG	Interactive Graphics Segment Program
OSB6	Overhead Sign Bridge Analysis Program
PCACOL	PC Column
PLANV	Plan View System
PSTRS14	Prestressed Concrete Beam Design/Analysis System
RDS	Roadway Design System
RWALL	Retaining Wall Program
SDMS	Survey Data Management System
SIGNAL	Traffic Signal Pole Assemblies Program
SIGNSZ	Interstate Sign Sizing Program
SPAN	Span Detail System
STAAD-III/ISDS	Structural Analysis and Design - Integrated Structural Design System
THYSYS	Texas Hydraulic System
TRFSGN	Traffic Control Signing Options
TXTOM	Texas Truck Offtrack Modeling System
USF	Universal Specifications File System

Deliver Transportation Systems

CCF	Current Construction File
CIS	Contract Information System
FIMS	Financial Information Management System
MCS	Material Control System
MMIS	Maintenance Managment Information System
RL1	Road Life File
SMBS	Small and Minority Business System
SMS	Subcontractor Monitoring System

Maintain and Operate Transportation Systems

HCR	Highway Condition Report

MMIS	Maintenance Management Information System
SES	Single Entry Screen System
SWS	Statewide Safety Improvements System (Title II)

Regulate Transportation Systems

CPS	Central Permits System
IRP	International Registration Plan System
RRA	Registration Report Audit System
RTS	Registration and Title System
SPC	Special License Plates System

Fiscal Services

APS	Automated Purchasing System
ARRS	Automated Receiving Report System
BUD	Budget Monitoring System
CIS	Contract Information System
CMCS	Construction/ Maintenance Contract System
CPS	Central Permit System
FAMS	Funds Allocation and Monitoring System
FIMS	Financial Information Management System
IRP	International Registration Plan System
MSMS	Material and Supply Management System
PAY	Payroll System
RTS	Registration and Title System
SLD	Salary and Labor Distribution
TXH	Texas Highways Magazine Subscription System
VPS	Vendor Payment System

Contracted Services

BAMS	Bid Analysis Management System
BPS	Bid Proposal System
CBS	Contractor Bidding System
CIS	Contract Information System
CMCS	Construction and Maintenance Contract System
CTS	Contract Tracking System
FIMS	Financial Information Management System
LET	Letting
SMBS	Small and Minority Business Systems

Human Resources

| BEN | Benefits System |

CPP   Career Planning Profile System
DRC   Drivers Record Check System
HRIS   Human Resources Information System
INA   Insurance Support and Worker's Compensation
INS   Group Insurance System
JAT   Job Applicant Tracking System
PER   Personnel System
PIF   Permanent Index File System
RGN   Registrar/N System
SDA   Safe Driver Awards System
VSL   Vacation/Sick Leave System

Information Resources

DOTS   Data on Terminal System
MDC   Master Data Controller
NCS   Natural Control System
OPA   Operations Plan for Automation
PDL   Program Documentation Log
PJS   Planning and Justification System
TACS   Tables and Characteristics System

Real Property Management

ROW   Right of Way Records

Equipment, Materials and Supplies Management

APS   Automated Purchasing System
ARMS   Automation Resource Management System
EOS   Equipment Operations System
MES   Minor Equipment System
MSMS   Material and Supply Management System
PJS   Planning and Justification System
SES   Single Entry Screen
UVD   Universal Vendor Descriptions

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
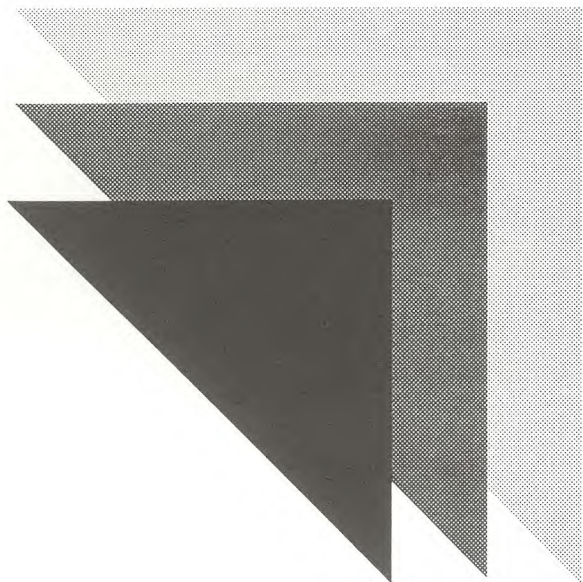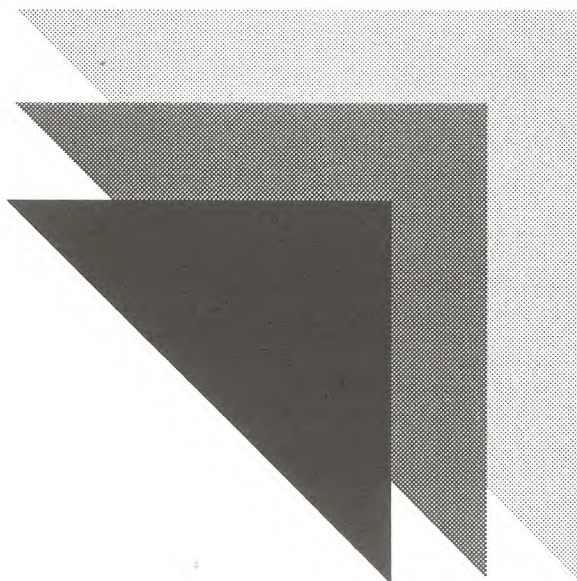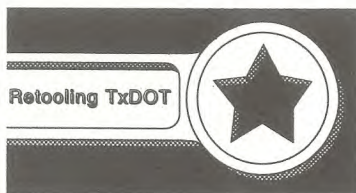
Texas Department of Transportation

DATABASE INVENTORY
* Local refers to files stored on a user workstation

Database Name	Entity Types	Database Size
ABUT Abutment Detail	Abutment Breakback Pier Wingwall Bearing Pad	Local
ACR Accumulative Count Recorders	Traffic Volume Counts	Medium
APP Automated Plan Preparation	Plan Profile	Local
APS Automated Purchasing System	Purchase Orders Requisitions Vendor Performance Purchase Quantities Pricing Lead Time	Extra-Large
ARMS Automation Resource Mgmt	Hardware and Software Items Configurations	Small
ATR Automated Traffic Recorders	Continuous Traffic Seasonal Variations	Medium
BDG Bridge Inventory, Inspection and Appraisal	On System and Off System Structures: Roadway Traffic Inspections	Medium
BFAST Bridge Foundation and Soil Test	Project Log Test Lab Test Foundation Foundation Strength Soil Strength	Local

Database Name	Entity Types	Database Size

BPS Bid Proposal	Construction Bid and Informational Proposals:
	    Vendor Requests
	    Printing/Distribution
		Small

BUD Budget	Program Activity Account Budget Preparation 'Cash' Budget Monitoring Activity	Small
CAP18 Bent Cap Analysis	Bridge Bent Cap	Local

CBS Contractor Bidding	Construction and Maintenance Contractor Data:
	    General
	    Prequalified Financial
		Medium

CCF Current Construction File	Current Construction Completed Construction	Small

CIS Contract Information	Construction Contracts:
	    Bid Items
	    Materials
	    Quantities
	    Prices
	    Work Placed
	    Material Tests
	    Contractor Payments
		Large

CMCS Construction/Maintenance Contract	Maintenance Contracts: Contractors	Small
CPS Central Permits	Oversize/Overweight Permits Tolerance Permits	Medium
CSI City Street Inventory	City Street Mileage Surface Type City Population	Small
CTS Contract Tracking	Contractor Project County Change Documents	Small

Database Name	Entity Types	Database Size
CULV Culvert Detail	Culvert	Local
DCIS Design and Construction Information	Project Planning Bid Information Contract Award	Large
DRC Drivers Record Check	Employee Driver Record	Small
EOS Equipment Operations	Major Equipment Repair Orders Part Issues	Extra-Large
EPS Economic and Planning	Highway Funds Forecasting Model Highway Maintenance and Rehabilitation Cost Estimates	Small
FAMS Funds Allocation and Monitoring	Apportionment (funds) Project	Small
FIMS Financial Information Mgmt	Accounts Payable Buildings and Land Capitol Equipment Clearing Expenditures Cash Revenue Construction Payroll and Misc Deductions Encumbrances Fund Equity General Ledger Bank Retainage Liabilities Project Maintenance Public Transportation Accounts receivable Research Expenditures Routine Maintenance Vouchers Payable Warehouse Stock	Extra-Large
GPS Geodesy, Photo, and Surveying	Geodetic Position	Small

Database Name	Entity Types	Database Size
HCR Highway Condition Report	Road Conditions Central Permits Weather Wildflower Sites	Small
HPMS Highway Performance Monitoring	Highway System Inventory	Medium
HRIS Human Resources Information	Employee Insurance Vacation/Sick Leave Payroll Deductions	Small
IGBENT Interactive Graphics Bent Program	Bridge Bent Cap	Local
IGRDS Interactive Graphics Roadway Design	Coordinate Geometry Horizontal and Vertical Alignment	Local
IGSEG Interactive Graphics Segment Program	Bridge Segment	Local
IRP International Registration Plan	Vehicle International registration Fee	Medium
JAT Job Applicant Tracking	Job Vacancy Applicant Referrals	Small
MCC Manual Classification Count	Vehicle Classification	Medium
MCS Material Control	Material Test Results Producers/Vendors	Large
MES Minor Equipment	Minor Equipment Inventory Minor Equipment Requisitions	Medium
Mainframe SMF Statistics (MICS)	Automation Equipment Utilization	Extra-Large
MMIS Maintenance Management Information	Roadway Maintenance	Extra-Large

Database Name	Entity Types	Database Size
MPE Milepoint Equivalency	Control-Section Changes Milepoint Changes	Small
MSMS Material and Supply Mgmt	Material and Supply Inventory: Received Issued Pass-Thru Stock Levels Locations Asset Value	Extra-Large
NCS Natural Control	User Application Function	Small
OPA Operations Plan for Automation	Automation Project Objectives Needs	Small
PAY Payroll	Employee Pay Deductions	Small
PDL Program Documentation Log	Programs	Small
PIF Permanent Index File	Worker's Compensation Claims	Medium
PMIS Pavement Mgmt	Roadway Inventory Conditions Project Planning Performance	Extra-Large
PJS Planning and Justification	Automation Catalogue Automation Requests Inventory	Medium
POSTADT Post Average Daily Traffic	Map Traffic Count	Local
PPE Milepoint/Reference Marker Equivalency	Location Reference	Small

Database Name	Entity Types	Database Size
PSTRS14 Prestressed Concrete Beam Design and Analysis	Span Beam	Local
RDS Roadway Design	Roadway Coordinate Geometry Bridge Geometry Terrain Design	Local
RGN Registrar/N	Employee (student) Class Class Registration training	Small
RIA Road Inventory	Roadway Traffic Design	Medium
RL1 Road Life File	Roadway	Small
RRA Registration Report Audit	County Registration Reports County Payments County Inventory	Medium
RRX Railroad Grade Crossing	Railroad Crossings Trains	Small
RTS Registration and Title	Registrations Titles	Extra-Large
RWALL Retaining Wall	Retaining Wall Panel	Local
SDA Safe Driver Awards	Employee Safe Driver Awards	Small
SIGNZ Interstate Sign Sizing	Interstate Highway Sign	Local
SKD Skid Test Program	Skid Numbers	Small
SLD Salary and Labor Distribution	Time Sheet Repair Order Worked	Large
SMBS Small and Minority Business	DBEs Purchasing Contracting	Medium

Database Name	Entity Types	Database Size
SMS Subcontractor Monitoring	Minority-owned Business Small Business	Small
SPC Special License Plates	Special Plate registration Dealer Plate	Small
SSS Speed Survey	Speed Limit Compliance	Small
STAMINA Noise Barrier Cost Reduction	Noise Barrier	Local
SWS Statewide Safety Improvements	Federally Funded Safety Projects	Small
TAF Traffic Assignment and Forecasting	Trip Distributions Current Urban Traffic Future Urban Traffic	Medium
THYSYS Texas Hydraulic	Surface Runoff Channel Flow Hydraulic Structures Storm Sewer Networks Pump Stations	Local
TLG Traffic Log	Traffic Design	Medium
Top Secret	Security Authorizations	Small
TRA Traffic Accident Report	On System Accidents Off System Accidents	Medium
TRFSGN Traffic Control Signing Options	Traffic Signs	Local
TRIMS Texas Roadway Inventory Mapping	County Maps District Maps	Local
TVL Travel Literature	Travel Literature	Medium
TXH Texas Highways Magazine Subscription	Subscriptions	Extra-Large
TXTOM Texas Truck Offtrack Modeling	Curve Vehicle	Local

Database Name	Entity Types	Database Size
USF Universal Specifications File	Bid Item Specifications Material Specifications	Small
UVD Universal Vendor Description	Vendors	Small
VPS Vendor Payment	Vendors Vouchers Payments	Extra-Large
WIM Weight In Motion	Truck Weight	Medium

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

SERVICE AREAS FOR EXTERNAL ASSESSMENT

The Application Strategies section of the external assessment was divided into four areas to more specifically assess the condition of each key business service area. Pre-defined business service areas were developed in an effort to standardize responses between participants and were not intended to be the same as the Business Areas outlined in the "Business Direction and Needs" section. The following functions were listed under each business service area to provide guidance on the type of activities that should be considered during completion of the questionnaire:

Transportation Planning and Development:
- Research and Technology Transfer
- Transportation Planning and Programming
- Environmental Affairs
- Right of Way
- Design

Field Operations
- Construction and Maintenance
- Materials and Tests
- Traffic Operations

Administrative Services
- Budget and Finance
- Human Resources
- General Services
- Information Systems

Motorist Services
- Central Permit Administration
- Vehicle Titles and Registration
- Motor Vehicle Division
- Travel and Information Services

Application Strategies: The following charts display the extent of automation within each business area. Figures were derived from question 1, pages 3-7 of the External DOT Survey.
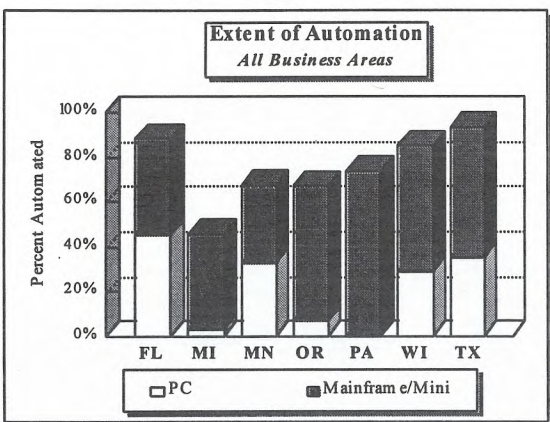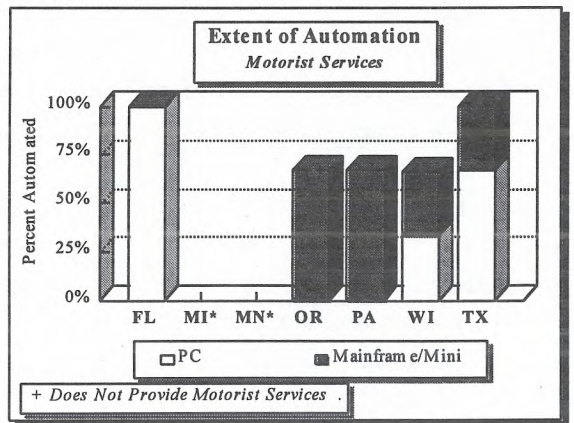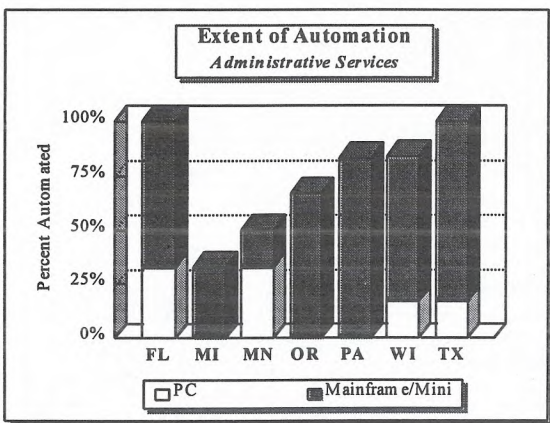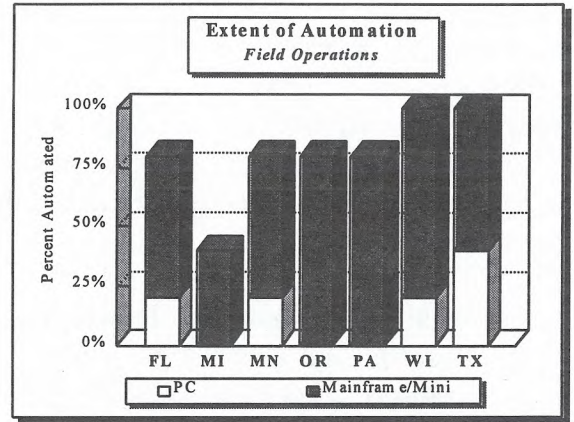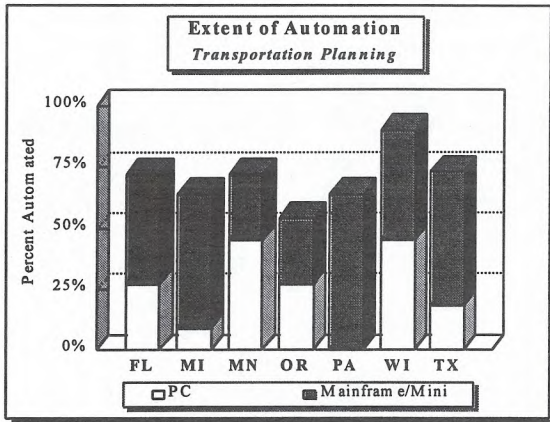
Application Strategies: The following charts display the extent of integration between applications within each business area. Figures were derived from question 1, pages 3-7 of the External DOT Survey.

Integration of Applications
Transportation Planning & Development

Integration of Applications
Field Operations

Integration of Applications
Administrative Services

Integration of Applications
Motorist Services

* Does Not Provide Motorist Services

Integration of Applications
All Applications
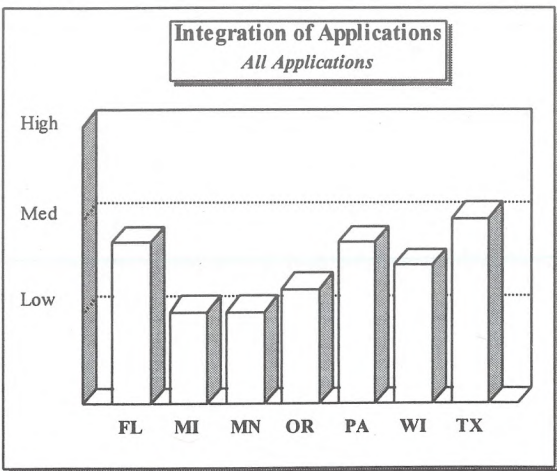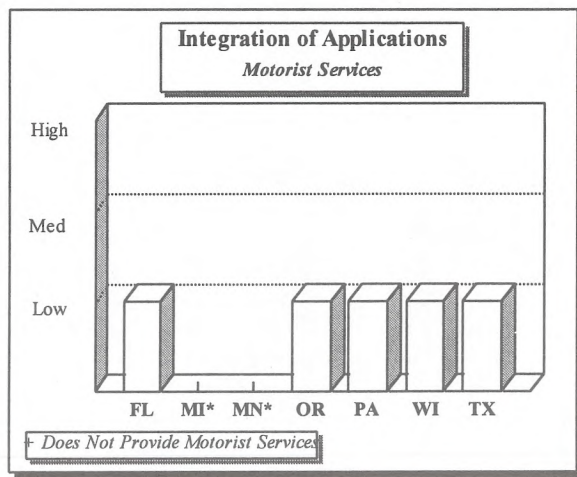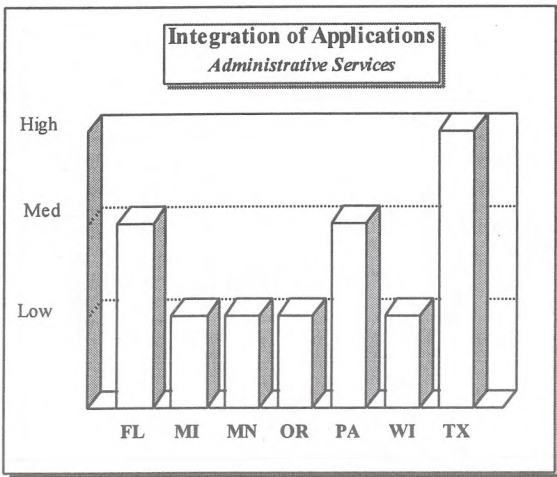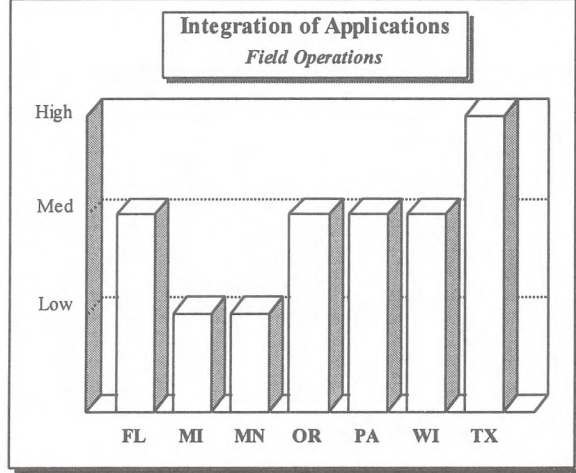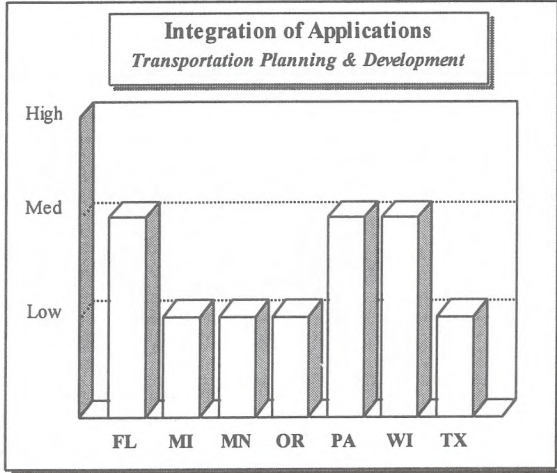
Application Strategies: The following charts display the utilization of technology within each business area through the use of on-line systems and package applications. Figures were derived from question 1, pages 3-7 of the External DOT Survey.

Utilization of Technology
Transportation Planning & Development

Utilization of Technology
Field Operations

Utilization of Technology
Administrative Services

Utilization of Technology
Motorist Services

Does Not Provide Motorist Service

Utilization of Technology
All Applications
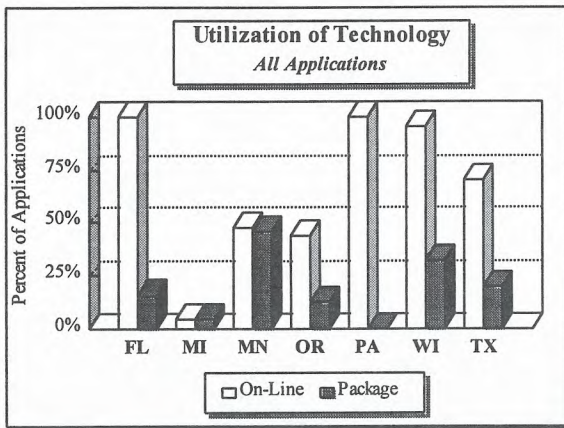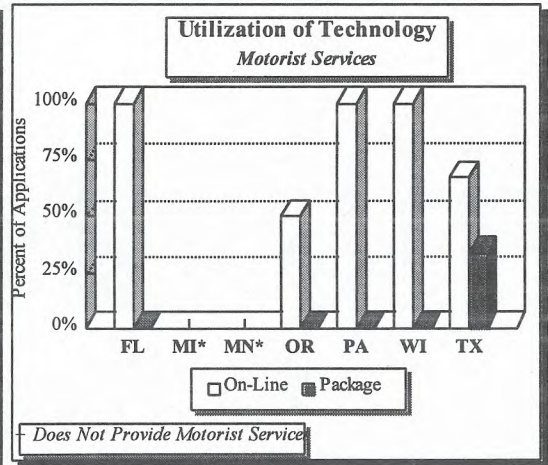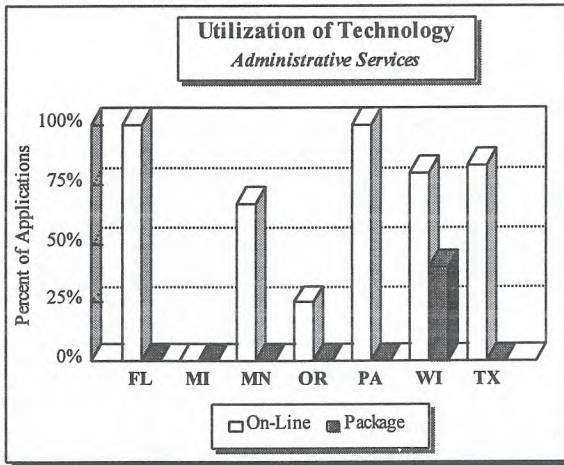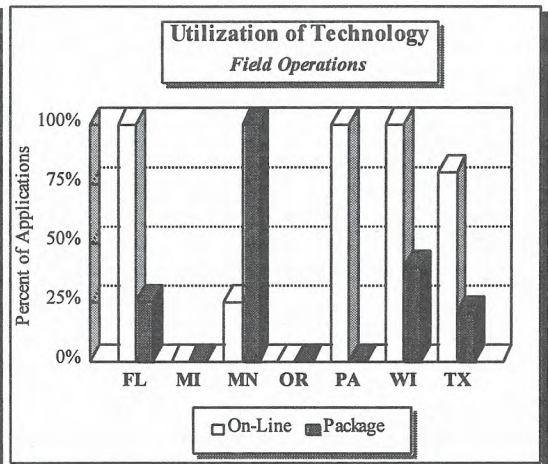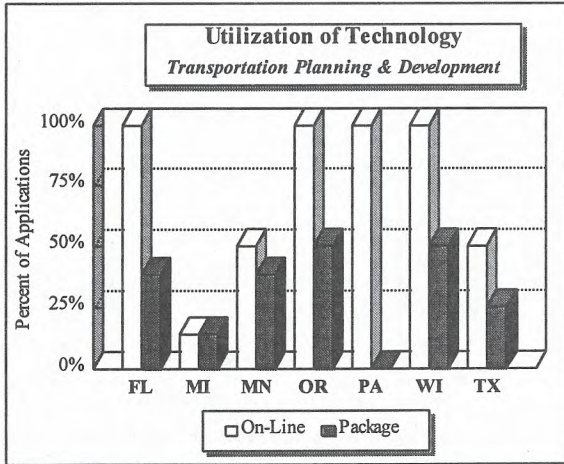
Application Strategies: The following charts display the average age of applications within each business area. Figures were derived from question 1, pages 3-7 of the External DOT Survey.

Average Age of Automated Applications
Transportation Planning & Development

Average Age of Automated Applications
Field Operations

Average Age of Automated Applications
Administrative Services

Average Age of Automated Applications
Motorist Services

Does Not Provide Motorist Service

Average Age of Automated Applications
All Applications
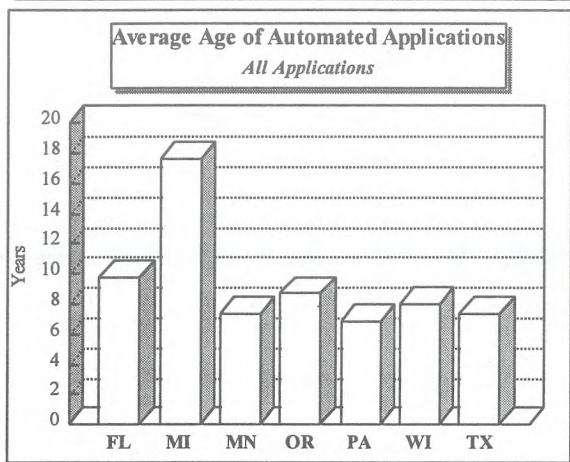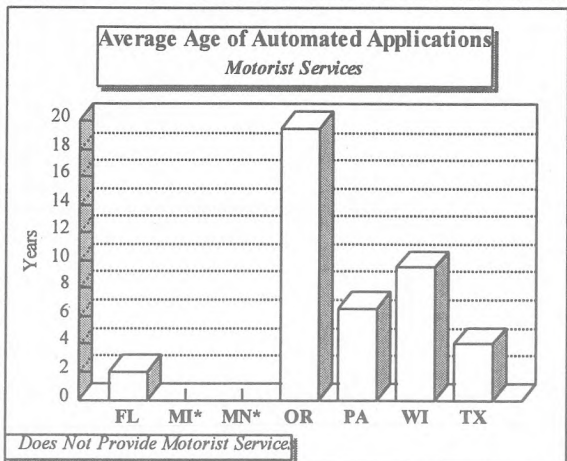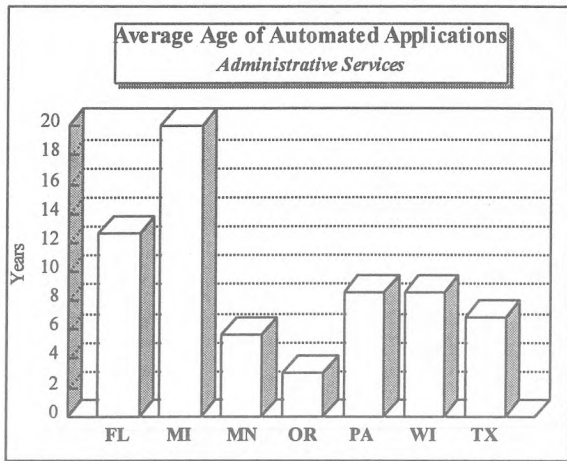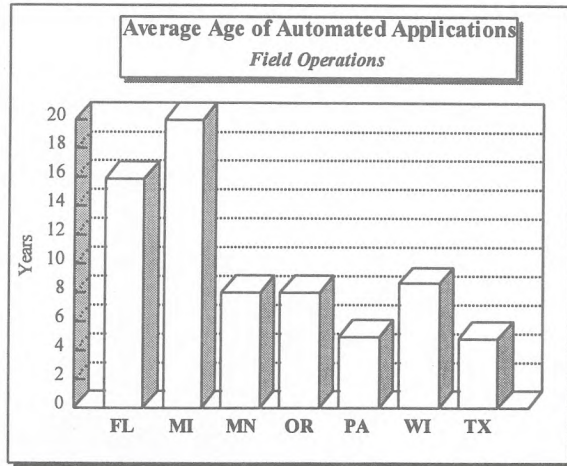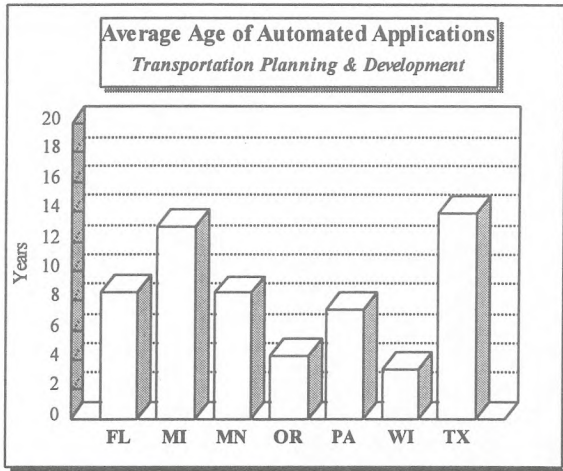
Application Strategies: The following charts display the application development efficiency of each DOT. Attributes included application development time, development backlog, and percent time spent on maintenance of existing applications. Figures were derived from questions 5-7, page 8 of the External DOT Survey.
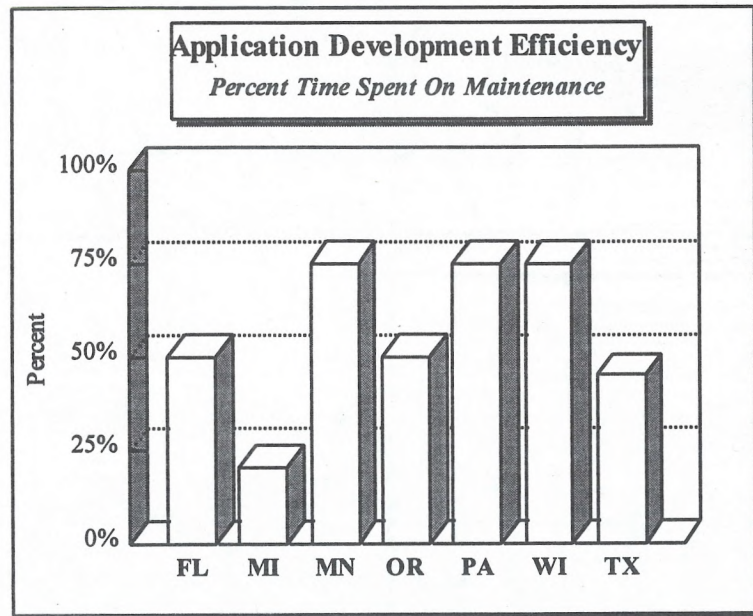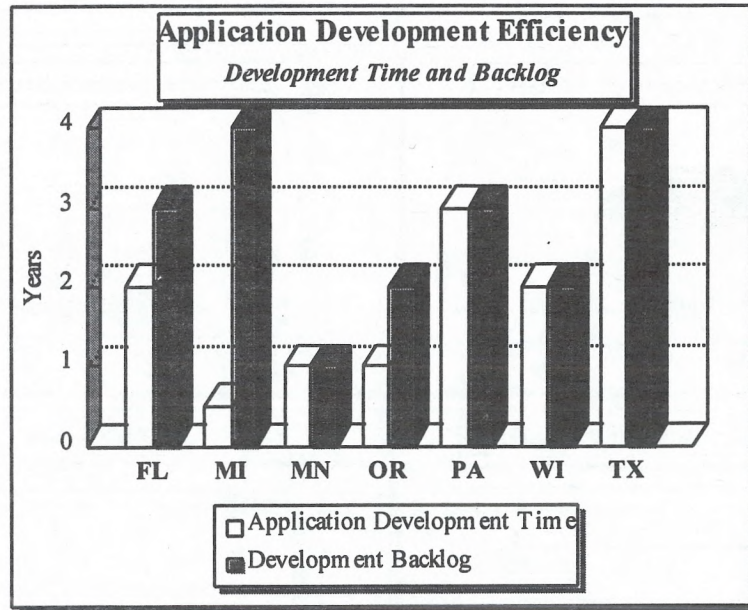
Data Strategies: The following charts display the treatment of department data as an asset and the employment of data and database administrators. Figures were derived from questions 1, 2 and 3 on page 10 of the External DOT Survey.

Department Data Viewed As An Asset

(42.9%)
(14.3%)
(0.0%)
(42.9%)

☐ Data Model Exists   ■ Use Data Modeling Tools
■ Both   ☐ Neither

Database Administrator Employed

(100.0%)   (0.0%)

☐ Yes   ■ No

Data Administrator Employed

(57.1%)

(42.9%)

☐ Yes   ■ No
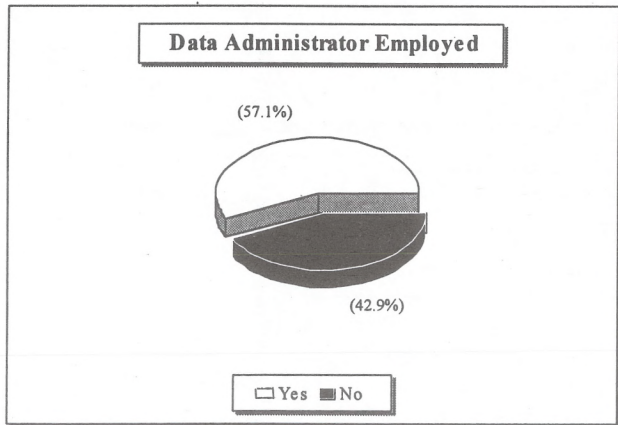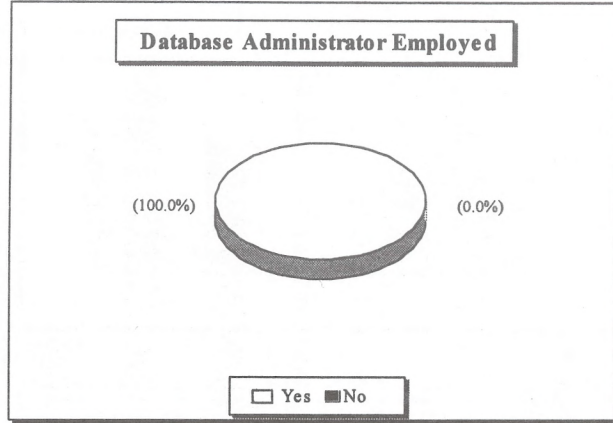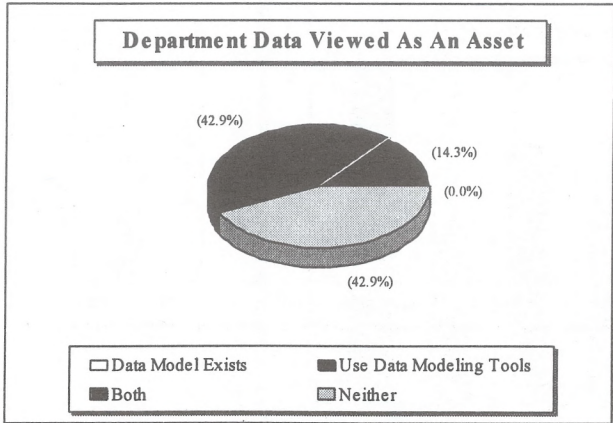
Data Strategies: The following charts display the extent of database integration and centralization and the use of automated data development tools. Figures were derived from questions 6, 7 on page 10 and question 10 on page 11 of the External DOT Survey.
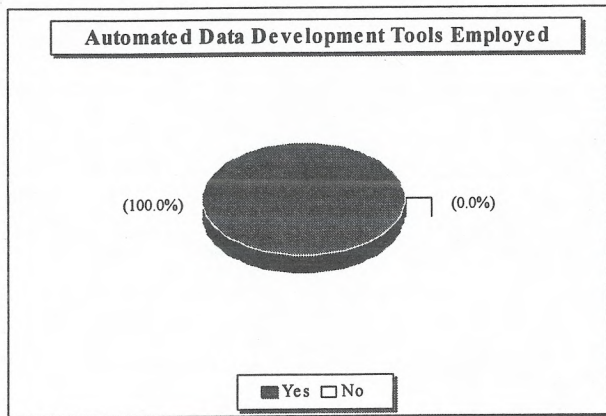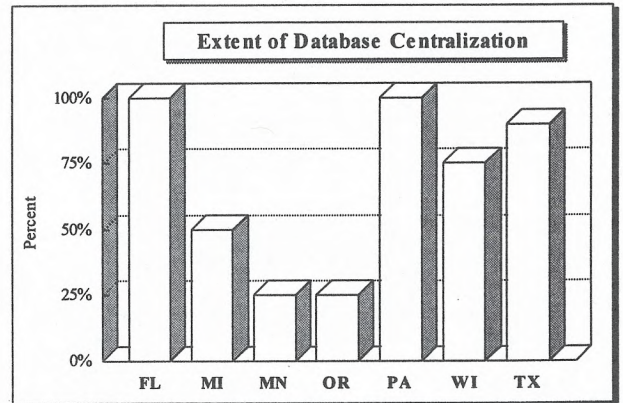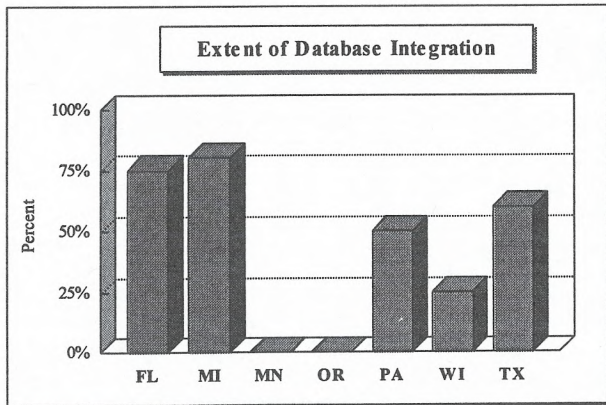
Technology Strategies: The following charts display the growth and deployment of microcomputer technology within each DOT. Figures were derived from questions 4, 8 on page 12 of the External DOT Survey.

Percent Increase in PC Usage (1990-94)

IS Users Per PC
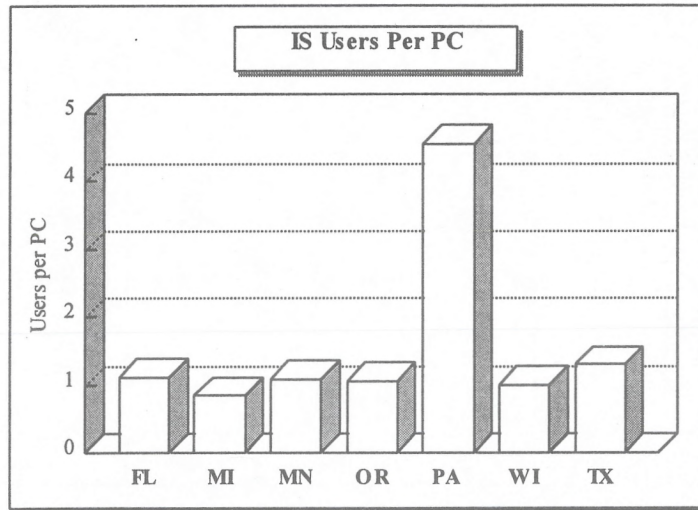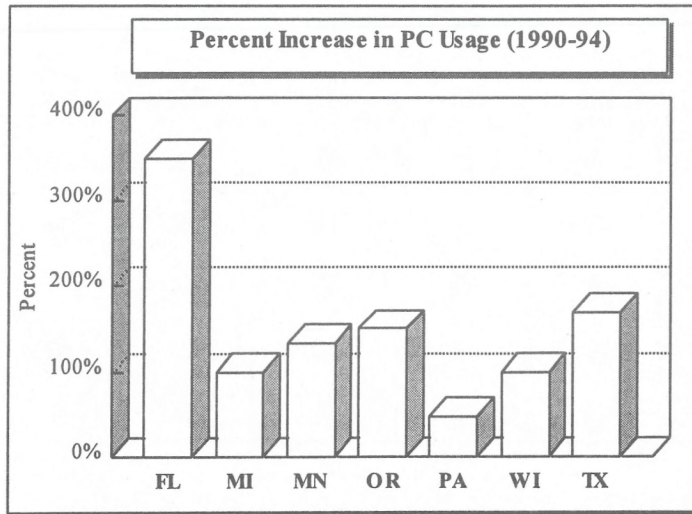
Technology Strategies: The following charts display the platforms and advanced technologies utilized by each DOT and the level of satisfaction with the technology currently in place. Figures were derived from question 9 on page 13 and question 3 on page 12 of the External DOT Survey.

Hardware Platforms

	FL	MI	MN	OR	PA	WI	TX
PC	●	●	●	●	●	●	●
LAN	●	●	●	●	●	●	●
WAN	●	●	●	●			●
Minicomputer	●	●	●		●		●
Mainframe	●	●	●	●	●	●	●

Advanced Technologies

	FL	MI	MN	OR	PA	WI	TX
Fiber Optics	●	●	●	●	●	●	●
Bar Coding	●						●
Doc. Mgmt./Imaging			●			●	●
GIS	●	●	●	●	●	●	●
Voice Response				●	●	●	●
Neural Networks							
Expert Systems			●			●	
Hand Held Devices	●	●	●	●		●	●

Level of Satisfaction With Technology
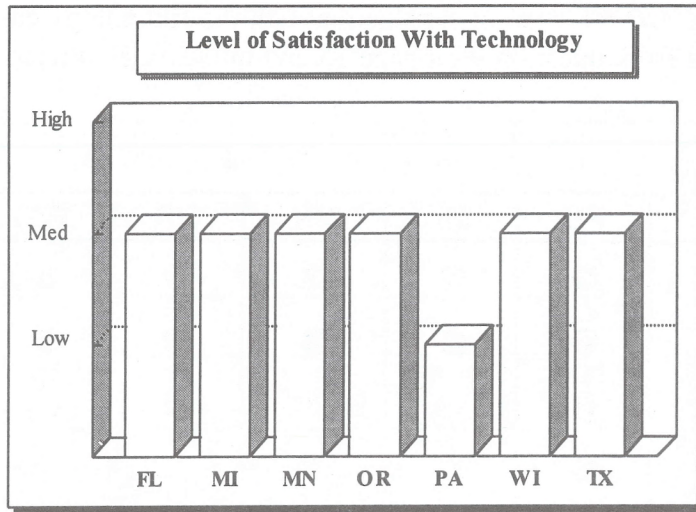
Resource Strategies: The following charts display the growth in IS budgets over the last three years and the current level of IS funds as a percent of the total DOT budget. Figures were derived from questions 1, 2 on page 14 of the External DOT Survey.

Percent Growth In IS Budget (1991-93)

IS Budget As A Percent of DOT Budget
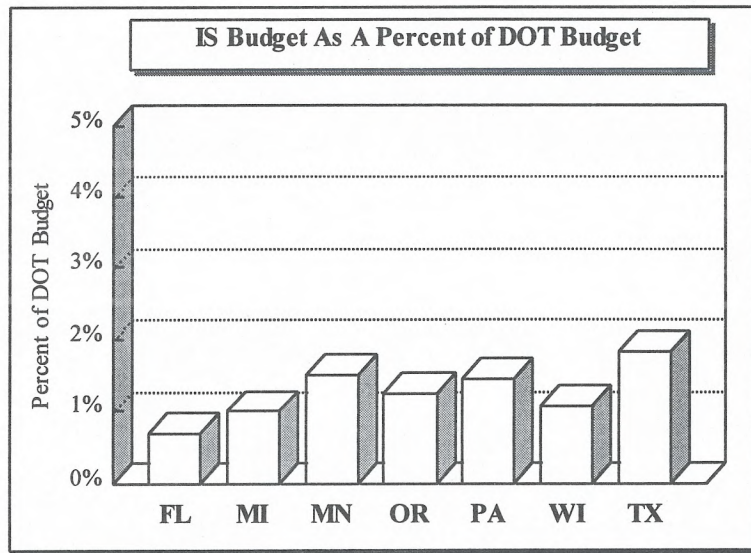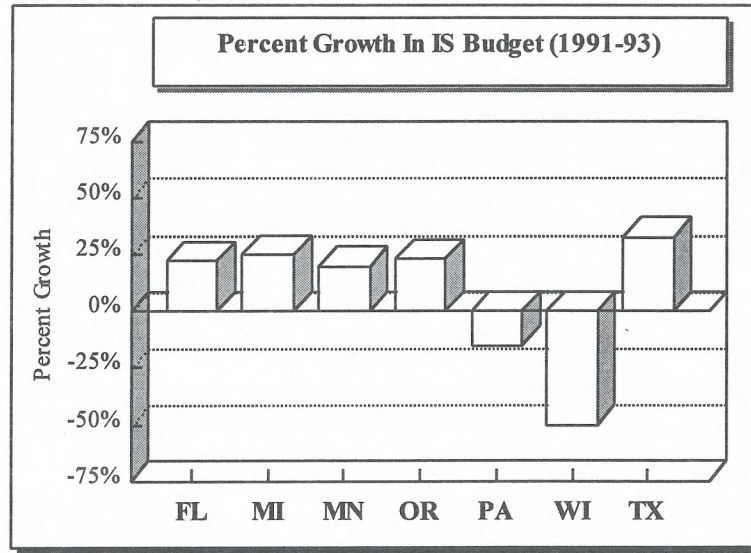
Resource Strategies: The following charts display the level of managerial experience within the IS department and the level of turnover experienced on an annual basis. Figures were derived from questions 5 and 6, page 15 of the External DOT Survey.

Managerial Experience

IS Personnel Turnover
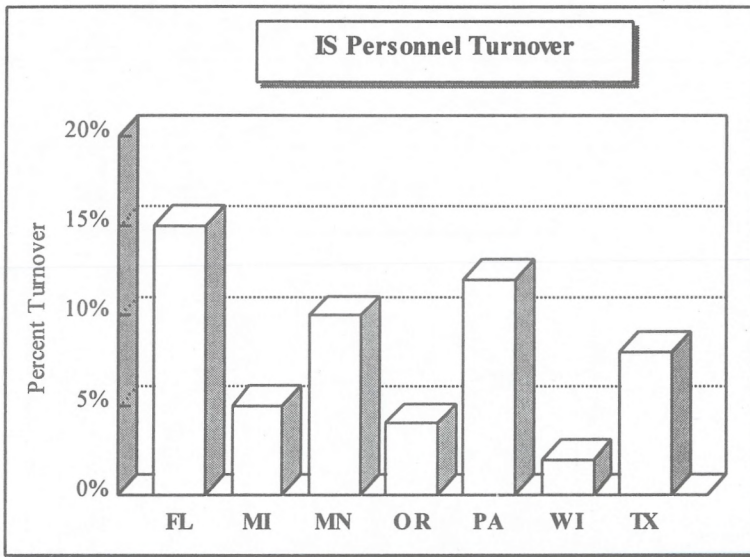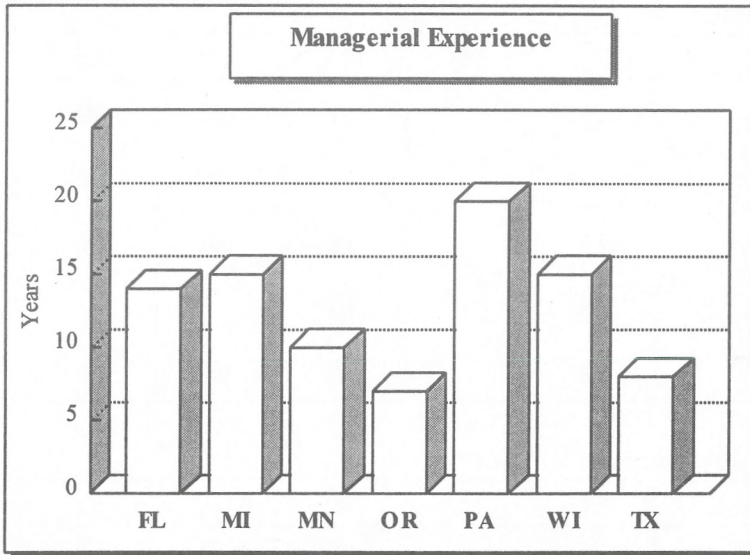
Resource Strategies: The following charts display IS activities performed by non-IS personnel, the importance of IS strategic planning, and the overall user satisfaction with IS support. Figures were derived from question 9 on page 15, and questions 12, 13, 14 and 15 on page 16 and of the External DOT Survey.

IS Activities Performed by Non-IS Personnel

	FL	MI	MN	OR	PA	WI	TX
Programming	●		●	●	●	●	●
Software Installation	●		●	●	●	●	●
Hardware Installation	●		●	●	●	●	●
Hardware Maintenance	●		●				●
LAN Administration	●		●	●	●	●	●

Organizational Importance of IS Planning

	FL	MI	MN	OR	PA	WI	TX
Existing IS Strategic Plan	●	●	●	●	●	●	●
IS Strategic Plan Tied to Business Plan	●	●		●	●	●	●
Level of Organization Which Sets IS Direction	Executive Committee	CIO	Management Committee	Resource Allocation Committee	Deputy Secretary	Division Councils	Executive

User Satisfaction With IS Support
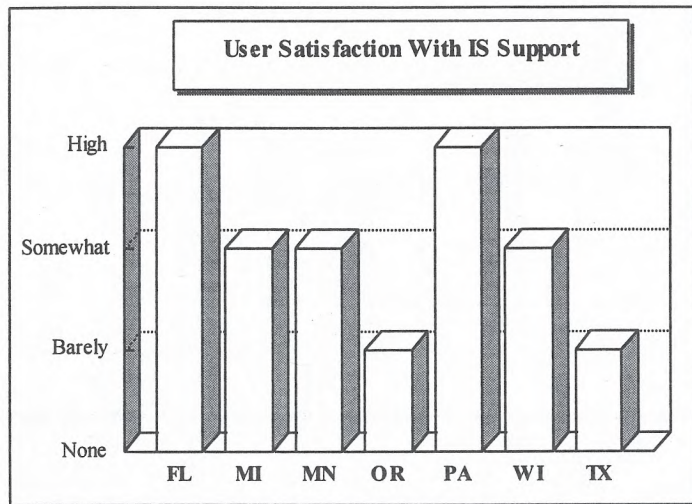
BIBLIOGRAPHY

Increasing IS Budgets

Balmer, D., et. al. *Scenario: Managing Investments in Information Technology*. Gartner Group, R-500-133, May 13, 1993.

Flynn, S. *Five-year IT Spending Scenario*. Gartner Group, S-969-1032, December 17, 1993.

Flynn, S. *IS Budget Survey: Spending as a Percent of Revenue*. Gartner Group, SPA-962-1001, July 14, 1993.

Flynn, S. *Benchmarking for IT Budgets and Investment Management*. Gartner Group, R-BUDG-119, August 31, 1993.

Flynn, S. *IS Budget Survey: Spending Trends*. Gartner Group, SPA-962-1000, July 14, 1993.

Flynn, S. *IS Budget Survey: Head Count Growth and Allocation*. Gartner Group, SPA-962-1007, August 24, 1993.

Flynn, S. *Chargeback: 1993 Survey Results*. Gartner Group, SPA-962-991, May 28, 1993.

Flynn, S. *Chargeback: Best Practices*. Gartner Group, K-962-914, August 26, 1993.

Flynn, S. *A Framework for IT Investment*. Gartner Group, K-925-980, April 31, 1993.

Miller, Brian. *ISTEA Not Sweet Enough*. Government Technology, July 1993, pp. 1, 54.

Rin, A. *ADM 1994 Forecasts and Their Impact*. Gartner Group, SPA-000-978, January 31, 1994.

Decentralization

Brown, D., et. al. *ADM Five-Year Scenario: Succeeding Amidst Chaos*. Gartner Group, R-100-118, January 14, 1994.

Flynn, S. *IS Managers Ask for More Customer Involvement.* Gartner Group, S-960-981, April 30, 1993.

F. McClimans, Miller, D. *Networking Infrastructure: The Physical LAN Foundation.* Gartner Group, R-NET-116, October 29, 1993.

Client/Server (C/S) Migration And Downsizing

Brown, D., et. al. *Symposium '93 and ADM6: Highlights, Questions and Answers.* Gartner Group, R-200-121, January 28, 1994.

Moad, Jeff. *Client/Server Costs: Don't Get Taken for a Ride.* Datamation, February 15, 1994, pp. 34, 35, 38, 41.

Passmore, D. *LAN Management: Staffing and Organization.* Gartner Group, SPA-ORG-1122, March 15, 1993.

Computer Aided Systems Engineering (CASE)

Brown, D., et. al. *Symposium '93 and ADM6: Highlights, Questions, and Answers.* Gartner Group, R-200-121, January 14, 1994.

South Dakota Department of Transportation. Informations Systems Plan - Information Study SD91-14, September, 1991, p. 157.

Imaging And Document Management Systems

Dresner, H. *Geographic Data Visualization Meets Business Intelligence.* Gartner Group, T-GV-1158, July 12, 1993.

Newcombe, Tod. *Workflow: The Force within Imaging.* Government Technology, April 1994, pp. 1, 52, 53.

Newcombe, Tod. *The Value of Innovative Imaging.* Government Technology, April 1994, pp. 1, 69, 70.

Tenalio, Michael. *Optical Disc in the Public Sector.* Government Technology, December 1992, pp. 58, 59.

Williams, Robert. *Shifts in the Records Management Paradigm.* Imaging World,

March, 1994, pp. 54.

Electronic Data Interchange (EDI)

Sprecher, Milford. *EDI: Status in State Government*. Government Technology, October 1992, pp. 38, 41.

Intelligent Vehicle Highway System (IVHS)

IVHS America. Strategic Plan for Intelligent Vehicle-Highway Systems - Executive Summary. IVHS America, Washington D.C., May 20,1992.

Geographical Information Systems (GIS) And Global Positioning Systems (GPS)

James, Fred. *GPS + Attributes = Cost Effective Management*. Government Technology, January 1993, pp. 23.

La Motte, Roy. *A GIS for the Road*. Government Technology, February, 1993, pp. 23, 44.

Newcombe, Tod. *GIS on the Comeback Trail*. Government Technology, July 1993, pp. 1, 56, 57.

Spear, Vickie. *GIS Moves onto America's Highways*. Government Technology, July, 1993, pp. 16, 17.

This page left intentionally blank.

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
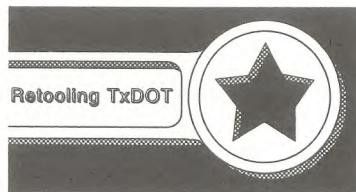
Texas Department of Transportation

Business Model Details

Business modeling workshops identified not only the processes within each business area, but also sample activities, inputs and outputs. These details are presented within each business area (process by process) on the following pages.

Management

Direction & Leadership

Business Management

Operations

Determine &Analyze Transportation Needs

Plan Transportation Systems

Design Transportation Systems

Deliver Transportation Systems

Maintain & Operate Transportation Systems

Regulate Transportation Systems

Business Services

Fiscal Services

Contracted Services

Human Resources

Information Services

Real Property

Equipment, Materials & Supplies

The TxDOT Business Model

Business Processes

```
┌─────────────────────────────────┐
│  Direction and Leadership        │
└─────────────────────────────────┘
        │
        │        ┌──────────────────────────────┐
        ├────────│   Provide Strategic          │
        │        │   Direction                  │
        │        └──────────────────────────────┘
        │
        │        ┌──────────────────────────────┐
        ├────────│   Develop Policy             │
        │        └──────────────────────────────┘
        │
        │        ┌──────────────────────────────┐
        ├────────│   Develop Business Plans     │
        │        └──────────────────────────────┘
        │
        │        ┌──────────────────────────────┐
        └────────│   Promote Transportation in  │
                 │   the State of Texas         │
                 └──────────────────────────────┘
```
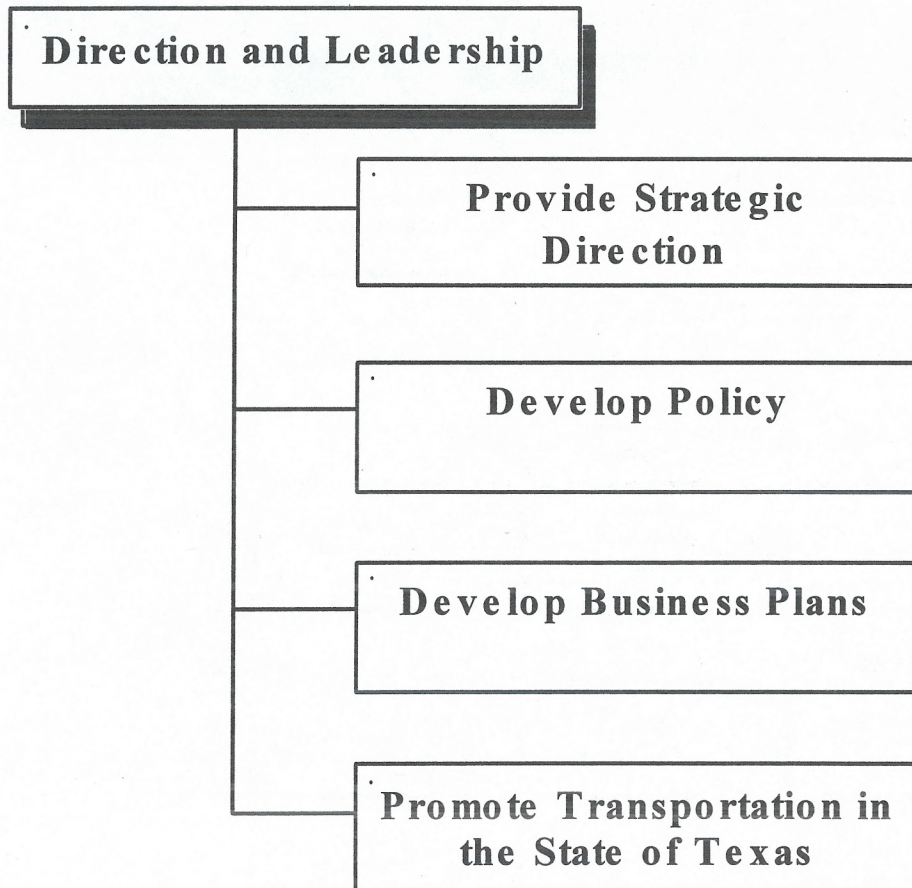
Direction & Leadership

Establishes the strategic direction for the department and its operations and includes producing business plans to achieve this direction.

1. PROVIDE STRATEGIC DIRECTION

Sets the future direction, mission and goals for the department and establishes strategies for achieving them.

☐ **Sample Activities**

+ Analyze department strengths, weaknesses, opportunities, threats
+ Define department vision/mission and operating philosophies
+ Determine department goals and strategies
+ Develop critical success factors
+ Identify action plans

☐ **Sample Inputs**

• Trends (transportation, communication, population, customer service, business)
• Legislative issues
• Public information and input
• Internal/external strategic assessment results
• Employee suggestions
• Transportation needs

☐ **Sample Outputs**

• Customer awareness (decrease in number of "surprises" - someone else telling us what our customers want)
• More money (increased revenues/support)
• Better planning
• Better and more partnerships
• Strategic plan
• Vision and mission statements
• Improved communications
• Employee support of department direction

2. DEVELOP POLICY

Provides for internal leadership by establishing mandates which department offices are to follow when conducting their business.

☐ **Sample Activities**

+ Identify potential policy change
+ Determine impact of policy change
+ Develop policy
+ Approve policy
+ Publish and distribute policy

☐ **Sample Inputs**

- Legislative issues
- Audit reports
- Process evaluation results
- Business/management issues
- Regulatory issues
- TxDOT strategic plan
- New technology
- Internal/external strategic assessment findings
- Customer survey results
- Legal procedures
- Employee suggestions
- Transportation needs

☐ **Sample Outputs**

- New and improved policies
- New and revised procedures and operations
- Improved guidelines
- Legislative and governmental compliance

3. DEVELOP BUSINESS PLANS

Produces operating plans that enable the department to reach its strategic mission, goals and objectives.

☐ **Sample Activities**

+ Analyze department position and compare to direction
+ Develop planning assumptions
+ Incorporate measurable objectives
+ Evaluate improvement opportunities
+ Develop programs, priorities and timetables
+ Determine resource requirements
+ Estimate costs
+ Set priorities for operations
+ Approve plan
+ Publish and distribute plans

☐ **Sample Inputs**

• Communication audit results
• Customer surveys
• Identified problems
• List of people to survey
• Trends (transportation, communication, customer service, business)
• List of customers
• Evaluation of survey responses/results
• Identified problems/solutions
• Identified customer groups
• Clear understanding of mission
• Trends analysis (social, economic, political, environmental)
• Legislative issues
• Policies
  - Budget allocation
  - Statewide work plan
  - Prioritized needs
  - Existing available resources

☐ **Sample Outputs**

• Published plans (e.g., communication, marketing, business, resource)
• Survey responses and results
• Identified solutions
• Identified customer groups
• Better understanding of influences to customer needs
• Customer awareness (decrease in number of "surprises" - someone else telling us what our customers want)
• Better planning
• Better and more partnerships
  - Resources plan
  - District and section work plans
  - Finalized area and section allocations

4. PROMOTE TRANSPORTATION IN THE STATE OF TEXAS

Provides a proactive look at marketing the different products and services available to individuals and businesses using the transportation system to move either people or goods.

☐ Sample Activities

+ Determine marketing goals and strategies
+ Evaluate options for implementing strategies
+ Implement strategies (develop the message and deliver)
+ Monitor marketing progress
+ Build public relations program
+ Provide information about department products and services
+ Solicit public input

☐ Sample Inputs

• Target audience
• Information about transportation systems (including input by subject matter experts)
• Available resources
• Transportation innovations
• Marketing strategies (including benchmarking, target audience, intended message, etc.)
• Funding resources/limitations
• Communication audit results
• Focus group results
• Communication gaps
• Statistics, photographs, data
• TxDOT mission
• External influences
• Legislation
• Success stories/ feedback
• Customer feedback (surveys, complaints, letters)
• Evaluation of survey responses/results
• Trends analysis (social, economic, political, environmental)
• Policies

☐ Sample Outputs

• More people, jobs and money coming to Texas
• Fewer complaints
• Public relations campaign
• Products: travel literature, departmental literature and other written or oral (multi-media) communications
• Increased visibility of TxDOT
• Better educated customer
• Increased use of alternative modes of transportation
• Less congestion and pollution
• Appropriate allocation of resources to support transportation
• Better and more partnerships
• Survey responses/results
• Identified customer groups
• Other ways to gather information
• Better understanding of influences to customers needs
• Educated work force
• Positive image

Business Processes

```
┌─────────────────────────────────┐
│  Business Management            │
└─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        │      │  Evaluate Business Practices    │
        │      └─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        └──────│  Provide Legal Guidance         │
               └─────────────────────────────────┘
```
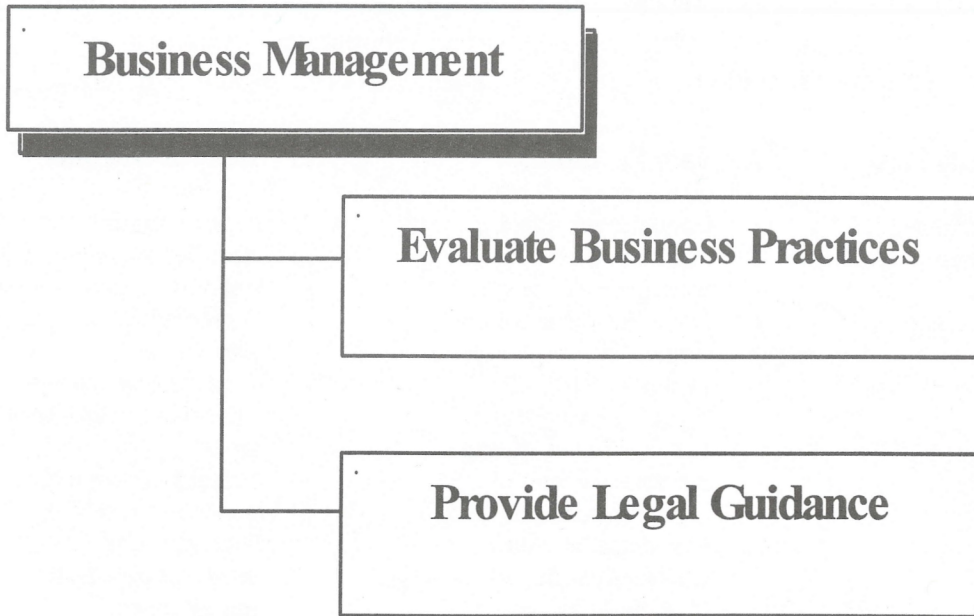
Business Management

Oversees department operations by reviewing, evaluating and recommending actions to improve the way the department does business.

1. EVALUATE BUSINESS PRACTICES

Evaluates the way the department conducts business and recommends business improvements or courses of action to ensure compliance with policies and legislation.

☐ **Sample Activities**

+ Conduct internal audits
+ Analyze business processes
+ Identify improvement opportunities
+ Recommend corrective action

☐ **Sample Inputs**

- Customer surveys and responses
- Identified problems
- List of people to survey
- Complaints
- Letters
- Trends (transportation, communication, customer service, business)
- List of customer needs
- Evaluation of survey responses/results
- Identified problems/solutions
- Identified customer groups
- Trends analysis (social, economic, political, environmental)
- People skills
- Policies
- Public information and input

☐ **Sample Outputs**

- Survey results
- Identified solutions
- Identified customer groups
- Other ways to gather information
- Better understanding of influences to customers needs
- Increase in number of complaints resolved
- Positive image
- Increased trust and empowerment
- More money (increased revenues/support)
- Higher morale
- Better and more partnerships
- Decrease in number of complaints
- More efficient, effective and economical operations

2. PROVIDE LEGAL GUIDANCE
Provides for legal advice when performing department responsibilities and operations.

☐ **Sample Activities**

+ Interpret legislation
+ Review department documents and policies
+ Provide legal representation for the department
+ Identify and mitigate departmental problems and issues
+ Provide response to Open Record Requests

☐ **Sample Inputs**

• Legislative issues
• Policies, procedures and guidelines
• Statutory regulations and rules
• Employee related issues
• Grievance hearings - administrative process
• Draft rules

☐ **Sample Outputs**

• Administrative Code
• Equitable relief on departmental issues
• Due process and/or recommendations for policy and procedures
• Response to Open Records Requests
• Customer awareness of department procedures and operations
• Legal interpretations
• Rulemaking standards (developing and publishing)

Business Processes

```
┌─────────────────────────────┐
│  Determine and Analyze      │
│  Transportation Needs       │
└─────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        ├──────│  Establish Performance Goals    │
        │      └─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        ├──────│  Collect Inventory, Operational │
        │      │  and User Data                  │
        │      └─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        ├──────│  Project Travel Demand of       │
        │      │  People and Goods               │
        │      └─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        ├──────│  Evaluate Current and Future    │
        │      │  System Conditions              │
        │      └─────────────────────────────────┘
        │
        │      ┌─────────────────────────────────┐
        └──────│  Evaluate Current and Future    │
               │  System Conditions              │
               └─────────────────────────────────┘
```
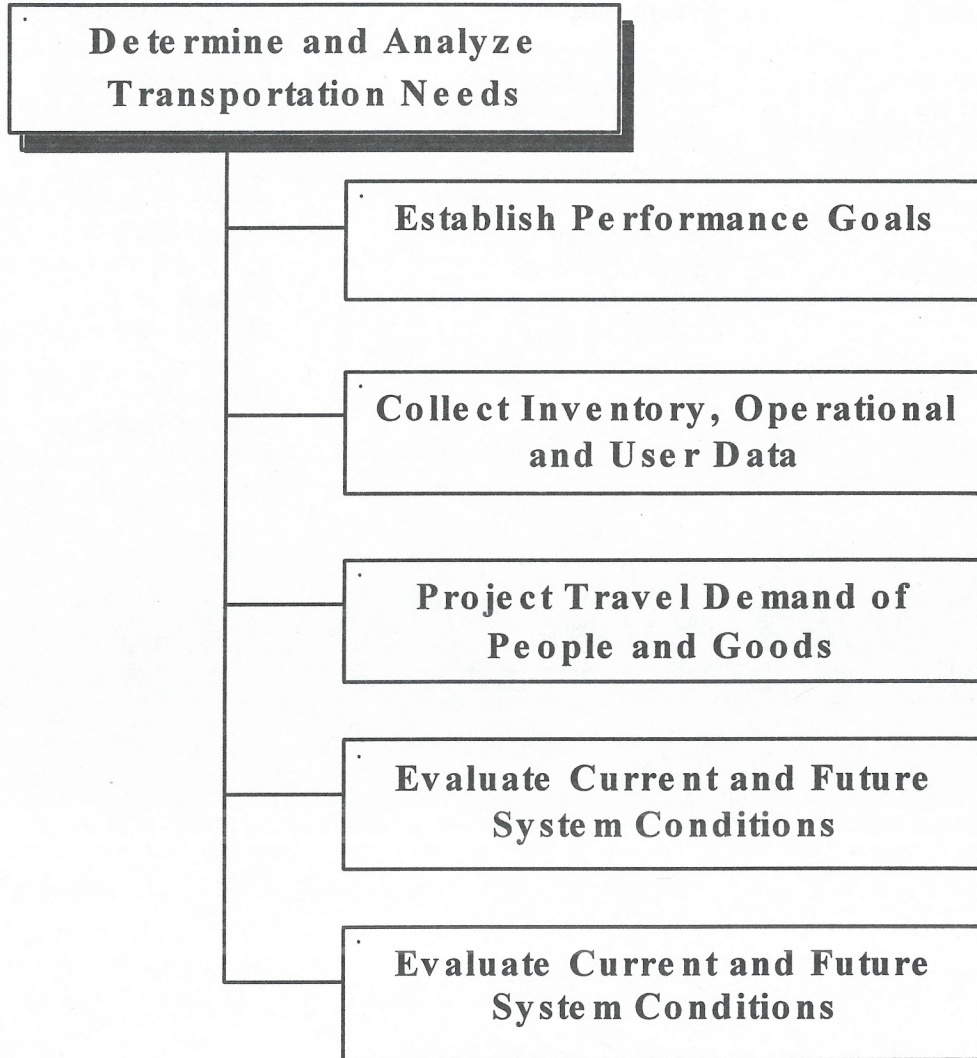
Determine & Analyze Transportation Needs

Considers the expectations and transportation needs of our customers to identify and analyze transportation needs.

1. ESTABLISH PERFORMANCE GOALS

Provides the means to identify, on a proactive basis, multimodal transportation performance objectives. A key to establishing these objectives is obtaining the input of the traveling public and understanding their service level expectations.

☐ **Sample Activities**

+ Meet with general public to identify goals
+ Review existing travel conditions to identify goals
+ Prepare a formal list of transportation performance goals

☐ **Sample Inputs**

- Public input
- Legislated guidelines
- Existing conditions and problems (e.g., level of deterioration, physical and operating characteristics)
- Research results
- Letters (e.g., complaints, inquiries)
- Transportation trends

☐ **Sample Outputs**

- Goals
- Performance measures
- Increased customer satisfaction
- Better planning

2. COLLECT INVENTORY, OPERATIONAL AND USER DATA

Data collection activities that provide the necessary information to project travel demands and evaluate the current and future condition and service level of the state's transportation networks.

☐ **Sample Activities**

+ Collect transportation system conditional data
+ Collect traffic statistics
+ Collect accident statistics
+ Collect socio-economic data

☐ **Sample Inputs**

• Performance goals (e.g., air quality)
• Legislated requirements (federal, state, local)
• Operations information
• Research-based information
• Cultural data and trends
• Business/industry data and trends

☐ **Sample Outputs**

• Maps
• Inventory database (bridge, pavement, traffic, geometric, transit, aviation)
• HPMS information
• Model inputs (system capacity, Passer, Traffic Demand [TDM], Freeway Simulation [FREQ])
• Summary eports (compliance, project design/analysis, public hearings)
• Accident data
• Enplanements, operations, and based aircraft

3. PROJECT TRAVEL DEMAND OF PEOPLE AND GOODS
Activities that result in the forecast of travel demand by transportation mode.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Collect data from MPOs regarding the projection of land use and demographics	• Existing/projected demographics (from MPO'ps)	• Projected travel demand by mode
+ Identify the trip making characteristics of the general public	• Existing/projected land use (from MPOs)	• Vehicle trips
+ Develop "models" to simulate travel and project (forecast) travel demand	• Existing/committed network of transportation modes	• Vehicle miles traveled
	• Trip-making characteristics of households (origins, destinations, mode, time of day, etc.)	• Person trips
	• Model(s)	• Average speeds
	• Characteristics of network	• Vehicle emissions
	• Characteristics of choice (e.g., user cost)	• Fuel consumption
	• Employment data	• Person/vehicle hours of travel
	• Vehicle characteristics (age, type)	• Delay
	• Meteorological data	• Travel performance
	• Types of fuel	• Land use (Future: 3-5 years)
	• Legislated constraints (e.g., air quality standards)	• Economic development impact
	• Enplanements, operations and based aircraft data	
	• Technology trends (IVHS, hovercraft)	
	• Social trends (ADA law, home schooling, work at home, etc.)	

4. EVALUATE CURRENT AND FUTURE SYSTEM CONDITIONS

Provides for a comprehensive assessment of the transportation system's current and projected performance, physical deficiencies and multimodal characteristics.

☐ **Sample Activities**

+ Evaluate the physical characteristics (level of deterioration) of the transportation systems
+ Identify hazardous locations
+ Evaluate the accessibility to alternative modes of transportation

☐ **Sample Inputs**

- All information from "Collect" and "Model" processes
- HPMS (Highway Performance Monitoring System) data (both on and off system)
- Inventory databases (bridge, pavement, traffic, geometric, accident data, photo logs, aviation, transit)
- Performance information from customers and field personnel
- Performance goals - to help determine what analysis to perform
- Professional judgment
- System history (should be part of inventory - historical and trends)

☐ **Sample Outputs**

- Performance information (all modes)
  - Hazardous locations and features
  - Level of service (travel time contours, vehicles per lane-mile, % of on-time service, no. of miles between road calls, delay and user costs, vehicle miles traveled, equivalent single axle loads or ESAL's traveled)
  - Adequacy of navigational information systems
- Physical characteristics
  - Hazardous locations and features
  - Pavement, rail, system condition
  - Structure ratings
  - System deficiencies (level of deterioration, runway lengths and/or strengths, excessive grades, sight restrictions, roadway widths, shoulders, facilities)
- Multimodal characteristics
  - Accessibility to other modes, recreational facilities, rural areas

5. IDENTIFY TRANSPORTATION NEEDS

Activities that result in the generation of a comprehensive multimodal view of the state's transportation needs. Considers the transportation performance goals (largely set by public opinion), the projected travel demand and the current and projected condition of the transportation networks.

☐ **Sample Activities**

+ Perform gap analysis of the performance goals compared to actual
+ Compare levels of deterioration of the transportation systems and projected travel demand
+ Generate a report which identifies a complete list of multi-modal needs

☐ **Sample Inputs**

• Performance goals
• Current and future performance, physical and multimodal characteristics
• Public input
• Discretionary input and emergency response

☐ **Sample Outputs**

• Needs identification (more than PDP, public transportation plan, aviation plan, programs lists)
  - all modes
  - general needs; corridor problems, accident problems, demand management, etc.
  - long term and short term needs and trends
  - statewide and local needs
  - does not identify solutions or projects
  - reflects international and multi-state needs
  - socio-economic and environmental factors
• Performance "actuals"

Business Processes

```
┌─────────────────────────────────┐
│ Plan Transportation Systems     │
└─────────────────────────────────┘
        │
        │        ┌─────────────────────────────────────┐
        ├────────│        Identify Alternatives        │
        │        └─────────────────────────────────────┘
        │
        │        ┌─────────────────────────────────────┐
        ├────────│         Identify Solutions          │
        │        └─────────────────────────────────────┘
        │
        │        ┌─────────────────────────────────────┐
        ├────────│         Formulate Projects          │
        │        └─────────────────────────────────────┘
        │
        │        ┌─────────────────────────────────────┐
        ├────────│     Develop Financial Strategies    │
        │        └─────────────────────────────────────┘
        │
        │        ┌─────────────────────────────────────┐
        └────────│   Program and Schedule Projects     │
                 └─────────────────────────────────────┘
```
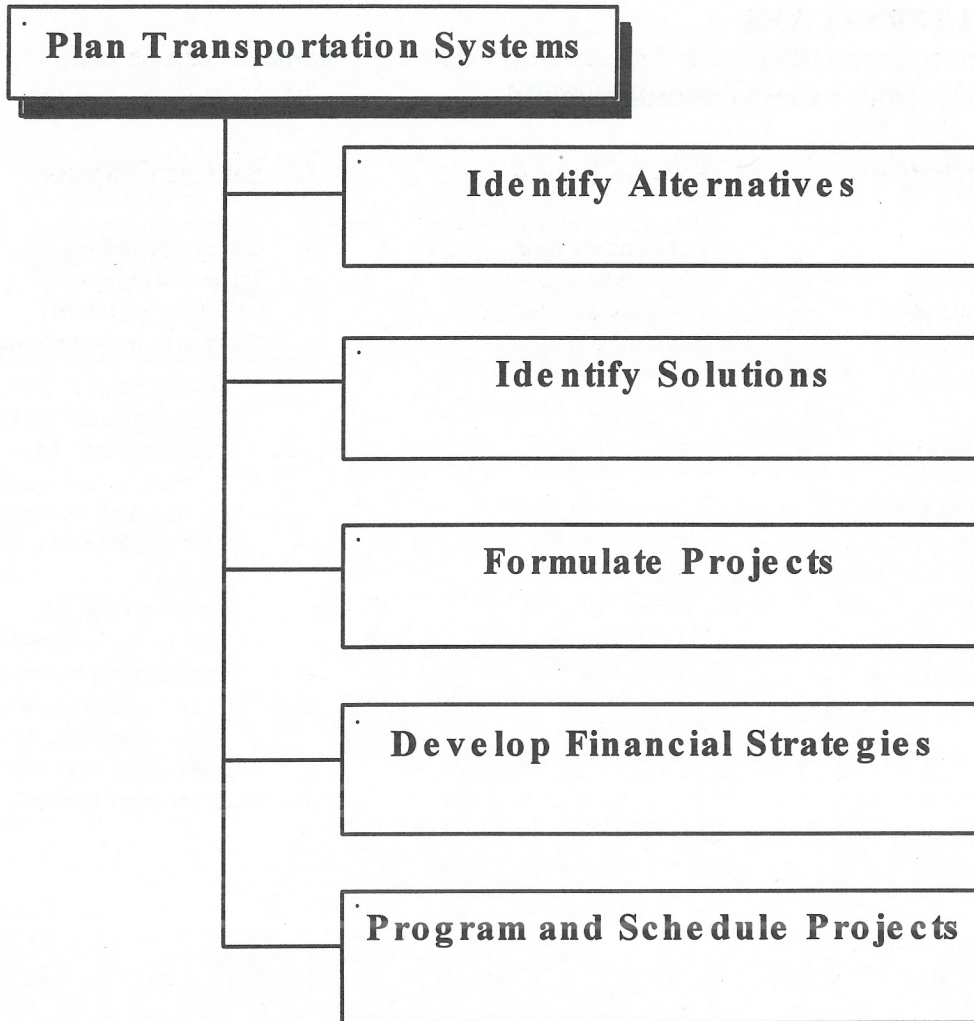
Plan Transportation Systems

Addresses transportation needs by identifying, prioritizing and scheduling transportation solutions (projects).

1. IDENTIFY ALTERNATIVES

Takes identified transportation needs and seeks different ways the needs can be met. These alternatives can be viewed as unconstrained.

□ **Sample Activities**

+ Modeling
+ Forecasting
+ Consider public input

□ **Sample Inputs**

- List of needs from "Determine and Analyze Transportation Needs" business area
- Existing multimodal, statewide transportation plans
- Projected demand for using transportation systems
- Travel performance
- Land use
- Transportation system performance information
- Physical characteristics
- Multimodal characteristics
- External input

□ **Sample Outputs**

- List of alternatives
- Suggested legislative, regulatory or internal changes to improve process

2. IDENTIFY SOLUTIONS

Determines which previously identified alternatives are feasible based upon external input, cost estimates, data and socioeconomic issues.

☐ **Sample Activities**

+ Assess preliminary environmental impacts
+ Perform economic analysis
+ Perform investment studies
+ Check compliance with federal/state mandates (bicycle lanes, ADA)

☐ **Sample Inputs**

- List of alternatives
- Management system data
- Preliminary cost estimates
- External input
- Benefits of selected alternatives
- Environmental issues
- Legislative directives

☐ **Sample Outputs**

- Solutions
- Recommendations to entities outside TxDOT jurisdiction
- Recommended research topics
- Documentation analysis of selection criteria
- Suggested legislative, regulatory or internal changes to improve process

3. FORMULATE PROJECTS

Transforms solutions for identified needs into projects. Projects may be mode specific or may incorporate the use of more than one mode to meet the identified need. This process includes the scoping of projects and preliminary prioritization.

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Finalize estimated costs + Scope projects + Begin prioritizing projects	• Solution data • Management system data • Existing plans • Standards • Funding considerations • External input • Sponsor/partnership commitment • Environmental information • System consideration (consideration of gaps) • Phasing considerations • Impact on outside stakeholders (utility companies, local government plans, etc.)	• List of projects • Time frames for development • Refined cost estimate • Amount of land, equipment, capital needed • Project scope • Environmental, economic and social impacts • Projects identified that need additional justification • Preliminary prioritization • Suggested legislative, regulatory or internal changes to improve process

4. DEVELOP FINANCIAL STRATEGIES

Matches available funding to prioritized projects. Funding apportionments are made to districts based upon this prioritization.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Allocate funds + Allocate funds to different programs + Identify alternative financing methods	• List of projects with costs • List of funding sources • Projections of state/federal funding • Operations constraints on funding • Management allocation decisions • Priorities • Existing plans - current documents • Local share participation ratios • "Allowed" over- budgeting (by rules) • Non-traditional funding sources	• Funding apportionments to districts • List of projects (separate lists - with and without available funding) • Projects identified using established criteria • Identification of funding source and amount • Suggested legislative, regulatory or internal changes to improve process

5. PROGRAM AND SCHEDULE PROJECTS

Places funded projects in a time schedule for work to begin.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Match funds to prioritized projects + Establish letting schedules + Gain approval by Commission of program	• List of financially constrained projects • List of categorical apportionments by funding source and amounts • Priorities • List of mandated projects • Letting schedules	• List of financially constrained projects (aviation) • Projects matching funding (programs) • Project timing (when will it be funded?) • Priority schedule • Tentative letting date • Commission approval of the programs

Business Processes

Design Transportation Systems

Conduct Preliminary Design

Conduct Final Design

Prepare plans, Specifications and Estimates

Develop Specifications

Secure Project Approvals
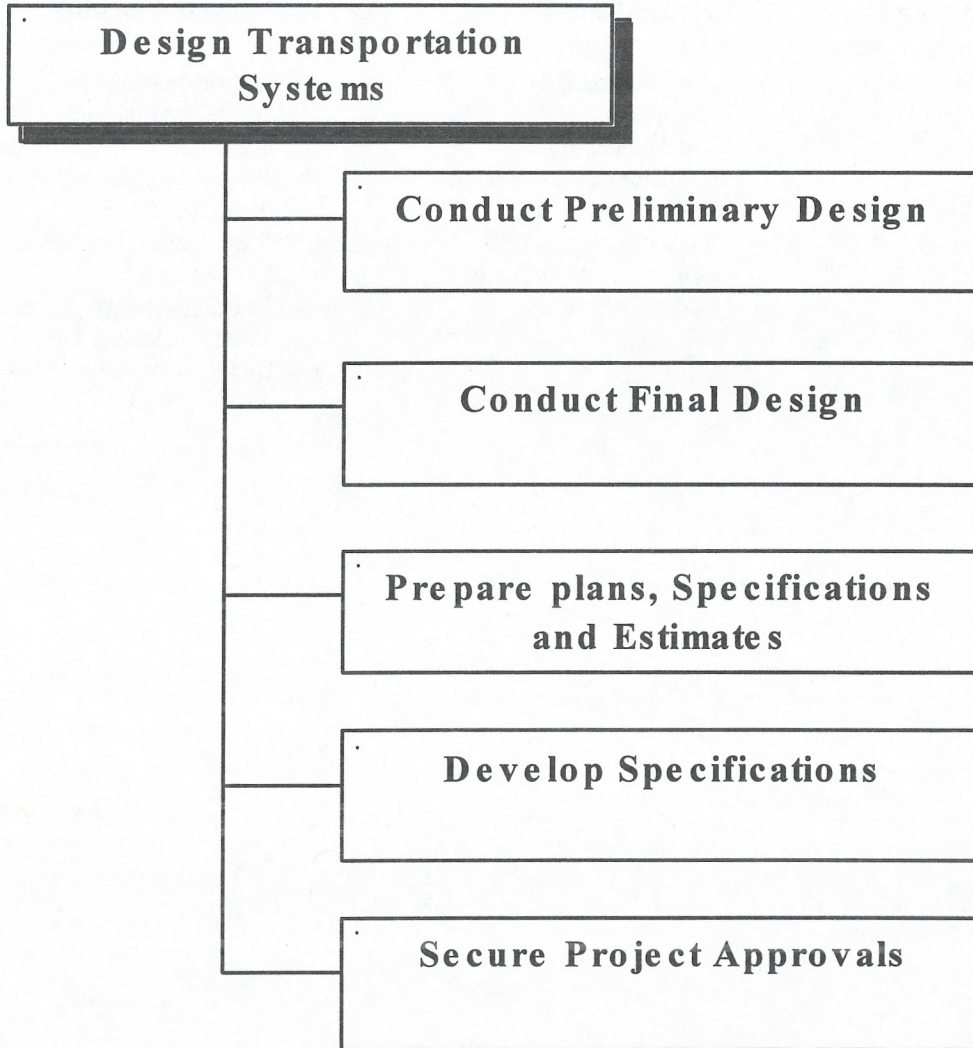
Design Transportation Systems

Transforms solutions from a conceptual framework to a fully designed project with detailed plans and specifications. The plans and specifications are developed for all transportation systems and facilities that serve TxDOT's external customers (roadways, right-of-way maintenance, transit facilities and services, aviation facilities, landscape, rest areas, travel information centers, etc.) Activities within the processes include those providing oversight for external entities performing design (transit authorities, consultants, etc.).

1. CONDUCT PRELIMINARY DESIGN

Refines the project scope and initiates the design of the project.

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Determine design criteria	• Design guidelines and policies	• Schematic
+ Prepare schematic	• Project data	• Environmental assessments (including mitigation)
+ Conduct project design concept conference	• Public input	• Property maps and deeds
+ Perform hydraulic design	• External entity input (local government, schools, utility companies, etc.)	• Typical section
+ Prepare preliminary cost estimate	• Project scope	• Project Concept Conference results
+ Provide technical assistance to transit providers	• Existing utility locations	• Revised project scope
+ Prepare environmental assessments	• Original property maps	• Applicable design guidelines and preliminary design criteria
+ Perform soils analysis	• Preliminary surveys (field, aerial, geodetic and geotechnical)	• Preliminary cost estimate
+ Provide for public participation	• Programmed funding amount	• Hydraulic design
+ Oversee consultant design work	• State and federal mandates	• Land specifications and requirements (spoil site acreage, parks, wetlands, etc.)
	• Available technologies and traffic system equipment	• Soils analysis
	• Request for spoil sites (Corps of Engineers)	
	• Environmental, economic and social impacts	

2. CONDUCT FINAL DESIGN

Performs primary design functions, including design and quantity calculations, developing details and selecting applicable specifications.

☐ **Sample Activities**

+ Prepare design details (final horizontal and vertical alignments, pavement designs, construction sequence)
+ Select design specifications and standard sheets
+ Calculate quantities and prepare design exceptions
+ Monitor designs and design processes to assure compliance with regulations
+ Perform quality reviews

☐ **Sample Inputs**

• Schematic
• Public hearing records
• Property maps and deeds
• Design data
• Approved environmental documentation
• Revised project scope
• Preliminary estimate
• Project concept conference results
• Typical section
• Preliminary review recommendations
• Project correspondence (commitments)
• Existing utility locations from utility owners
• Preliminary design criteria
• Budget
• Design specifications catalog (list)

☐ **Sample Outputs**

• Design details (final horizontal/vertical alignments, pavement designs, roadway details, storm sewer design, construction sequence, cross-sections, plan profiles, traffic control plan, signal phasing and timing, landscape details, mowing acreage and locations, architectural details, electrical details, transit facility enhancements, runway lengths, transit routes and schedules, etc.)
• Selected design specifications
• Selected standard sheets
• Quantities
• Design calculations
• Design exceptions
• Approved utility relocation plan

3. PREPARE PLANS, SPECIFICATIONS AND ESTIMATES

Compiles the project details into a published form, ready for proposal preparation and contract development.

☐ **Sample Activities**

+ Prepare plan sheets
+ Prepare project estimate
+ Compile plans and specifications
+ Submit supporting documentation
+ Review and approve plans and bid documents prepared by others

☐ **Sample Inputs**

- Design details
- Quantities
- Cost information
- Selected standard sheets
- Selected design specifications
- Construction scheduling and sequencing data

☐ **Sample Outputs**

- Plans (plan details, general notes, plan sheets)
- Specifications, estimates, general notes
- Supporting documentation (ROW certifications, utility certification, project authorization, relocation certification)
- Approved plans and contract provisions
- Approved service plans (transit operating plans, routes, fare structures, etc.)
- Project schedule

4. DEVELOP SPECIFICATIONS
Develops project specifications and makes them available for project designers.

☐ **Sample Activities**

+ Review and/or develop new technologies and methods
+ Prepare/rewrite unique and statewide specifications
+ Publish specifications
+ Revise/create standard detail plan sheets

☐ **Sample Inputs**

- Existing specifications
- Design needs
- Product information (specifications and availability)
- Contractor input
- Construction requirements
- Recognized need (potential manpower savings, reduced paperwork)
- External entity input (AGC, FHWA, FAA, etc.)
- Transit vehicle requests
- Employee input (construction inspectors, designers, traffic operations and maintenance)

☐ **Sample Outputs**

- Standard specifications (construction, maintenance, traffic systems, landscape, architectural, transit vehicles and facilities)
- Special specifications and provisions
- Standard detail sheets

5. SECURE PROJECT APPROVALS

Provides appropriate coordination with external entities for effective communication and approvals.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Submit project approval documentation (environmental assessments, traffic control plans, permit applications, hydraulic calculations, etc.) to external entities + Monitor and negotiate project approvals with external entities + Communicate external approvals to appropriate internal personnel	• Design calculations and details (railroads) • Plans & specifications (TNRCC - water pollution abatement plan) • Revisions to standard specifications (FAA) • Environmental assessment (Historical Commission, TX Parks & Wildlife, TNRCC, FHWA, US Fish & Wildlife) • Application for Section 404 permit (Corps of Engineers) • Application for Coast Guard permit (Coast Guard) • Traffic control plan (local government - detour agreements) • Estimate and scope of work for escrow agreement (local government) • Complete plan & specifications for sponsor (FHWA) • Air/highway facility details for clearance and analysis (FAA) • Justification/documentation for design exceptions (FHWA) • Hydraulics calculations/study • Transit operational and capital improvement plans	• Approval letter (FAA, FTA, FHWA) • Approved permits (Section 404, US Coast Guard) • Approved NEPA (National Environment Protection Act) letter • Approved agreement (RR, detour, escrow) • Approved water pollution abatement plan • Approved hydraulic design (FEMA, utilities, flood districts)

Business Processes

```
┌─────────────────────────────┐
│  Deliver Transportation      │
│         Systems              │
└─────────────────────────────┘
        │
        │         ┌────────────────────────────────────┐
        ├─────────│      Prepare for Projects           │
        │         └────────────────────────────────────┘
        │
        │         ┌────────────────────────────────────┐
        ├─────────│      Administer Projects            │
        │         └────────────────────────────────────┘
        │
        │         ┌────────────────────────────────────┐
        ├─────────│      Monitor Projects               │
        │         └────────────────────────────────────┘
        │
        │         ┌────────────────────────────────────┐
        └─────────│      Close Projects                 │
                  └────────────────────────────────────┘
```
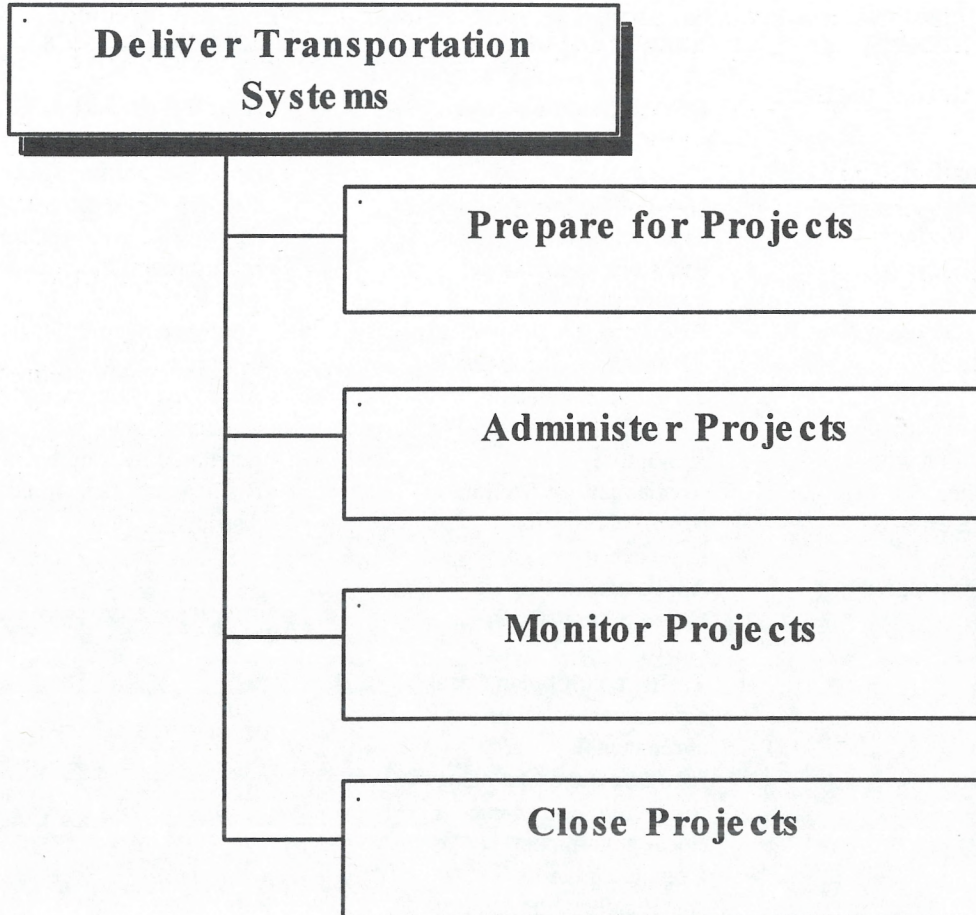
Deliver Transportation Systems

Transforms a fully designed project with detailed plans and specifications to a delivered product (construction projects, maintenance projects, transit facilities and services, landscape projects, traffic control systems projects, airport facilities, etc.). Activities are directed toward project management including quality assurance and quality control. Oversees projects administered by external partners.

1. PREPARE FOR PROJECTS

Prepares project personnel to manage and inspect a project.

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Determines resources	• Awarded contract and	• Assigned resources
+ Review project data	contractor	• Informed public, refined
+ Conduct pre-	• Project data	project data
construction	• Public input	• Project guidelines and
conference	• Available resources	schedule
+ Show project	• Project plans and	• Sampling and testing
+ Coordinate with	specifications	requirements
outside entities		

2. ADMINISTER PROJECTS

Performs project management, material testing and contract compliance functions to achieve quality assurance.

☐ **Sample Activities**

+ Conduct partnering workshops
+ Begin time charges
+ Prepare pay estimates
+ DBE/HUB commitment monitoring
+ Negotiate change orders
+ Monitor payroll compliance
+ Coordination with outside entities
+ Monitor consultant
+ Administer public transportation and aviation projects
  - Provide technical assistance for transit and aviation projects
  - Monitor award of contract/bid (including DBE/HUB participation)
  - Monitor implementation of transit services
+ OJT compliance review
+ EPA compliance review
+ Source materials
+ Independent assurance testing
+ EEO compliance review
+ Traffic control compliance review
+ Test materials
+ Test and administer projects for:
  - Traffic signals
  - Signing
  (e.g., IVHS, railroad crossing, illumination, pavement marking systems)
  - Bicycle and pedestrian facilities

☐ **Sample Inputs**

• Specifications and plans (includes contract document)
• Contractor default information
• Material sources
• Contractors schedule of work
• Contractors payroll
• Daily worksheets
• Statewide bid averages
• Contractors price breakdown
• Equipment rental rate
• SW3P documentation (NOI/NOT)
• (Future) QC/QA documents
• Work order
• List of subcontractors
• Davis Bacon Act
• Change order and supplemental agreement requests
• Pay item quantities and supplemental agreement requests
• Approved bid document
• Federal and state rules and regulations
• Delivery schedule and workplan
• Transit billings and reports (including service schedules and routes)
• Department contract administration policies and guidelines

☐ **Sample Outputs**

• Documentation (of compliance)
• DBE/HUB utilization reports
• Modified contract (change orders)
• Escrow agreement
• Project goals (partnering)
• Work order
• Provide contractor after default to continue the work
• Billing authorizations
• Monthly estimates

3. MONITOR PROJECTS
Performs project inspection and record keeping to provide quality control.

☐ **Sample Activities**

+ Project inspection
+ EPA, OSHA monitoring
+ Test project materials
+ Review project schedules
+ Monitor traffic control
+ Maintain project records
+ Notify public of work
+ Monitor consultant
+ Prepare daily reports
+ Monitor projects
  - Traffic signals
  - Signing
  - IVHS
  - Railroad crossing
  - Illumination
  - Pavement marking systems
  - Bicycle and pedestrian facilities
+ Monitor public transportation and aviation projects
  - Inspect delivered product (transit vehicle, facility improvement, etc.)
  - Review and inspect ongoing progress of construction (facility enhancement)

☐ **Sample Inputs**

• Inspector certification
• "Plans", specifications, testing procedures
• Federal, state, local statutes governing project construction
• Project records & documentation
• Public involvement
• Aviation consultants worksheets
• Inspection of activities
• Track contract/ contractor/project schedule
• Shop drawings
• Goals to reduce engineering costs
• Work performed
• Awarded contractor's project plan
  - Scheduling
  - Responsibilities defined
  - Suppliers
  - Approach
• Delivery schedule or workplan

☐ **Sample Outputs**

• EPA (NOI/NOT)
• Traffic inspection reports
• Data to substantiate claims resolution
• Historical information for use on design/construction of other projects (mix design / innovative methods)
• Completed product/project
• Aviation consultants' documentation/worksheets
• Compliance with contract specifications
• Public information
• Project records
• Improved facility
• Improved mobility
• Work results
• Performance review

4. CLOSE PROJECTS
Performs the final acceptance of a completed project.

☐ **Sample Activities**

+ Perform final inspection
+ Prepare final project records
+ Notify maintenance and public officials
+ Conduct final acceptance of project
+ Close public transportation projects
+ Approve final payment and project inspection
+ Prepare report to Federal Transit Administration

☐ **Sample Inputs**

• Final project records
• Acceptance of project
• Contractor claim information

☐ **Sample Outputs**

• Final project records (e.g., final quantities, notice of termination, traffic control inspection records)
• Acceptance letter
• Completed project (transit facility or facility enhancement)
• Delivery of product (transit vehicle)

Business Processes

```
┌─────────────────────────────┐
│ Maintain and Operate        │
│ Transportation Systems      │
└─────────────────────────────┘
        │
        ├──── ┌──────────────────────────────┐
        │     │ Monitor and Analyze Movement │
        │     │ and Condition                │
        │     └──────────────────────────────┘
        │
        ├──── ┌──────────────────────────────┐
        │     │ Develop Alternatives and     │
        │     │ Solutions                    │
        │     └──────────────────────────────┘
        │
        ├──── ┌──────────────────────────────┐
        │     │ Restore and Improve Movement │
        │     │ and Condition                │
        │     └──────────────────────────────┘
        │
        └──── ┌──────────────────────────────┐
              │ Provide User and Safety      │
              │ Awareness Information to     │
              │ Customers                    │
              └──────────────────────────────┘
```
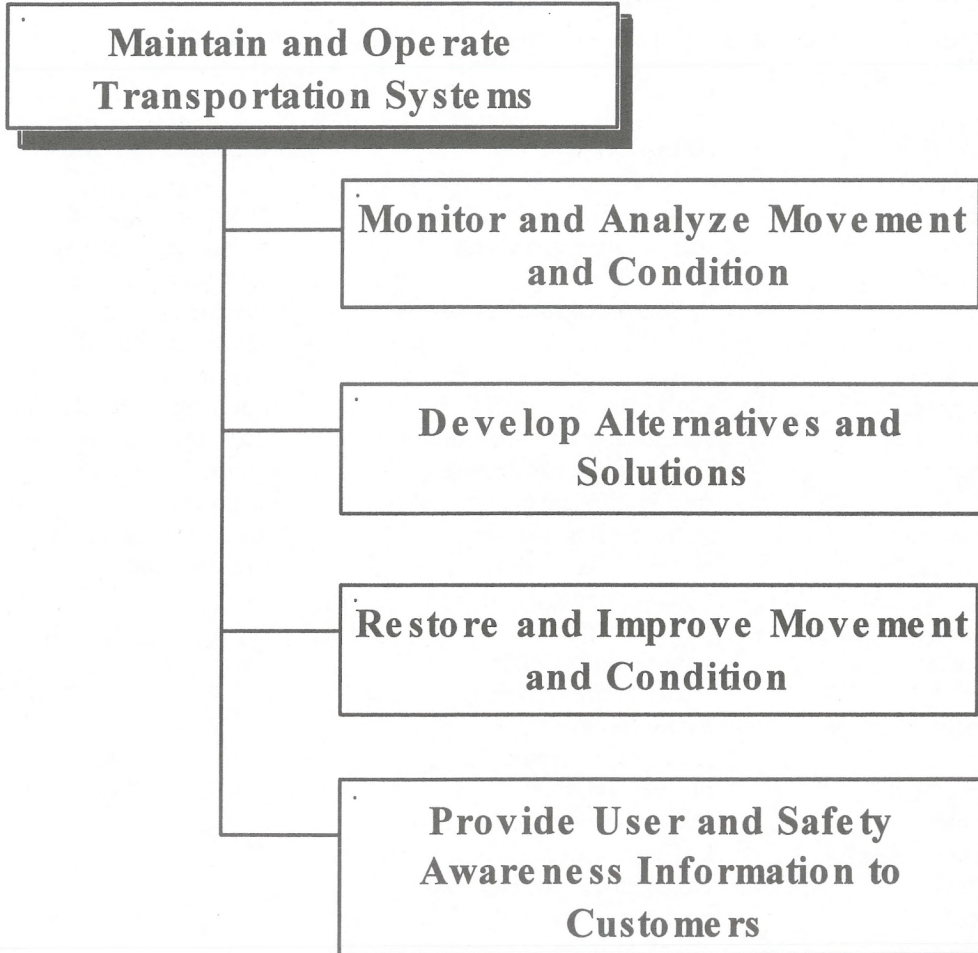
Maintain and Operate Transportation Systems

Keeps people and goods moving safely and efficiently on all modes of transportation networks.

1. MONITOR AND ANALYZE MOVEMENT AND CONDITION

Continually observes, detects and determines causes of disruptions to flow and deterioration of the system.

☐ **Sample Activities**

+ Monitor traffic flow during disasters, emergencies and special events
+ Monitor transit service (route, ridership, etc.)
+ Analyze disruptions impacting or potentially impacting traffic flow
+ Monitor congestion (i.e., video, loops, radio, charts, projections, etc.)
+ Gather information using permanent automated traffic data collection devices
+ Monitor speed zones
+ Analyze railroad crossing inventory data
+ Analyze traffic accident records
+ Analyze deterioration or potential deterioration of transportation facilities and systems
+ Conduct investigations for traffic signal warrants and optimization of signal timing
+ Conduct aviation facility inspections (safety and compliance)

☐ **Sample Inputs**

• Flow conditions (surveillance, detectors, cameras)
• Special needs assessments (bicycle race, parade, special permit loads, etc.)
• Customer complaints/request/needs
• Facility characteristics (traffic accident history and statistics, repair history, pavement data, traffic signal timing and phasing)
• Commercial traffic reporting services (metro traffic & traffic patrol)
• System conditions (i.e., maintenance reports, visual observation, etc.)
• Purpose and limitations of traffic control devices
• Number of ingress/egress points
• Characteristics of traffic generators
• User characteristics (traffic accident history and statistics, speed checks, DWI and seatbelt statistics)

☐ **Sample Outputs**

• Motorist information regarding conditions affecting traffic flow (customer message)
• Identified needed improvements (safety, operational and physical, transit service, aviation)
• Responses to customer inquiries
• Identified traffic safety problem areas

2. DEVELOP ALTERNATIVES AND SOLUTIONS

Identifies and develops solutions and courses of action to address disruption and deterioration.

☐ **Sample Activities**

+ Identify existing and available alternatives and resources
+ Evaluate alternatives (effectiveness and feasibility)
+ Develop work plan (resources, schedule and budget)
+ Conduct local Traffic Management Team (TMT) meetings
+ Administer and or develop public awareness and training programs

☐ **Sample Inputs**

• Available resources (materials, equipment, personnel, budget)
• Identified need (disruption, deterioration and location)
• Department policies and procedures
• Mandates
• Current schedules
• Available options (methods, technology, specifications)
• Desirable level of service (physical and operational)
• Information from TMT meeting discussions
• Resource plan
• Planned improvement projects (individual schedule)
• Identified traffic safety problem areas
• Programs and budget allocations
• Incident management plan

☐ **Sample Outputs**

• Selected alternative(s) and/or solution(s)
• Required resources (materials, equipment, personnel, budget)
• Work plan (schedule, assigned personnel, etc.)
• Improvement opportunities
• Cost estimates for improvements

3. RESTORE AND IMPROVE MOVEMENT AND CONDITION
Preserves or restores system flow and condition to an acceptable level of service.

☐ Sample Activities

+ Assign resources (e.g., personnel, equipment)
+ Perform and document response or repair work
+ Evaluate response or repair effectiveness
+ Repair deteriorated facility
+ Activate lane control signals, message signs, ramp meters, HAR (highway advisory radio)
+ Respond to incidents affecting traffic flow (emergencies, special events, damaged facility, etc.)
+ Minimize congestion through operational improvements (ramp closures, signal timing, etc.)
+ Provide guidance by signing and marking
+ Provide motorist assistance services (e.g., courtesy patrol)
+ Establish direction of flow and hours of operation for HOV lanes
+ Install and operate traffic signal systems
+ Establish speed zones
+ Improve railroad grade crossings (protection and condition)
+ Coordinate special events (e.g., bicycle races)

☐ Sample Inputs

• Incidents
• Customer complaints/requests
• Recurring congestion
• Notification of special events
• Data from surveillance systems
• Highway capacity information
• Weather conditions
• Air quality reports or analyses
• Permits
• Work plan
• Work schedules
• Required resources
• Evacuation routes (hurricane, emergency, etc.)
• Incident Management Plan

☐ Sample Outputs

• Restored or improved physical condition
• Restored or improved flow condition
  - Lane control signals, changeable message signs, ramp meters, HAR (highway advisory radio)
  - Controlled traffic flow for bridges and tunnels
  - Pre-emption of traffic signals for railroad and emergency vehicles
• Installed traffic control devices
• Restricted access at strategic locations
• Alternative routing information
• Responses to customer needs
• Documentation of repairs, methods and procedures and resource utilization
• Modified/increased transit service
• Established speed zone
• Revised/improved Incident Management Plan

4. PROVIDE USER AND SAFETY AWARENESS INFORMATION TO CUSTOMERS

Provides customers with educational and navigational information to effectively and safely utilize transportation systems.

☐ **Sample Activities**

+ Provide information regarding situations affecting traffic conditions (construction activities, special events, incidents, status of HOV lanes, toll roads, weather conditions)
+ Provide guidance through signing, markings and signals, etc.
+ Provide congestion information (radio, etc.)
+ Publish traffic data
+ Provide the Roadway Condition Report (RCR) to customers
+ Provide responses to customers
+ Provide public service announcements
+ Provide customers with information on the operation of the transportation system and on traffic safety
+ Publish aircraft operations data
+ Direct public to other transportation system operators for specific route/scheduling information
+ Provide technical assistance (aviation, transit)
+ Educate transportation providers and customers (conferences, directories, publications)
+ Administer and/or present public awareness and training programs
+ Develop, implement and administer Highway Safety Plan
+ Administer flight instructor recertification clinics and refueling seminars

☐ **Sample Inputs**

• State and federal guidelines or department policies
• Law enforcement requests
• Customer requests and/or complaints
• Technical information on traffic control devices
• Opinions from focus groups
• Roadway Condition Report
• Condition reports from maintenance personnel, law enforcement, residents and travelers

☐ **Sample Outputs**

• New or repaired communication mechanisms (changeable message sign information, signing, marking and signals)
• Current message for Highway Advisory Radio, media and motorist information systems
• Information to public and media
• Educated and satisfied customer
• Reduction in number of complaints
• Positive TxDOT image
• Distributed information
• Delivered safety programs
  - STEP (DWI, seatbelt, speed)
  - Specialized education
  - Seasonal programs for alcohol and drug countermeasures
  - EMS education
  - Motorcycle safety
  - School bus safety
  - Pedestrian/bicycle safety
  - Performance measures/goals
  - Public information program

Business Processes

```
┌─────────────────────────────┐
│  Regulate Transportation    │
│         Systems             │
└─────────────────────────────┘
        │
        │      ┌──────────────────────────────────┐
        ├──────│      Develop Regulations          │
        │      └──────────────────────────────────┘
        │
        │      ┌──────────────────────────────────┐
        ├──────│   Authorize Regulated Activities  │
        │      └──────────────────────────────────┘
        │
        │      ┌──────────────────────────────────┐
        └──────│        Oversee Compliance         │
               └──────────────────────────────────┘
```
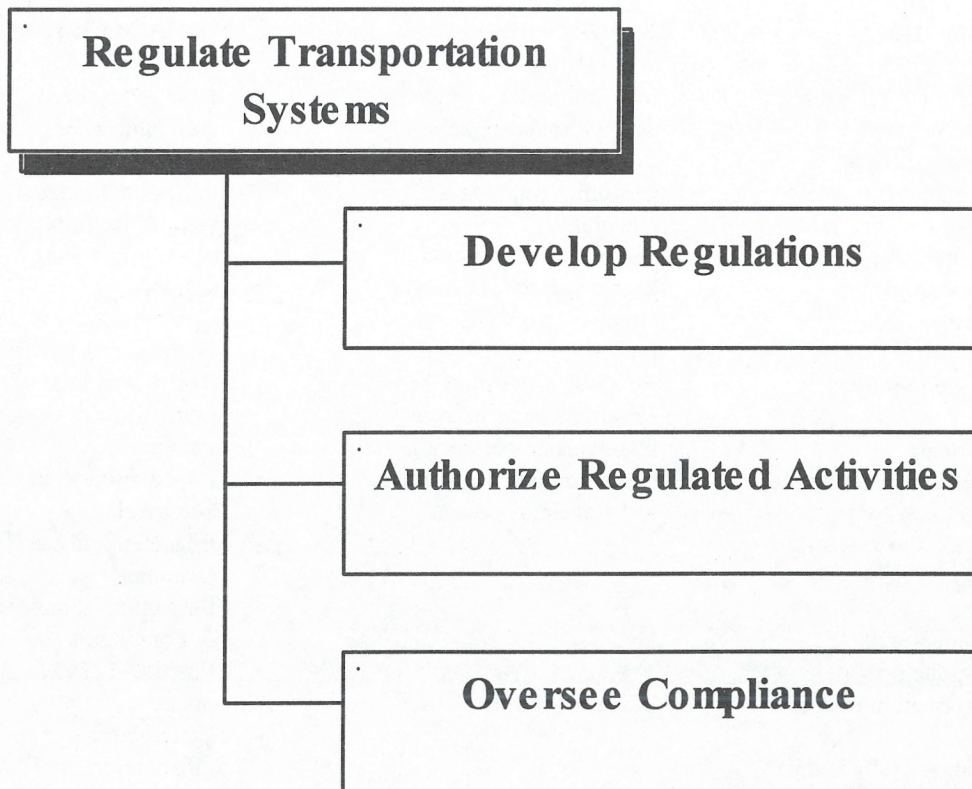
Regulate Transportation Systems

Enforces compliance with regulations relating to the use of the transportation systems and state owned right-of-way by issuing licenses or permits, or as specified by law.

1. DEVELOP REGULATIONS

Develops regulations for an area which the department is responsible or in response to federal or state laws and rules that give the department the authority to govern a particular activity.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Write administrative rules	• Feedback from stakeholders	• Procedures
+ Develop procedures	• Identified resources	• Commission/board action
+ Hold public hearings	• Statutes	• Regulations
	• Legal interpretation	• Department fiscal impact
	• Operational impact	• Stakeholder fiscal impact

2. AUTHORIZE REGULATED ACTIVITIES

Accepts applications and any related fees or bonds, reviews the application and either grants or denies the authorization (e.g., license or permit).

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Review applications + Issue license, permit, title, registration, etc. + Develop list of permit and license holders	• Application for permit, license, title, or registration • Collected fees • External input • Criminal history of applicant from the Department of Public Safety • Required bond	• Issued product/authorization • Collected fees • List of licensees • Files of recorded owners, permit owners, licensees, etc. • Tracking system • Actual installation of driveway, licensed dealer, registered vehicle, permit issued, etc.

3. OVERSEE COMPLIANCE

Ensures that authorized individuals, companies or other entities comply with regulations established by the department. Includes subsequent renewal or cancellation of the authorization.

☐ **Sample Activities**

+ Remove license, permit, etc. previously authorized
+ Maintain records
+ Perform audits and inspections

☐ **Sample Inputs**

- Statutes
- Complaints
- Inventory of what is there or who has been authorized
- Results of physical inspection

☐ **Sample Outputs**

- Results of physical inspection
- Fines/penalties
- Cancellation of authorization
- Renewal of authorization
- Removal of authorization or structure
- Orders for corrective action
- Preservation of the system
- Escrow/bond judgements

Business Processes

```
┌──────────────────────────────┐
│   Fiscal Services            │
└──────────────────────────────┘
              │
              ├──────┌────────────────────────────────────┐
              │      │       Forecast Financial Needs      │
              │      └────────────────────────────────────┘
              │
              ├──────┌────────────────────────────────────┐
              │      │   Prepare, Monitor and Adjust       │
              │      │            Budget                   │
              │      └────────────────────────────────────┘
              │
              ├──────┌────────────────────────────────────┐
              │      │   Provide an Accounting of Fiscal   │
              │      │            Resources                │
              │      └────────────────────────────────────┘
              │
              ├──────┌────────────────────────────────────┐
              │      │        Collect Receivables          │
              │      └────────────────────────────────────┘
              │
              └──────┌────────────────────────────────────┐
                     │         Make Payments               │
                     └────────────────────────────────────┘
```
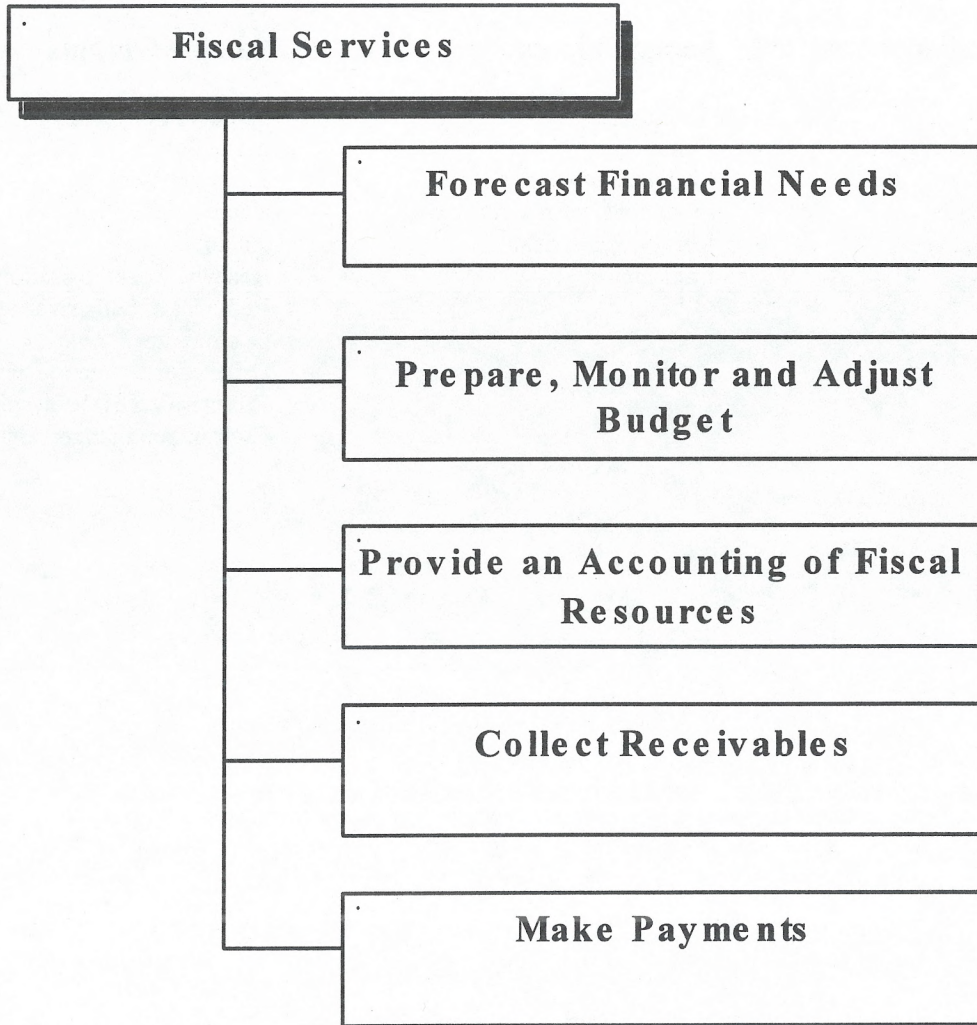
Fiscal Services

Determines financial needs and manages the department's financial resources.

1. FORECAST FINANCIAL NEEDS

Identifies all trends, impacts, constraints and other factors that will affect the department's future financial needs and effectively quantifies those needs.

☐ **Sample Activities**

+ Review historical spending
+ Review new legislation
+ Analyze industry trends
+ Review management goals and plans
+ Predict budget requirements (quantitative models)

☐ **Sample Inputs**

• Comptroller's allowed $ (caps)
• Available funds (federal & state, private, public, local govt, MPO matching)
• Models (econometrics)
• Historical data - past expenses
• Biennium constraints
• Business funding needs:
  - transportation, staffing, supplies, travel
  - funding needs of all other business areas
• Current and projected time frames
• Strategic plans, Project Development Plan, Transportation Improvement Program

☐ **Sample Outputs**

• Estimated dollars available
• Estimated spending needs
• "What if" analysis information (contingency plans)

2. PREPARE, MONITOR AND ADJUST BUDGET

Provides for the allocation of money to be spent towards planned expenditures necessary for the department to perform according to plans. Also provides for monitoring and adjusting the allocation of money between budget cycles to ensure the department continues to perform according to plans.

☐ **Sample Activities**

+ Review budget requests
+ Allocate dollars
+ Monitor spending vs. budgeted
+ Increase budgeted amounts

☐ **Sample Inputs**

• Prepare: Budget requests from all business areas
• Historical data (performance)
• Legislative mandates
• Sr. Mgt. Team mandates
• Monitor: approved budget and cash (voucher) expenditures

☐ **Sample Outputs**

• Validated budget
• Budget adjustments
• Legislative appropriations request (LAR)

3. PROVIDE AN ACCOUNTING OF FISCAL RESOURCES

Tracks and analyzes the department's use of taxpayers' dollars in order to facilitate decision- making and ensure fiscal accountability.

☐ **Sample Activities**

+ Monitor balances
+ Tie payments/receipts to projects/activities
+ Tie equipment/ materials usage & labor to projects/ activities
+ Ensure compliance with legislation & policies

☐ **Sample Inputs**

• Allocated dollars ($)
• Salary & labor usage
• Equipment usage
• Material usage
• Receipts, EOS, MES, MSMS
• Voucher payments
• Receipts
• Project information
• Fund sources

☐ **Sample Outputs**

• Fund balances
• Cost of doing business
• Billings, payables
• 100 day report
• Accounts, "the books"
• Information needed by responsible managers

4. COLLECT RECEIVABLES

Collects all financial resources owed or entitled to the department.

□ **Sample Activities**

+ Bill for receivables
+ Process claims
+ Record receipts
+ Collect fees

□ **Sample Inputs**

- Vouchers
- Damage claims
- Miscellaneous claims
- Cash receipts
- Fees
- Fund sources

□ **Sample Outputs**

- Bills
- Receipts

5. MAKE PAYMENTS

Pays and records expenditures owed or obligated by the department to other entities and to employees.

☐ **Sample Activities**

+ Pay vendors, contractors, employees, government entities
+ Authorize payments

☐ **Sample Inputs**

• Account codes
• Invoices
• Receipt of goods or services
• Authorization for payment
• Test results for some materials and products

☐ **Sample Outputs**

• Vouchers
• Warrants or direct deposits
• Reports

Business Processes

Contracted Services

Prepare for Bids and Proposals

Prepare, Award and Execute Contracts

Provide Administrative Contract Support
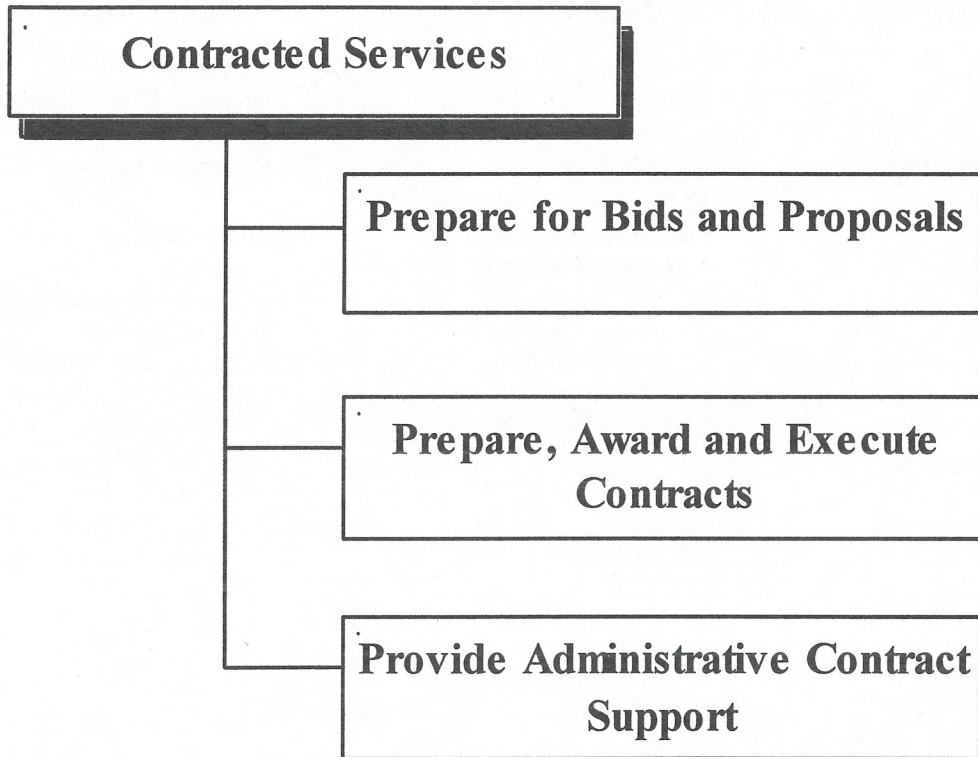
Contracted Services

Guides and supports the various department functions responsible for project management and oversight of contracted services.

1. PREPARE FOR BIDS AND PROPOSALS

Prepares final bid proposals and requests for proposal, notifies potential candidates of project availability and ensures candidates are qualified to perform proposed projects.

☐ **Sample Activities**

+ Define contractor qualifications
+ Review contract/project specifications
+ Recommend changes to specifications
+ Assemble bid package
+ Notice to contractors
+ Pre- bid conference
+ Advertising
+ Revisions
+ Issue proposals
+ Pre-qualifications
+ Set HUB/DBE goals
+ Notify consultant
+ Verify clearance (environmental, ROW, utility, escrow)
+ Print and issue proposals

☐ **Sample Inputs**

• Plans & specifications (PS&E and proposal)
• Pre-qualification information (i.e. Contractor Bid System - CBS)
• Federal, state and local statutes governing bid preparations
• Determine DBE/HUB goals
• Order for letting
• Contractors request for proposal
• List waived projects
• Vendor qualifications
• Contract/project specifications
• Advertisements
• Bidder list
• List of available HUBs and DBE s
• Established provider lists (e.g., title companies)
• HUB/DBE requirements (goals)
• Other legislative requirements

☐ **Sample Outputs**

• Completed proposal to contractor
• Affidavit of publication
• Informed bidders
• Valid bid prices
• DBE/HUB availability
• Informed public
• Qualified bidders
• Approved vendor lists
• Request for proposal
• Recommended changes to contract/project
• Proposal packet specifications

2. PREPARE, AWARD AND EXECUTE CONTRACTS

Determines the most qualified candidate based on submitted bids and proposals, prepares and awards the contract and ensures that all contract requirements are met before work begins.

☐ Sample Activities

+ Accept proposals
+ Accept bids
+ Evaluate proposals
+ Calculate low bid
+ Request consent to award from Commission
+ Notify selected contractor/consultant
+ Negotiate contract & execute (sign)
+ Receive bids
+ Open /read bids
+ Analyze bids
+ Recommend award
+ Notify sponsor
+ Commission award
+ Bonding & insurance
+ Check for collusion
+ Check for unbalanced bid and quantity errors
+ DBE approval
+ Contract assembly
+ Issue work order
+ Default/Re-award
+ Distribute contract
+ Identify contract requirements
+ Review contract for compliance
+ Construct estimate (CIS)
+ Review specifications
+ Write contract provisions
+ Review with legal counsel

☐ Sample Inputs

• Contractor bid submission
• District/Sponsor recommendation
• Bid prices
• Proposal guarantee
• Negotiated contract information
• Federal, State and local statutes governing selection of contractor
• Recommendation to accept/reject apparent low bid
• Coordination with outside funding sources
• Insurance certificate
• FHWA approval
• Planned HUB/DBE usage by contractor (commitment)
• Contract Documents
• Federal, State, Local statutes that govern contract execution
• Estimated quantities and unit process
• Bids and proposals
• Proposals
• Commission approval

☐ Sample Outputs

• Identify apparent low bidder
• Bid tabulations
• Recommendations for award
• Certification to FHWA
• Work order
• Executed bond
• Signed contract
• Request for consent to award
• Defaulted contracts
• Project Budget for monitoring project expenditures
• Request for difference for additional outside funds (if needed)
• Estimate (CIS)
• Executable contract/Purchase Order
• Minute Order & other reports and notifications
• Project/contract specifications
• Type and scope of Work
• Quantity
• Location
• Duration
• Justification (need vs. value, feasibility)
• Relative urgency
• Bid Items
• Plans (service projects)
• Purchase-of-service request
• User Requests

3. PROVIDE ADMINISTRATIVE CONTRACT SUPPORT

Advises, recommends and assists project and contract managers with responsibilities related to contract administration (e.g., contract revisions, subcontractor approvals, claims resolution).

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Process billings	• Billing statements	• Approved insurance certifications
+ Process insurance & claims	• Billing authorizations	
+ Write supplemental agreements	• Insurance policies	• Contract recommendations
	• Insurance claims	• Negotiated supplemental agreements
+ Provide guidance on contract issues	• Project changes	
	• Change Orders	• Modified contract (change orders)
+ Collect required documents (insurance certificates, HUB/DBE payrolls, etc.)	• Supplemental Agreements	
	• Project Review (Inspection results)	• Escrow agreement
		• Project goals (Partnering)
+ Issue notice to begin work	• Final estimate	• Provide contractor after default to continue the work
	• FHWA review & recommendations	
+ Closeout contract	• TxDOT costs	• Payment authorizations
+ Resolve claims/disputes	• Disputes and claims	• Claims and dispute resolutions
+ Execute/Approve change orders		
+ Subcontract approval		
+ Default support		
+ Issue work order		

Business Processes

```
┌─────────────────────────────────────────┐
│  Human Resources                         │
└─────────────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        ├───────┤  Analyze Staffing Needs           │
        │       └───────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        ├───────┤  Hire Workers                     │
        │       └───────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        ├───────┤  Develop and Retain Staff         │
        │       └───────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        ├───────┤  Provide Benefits                 │
        │       └───────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        ├───────┤  Design and Deliver Training      │
        │       └───────────────────────────────────┘
        │
        │       ┌───────────────────────────────────┐
        └───────┤  Promote Safe Work                │
                │  Environment                      │
                └───────────────────────────────────┘
```
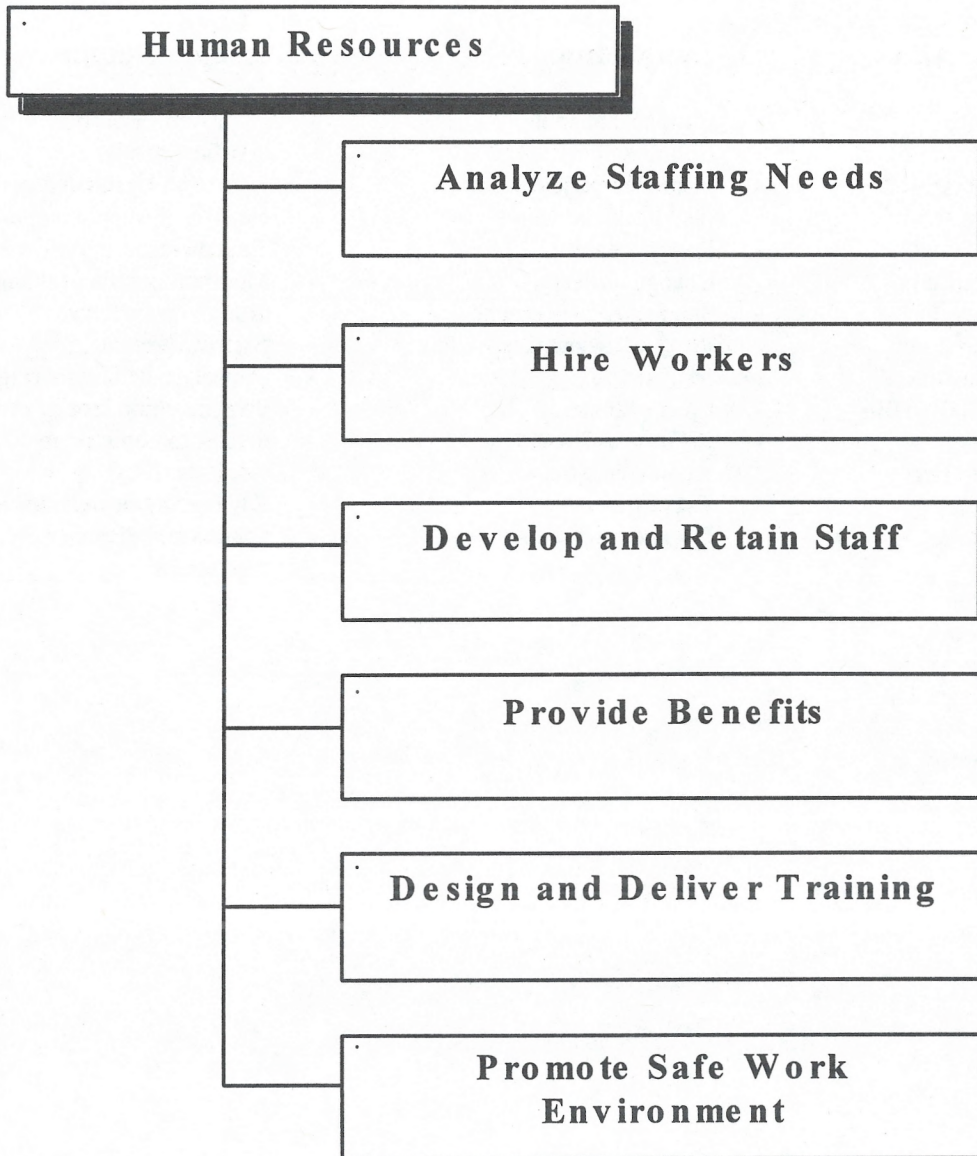
Human Resources

Addresses the department's needs by effectively hiring, managing and supporting human resources.

1. ANALYZE STAFFING NEEDS

Forecasts, plans and allocates classified positions based on skill and workload needs identified by all business areas.

☐ **Sample Activities**

+ Identify positions
+ Classify positions
+ Evaluate legislative impact
+ Forecast human resource needs

☐ **Sample Inputs**

- Current & projected workload (projects and functions)
- Type of work performed (& dollars needed)
- Inventory of workforce (& dollars needed)
- Historical info about workforce
- Optimum staffing levels - number of people typically needed per position
- Legislation
- Work statistics - .information needed to do projected workloads
- Workload measures (time per task/job)
- Strategic plans, Project Development Plan, Transportation Improvement Program
- Budget
- Demographic, EEO, and census data
- Job market analysis (what skills, or disciplines are/are not available in the market, and what is the market value of each skill or discipline?)

☐ **Sample Outputs**

- Cost efficient workforce
- Optimum staffing
- Diverse workforce
- Staffing plans
- Fair classification & compensation levels (e.g., multiple roles in small districts)
- Staff positions determined by requirements of our mission

2. HIRE WORKFORCE (Staff/Personnel)
Recruits and hires qualified individuals to meet the department's workforce needs.
Includes the induction and orientation of new employees.

☐ **Sample Activities**

+ Advertise (post) positions
+ Recruit potential employees
+ Screen candidates
+ Select employees
+ Conduct TxDOT orientation

☐ **Sample Inputs**

• Staffing plan results
• Specifics about individuals to be hired
• Standards for screening process
• Openings generated from "Analyze Staffing Needs"
• Job applications
• Information about potential applicants

☐ **Sample Outputs**

• Hired Employees
• Highly qualified, diverse workforce
• Improved applicant pool
• Benefit: improved public image

3. DEVELOP AND RETAIN STAFF

Protects the department's investment in its employees by promoting individual career growth through systematic professional development and ensures the availability of career opportunities.

☐ **Sample Activities**

+ Educational assistance
+ Grievance procedures
+ Career planning
+ Performance evaluation
+ Compensation
+ Cross train employees
+ Identify training needs

☐ **Sample Inputs**

- Performance Plans - performance standards
- Training needs
- Employee requests (about goals, training, education, development, salary)
- Job requirements / description
- Exit interviews
- Employee job performance
- Employee benefits packages
- Working conditions
- Employee KSAs
- Professional development (i/o) (Progress)

☐ **Sample Outputs**

- Merits
- Raises
- Employee evaluations - assessment against standards
- Changes in employee status
- Re-classified employees
- Training needs
- Satisfied / qualified employees
- Increased productivity
- Mutual understanding of job requirements
- Improved communication

4. PROVIDE BENEFITS
Ensures the availability of an array of benefits to all employees.

☐ **Sample Activities**

+ Provide insurance, deferred compensation
+ Workers compensation
+ Educational assistance
+ Explore new benefits programs
+ Employee assistance programs
+ Employee retirement system
+ Develop plans..
   mandated
   allowed
+ Inventory benefits
+ Relocation assistance

☐ **Sample Inputs**

• Legislation
• "Allowed" Benefits - analyze information about feasibility: cost, desirability
• "Mandated" Benefits program characteristics and parameters related workforce characteristics and impact

☐ **Sample Outputs**

• Benefits implementation plan
• Strong retirement system
• Good public image

5. DESIGN AND DELIVER TRAINING

Develops, acquires or delivers training to the employees based on needed skills and individual career growth.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Education assistance	• Employee training needs (from evaluation process)	• Trained employees
+ Internal (in-house training)	• New job function training needs	• Good morale
+ External (contracted or off-site)	• Internal/external training alternatives (information) trainers (internal available with experience)	• More knowledgeable & flexible workforce
+ On-the-job training	• Facilities (internal, environmental, equipment)	• Increased productivity
	• Cost (travel, geography)	• Professional development
	• Time (travel, geography)	• Responsive training curricula
	• Catalog	• Higher quality product (transportation system)
	• Available media (e.g., videoconferencing, video tape, etc.)	
	• Available funds	
	• College education program & master's program	

6. PROMOTE SAFE WORK ENVIRONMENT
Provides for procedures and education that promote a safe work environment for all employees.

☐ **Sample Activities**

+ Hazardous materials awareness training
+ Prevention programs
+ Substance abuse training
+ Defensive driving
+ Analyze accidents
+ Inspect job sites

☐ **Sample Inputs**

- Hazards defined (federal & state legislation and individuals)
  -Materials
  -Facilities
  -Tasks/work functions
- History of (Inquiries) unsafe incidents
- Workman's comp statistics
- Legislation (OSHA requirements, ADA)
- Safety data
- Industry standards

☐ **Sample Outputs**

- Committee recommendations
- Rehabilitated employee
- Safe workplace
- Improved public image
- Safer transportation systems
- Increased productivity
- Less down time, saved money
- Training needs (identified)

Business Processes

```
┌──────────────────────────────────┐
│ Information Services              │
└──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        ├───────│      Analyze Information          │
        │       │      Technology Needs             │
        │       └──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        ├───────│   Provide Information Resource    │
        │       │            Standards              │
        │       └──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        ├───────│  Provide and Support Enabling     │
        │       │  Information Technologies         │
        │       └──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        ├───────│      Develop and Support          │
        │       │         Applications              │
        │       └──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        ├───────│     Perform Information           │
        │       │  Communication Services           │
        │       └──────────────────────────────────┘
        │
        │       ┌──────────────────────────────────┐
        └───────│      Provide Information          │
                │           Technology              │
                │  Consulting/Customer Services     │
                └──────────────────────────────────┘
```
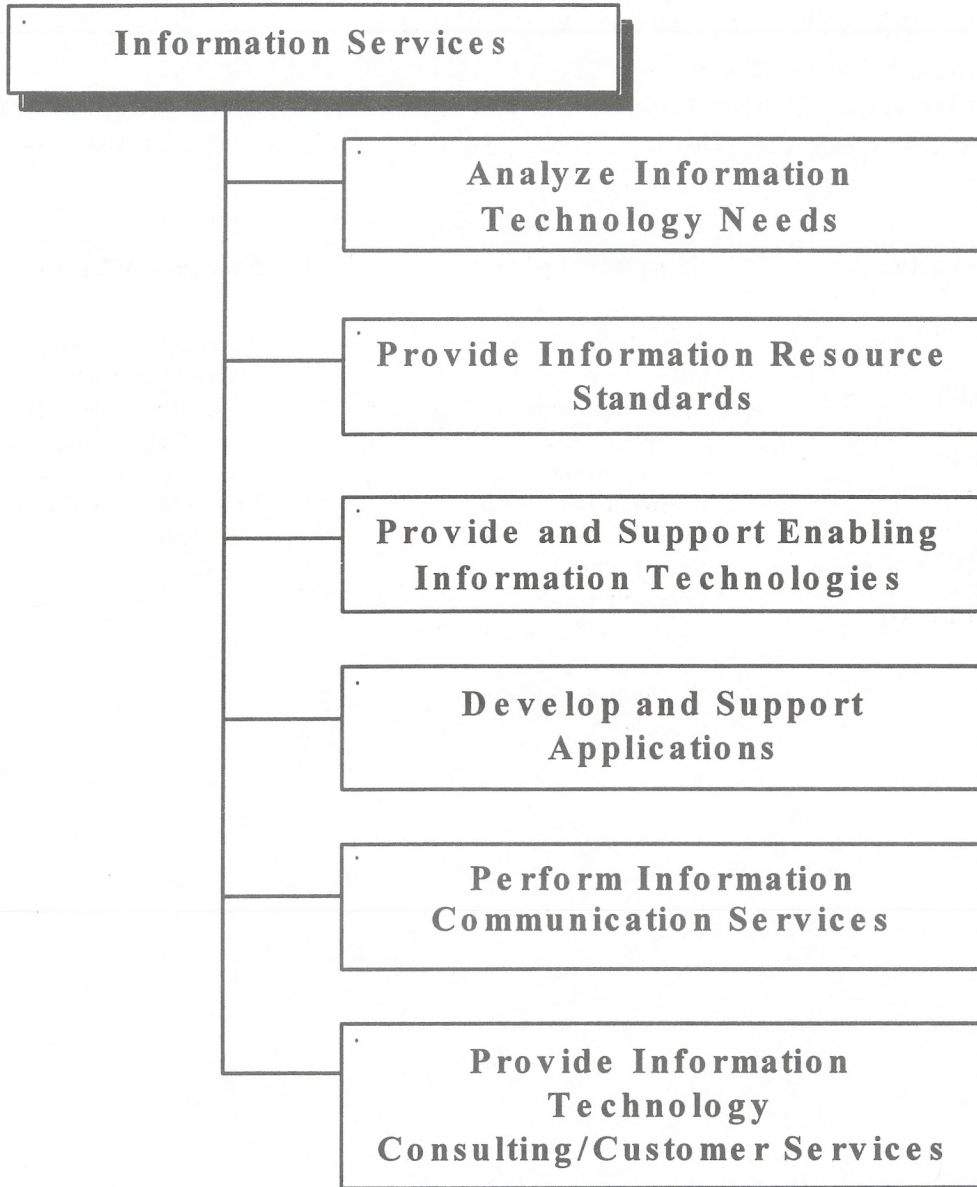
Information Services

Enables and supports TxDOT's effective use of information as a business resource including services for communicating information.

1. ANALYZE INFORMATION TECHNOLOGY NEEDS

Analyzes and plans information resources based on the department's business requirements. Develops alternative applications and data strategies, technology solutions and resource requirements (e.g., skills, workload, services, equipment, materials and dollars).

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Identify types of work to be done + Estimate work load + Estimate dollars + Identify IT skills needed to accomplish workloads + Identify hardware, software needs + Develop IR operating plans	• Department's strategic plan • IR strategic plan • User requests • Current inventory (hardware, software, people) • Budget limits • Legislation • Existing and available enabling technology • Traffic control system needs	• Alternative solutions • Priority information • Updated IR strategic plan • Tactical plans including cost benefit analysis • BOP ready for DIR approval

2. PROVIDE INFORMATION RESOURCE STANDARDS

Assesses, develops and implements information resource-related standards. These standards facilitate the effective use of data, applications and technologies and consistent structured design practice.

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Assess industry directions	• Mandates	• Procedures/manuals
+ Review existing and future architectures	• Policy	• Standards
+ Develop standards	• Business practices	
	• IR strategic plans	
	• Better methods identified	
	• Benchmarks	

3. PROVIDE AND SUPPORT ENABLING INFORMATION TECHNOLOGIES
Researches, develops and implements technologies that support the department's use of information within established architectures.

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Research new technologies + Implement new technologies (e.g., GIS, UNIX, imaging,RDBMS) + Provide multimedia capabilities (e.g., audiovisual, video conferencing, imaging, telephone/voice) + Provide computerization capabilities (e.g., LAN, WAN) + Maintain current technologies	• Information needs • Communication needs • User requests for product or assistance • Current technology • Standards • Products • Traffic control system needs	• Implemented technology (e.g., LAN) • Upgrades • Purchase requests • Assistance, satisfaction and resolved needs • Implemented traffic management and control hardware and software

4. DEVELOP AND SUPPORT APPLICATIONS

Develops, enhances, preserves and provides production support for application systems within established architectures to effectively support department business requirements.

☐ **Sample Activities**

+ Develop & implement new applications
+ Enhance existing applications
+ Provide production support
+ Provide user assistance
+ Assist in training users

☐ **Sample Inputs**

- Work requests (user)
- Outputs from "Analyze Information Resource Needs"
- Standards
- Implemented technology
- Senior management team, federal, and state mandates (deadlines and user requirements)

☐ **Sample Inputs**

- New applications
- Enhancements
- Maintenance/production support

5. PERFORM INFORMATION COMMUNICATIONS SERVICES

Enables effective information transfer within the department and between the department and external entities.

☐ **Sample Activities**

+ Mail Distribution
+ Print shop operations
+ Publishing services
+ Telephone repair
+ Switchboard operation
+ Records retention

☐ **Sample Inputs**

• Distribution lists
• Directories
• Contingency plan
• Mail
• Phone calls
• Distributions/communications
• User requests
• Documents
• Records

☐ **Sample Outputs**

• Organized, easily retrievable procedures, work products, processes & records (archives)
• Organized directories of recipients
• Published documents
• Communicated information
• Standard recipient checklists
• Library (bulletin board)

6. PROVIDE INFORMATION TECHNOLOGY CONSULTING/CUSTOMER
SERVICE   Diagnoses and solves problems, assists and instructs technology users and facilitates vendor assistance.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Problem analysis + Problem solving + Help desk + Hotline operation + Call the vendor + Technical consulting	• User complaints, questions, requests, problems • Technology & application status • Responsibilities for information technologies • Functional directory • Vendor communication	• Solved problems • Problem log/status • Vendor communication

Business Processes

```
┌─────────────────────────────────┐
│         Real Property           │
└─────────────────────────────────┘
         │
         │      ┌──────────────────────────────┐
         ├──────│  Analyze Internal Facility and │
         │      │     Real Property Needs        │
         │      └──────────────────────────────┘
         │
         │      ┌──────────────────────────────┐
         ├──────│   Obtain Real Property and    │
         │      │        Improvements           │
         │      └──────────────────────────────┘
         │
         │      ┌──────────────────────────────┐
         ├──────│   Provide Internal Facilities │
         │      │                               │
         │      └──────────────────────────────┘
         │
         │      ┌──────────────────────────────┐
         └──────│   Manage Real Property and    │
                │         Facilities            │
                └──────────────────────────────┘
```
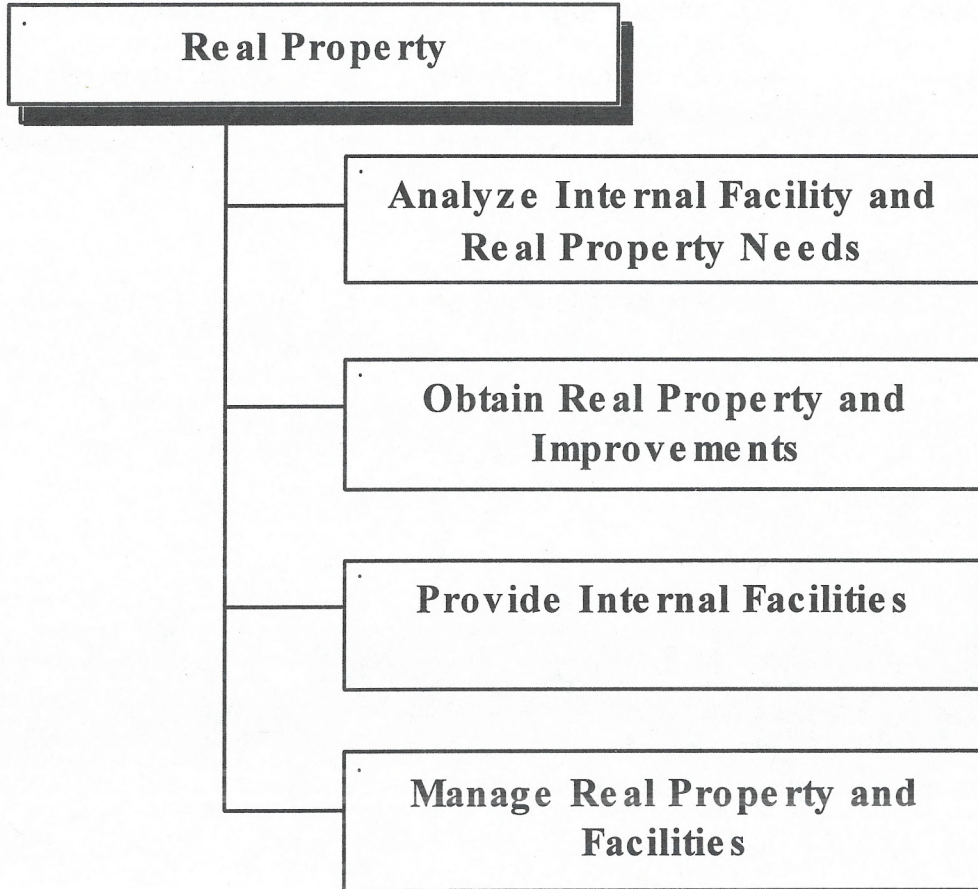
Real Property

Acquires, manages and disposes of buildings and land for the transportation system and for the department's employees and assets.

1. ANALYZE INTERNAL FACILITY AND REAL PROPERTY NEEDS

Identifies and analyzes land and building needs for effectively housing and supporting the employees and property of the department. (Note: Real property needs for the transportation system are identified in the "Design Transportation Systems" business area.)

☐ Sample Activities	☐ Sample Inputs	☐ Sample Outputs
+ Review user requests + Identify site alternatives	• Local ordinance & permit requirements • Age/condition of current property recommended sites and facilities • Human resource needs (user request for facilities, office and parking space) • Technology needs: facilities to house, temperature, power, communications • Additional functional needs (internal/external) • Legislative mandates (ADA, OSHA) • Environmental mitigation (EPA, TNRCC) • Needs generated by natural disaster • Contracts & agreements with local governments to buy property "city/county contractual agreements" • Requests for emergency lease space • Financial analysis (internal to the process) -Number employees -Facility schematics	• Specifications on land and/or facilities to be acquired (e.g., spoil sites acreage, parks, wetlands and alternatives) • Identification of alternatives and recommended sites and facilities • Funding needs

2. OBTAIN REAL PROPERTY AND IMPROVEMENTS

Acquires land and improvements to serve the transportation system and to house TxDOT employees and property.

☐ **Sample Activities**

+ Appraise property
+ Get insurance
+ Survey property
+ Make offer
+ Consider lease options
+ Condemnation
+ Present legal cases
+ Approve conveyance document

☐ **Sample Inputs**

- Output from "Determine & Analyze Transportation Needs" process
- Appraisals
- Surveys
- Property owner input
- Budget
- Letter of authority (4 levels)
- Title search (owner(s) easements, etc.)
- Negotiation options (donations, easements, leasing, exchanges, etc.)
- Title insurance
- Condition of property (underground tank leakage, etc.)
- Improvements on property
- Court rulings
- Donations options
- Property maps and deeds
- Title information
- Contract for appraisers
- Design information
- Contracts with cities and counties
- Letter of Authority from FHWA
- Environmental clearance
- Relocation plan for people/businesses
- Project release
- Airport layout plan

☐ **Sample Outputs**

- Accepted offer
- Deeds & other legal documents
- Judgments for condemned property
- Cleared property (of occupants)
- Established values
- Signed deed/acquired land
- Relocated people and business
- Improvements removed: buildings, underground storage tanks
- Final map showing recording data

3. PROVIDE INTERNAL FACILITIES

Develops plans and specifications for construction or renovation of facilities for department employees and property. Includes overseeing the construction, remodeling or demolition of facilities.

☐ **Sample Activities**	☐ **Sample Inputs**	☐ **Sample Outputs**
+ Define contract requirements for building internal facilities	• Building, site plans, schematics	• New or updated building, site plans, schematics
+ Administer service contracts	• User requests	• Project/contract specifications
+ Remodel internal facilities	• Service contract	• Funding requirements
+ Demolish internal facilities	• Project plans	
	• Legislative mandates (ADA, EPA, etc.)	
	• Technology specifications	
	• Utility information	

4. MANAGE REAL PROPERTY AND FACILITIES (internal & transportation system)

Maintains, protects and manages land and improvements that house department employees and property. Includes real estate activities and transactions related to transportation system parcels and managing land and facilities leased by the department to serve the public and the department's internal needs.

☐ Sample Activities

+ Define service contract requirements
+ Administer service contracts
+ Maintain internal (employee) facilities (i.e., routine maintenance)
   -Mow internal (employee) facilities
   -Update (maintain) signs for internal (employee) facilities
+ Manage surplus land & facilities
+ Carry out EPA guidelines
+ Negotiate multiple use agreements
+ Manage sewage treatment plants
+ Manage water supply/storage systems
+ Make legislative modifications/special programs (such as ADA, asbestos removal, etc.)
+ Lease mineral rights
+ Pay utility bills

☐ Sample Inputs

• Legal mandates (e.g., ADA, asbestos, ISTEA, etc.)
• Utility bills (energy usage)
• Condition of facility & property
• Maintenance & preventative maintenance guidelines
• Lease agreements & terms
• Multiple use agreements
• Utility service agreements
• Revenue enhancement mandates (Maximize revenues of what we own)
• Space allocations considerations
• Building/site plans
• Security needs
• Property limits (rights, property lines)
• Wetland & environmental mandates (storm water runoff) & needs
• Permit requirements (e.g., waste water, utility systems, driveway)
• Utility information (accommodation policies, costs & effects)
• Location of utilities (current/future)
• Interagency agreements
• Public & private requests for property usage
• Contract terms

☐ Sample Outputs

• Mineral leases
• Sign permits
• Contract requirements (for services, interagency, etc.)
• Lease agreements
• Deeds for disposal
• Facilities (safe, comfortable workplace)
• Revenue
• Multiple use agreements (driveways, railroad, utilities, joint use parcels)
• Expenses, sold property

Business Processes

```
┌─────────────────────────────────┐
│  Equipment, Materials and       │
│  Supplies                       │
└─────────────────────────────────┘
       │
       │    ┌──────────────────────────────────┐
       ├────│  Analyze Equipment, Material     │
       │    │  and Supply Needs                │
       │    └──────────────────────────────────┘
       │
       │    ┌──────────────────────────────────┐
       ├────│  Purchase Equipment, Materials   │
       │    │  and Supplies                    │
       │    └──────────────────────────────────┘
       │
       │    ┌──────────────────────────────────┐
       └────│  Manage Equipment, Materials     │
            │  and Supplies                    │
            └──────────────────────────────────┘
```
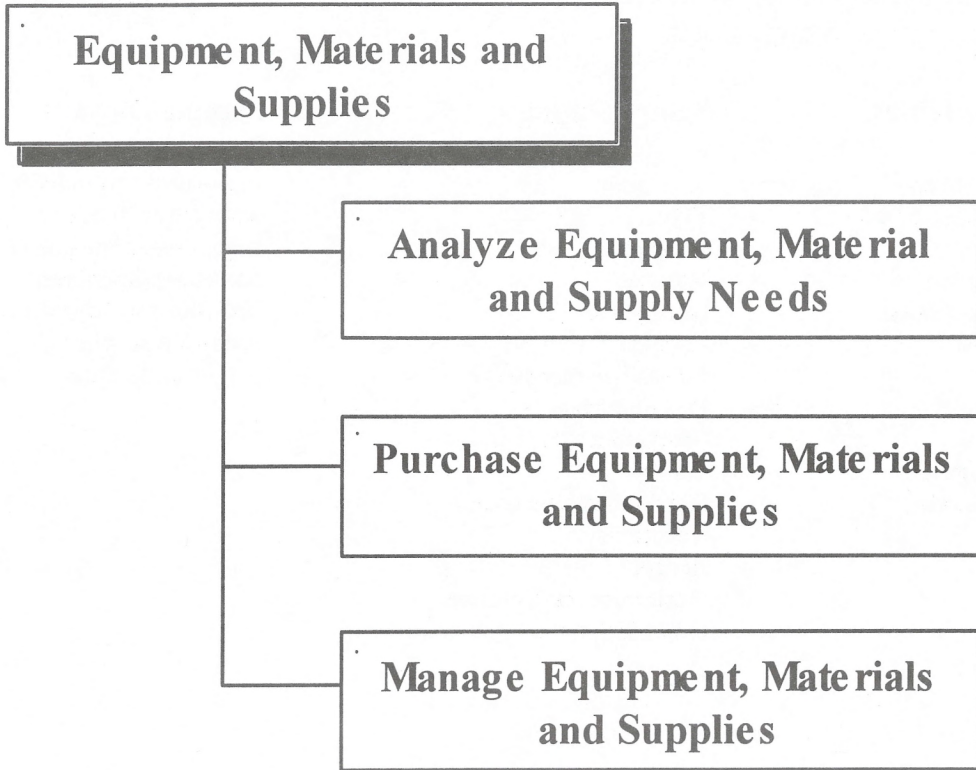
Equipment, Materials and Supplies

Analyzes needs, procures, manages and disposes of equipment, materials and supplies.

1. ANALYZE EQUIPMENT, MATERIAL AND SUPPLY NEEDS

Analyzes alternative acquisition methods, markets, vendors and products for department equipment, material and supply needs.

☐ **Sample Activities**

+ Analyze equipment procurement needs and requests
+ Analyze alternatives
+ Develop procurement guidelines and specifications
+ Ensure policy compliance
+ Ensure legislative mandates are met

☐ **Sample Inputs**

- User needs
- Types
- Frequency
- Volume
- Justification
- Equipment utilization
- Legislative mandates
- Environmental
  -Recycling
  -Safety
- Standardization needs
- Vendor lists
- Budget
- Equipment performance and reliability

☐ **Sample Outputs**

- Equipment, material & supply specifications
- Procurement method & procedure guidelines
- Justification documents
- Available suppliers
- Approved funding

2. PURCHASE EQUIPMENT, MATERIALS AND SUPPLIES

Procures equipment, materials and supplies for all areas of the department (includes leased equipment).

☐ Sample Activities

+ Advertise for bids
+ Review proposals
+ Select vendors & products
+ Prepare purchase orders
+ Monitor acquisition time

☐ Sample Inputs

- Specifications
- User request
- List of available sources
- Suplier list
- HUB/DBEs
- Bid Proposals
- Funding
- Legislative requirements

☐ Sample Outputs

- Advertisement for bid
- Purchase order
- Product (with any related agreements)
- Goals and mandates met
- Obligated expenditures (encumbrance)

3. MANAGE EQUIPMENT, MATERIALS AND SUPPLIES
Inventories, distributes, protects or maintains department equipment, materials and supplies.

☐ Sample Activities

+ Fleet management
+ Establish and implement preventative maintenance guidelines
+ Track receipt of equipment, materials, and supplies
+ Inventory equipment, materials, and supplies
+ Distribute to user ("custodian")
+ Monitor equipment utilization
+ Monitor repair time

☐ Sample Inputs

- User satisfaction (cost/benefit ratio, etc.) and recommendation.
- Lease specifications and options: (dates for upgrades, renewals, cancellations, new prices, etc.)
- Receiving reports
- Utilization reports - use/cost
- OSHA safety regulations
- Legislative mandates
- Maintenance
  -Preventative maintenance (scheduled) guidelines and schedules
  -Emergency maintenance (unscheduled, remedial)
  -Warranty, service and lease agreement expiration dates and specifications
  -Cost history
- Condition of property
- Inventory (property item, custodian, location)
- Inspections

☐ Sample Outputs

- Updated inventories
- Reports
  - Quarterly updates, etc.
  - State property accounting
- Turnover rates, shelf life
- Usage rates
- Shop Rates (costs to repair)
- Service contract specifications (e.g., oil changes, tires, leased items)
- Commercial equipment repair
- Repair time report
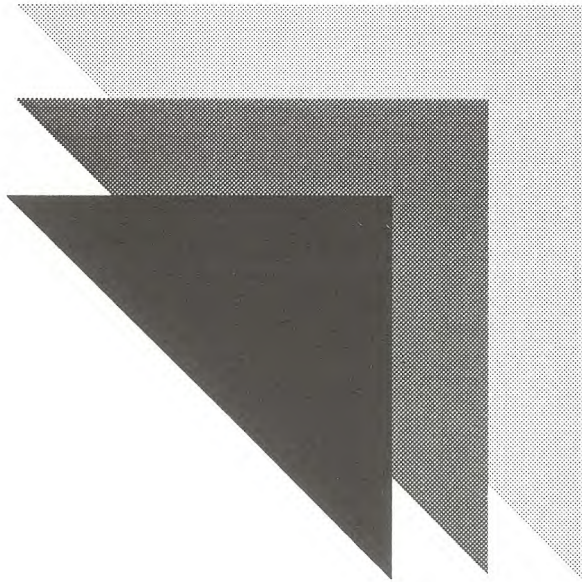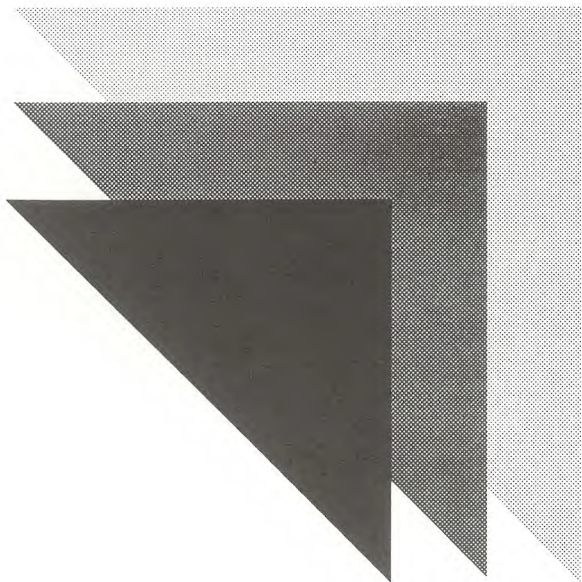
APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN
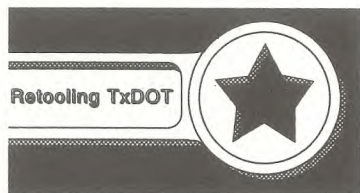
Retooling TxDOT

Texas Department of Transportation

TxDOT Business Model - IEF Depiction

The Retooling business analyst team used a software modeling tool, Texas Instruments Integrated Engineering Facility (IEF), for analysis of the business model. With the model captured in a centralized location (IEF), business and technical analysts performed preliminary analysis to evaluate processes and technological support for processes. The following figures are printed directly from the software tool.

Figure 1 - The TxDOT Business Model showing the three functional areas

```
┌─────────────────────────────────────────────────────────┐
│ RETOOL FUNCTIONAL BUSINESS MODEL                          │
└─┬───────────────────────────────────────────────────────┘
  │   ┌─────────────────────────────────────────────────────┐
  │   │ TXDOT MANAGEMENT                                      │
  │   └─┬─────────────────────────────────────────────────────┘
  │     │   ┌─────────────────────────────────────────────────────┐
  │     │   │ DIRECTION AND LEADERSHIP                              │
  │     │   └─┬─────────────────────────────────────────────────────┐
  │     │     │   ┌─────────────────────────────────────────────────┐
  │     │     │   │ PROVIDE STRATEGIC DIRECTION                      │
  │     │     │   └─────────────────────────────────────────────────┘
  │     │     │   ┌─────────────────────────────────────────────────┐
  │     │     │   │ DEVELOP POLICY                                   │
  │     │     │   └─────────────────────────────────────────────────┘
  │     │     │   ┌─────────────────────────────────────────────────┐
  │     │     │   │ DEVELOP BUSINESS PLANS                           │
  │     │     │   └─────────────────────────────────────────────────┘
  │     │     │   ┌─────────────────────────────────────────────────┐
  │     │     └───│ PROMOTE TRANSP IN TEXAS                          │
  │     │         └─────────────────────────────────────────────────┘
  │     │   ┌─────────────────────────────────────────────────────┐
  │     └───│ BUSINESS MANAGEMENT                                   │
  │         └─┬─────────────────────────────────────────────────────┐
  │           │   ┌─────────────────────────────────────────────────┐
  │           │   │ EVALUATE BUSINESS PRACTICES                      │
  │           │   └─────────────────────────────────────────────────┘
  │           │   ┌─────────────────────────────────────────────────┐
  │           └───│ PROVIDE LEGAL GUIDANCE                           │
  │               └─────────────────────────────────────────────────┘
  │   ┌─────────────────────────────────────────────────  o o o ──┐
  │   │ TXDOT OPERATIONS                                            │
  │   └─────────────────────────────────────────────────────────────┘
  │   ┌─────────────────────────────────────────────────  o o o ──┐
  └───│ TXDOT BUSINESS SERVICES                                     │
      └─────────────────────────────────────────────────────────────┘
```

Figure 2 - The Management Functional Area including business areas and processes

```
┌─────────────────────────────────────────────┐
│ RETOOL FUNCTIONAL BUSINESS MODEL             │
└┬────────────────────────────────────────────┘
 │   ┌──────────────────────────────────  ●●● ─┐
 ├───│ TXDOT MANAGEMENT                         │
 │   └──────────────────────────────────────────┘
 │   ┌──────────────────────────────────────────┐
 ├───│ TXDOT OPERATIONS                          │
 │   └┬─────────────────────────────────────────┘
 │    │   ┌─────────────────────────────────────┐
 │    ├───│ DETERMINE ANALYZE TRANSP NEEDS       │
 │    │   └┬────────────────────────────────────┘
 │    │    │  ┌──────────────────────────────────┐
 │    │    ├──│ ESTABLISH PERFORMANCE GOALS       │
 │    │    ├──│ COLLECT DATA                      │
 │    │    ├──│ PROJECT TRAVEL DEMANDS            │
 │    │    ├──│ EVALUATE SYSTEM CONDITIONS        │
 │    │    └──│ IDENTIFY TRANSPORTATION NEED      │
 │    │   ┌──────────────────────────────────────┐
 │    ├───│ PLAN TRANSPORTATION SYSTEMS           │
 │    │    ├──│ IDENTIFY ALTERNATIVES             │
 │    │    ├──│ IDENTIFY SOLUTIONS                │
 │    │    ├──│ FORMULATE PROJECTS                │
 │    │    ├──│ DEVELOP FINANCIAL STRATEGIES      │
 │    │    └──│ PROGRAM AND SCHEDULE PROJECTS     │
 │    ├───│ DESIGN TRANSPORTATION SYSTEMS         │
 │    │    ├──│ CONDUCT PRELIMINARY DESIGN        │
 │    │    ├──│ CONDUCT FINAL DESIGN              │
 │    │    ├──│ PREPARE PLANS SPECS ESTIMATES     │
 │    │    ├──│ DEVELOP SPECIFICATIONS            │
 │    │    └──│ SECURE PROJECT APPROVAL           │
 │    ├───│ DELIVER TRANSPORTATION SYSTEMS        │
 │    │    ├──│ PREPARE FOR PROJECTS              │
 │    │    ├──│ ADMINISTER PROJECTS               │
 │    │    ├──│ MONITOR PROJECTS                  │
 │    │    └──│ CLOSE PROJECTS                    │
 │    ├───│ MAINTAIN AND OPERATE TRANS SYS        │
 │    │    ├──│ MONITOR ANALYZE MVMT AND COND     │
 │    │    ├──│ DEVELOP ALTERNATVS AND SOLUTIONS  │
 │    │    ├──│ RESTORE AND IMPROVE FLOW AND CON  │
 │    │    └──│ PROVIDE USER SAFETY AWARE INFO    │
 │    └───│ REGULATE TRANSPORTATION SYSTEMS       │
 │         ├──│ DEVELOP REGULATIONS               │
 │         ├──│ AUTHORIZE REGULATED ACTIVITY      │
 │         └──│ OVERSEE COMPLIANCE                │
 │   ┌──────────────────────────────────  ●●● ─┐
 └───│ TXDOT BUSINESS SERVICES                   │
     └──────────────────────────────────────────┘
```

Figure 3 - The Operations Functional Area including business areas and processes

RETOOL FUNCTIONAL BUSINESS MODEL
- TXDOT MANAGEMENT •••
- TXDOT OPERATIONS •••
- TXDOT BUSINESS SERVICES
  - FISCAL SERVICES
    - FORECAST FINANCIAL NEEDS
    - PREPARE MONITOR ADJUST BUDGET
    - PROVIDE ACCOUNTING FISCAL RSRCES
    - COLLECT RECEIVABLES
    - MAKE PAYMENTS
  - CONTRACTED SERVICES
    - PREPARE FOR BIDS AND PROPOSALS
    - PREPARE AWARD EXECUTE CONTRACT
    - PROVIDE ADMIN CONTRACT SUPPORT
  - HUMAN RESOURCES
    - ANALYZE STAFFING NEEDS
    - HIRE WORKFORCE
    - DEVELOP AND RETAIN STAFF
    - PROVIDE BENEFITS
    - DESIGN AND DELIVER TRAINING
    - PROMOTE SAFE WORK ENVIRONMENT
  - INFORMATION SERVICES
    - ANALYZE INFO TECHNOLOGY NEEDS
    - PROVIDE INFO RESOURCE STANDARDS
    - PROVIDE ENABLING TECHNOLOGIES
    - DEVELOP AND SUPPORT APPLICATIONS
    - PERFORM COMMUNICATION SERVICES
    - PROVIDE CUSTOMER SERVICE
  - REAL PROPERTY
    - ANALYZE FACLT AND REAL PROP NEED
    - OBTAIN REAL PROP AND IMPRVMNTS
    - PROVIDE INT FACILITIES
    - MANAGE REAL PROP AND FACIL
  - EQUIP MATLS AND SUPPLIES
    - ANALYZE EQUIPT MATL SUPPL NEEDS
    - PURCHASE EQUIPT MATL SUPPLIES
    - MANAGE EQUIPT MATL SUPPLIES

Figure 4 - The Business Services Functional Area including business areas and processes

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

Business Model Validation Analysis

The Retooling team analyzed the business model using two matrices within the software modeling tool (Texas Instruments IEF). Processes were compared against critical success factors and objectives. The results of the comparison are shown in the following figures (printed directly from the IEF tool). The comparison validates the business model by indicating which processes support critical success factors and objectives defined in TxDOT's strategic plan.

This page intentionally left blank.

Cell Values:
```
  = Not referenced
X = Include
1    2    3
4    5    6
7    8    9
```

Elementary Process	QUALITY AND DE^	PUBLIC SAFETY ^	PUBLIC PERCEPT^	PARTICIPATING ^	OPTIMIZE FUNDI^	MUTUAL RESPECT ^	INCREASE OPPOR^	IDENTIFY CUSTO^	EXPAND COMMUNI^	ENHANCE THE EN^	EFFECTIVE TRAN^	EDUCATION PROG^	ECONOMIC AND S^	CONTINUOUSLY I^	CONNECTIVITY O^
ADMINISTER PROJECTS	X														
ANALYZE EQUIPT MATL SUPPL NEEDS								X							
ANALYZE FACLT AND REAL PROP NEED								X							
ANALYZE INFO TECHNOLOGY NEEDS								X							
ANALYZE STAFFING NEEDS								X							
AUTHORIZE REGULATED ACTIVITY	X	X	X					X		X	X		X		
CLOSE PROJECTS	X														
COLLECT DATA	X														
COLLECT RECEIVABLES															
CONDUCT FINAL DESIGN	X	X								X	X		X		
CONDUCT PRELIMINARY DESIGN		X						X		X	X		X		
DESIGN AND DELIVER TRAINING	X														
DEVELOP ALTERNATVS AND SOLUTIONS										X	X				
DEVELOP AND RETAIN STAFF															
DEVELOP AND SUPPORT APPLICATIONS															
DEVELOP BUSINESS PLANS	X										X				
DEVELOP FINANCIAL STRATEGIES					X										
DEVELOP POLICY															
DEVELOP REGULATIONS	X	X	X		X					X	X		X		
DEVELOP SPECIFICATIONS															
ESTABLISH PERFORMANCE GOALS	X														
EVALUATE BUSINESS PRACTICES	X		X		X			X		X	X			X	
EVALUATE SYSTEM CONDITIONS											X	X			
FORECAST FINANCIAL NEEDS							X								
FORMULATE PROJECTS		X								X	X		X		X
HIRE WORKFORCE															
IDENTIFY ALTERNATIVES	X														X
IDENTIFY SOLUTIONS	X	X			X					X	X		X		X
IDENTIFY TRANSPORTATION NEED								X			X				
MAKE PAYMENTS															
MANAGE EQUIPT MATL SUPPLIES															
MANAGE REAL PROP AND FACIL	X										X				
MONITOR ANALYZE MVMT AND COND							X								
MONITOR PROJECTS	X	X									X		X		X
OBTAIN REAL PROP AND IMPRVMNTS												X			
OVERSEE COMPLIANCE	X	X	X		X			X		X	X		X		
PERFORM COMMUNICATION SERVICES															
PREPARE AWARD EXECUTE CONTRACT	X			X		X	X								
PREPARE FOR PROJECTS	X														
PREPARE FOR BIDS AND PROPOSALS	X			X		X									
PREPARE MONITOR ADJUST BUDGET															
PREPARE PLANS SPECS ESTIMATES															
PROGRAM AND SCHEDULE PROJECTS	X	X			X						X	X			
PROJECT TRAVEL DEMANDS											X	X			
PROMOTE SAFE WORK ENVIRONMENT	X														
PROMOTE TRANSP IN TEXAS		X													
PROVIDE ACCOUNTING FISCAL RSRCES					X										
PROVIDE ADMIN CONTRACT SUPPORT															
PROVIDE BENEFITS															
PROVIDE CUSTOMER SERVICE	X							X							
PROVIDE ENABLING TECHNOLOGIES															
PROVIDE INFO RESOURCE STANDARDS	X														
PROVIDE INT FACILITIES															
PROVIDE LEGAL GUIDANCE	X		X							X	X			X	
PROVIDE STRATEGIC DIRECTION															
PROVIDE USER SAFETY AWARE INFO															
PURCHASE EQUIPT MATL SUPPLIES	X			X			X	X							
RESTORE AND IMPROVE FLOW AND CON	X										X	X			
SECURE PROJECT APPROVAL		X					X		X						

Figure 1 - TxDOT business model processes vs. strategic plan objectives

Cell Values:
```
    = Not referenced
X = Include
1      2      3
4      5      6
7      8      9
```

Elementary Process	Crit Success	TRANSPORTATION	PARTNER WITH S	SAFE HIGHWAY S	FUNDING	FOSTER ALTERNA	DIVERSITY WORK	DEPARTMENT PER	REDUCE BUREAUC	PUBLIC INFORMA	HUB OPPORTUNIT	EMPLOYEE ACCOU
ADMINISTER PROJECTS		X										
ANALYZE EQUIPT MATL SUPPL NEEDS												
ANALYZE FACLT AND REAL PROP NEED												
ANALYZE INFO TECHNOLOGY NEEDS		X		X								
ANALYZE STAFFING NEEDS				X			X					
AUTHORIZE REGULATED ACTIVITY		X	X									
CLOSE PROJECTS												
COLLECT DATA	X											
COLLECT RECEIVABLES												
CONDUCT FINAL DESIGN	X			X								
CONDUCT PRELIMINARY DESIGN	X			X								
DESIGN AND DELIVER TRAINING				X								
DEVELOP ALTERNATVS AND SOLUTIONS	X		X									
DEVELOP AND RETAIN STAFF				X			X					
DEVELOP AND SUPPORT APPLICATIONS												
DEVELOP BUSINESS PLANS						X						
DEVELOP FINANCIAL STRATEGIES	X		X	X	X							
DEVELOP POLICY												
DEVELOP REGULATIONS			X	X	X							
DEVELOP SPECIFICATIONS												
ESTABLISH PERFORMANCE GOALS	X			X								
EVALUATE BUSINESS PRACTICES			X		X	X		X	X			X
EVALUATE SYSTEM CONDITIONS	X		X									
FORECAST FINANCIAL NEEDS				X								
FORMULATE PROJECTS	X		X		X							
HIRE WORKFORCE							X					
IDENTIFY ALTERNATIVES	X	X	X		X							
IDENTIFY SOLUTIONS	X	X	X	X	X							
IDENTIFY TRANSPORTATION NEED	X	X										
MAKE PAYMENTS												
MANAGE EQUIPT MATL SUPPLIES		X					X					
MANAGE REAL PROP AND FACIL		X	X									
MONITOR ANALYZE MVMT AND COND	X		X									
MONITOR PROJECTS		X		X								
OBTAIN REAL PROP AND IMPRVMNTS		X										
OVERSEE COMPLIANCE		X	X	X								
PERFORM COMMUNICATION SERVICES		X										
PREPARE AWARD EXECUTE CONTRACT		X		X							X	
PREPARE FOR PROJECTS												
PREPARE FOR BIDS AND PROPOSALS		X		X							X	
PREPARE MONITOR ADJUST BUDGET		X		X								
PREPARE PLANS SPECS ESTIMATES												
PROGRAM AND SCHEDULE PROJECTS	X			X	X							
PROJECT TRAVEL DEMANDS	X			X								
PROMOTE SAFE WORK ENVIRONMENT												
PROMOTE TRANSP IN TEXAS						X				X		
PROVIDE ACCOUNTING FISCAL RSRCES						X		X				
PROVIDE ADMIN CONTRACT SUPPORT												
PROVIDE BENEFITS		X										
PROVIDE CUSTOMER SERVICE		X		X								
PROVIDE ENABLING TECHNOLOGIES				X								
PROVIDE INFO RESOURCE STANDARDS												
PROVIDE INT FACILITIES		X										
PROVIDE LEGAL GUIDANCE												
PROVIDE STRATEGIC DIRECTION												
PROVIDE USER SAFETY AWARE INFO											X	
PURCHASE EQUIPT MATL SUPPLIES		X		X		X						X
RESTORE AND IMPROVE FLOW AND CON		X	X	X		X					X	
SECURE PROJECT APPROVAL		X										

Figure 2 - TxDOT business model processes vs. critical success factors
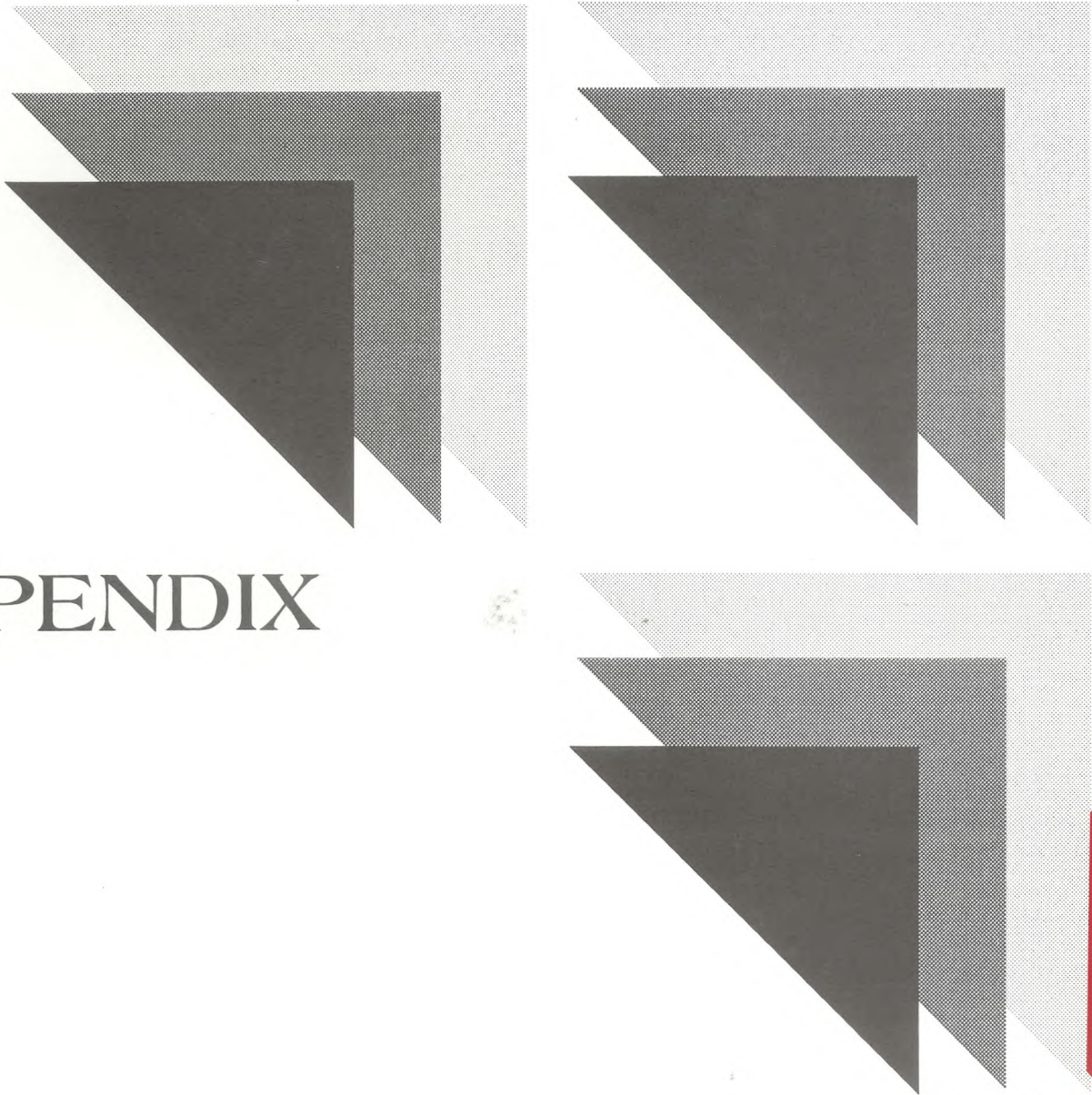
APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
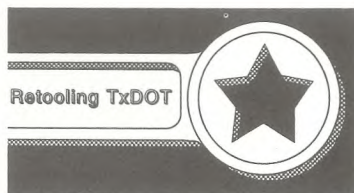
Texas Department of Transportation

Application Acronyms

AABUT	Abutment Detail
ACID	Access Control Account Maintenance
ACR	Accumulative Count Recorders System
APP	Automated Plan Preparation System
APS	Automated Purchasing System
ARMS	Automation Resource Management System
ARRS	Automated Receiving Report System
ATMS	Arterial Traffic Management System
ATR	Automated Traffic Recorders System
B30	Continuous Beam Analysis - B30 System
BAMS	Bid Analysis Management System
BDG	Bridge Inventory, Inspection and Appraisal
BEN	Benefits System
BFAST	Bridge Foundation and Soil Test Program
BLS	Bridge Layout System
BMT	Building Maintenance Tracking
BOP	Biennial Operating Plan
BPS	Bid Proposal System
BUD	Budget Monitoring System
CAiCE	Computer Aided Civil Engineering and Surveying
CAP18	Bent Cap Analysis Program
CBS	Contractor Bidding System
CCF	Current Construction File System
CDC	Car Dealer Complaints
CFS	Cash Forecasting System
CIS	Contract Information System
CMCS	Construction/ Maintenance Contract System
COSB1	Cantilever Overhead Sign Bridge
CPP	Career Planning Profile System
CPS	Central Permits System
CSI	City Street Inventory System
CTS	Contract Tracking System
CULVERT	Culvert Detail System
CULV5	Concrete Box Culvert Analysis System
DCIS	Design and Construction Information System
DOTS	Data on Terminal System

DRC	Drivers Record Check System
ECT	Employee Complaint Tracking
EOS	Equipment Operations System
EPS	Economic and Planning System
EVM	Environmental System
FAMS	Funds Allocation and Monitoring System
FIMS	Financial Information Management System
GPS	Geodesy, Photo, and Surveying System
HBA	Highway Beautification Act
HCR	Highway Condition Report
HCS	Highway Capacity Software
HEEM	Highway Efficiency Evaluation Model
HOV	High Occupancy Vehicle Traffic Management
HPMS	Highway Performance Monitoring System
HRIS	Human Resources Information System
IGBENT	Interactive Graphics Bent Program
IGRDS	Interactive Graphics Roadway Design System
IGSEG	Interactive Graphics Segment Program
INA	Insurance Support and Worker's Compensation
INS	Group Insurance System
IRP	International Registration Plan System
JAT	Job Applicant Tracking System
LANSER	Local Area Network Safety Evaluation and Reporting System
LET	Letting System
MCC	Manual Classification Count System
MCS	Material Control System
MDC	Master Data Controller
MEARS	Maintenance Efficiency Analysis Reporting System
MES	Minor Equipment System
MICS	Mainframe Computer Utilization
MMIS	Maintenance Management Information System
MPE	Milepoint Equivalency System
MSMS	Material and Supply Management System

MSS	Manpower Staffing System
MVAR	Motor Vehicle Accounts Receivable
NCS	Natural Control System
NETSIM	Network Simulator
OPA	Operations Plan for Automation
OSB6	Overhead Sign Bridge Analysis Program
PASSERII	Signal Passing Optimization
PAY	Payroll System
PBT	Project Budget Tracking
PCACOL	PC Column
PDL	Program Documentation Log
PER	Personnel System
Phoenix	Phoenix Training Authoring System
PIF	Permanent Index File System
PJS	Planning and Justification System
PLANV	Plan View System
PMIS	Pavement Management Information System
POSTADT	Post Average Daily Traffic System
PPE	Milepoint/ Reference Marker Equivalency System
PRT	Procurement Requisition Tracking
PSTRS14	Prestressed Concrete Beam Design/Analysis System
RDS	Roadway Design System
RGN	Registrar/N System
RIA	Road Inventory System
RIS	Roadway Information System
RL1	Road Life File System
ROW	Right of Way Records System
RRA	Registration Report Audit System
RRX	Railroad Grade Crossing System
RTS	Registration and Title System
RWALL	Retaining Wall Program
SDA	Safe Driver Awards System
SDMS	Survey Data Management System
SES	Single Entry Screen System
SIGNAL	Traffic Signal Pole Assemblies Program
SIGNSZ	Interstate Sign Sizing Program

SKD	Skid Test Program
SLD	Salary and Labor Distribution System
SMBS	Small and Minority Business System
SMS	Subcontractor Monitoring System
SPAN	Span Detail System
SPC	Special License Plates System
SSS	Speed Survey System
STAAD	STAAD-III-ISDS
STAMINA	Noise Barrier Cost Reduction Program
SWAMIS	South West Airport Management Information System
SWS	Statewide Safety Improvements System (Title II)
TACS	Tables and Characteristics System
TAF	Traffic Assignment and Forecasting System
THYSYS	Texas Hydraulic System
TIPS	Transportation Improvement Program System
TLG	Traffic Log System
TRA	Traffic Accident Report System
TRANPLAN	Transportation Plan
TRFSGN	Traffic Control Signing Options
TRIMS	Texas Roadway Inventory Mapping System
TRM	Texas Reference Marker System
TVL	Travel Literature System
TXH	Texas Highways Magazine Subscription System
TXTOM	Texas Truck Offtrack Modeling System
USF	Universal Specifications File System
UVD	Universal Vendor Description System
VPS	Vendor Payment System
VSL	Vacation/Sick Leave System
WIM	Weight In Motion System
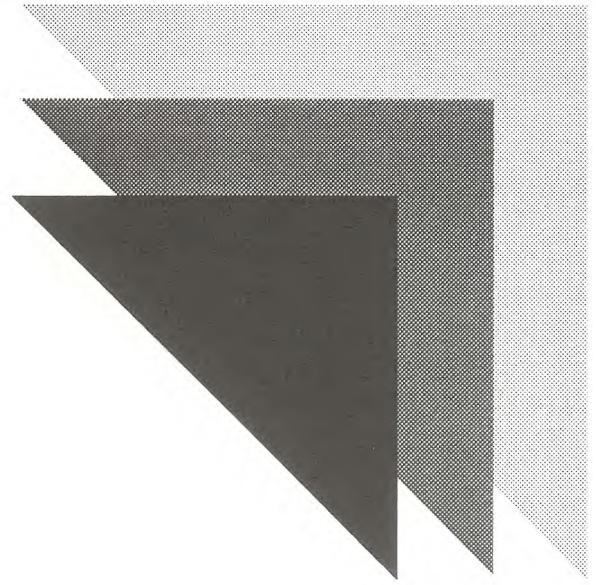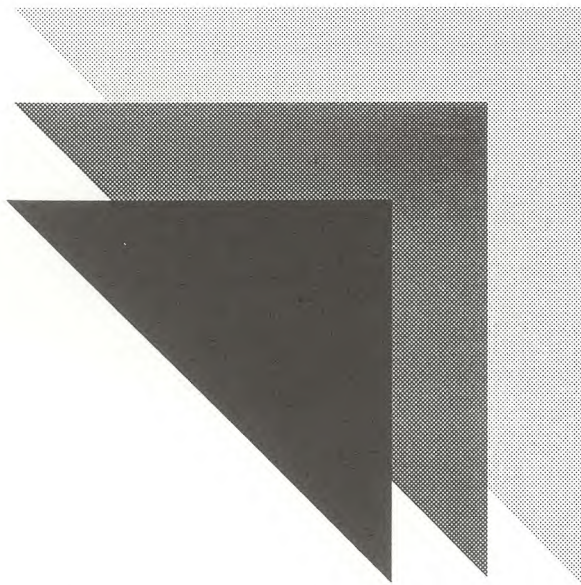
APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

Applications Supported by Processes

This appendix identifies the current applications supporting each business process. An application is considered to support a business process if it provides full or partial functional support to a process. Applications which only capture data used by a process are not mapped to a business process if no additional functionality is provided.

This appendix should be referenced during the Current System Analysis phase of each business process retooling and business improvement project.

This page intentionally left blank.

PROCESSES:

| Establish Performance Goals | Collect Inventory, Operational & User Data | Project Travel Demands of People & Goods | Evaluate Current & Future System Conditions | Identify Transportation Needs |

CURRENT APPLICATION SUPPORT:

MPE BDG TRA	LANSER	PMIS	PMIS
PPE TRM WIM	NETSIM	TRIMS	HPMS
RIA CSI MCC	TRANPLAN	POSTADT	
SKD ACR PMIS	HCS	HPMS	
RRX ATR RIS	TAF	EVM	
TLG SSS	PMIS		
	TLG		

---

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Plan Transportation Systems

PROCESSES:

Identify Alternatives	Identify Solutions	Formulate Projects	Develop Financial Strategies	Program and Schedule Projects

CURRENT APPLICATION SUPPORT:

PMIS	PMIS	TAF	DCIS	EPS	DCIS
TAF	SWS	HPMS	PMIS	FAMS	FAMS
EVM	EVM			PMIS	
STAMINA	STAMINA			DCIS	

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Design Transportation Systems

PROCESSES:

Conduct Preliminary Design	Conduct Final Design	Prepare Plans, Specifications & Estimates	Develop Specifications	Secure Project Approvals

CURRENT APPLICATION SUPPORT:

IGRDS	BFAST	IGRDS	BFAST	ABUT	BLS	USF
RDS	COSB1	RDS	COSB1	APP	CULVERT	ABUT
SIGNSZ	CAP18	SIGNSZ	CAP18	IGSEG	PLANV	SPAN
TRFSGN	CULV5	TRFSGN	CULV5	RWALL	SPAN	CULVERT
TXTOM	IGBENT	TXTOM	IGBENT	BPS		
OSB6	SIGNAL	OSB6	SIGNAL			
PSTRS14	B30	PSTRS14	B30			
GPS	THYSYS	GPS	THYSYS			
APP	PLANV	STAAD	PCACOL			
STAAD	PCACOL	APP	PLANV			
DCIS	SDMS	SDMS	CAiCE			
CAiCE						

* - Application Appears In More Than One Logical Application System *Italicized* Applications Are Not Supported By ISD ~~ABC~~ Application will be eliminated

Deliver Transportation Systems
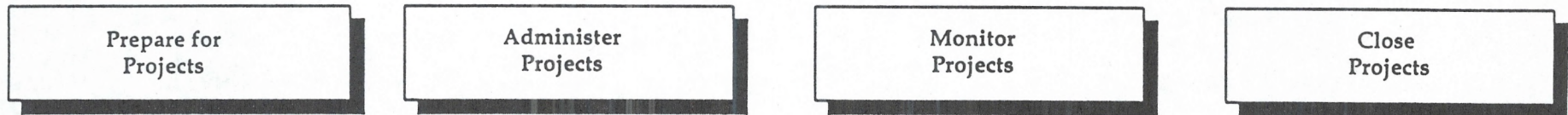
PROCESSES:

| Prepare for Projects | Administer Projects | Monitor Projects | Close Projects |

CURRENT APPLICATION SUPPORT:

	MMIS	SMBS		MMIS	FIMS		CIS
	MCS	CCF		CIS	CCF		
	CIS	SMS		RL1			

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Texas Department of Transportation   Page 4

PROCESSES:

Monitor & Analyze Movement and Condition	Develop Alternatives and Solutions	Restore & Improve Movement and Condition	Provide User Information & Safety Awareness to Customers
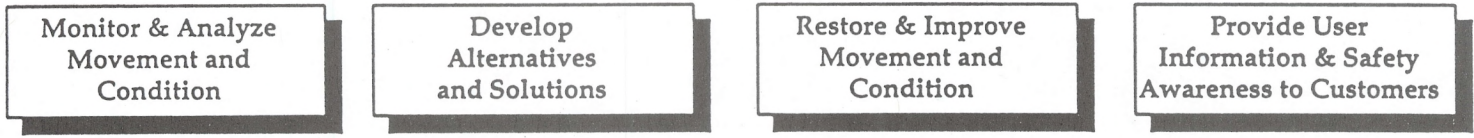
CURRENT APPLICATION SUPPORT:

IVHS

MMIS
SES

HCR
SWS

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Texas Department of Transportation

Page 5

Regulate Transportation Systems

PROCESSES:

| Develop Regulations | Authorize Regulated Activities | Oversee Compliance |

CURRENT APPLICATION SUPPORT:

CPS
IRP
RTS
SPC
RRA

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Texas Department of Transportation   Page 6

PROCESSES:

Forecast Financial Needs	Prepare, Monitor, and Adjust Budget	Provide an Accounting of Fiscal Resources	Collect Receivables	Make Payments
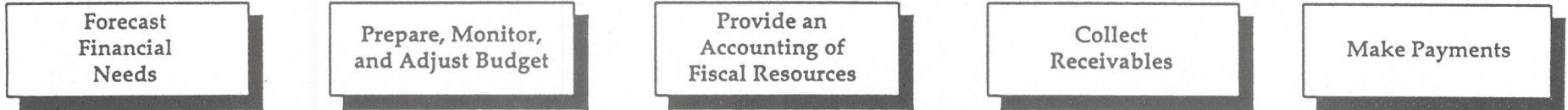
CURRENT APPLICATION SUPPORT:

FAMS	FIMS FAMS BUD	FIMS VPS	FAMS SLD	TXH CPS IRP	FIMS RTS	ARRS CIS CMCS APS	MSMS PAY FIMS

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Information Services

PROCESSES:

Analyze Info. Resource Needs	Provide Info. Resource Standards	Provide & Support Enabling Technologies	Develop and Support Applications	Perform Information Communications Services	Provide Info. Tech. Consulting/ Customer Service

CURRENT APPLICATION SUPPORT:

OPA
PJS

PDL
DOTS
MDC
NCS
TACS

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ABC Application will be eliminated

PROCESSES:

| Analyze Staffing Needs | Hire Workforce | Develop and Retain Staff | Provide Benefits | Design and Deliver Training | Promote Safe Work Environment |
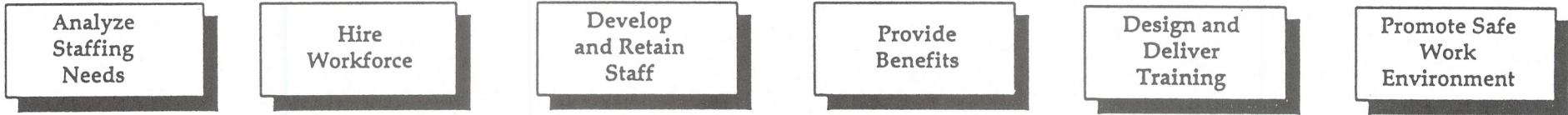
CURRENT APPLICATION SUPPORT:

	JAT	HRIS	VSL	RGN	SDA
		CPP	BEN		
		PER	INA		
		DRC	INS		
			PIF		

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

Real Property

PROCESSES:

Analyze Internal Facility and Real Property Needs	Obtain Real Property and Improvements	Provide Internal Facilities	Manage Real Property and Facilities

CURRENT APPLICATION SUPPORT:
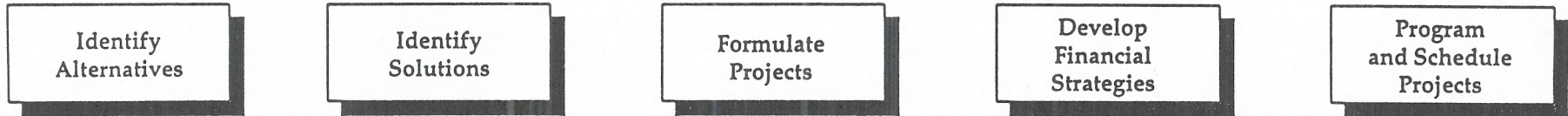
ROW   ROW

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ABC Application will be eliminated

Texas Department of Transportation   Page 10

PROCESSES:

| Analyze Equipment, Material, and Supply Needs | Purchase Equipment, Materials, and Supplies | Manage Equipment, Materials, and Supplies |

CURRENT APPLICATION SUPPORT:

MSMS	APS	MSMS	APS
APS	UVD	ARMS	SES
PJS		EOS	MES

---

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

PROCESSES:

| Prepare for Bids & Proposals | Prepare, Award and Execute Contracts | Provide Administrative Contract Support |

CURRENT APPLICATION SUPPORT:

BPS	LET	FIMS
CBS	BAMS	CTS
CMCS	CMCS	CMCS
	CBS	CIS
		BAMS
		SMBS

* - Application Appears In More Than One Logical Application System   *Italicized* Applications Are Not Supported By ISD   ~~ABC~~ Application will be eliminated

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
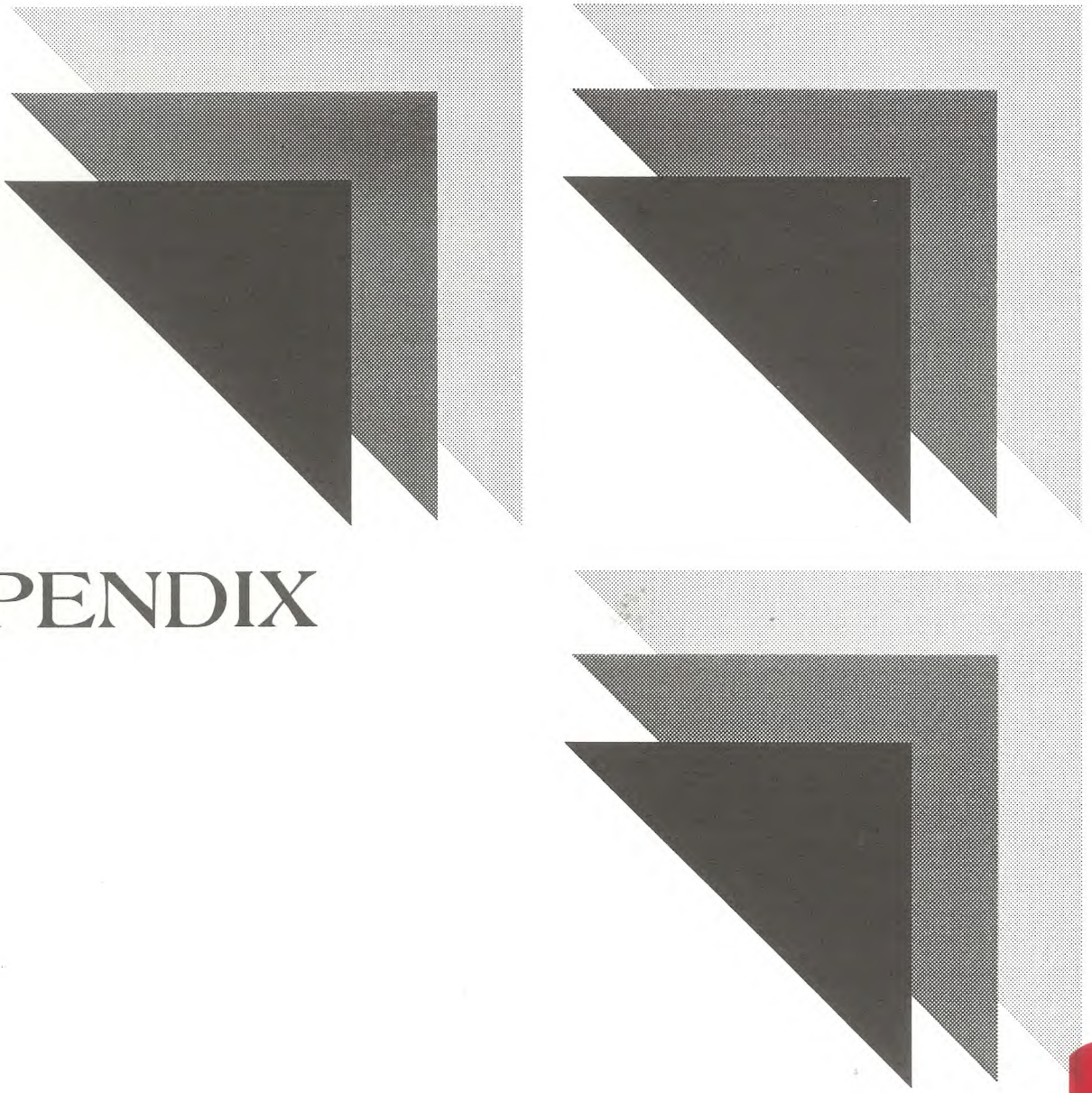
Texas Department of Transportation
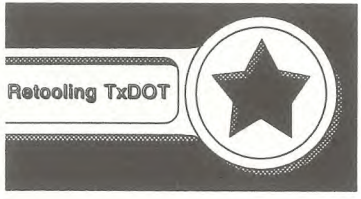
Logical Application System Cross-Reference

This Logical Application Systems Cross-Reference lists each of the future logical application systems identified in the Application Architectur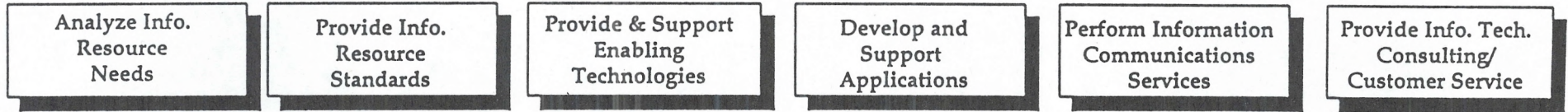e. For each logical application system, the cross-reference lists the business area(s) and process(es) supported by the logical application system. This highlights the integration of applications and is useful in determining the impact of a logical application system across multiple business areas.

Logical Application System	Business Area / Business Process
Application Mgmt System	Information / Develop & Support Applications
Benefits Mgmt System	Human Resources / Provide Benefits
Bid Mgmt System	Design / Prepare Plans, Specifications & Estimates Contracted / Prepare for Bids & Proposals Contracted / Prepare, Award & Execute Contracts
Bridge Mgmt System (ISTEA)	Needs / Evaluate Current & Future System Conditions Needs / Identify Transportation Needs Plan / Identify Alternatives Plan / Identify Solutions Maintain & Operate / Monitor & Analyze Movement and Condition Maintain & Operate / Develop Alternatives and Solutions
Congestion Mgmt System (ISTEA)	Needs / Evaluate Current & Future System Conditions Needs / Identify Transportation Needs Plan / Identify Alternatives Plan / Identify Solutions Maintain & Operate / Monitor & Analyze Movement and Condition Maintain & Operate / Develop Alternatives and Solutions
Contract Mgmt System	Deliver / Administer Projects Deliver / Monitor Projects Deliver / Close Projects Contracted / Prepare, Award and Execute Contracts Contracted / Provide Administrative Contract Support

Design Development System   Design / Conduct Preliminary Design
Design / Conduct Final Design

Employee Mgmt System   Human Resources / Develop & Retain Staff

Environmental Mgmt System   Needs / Evaluate Current & Future System Conditions
Needs / Identify Transportation Needs
Plan / Identify Alternatives
Plan / Identify Solutions

Equipment Mgmt System   Equipment / Analyze Equip, Material and Supply Needs
Equipment / Manage Equipment, Materials and Supplies

Financial Forecasting
& Budgeting System   Fiscal / Forecast Financial Needs
Fiscal / Prepare, Monitor & Adjust Budget

Financial Mgmt System   Deliver / Monitor Projects
Fiscal / Provide an Accounting of Fiscal Resources
Fiscal / Collect Receivables
Fiscal / Make Payments
Contracted / Provide Administrative Contract Support

HUB Tracking Mgmt System   Deliver / Administer Projects
Contracted / Prepare, Award and Execute Contracts
Contracted / Provide Administrative Contract Support

Information Technology Mgmt   Information / Provide & Support Enabling Technologies

Intermodal Mgmt System (ISTEA)   Needs / Evaluate Current & Future System Conditions
Needs / Identify Transportation Needs
Plan / Identify Alternatives
Plan / Identify Solutions
Maintain & Operate / Monitor & Analyze Movement and
                                  Condition
Maintain & Operate / Develop Alternatives and Solutions

IR Help Desk   Information / Provide Information Technology
Consulting/Customer Service

Maintenance Mgmt System   Maintain & Operate / Restore & Improve Movement and
                                  Condition

Mapping System

Needs / Evaluate Current & Future System Conditions
Needs / Identify Transportation Needs
Design / Conduct Preliminary Design
Design / Conduct Final Design

Material Mgmt System

Equipment / Analyze Equip, Material and Supply Needs
Equipment / Manage Equipment, Materials and Supplies

Pavement Mgmt System (ISTEA)

Needs / Evaluate Current & Future System Conditions
Needs / Identify Transportation Needs
Plan / Identify Alternatives
Plan / Identify Solutions
Maintain & Operate / Monitor & Analyze Movement and
                              Condition
Maintain & Operate / Develop Alternatives and Solutions

Performance Goal Mgmt System

Needs / Establish Performance Goals

Plan & Specification Development

Design / Prepare Plans, Specifications & Estimates
Design / Develop Specifications

Procurement System

Equipment / Purchase Equipment, Materials and Supplies

Project Approval Mgmt System

Design / Secure Project Approvals

Project Formulation & Scheduling

Plan / Formulate Projects
Plan / Develop Financial Strategies
Plan / Program and Schedule Projects

Project Funding Mgmt System

Plan / Develop Financial Strategies
Plan / Program and Schedule Projects
Fiscal / Forecast Financial Needs
Fiscal / Prepare, Monitor and Adjust Budget
Fiscal / Provide an Accounting of Fiscal Resources

Project Mgmt System

Deliver / Prepare for Projects
Deliver / Administer Projects
Deliver / Monitor Projects
Deliver / Close Projects

Public Transit Mgmt System   Needs / Evaluate Current & Future System Conditions
(ISTEA)   Needs / Identify Transportation Needs
                                  Plan / Identify Alternatives
                                  Plan / Identify Solutions
                                  Maintain & Operate / Monitor & Analyze Movement and
                                              Condition
                                  Maintain & Operate / Develop Alternatives and Solutions

Quality Monitoring System   Deliver / Administer Projects
                                  Deliver / Monitor Projects
                                  Deliver / Close Projects

Real Property Acquisition System Real Property / Obtain Real Property and Improvements
                                  Real Property / Manage Real Property and Facilities

Real Property Mgmt System   Real Property / Analyze Internal Facility and Real
                                              Property Needs
                                  Real Property / Provide Internal Facilities
                                  Real Property / Manage Real Property and Facilities

Recruiting & Applicant Mgmt   Human Resources / Hire Workforce

Regulation, Authorization &   Regulate / Develop Regulations
Compliance System   Regulate / Authorize Regulated Activities
                                  Regulate / Oversee Compliance

Revenue Collection System   Deliver / Monitor Projects
                                  Fiscal / Provide an Accounting of Fiscal Resources
                                  Fiscal / Collect Receivables
                                  Fiscal / Make Payments
                                  Contracted / Provide Administrative Contract Support

Safety Mgmt System (ISTEA)   Needs / Evaluate Current & Future System Conditions
                                  Needs / Identify Transportation Needs
                                  Plan / Identify Alternatives
                                  Plan/ Identify Solutions
                                  Maintain & Operate / Monitor & Analyze Movement and
                                              Condition
                                  Maintain & Operate / Develop Alternatives and Solutions
                                  Maintain & Operate / Provide User Information & Safety
                                              Awareness to Customers

Staff Forecasting System	Human Resources / Analyzed Staffing Needs
Technology Needs Mgmt System	Information / Analyze Information Resource Needs
Traffic Operation Statistics System	Needs / Collect Inventory, Operational & User Data
Training Mgmt System	Human Resources / Design & Deliver Training
Transportation Information System	Maintain & Operate / Provide User Information & Safety Awareness to Customers
Transportation Inventory and Conditions System	Needs / Collect Inventory, Operational & User Data
Travel Demand Forecasting System	Needs / Project Travel Demands of People & Goods
Vendor Mgmt System	Equipment / Purchase Equipment, Materials and Supplies Contracted / Prepare for Bids & Proposals
Workplace Safety Mgmt System	Human Resources / Promote Safe Work Environment

This page left intentionally blank.

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
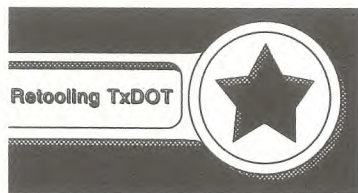
Texas Department of Transportation

Current Information System Business Area/Process Matrix

This IEF-produced matrix identifies the current applications that support each business area.

This matrix should be used during the Current System Analysis phase of each business process retooling and business improvement project.

CURRENT INFORMATION SYSTEM/BUSINESS AREA MATRIX (1 of 3)

Cell Values:
- = Not referenced
- X = Include

1	2	3
4	5	6
7	8	9

Current Info System	DIRECTION AND LEADERSHIP	BUSINESS MANAGEMENT	DETERMINE ANALYZE TRANSP>	PLAN TRANSPORTATION SYST>	DESIGN TRANSPORTATION SY>	DELIVER TRANSPORTATION S>	REGULATE TRANSPORTATION ^	MAINTAIN AND OPERATE TRA>	FISCAL SERVICES	CONTRACTED SERVICES	HUMAN RESOURCES	INFORMATION SERVICES	REAL PROPERTY	EQUIP MATLS AND SUPPLIES
ABUT ABUTMENT DETAIL					X									
ACR ACCUMLATIVE COUNT RECORDERS			X											
APP AUTOMATED PLAN PREPARATION					X									
APS AUTOMATED PURCHASING										X				X
ARMS AUTOMATION RESOURCE MGMT														X
ARRS AUTOMATED RECEIVING REPORT										X				
ATR AUTOMATED TRAFFIC RECORDERS			X											
B30 CONTINOUS BEAM ANALYSIS					X									
BAMS BID ANALYSIS MGMT										X				
BDG BRIDGE INV INSPECT APPRAISAL			X											
BEN BENEFITS											X			
BFAST BRIDGE FOUNDATION SOIL TES					X									
BLS BRIDGE LAYOUT SYSTEM					X									
BPS BID PROPOSAL					X					X				
BUD BUDGET MONITORING									X					
CAICE COMPUTER AIDED CIVIL ENGR					X									
CAP18 BENT CAP ANALYSIS					X									
CBS CONTRACTOR BIDDING										X				
CCF CURRENT CONSTRUCTION FILE						X								
CIS CONTRACT INFORMATION						X			X	X				
CMCS CONSTRUCTION MAINT CONTRACT									X	X				
COSB1 CANTILEVER OVERHEAD SIGN B					X									
CPP CAREER PLANNING PROFILE											X			
CPS CENTRAL PEMITS							X		X					
CSI CITY STREET INVENTORY			X											
CTS CONTRACT TRACKING SYSTEM										X				
CULV5 CONCRETE BOX CULVERT ANALY					X									
CULVERT CULVERT DETAIL					X									
DCIS DESIGN AND CONSTRUCTION INF				X	X									
DOTS DATA ON TERMINAL												X		
DRC DRIVERS RECORD CHECK											X			
EOS EQUIPMENT OPERATIONS														X
EPS ECONOMIC PLANNING			X											
EVM ENVIRONMENTAL SYSTEM			X											
FAMS FUNDS ALLOCATION MONITOR			X						X					
FIMS FINANCIAL INFO MGMT						X			X	X				
GPS GEODESY PHOTO AND SURVEYING					X									
HCR HIGHWAY CONDITION REPORT								X						

CURRENT INFORMATION SYSTEM/BUSINESS AREA MATRIX (2 of 3)

Cell Values:

= Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	DIRECTION AND LEADERSHIP	BUSINESS MANAGEMENT	DETERMINE ANALYZE TRANSP	PLAN TRANSPORTATION SYST	DESIGN TRANSPORTATION SY	DELIVER TRANSPORTATION S	REGULATE TRANSPORTATION	MAINTAIN AND OPERATE TRA	FISCAL SERVICES	CONTRACTED SERVICES	HUMAN RESOURCES	INFORMATION SERVICES	REAL PROPERTY	EQUIP MATLS AND SUPPLIES
HPMS HIGHWAY PERFORMANCE MONITOR			X	X										
HRIS HUMAN RESOURCES INFO											X			
IGBENT INTERACTIVE GRAPHICS BENT					X									
IGRDS INTERACTIVE GRAPHICS ROADW					X									
IGSEG INTERACTIVE GRAPHICS SEGME					X									
INA INSURANCE SUPPORT WORKER COM											X			
INS GROUP INSURANCE											X			
IRP INTERNATIONAL REGISTRATION P							X		X					
JAT JOB APPLICANT TRACKING											X			
LET LETTING										X				
MCC MANUAL CLASSIFICATION COUNT			X											
MCS MATERIAL CONTROL						X								
MDC MASTER DATA CONTROLLER												X		
MES MINOR EQUIPMENT														X
MMIS MAINTENANCE MGMT INFO						X		X						
MPE MILEPOINT EQUIVALENCY			X											
MSMS MATERIAL AND SUPPLY MGMT								X						X
NCS NATURAL CONTROL												X		
OPA OPERATIONS PLAN FOR AUTOMATI												X		
OSB6 OVERHEAD SIGN BRIDGE ANALY					X									
PAY PAYROLL									X					
PCACOL PC COLUMN					X									
PDL PROGRAM DOCUMENTATION LOG												X		
PER PERSONNEL											X			
PIF PERMANENT INDEX FILE											X			
PJS PLANNING AND JUSTIFICATION												X		X
PLANV PLAN VIEW					X									
PMIS PAVEMENT MGMT INFO			X	X										
POSTADT POST AVERAGE DAILY TRAFF			X											
PPE MILEPOINT REF MARKER EQUIVAL			X											
PSTRS14 PRESTRESSED CONCRETE BEA					X									
RDS ROADWAY DESIGN					X									
RGN REGISTRAR											X			
RIA ROAD INVENTORY			X											
RIS ROADWAY INFORMATION			X											
RL1 ROAD LIFE FILE						X								
ROW RIGHT OF WAY RECORDS													X	
RRA REGISTRATION REPORT AUDIT							X							

CURRENT INFORMATION SYSTEM/BUSINESS AREA MATRIX (3 of 3)

Cell Values:

 = Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	DIRECTION AND LEADERSHIP	BUSINESS MANAGEMENT	DETERMINE ANALYZE TRANSP	PLAN TRANSPORTATION SYST	DESIGN TRANSPORTATION SY	DELIVER TRANSPORTATION S	REGULATE TRANSPORTATION	MAINTAIN AND OPERATE TRA	FISCAL SERVICES	CONTRACTED SERVICES	HUMAN RESOURCES	INFORMATION SERVICES	REAL PROPERTY	EQUIP MATLS AND SUPPLIES
RRX RAILROAD GRADE CROSSING			X											
RTS REGISTRATION AND TITLE							X		X					
RWALL RETAINING WALL PROGRAM					X									
SDA SAFE DRIVER AWARDS											X			
SDMS SURVEY DATA MGMT SYS					X									
SES SINGLE ENTRY SCREEN								X						X
SIGNAL TRAFFIC SIGNAL POLE ASSEM					X									
SIGNSZ INTERSTATE SIGN SIZING					X									
SKD SKID TEST PROGRAM			X											
SLD SALARY AND LABOR DISTRIBUTIO									X					
SMBS SMALL AND MINORITY BUSINESS						X				X				
SMS SUBCONTRACTOR MONITORING						X								
SPAN SPAN DETAIL					X									
SPC SPECIAL LICENSE PLATES							X							
SSS SPEED SURVEY			X											
STAAD STRUCTURAL ANALYSIS DESIGN					X									
STAMINA NOISE BARRIER COST REDUC				X										
SWS STATEWIDE SAFETY IMPROVEMENT				X				X						
TACS TABLES AND CHARACTERISTICS												X		
TAF TRAFFIC ASSIGNMENT FORECAST			X	X										
THYSYS TEXAS HYDRAULIC					X									
TLG TRAFFIC LOG			X											
TRA TRAFFIC ACCIDENT REPORT			X											
TRFSGN TRAFFIC CONTROL SIGNING O					X									
TRIMS TEXAS ROADWAY INV MAPPING			X											
TRM TEXAS REFERENCE MARKER			X											
TVL TRAVEL LITERATURE	X													
TXH TEXAS HIGHWAYS MAGAZINE	X									X				
TXTOM TEXAS TRUCK OFFTRACK MODEL					X									
USF UNIVERSAL SPECIFICATIONS					X									
UVD UNIVERSAL VENDOR DESCRIPTION														X
VPS VENDOR PAYMENT									X					
VSL VACATION SICK LEAVE											X			
WIM WEIGHT IN MOTION			X											

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation

12
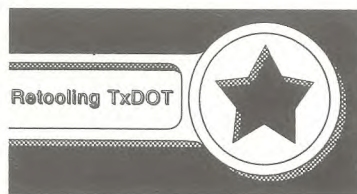
Subject Area/Current Data Store Matrix

This IEF-produced matrix identifies the current applications that support each business process.

This matrix should be used during the Current System Analysis phase of each business process retooling and business improvement project.

This page intentionally left blank.

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (1 of 9)

Cell Values:

= Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	ADMINISTER PROJECTS	ANALYZE EQUIPT MATL SU>	ANALYZE FACLT AND REAL>	ANALYZE INFO TECHNOLOG>	ANALYZE STAFFING NEEDS	AUTHORIZE REGULATED AC>	CLOSE PROJECTS	COLLECT DATA	COLLECT RECEIVABLES	CONDUCT FINAL DESIGN	CONDUCT PRELIMINARY DE>	DESIGN AND DELIVER TRA>	DEVELOP ALTERNATVS AND>	DEVELOP AND RETAIN STA>	DEVELOP AND SUPPORT AP>	DEVELOP BUSINESS PLANS	DEVELOP FINANCIAL STRA>	DEVELOP POLICY	DEVELOP REGULATIONS	DEVELOP SPECIFICATIONS	ESTABLISH PERFORMANCE >	EVALUATE BUSINESS PRAC>	EVALUATE SYSTEM CONDIT>	FORECAST FINANCIAL NEE>	FORMULATE PROJECTS	HIRE WORKFORCE
ABUT ABUTMENT DETAIL																				X						
ACR ACCUMLATIVE COUNT RECORDERS								X																		
APP AUTOMATED PLAN PREPARATION										X	X															
APS AUTOMATED PURCHASING		X																								
ARMS AUTOMATION RESOURCE MGMT																										
ARRS AUTOMATED RECEIVING REPORT																										
ATR AUTOMATED TRAFFIC RECORDERS								X																		
B30 CONTINOUS BEAM ANALYSIS										X	X															
BAMS BID ANALYSIS MGMT																										
BDG BRIDGE INV INSPECT APPRAISAL								X																		
BEN BENEFITS																										
BFAST BRIDGE FOUNDATION SOIL TES										X	X															
BLS BRIDGE LAYOUT SYSTEM																										
BPS BID PROPOSAL																										
BUD BUDGET MONITORING																										
CAICE COMPUTER AIDED CIVIL ENGR										X	X															
CAP18 BENT CAP ANALYSIS										X	X															
CBS CONTRACTOR BIDDING																										
CCF CURRENT CONSTRUCTION FILE	X																									
CIS CONTRACT INFORMATION	X							X																		
CMCS CONSTRUCTION MAINT CONTRACT																										
COSB1 CANTILEVER OVERHEAD SIGN B										X	X															
CPP CAREER PLANNING PROFILE														X												
CPS CENTRAL PEMITS							X		X																	
CSI CITY STREET INVENTORY								X																		
CTS CONTRACT TRACKING SYSTEM																										
CULV5 CONCRETE BOX CULVERT ANALY										X	X															
CULVERT CULVERT DETAIL																				X						
DCIS DESIGN AND CONSTRUCTION INF										X	X						X								X	
DOTS DATA ON TERMINAL															X											
DRC DRIVERS RECORD CHECK																	X									
EOS EQUIPMENT OPERATIONS																										
EPS ECONOMIC PLANNING																	X									
EVM ENVIRONMENTAL SYSTEM																								X		
FAMS FUNDS ALLOCATION MONITOR																	X							X		
FIMS FINANCIAL INFO MGMT									X																	
GPS GEODESY PHOTO AND SURVEYING										X	X															
HCR HIGHWAY CONDITION REPORT																										
HPMS HIGHWAY PERFORMANCE MONITOR																								X		
HRIS HUMAN RESOURCES INFO																	X									

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (2 of 9)

Cell Values:
= Not referenced
X = Include

1	2	3
4	5	6
7	8	9

Current Info System	IDENTIFY ALTERNATIVES	IDENTIFY SOLUTIONS	IDENTIFY TRANSPORTATIO>	MAKE PAYMENTS	MANAGE EQUIPT MATL SUP>	MANAGE REAL PROP AND F>	MONITOR ANALYZE MVMT A>	MONITOR PROJECTS	OBTAIN REAL PROP AND I>	OVERSEE COMPLIANCE	PERFORM COMMUNICATION >	PREPARE AWARD EXECUTE >	PREPARE FOR PROJECTS	PREPARE FOR BIDS AND P>	PREPARE MONITOR ADJUST>	PREPARE PLANS SPECS ES>	PROGRAM AND SCHEDULE P>	PROJECT TRAVEL DEMANDS	PROMOTE SAFE WORK ENVI>	PROMOTE TRANSP IN TEXAS	PROVIDE ACCOUNTING FIS>	PROVIDE ADMIN CONTRACT>	PROVIDE BENEFITS	PROVIDE CUSTOMER SERVI>	PROVIDE ENABLING TECHN>	PROVIDE INFO RESOURCE >
ABUT ABUTMENT DETAIL																X										
ACR ACCUMLATIVE COUNT RECORDERS																										
APP AUTOMATED PLAN PREPARATION																X										
APS AUTOMATED PURCHASING				X	X																					
ARMS AUTOMATION RESOURCE MGMT					X																					
ARRS AUTOMATED RECEIVING REPORT				X																						
ATR AUTOMATED TRAFFIC RECORDERS																										
B30 CONTINOUS BEAM ANALYSIS																										
BAMS BID ANALYSIS MGMT												X										X				
BDG BRIDGE INV INSPECT APPRAISAL																										
BEN BENEFITS																							X			
BFAST BRIDGE FOUNDATION SOIL TES																										
BLS BRIDGE LAYOUT SYSTEM																X										
BPS BID PROPOSAL														X		X										
BUD BUDGET MONITORING															X											
CAICE COMPUTER AIDED CIVIL ENGR																										
CAP18 BENT CAP ANALYSIS																										
CBS CONTRACTOR BIDDING														X		X										
CCF CURRENT CONSTRUCTION FILE								X																		
CIS CONTRACT INFORMATION			X					X														X				
CMCS CONSTRUCTION MAINT CONTRACT			X									X		X								X				
COSB1 CANTILEVER OVERHEAD SIGN B																										
CPP CAREER PLANNING PROFILE																										
CPS CENTRAL PEMITS																										
CSI CITY STREET INVENTORY																										
CTS CONTRACT TRACKING SYSTEM																						X				
CULV5 CONCRETE BOX CULVERT ANALY																										
CULVERT CULVERT DETAIL																X										
DCIS DESIGN AND CONSTRUCTION INF																	X									
DOTS DATA ON TERMINAL																										
DRC DRIVERS RECORD CHECK																										
EOS EQUIPMENT OPERATIONS					X																					
EPS ECONOMIC PLANNING																										
EVM ENVIRONMENTAL SYSTEM	X	X																								
FAMS FUNDS ALLOCATION MONITOR															X		X				X					
FIMS FINANCIAL INFO MGMT			X					X							X						X	X				
GPS GEODESY PHOTO AND SURVEYING																										
HCR HIGHWAY CONDITION REPORT																										
HPMS HIGHWAY PERFORMANCE MONITOR		X	X																							
HRIS HUMAN RESOURCES INFO																										

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (3 of 9)

Cell Values:

  = Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	Elementary Process	PROVIDE INT FACILITIES	PROVIDE LEGAL GUIDANCE	PROVIDE STRATEGIC DIRE>	PROVIDE USER SAFETY AW>	PURCHASE EQUIPT MATL S>	RESTORE AND IMPROVE FL>	SECURE PROJECT APPROVAL
ABUT ABUTMENT DETAIL								
ACR ACCUMLATIVE COUNT RECORDERS								
APP AUTOMATED PLAN PREPARATION								
APS AUTOMATED PURCHASING						X		
ARMS AUTOMATION RESOURCE MGMT								
ARRS AUTOMATED RECEIVING REPORT								
ATR AUTOMATED TRAFFIC RECORDERS								
B30 CONTINOUS BEAM ANALYSIS								
BAMS BID ANALYSIS MGMT								
BDG BRIDGE INV INSPECT APPRAISAL								
BEN BENEFITS								
BFAST BRIDGE FOUNDATION SOIL TES								
BLS BRIDGE LAYOUT SYSTEM								
BPS BID PROPOSAL								
BUD BUDGET MONITORING								
CAICE COMPUTER AIDED CIVIL ENGR								
CAP18 BENT CAP ANALYSIS								
CBS CONTRACTOR BIDDING								
CCF CURRENT CONSTRUCTION FILE								
CIS CONTRACT INFORMATION								
CMCS CONSTRUCTION MAINT CONTRACT								
COSB1 CANTILEVER OVERHEAD SIGN B								
CPP CAREER PLANNING PROFILE								
CPS CENTRAL PEMITS								
CSI CITY STREET INVENTORY								
CTS CONTRACT TRACKING SYSTEM								
CULV5 CONCRETE BOX CULVERT ANALY								
CULVERT CULVERT DETAIL								
DCIS DESIGN AND CONSTRUCTION INF								
DOTS DATA ON TERMINAL								
DRC DRIVERS RECORD CHECK								
EOS EQUIPMENT OPERATIONS								
EPS ECONOMIC PLANNING								
EVM ENVIRONMENTAL SYSTEM								
FAMS FUNDS ALLOCATION MONITOR								
FIMS FINANCIAL INFO MGMT						X		
GPS GEODESY PHOTO AND SURVEYING								
HCR HIGHWAY CONDITION REPORT					X			
HPMS HIGHWAY PERFORMANCE MONITOR								
HRIS HUMAN RESOURCES INFO								

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (4 of 9)

Cell Values:

  = Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	Elementary Process	ADMINISTER PROJECTS	ANALYZE EQUIPT MATL SU>	ANALYZE FACLT AND REAL>	ANALYZE INFO TECHNOLOG>	ANALYZE STAFFING NEEDS	AUTHORIZE REGULATED AC>	CLOSE PROJECTS	COLLECT DATA	COLLECT RECEIVABLES	CONDUCT FINAL DESIGN	CONDUCT PRELIMINARY DE>	DESIGN AND DELIVER TRA>	DEVELOP ALTERNATVS AND>	DEVELOP AND RETAIN STA>	DEVELOP AND SUPPORT AP>	DEVELOP BUSINESS PLANS	DEVELOP FINANCIAL STRA>	DEVELOP POLICY	DEVELOP REGULATIONS	DEVELOP SPECIFICATIONS	ESTABLISH PERFORMANCE ^	EVALUATE BUSINESS PRAC>	EVALUATE SYSTEM CONDIT>	FORECAST FINANCIAL NEE>	FORMULATE PROJECTS	HIRE WORKFORCE
IGBENT INTERACTIVE GRAPHICS BENT											X	X															
IGRDS INTERACTIVE GRAPHICS ROADW											X	X															
IGSEG INTERACTIVE GRAPHICS SEGME																											
INA INSURANCE SUPPORT WORKER COM																											
INS GROUP INSURANCE																											
IRP INTERNATIONAL REGISTRATION P							X			X																	
JAT JOB APPLICANT TRACKING																											X
LET LETTING																											
MCC MANUAL CLASSIFICATION COUNT									X																		
MCS MATERIAL CONTROL		X																									
MDC MASTER DATA CONTROLLER																X											
MES MINOR EQUIPMENT																											
MMIS MAINTENANCE MGMT INFO		X																									
MPE MILEPOINT EQUIVALENCY									X																		
MSMS MATERIAL AND SUPPLY MGMT			X																								
NCS NATURAL CONTROL																X											
OPA OPERATIONS PLAN FOR AUTOMATI					X																						
OSB6 OVERHEAD SIGN BRIDGE ANALY											X	X															
PAY PAYROLL																											
PCACOL PC COLUMN											X	X															
PDL PROGRAM DOCUMENTATION LOG																X											
PER PERSONNEL															X												
PIF PERMANENT INDEX FILE																											
PJS PLANNING AND JUSTIFICATION			X	X																							
PLANV PLAN VIEW											X	X															
PMIS PAVEMENT MGMT INFO									X									X							X	X	
POSTADT POST AVERAGE DAILY TRAFF																									X		
PPE MILEPOINT REF MARKER EQUIVAL									X																		
PSTRS14 PRESTRESSED CONCRETE BEA											X	X															
RDS ROADWAY DESIGN											X	X															
RGN REGISTRAR													X														
RIA ROAD INVENTORY									X																		
RIS ROADWAY INFORMATION									X																		
RL1 ROAD LIFE FILE																											
ROW RIGHT OF WAY RECORDS																											
RRA REGISTRATION REPORT AUDIT							X																				
RRX RAILROAD GRADE CROSSING									X																		
RTS REGISTRATION AND TITLE							X			X																	
RWALL RETAINING WALL PROGRAM																											
SDA SAFE DRIVER AWARDS																											

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (5 of 9)

Cell Values:

= Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	Elementary Process	IDENTIFY ALTERNATIVES	IDENTIFY SOLUTIONS	IDENTIFY TRANSPORTATIO>	MAKE PAYMENTS	MANAGE EQUIPT MATL SUP>	MANAGE REAL PROP AND F>	MONITOR ANALYZE MVMT A>	MONITOR PROJECTS	OBTAIN REAL PROP AND I>	OVERSEE COMPLIANCE	PERFORM COMMUNICATION >	PREPARE AWARD EXECUTE >	PREPARE FOR PROJECTS	PREPARE FOR BIDS AND P>	PREPARE MONITOR ADJUST>	PREPARE PLANS SPECS ES>	PROGRAM AND SCHEDULE P>	PROJECT TRAVEL DEMANDS	PROMOTE SAFE WORK ENVI>	PROMOTE TRANSP IN TEXAS	PROVIDE ACCOUNTING FIS>	PROVIDE ADMIN CONTRACT>	PROVIDE BENEFITS	PROVIDE CUSTOMER SERVI>	PROVIDE ENABLING TECHN>	PROVIDE INFO RESOURCE >
IGBENT INTERACTIVE GRAPHICS BENT																											
IGRDS INTERACTIVE GRAPHICS ROADW																											
IGSEG INTERACTIVE GRAPHICS SEGME																	X										
INA INSURANCE SUPPORT WORKER COM																								X			
INS GROUP INSURANCE																								X			
IRP INTERNATIONAL REGISTRATION P																											
JAT JOB APPLICANT TRACKING																											
LET LETTING												X															
MCC MANUAL CLASSIFICATION COUNT																											
MCS MATERIAL CONTROL																											
MDC MASTER DATA CONTROLLER																											
MES MINOR EQUIPMENT						X																					
MMIS MAINTENANCE MGMT INFO									X																		
MPE MILEPOINT EQUIVALENCY																											
MSMS MATERIAL AND SUPPLY MGMT					X	X																					
NCS NATURAL CONTROL																											
OPA OPERATIONS PLAN FOR AUTOMATI																											
OSB6 OVERHEAD SIGN BRIDGE ANALY																											
PAY PAYROLL					X																						
PCACOL PC COLUMN																											
PDL PROGRAM DOCUMENTATION LOG																											
PER PERSONNEL																											
PIF PERMANENT INDEX FILE																								X			
PJS PLANNING AND JUSTIFICATION																											
PLANV PLAN VIEW																	X										
PMIS PAVEMENT MGMT INFO		X	X	X														X									
POSTADT POST AVERAGE DAILY TRAFF																											
PPE MILEPOINT REF MARKER EQUIVAL																											
PSTRS14 PRESTRESSED CONCRETE BEA																											
RDS ROADWAY DESIGN																											
RGN REGISTRAR																											
RIA ROAD INVENTORY																											
RIS ROADWAY INFORMATION																											
RL1 ROAD LIFE FILE									X																		
ROW RIGHT OF WAY RECORDS							X			X																	
RRA REGISTRATION REPORT AUDIT																											
RRX RAILROAD GRADE CROSSING																											
RTS REGISTRATION AND TITLE																											
RWALL RETAINING WALL PROGRAM																	X										
SDA SAFE DRIVER AWARDS																				X							

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (6 of 9)

Cell Values:

  = Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	Elementary Process	PROVIDE INT FACILITIES	PROVIDE LEGAL GUIDANCE	PROVIDE STRATEGIC DIRE>	PROVIDE USER SAFETY AW>	PURCHASE EQUIPT MATL S>	RESTORE AND IMPROVE FL>	SECURE PROJECT APPROVAL
IGBENT INTERACTIVE GRAPHICS BENT								
IGRDS INTERACTIVE GRAPHICS ROADW								
IGSEG INTERACTIVE GRAPHICS SEGME								
INA INSURANCE SUPPORT WORKER COM								
INS GROUP INSURANCE								
IRP INTERNATIONAL REGISTRATION P								
JAT JOB APPLICANT TRACKING								
LET LETTING								
MCC MANUAL CLASSIFICATION COUNT								
MCS MATERIAL CONTROL								
MDC MASTER DATA CONTROLLER								
MES MINOR EQUIPMENT								
MMIS MAINTENANCE MGMT INFO							X	
MPE MILEPOINT EQUIVALENCY								
MSMS MATERIAL AND SUPPLY MGMT								
NCS NATURAL CONTROL								
OPA OPERATIONS PLAN FOR AUTOMATI								
OSB6 OVERHEAD SIGN BRIDGE ANALY								
PAY PAYROLL								
PCACOL PC COLUMN								
PDL PROGRAM DOCUMENTATION LOG								
PER PERSONNEL								
PIF PERMANENT INDEX FILE								
PJS PLANNING AND JUSTIFICATION								
PLANV PLAN VIEW								
PMIS PAVEMENT MGMT INFO								
POSTADT POST AVERAGE DAILY TRAFF								
PPE MILEPOINT REF MARKER EQUIVAL								
PSTRS14 PRESTRESSED CONCRETE BEA								
RDS ROADWAY DESIGN								
RGN REGISTRAR								
RIA ROAD INVENTORY								
RIS ROADWAY INFORMATION								
RL1 ROAD LIFE FILE								
ROW RIGHT OF WAY RECORDS								
RRA REGISTRATION REPORT AUDIT								
RRX RAILROAD GRADE CROSSING								
RTS REGISTRATION AND TITLE								
RWALL RETAINING WALL PROGRAM								
SDA SAFE DRIVER AWARDS								

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (7 of 9)

Cell Values:

= Not referenced
X = Include

1	2	3
4	5	6
7	8	9

Current Info System	ADMINISTER PROJECTS	ANALYZE EQUIPT MATL SU>	ANALYZE FACLT AND REAL>	ANALYZE INFO TECHNOLOG>	ANALYZE STAFFING NEEDS	AUTHORIZE REGULATED AC>	CLOSE PROJECTS	COLLECT DATA	COLLECT RECEIVABLES	CONDUCT FINAL DESIGN	CONDUCT PRELIMINARY DE>	DESIGN AND DELIVER TRA>	DEVELOP ALTERNATVS AND>	DEVELOP AND RETAIN STA>	DEVELOP AND SUPPORT AP>	DEVELOP BUSINESS PLANS	DEVELOP FINANCIAL STRA>	DEVELOP POLICY	DEVELOP REGULATIONS	DEVELOP SPECIFICATIONS	ESTABLISH PERFORMANCE ^	EVALUATE BUSINESS PRAC>	EVALUATE SYSTEM CONDIT>	FORECAST FINANCIAL NEE>	FORMULATE PROJECTS	HIRE WORKFORCE
SDMS SURVEY DATA MGMT SYS										X	X															
SES SINGLE ENTRY SCREEN																										
SIGNAL TRAFFIC SIGNAL POLE ASSEM										X	X															
SIGNSZ INTERSTATE SIGN SIZING										X	X															
SKD SKID TEST PROGRAM								X																		
SLD SALARY AND LABOR DISTRIBUTIO																										
SMBS SMALL AND MINORITY BUSINESS	X																									
SMS SUBCONTRACTOR MONITORING	X																									
SPAN SPAN DETAIL																				X						
SPC SPECIAL LICENSE PLATES								X																		
SSS SPEED SURVEY								X																		
STAAD STRUCTURAL ANALYSIS DESIGN										X	X															
STAMINA NOISE BARRIER COST REDUC																										
SWS STATEWIDE SAFETY IMPROVEMENT																										
TACS TABLES AND CHARACTERISTICS															X											
TAF TRAFFIC ASSIGNMENT FORECAST																										
THYSYS TEXAS HYDRAULIC										X	X															
TLG TRAFFIC LOG								X																		
TRA TRAFFIC ACCIDENT REPORT								X																		
TRFSGN TRAFFIC CONTROL SIGNING O										X	X		X													
TRIMS TEXAS ROADWAY INV MAPPING																							X			
TRM TEXAS REFERENCE MARKER								X																		
TVL TRAVEL LITERATURE																										
TXH TEXAS HIGHWAYS MAGAZINE								X																		
TXTOM TEXAS TRUCK OFFTRACK MODEL										X	X															
USF UNIVERSAL SPECIFICATIONS																				X						
UVD UNIVERSAL VENDOR DESCRIPTION																										
VPS VENDOR PAYMENT																										
VSL VACATION SICK LEAVE																										
WIM WEIGHT IN MOTION								X																		

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (8 of 9)

Cell Values:

  = Not referenced

X = Include

1	2	3
4	5	6
7	8	9

Current Info System	Elementary Process	IDENTIFY ALTERNATIVES	IDENTIFY SOLUTIONS	IDENTIFY TRANSPORTATIO>	MAKE PAYMENTS	MANAGE EQUIPT MATL SUP>	MANAGE REAL PROP AND F>	MONITOR ANALYZE MVMT A>	MONITOR PROJECTS	OBTAIN REAL PROP AND I>	OVERSEE COMPLIANCE	PERFORM COMMUNICATION >	PREPARE AWARD EXECUTE >	PREPARE FOR PROJECTS	PREPARE FOR BIDS AND P>	PREPARE MONITOR ADJUST>	PREPARE PLANS SPECS ES>	PROGRAM AND SCHEDULE P>	PROJECT TRAVEL DEMANDS	PROMOTE SAFE WORK ENVI>	PROMOTE TRANSP IN TEXAS	PROVIDE ACCOUNTING FIS>	PROVIDE ADMIN CONTRACT>	PROVIDE BENEFITS	PROVIDE CUSTOMER SERVI>	PROVIDE ENABLING TECHN>	PROVIDE INFO RESOURCE >
SDMS SURVEY DATA MGMT SYS																											
SES SINGLE ENTRY SCREEN						X			X																		
SIGNAL TRAFFIC SIGNAL POLE ASSEM																											
SIGNSZ INTERSTATE SIGN SIZING																											
SKD SKID TEST PROGRAM																											
SLD SALARY AND LABOR DISTRIBUTIO																						X					
SMBS SMALL AND MINORITY BUSINESS																							X				
SMS SUBCONTRACTOR MONITORING																											
SPAN SPAN DETAIL																	X										
SPC SPECIAL LICENSE PLATES																											
SSS SPEED SURVEY																											
STAAD STRUCTURAL ANALYSIS DESIGN																											
STAMINA NOISE BARRIER COST REDUC		X	X																								
SWS STATEWIDE SAFETY IMPROVEMENT			X																								
TACS TABLES AND CHARACTERISTICS																											
TAF TRAFFIC ASSIGNMENT FORECAST		X	X																X								
THYSYS TEXAS HYDRAULIC																											
TLG TRAFFIC LOG																			X								
TRA TRAFFIC ACCIDENT REPORT																											
TRFSGN TRAFFIC CONTROL SIGNING O																											
TRIMS TEXAS ROADWAY INV MAPPING																											
TRM TEXAS REFERENCE MARKER																											
TVL TRAVEL LITERATURE																											
TXH TEXAS HIGHWAYS MAGAZINE																											
TXTOM TEXAS TRUCK OFFTRACK MODEL																											
USF UNIVERSAL SPECIFICATIONS																											
UVD UNIVERSAL VENDOR DESCRIPTION																											
VPS VENDOR PAYMENT																							X				
VSL VACATION SICK LEAVE																									X		
WIM WEIGHT IN MOTION																											

CURRENT INFORMATION SYSTEM/BUSINESS PROCESS MATRIX (9 of 9)

Cell Values:

  = Not referenced

X = Include

| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

Current Info System	Elementary Process	PROVIDE INT FACILITIES	PROVIDE LEGAL GUIDANCE	PROVIDE STRATEGIC DIRE>	PROVIDE USER SAFETY AW>	PURCHASE EQUIPT MATL S>	RESTORE AND IMPROVE FL>	SECURE PROJECT APPROVAL
SDMS SURVEY DATA MGMT SYS								
SES SINGLE ENTRY SCREEN							X	
SIGNAL TRAFFIC SIGNAL POLE ASSEM								
SIGNSZ INTERSTATE SIGN SIZING								
SKD SKID TEST PROGRAM								
SLD SALARY AND LABOR DISTRIBUTIO								
SMBS SMALL AND MINORITY BUSINESS								
SMS SUBCONTRACTOR MONITORING								
SPAN SPAN DETAIL								
SPC SPECIAL LICENSE PLATES ·								
SSS SPEED SURVEY								
STAAD STRUCTURAL ANALYSIS DESIGN								
STAMINA NOISE BARRIER COST REDUC								
SWS STATEWIDE SAFETY IMPROVEMENT					X			
TACS TABLES AND CHARACTERISTICS								
TAF TRAFFIC ASSIGNMENT FORECAST								
THYSYS TEXAS HYDRAULIC								
TLG TRAFFIC LOG								
TRA TRAFFIC ACCIDENT REPORT								
TRFSGN TRAFFIC CONTROL SIGNING O								
TRIMS TEXAS ROADWAY INV MAPPING								
TRM TEXAS REFERENCE MARKER								
TVL TRAVEL LITERATURE								
TXH TEXAS HIGHWAYS MAGAZINE								
TXTOM TEXAS TRUCK OFFTRACK MODEL								
USF UNIVERSAL SPECIFICATIONS								
UVD UNIVERSAL VENDOR DESCRIPTION						X		
VPS VENDOR PAYMENT								
VSL VACATION SICK LEAVE								
WIM WEIGHT IN MOTION								

This page intentionally left blank.
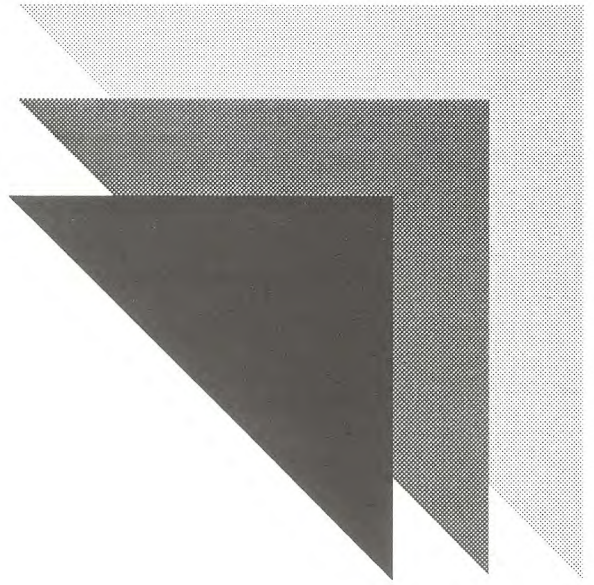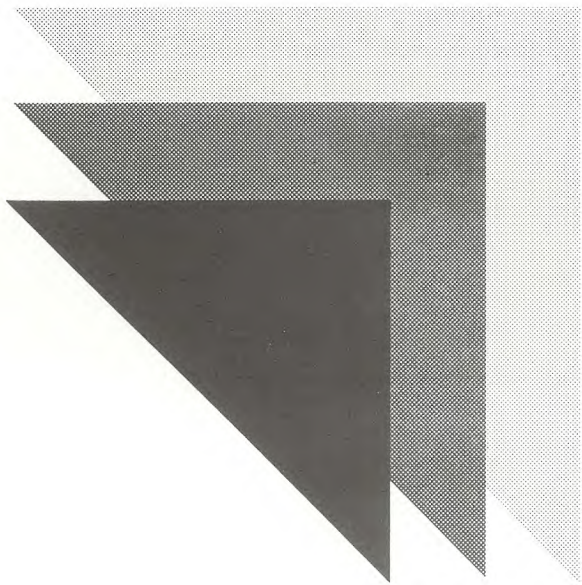
APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT
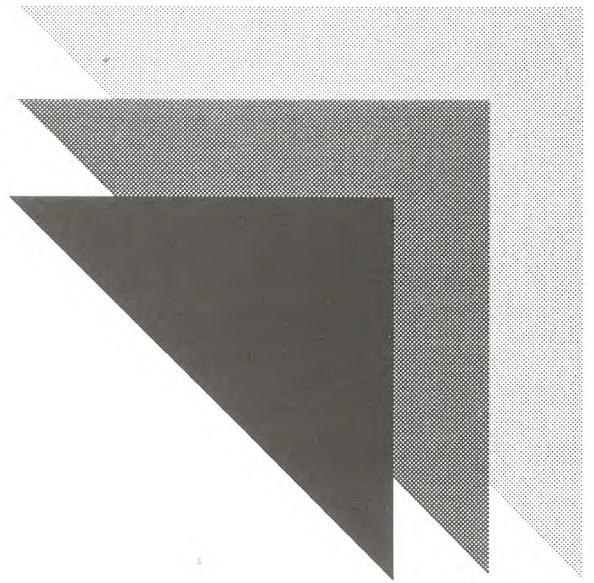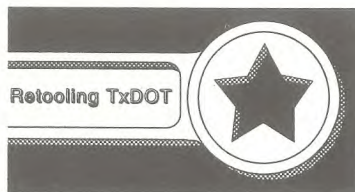
Texas Department of Transportation

BUSINESS AREA ATTRIBUTES

These figures are approximate because data is not collected to match the configuration of the business model.

Determine and Analyze Transportation Needs

Attribute	Measure
Number of FTEs	Included in "Plan" Business Area
Operating budget for 1994 fiscal year	Included in "Plan" Business Area
Budget requested for 1995 fiscal year	Included in "Plan" Business Area
Number of computers-including PCs, printers, and peripherals	Included in "Plan" Business Area
Percent of highway system attaining an "acceptable" level of service	87%
Percent of state highway system main lane pavement mileage rated good or better based on the Pavement Management Information System condition score	88%
Percent of state highway system bridges structurally deficient or functionally obsolete	18%
Number of on-system bridges in need of replacement or rehabilitation	6,096
Number of traffic and statistical data files updated	2,375
Percent of general aviation airport project needs identified in the Texas Airport Facilities Plan that are satisfied	37%

Plan Transportation Systems

Attribute	Measure
Number of FTEs	362
Operating budget for 1994 fiscal year	$61,022,271
Budget requested for 1995 fiscal year	$60,294,442
Number of computers-including PCs, printers, and peripherals	375
Total number of metropolitan planning organizations	25

Design Transportation Systems

Attribute	Measure
Number of FTEs	6,530
Operating budget for 1994 fiscal year	$356,027,061
Budget requested for 1995 fiscal year	$366,650,383
Number of highway construction project preliminary engineering plans completed	890
Number of active highway construction preliminary engineering projects	5,337
Number of highway construction projects reviewed for environmental impact	754
Number of computers-including PCs, printers, and peripherals	2,850

Deliver Transportation Systems

Attribute	Measure
Operating budget for 1994 fiscal year	$1,574,269,851
Number of highway construction projects completed	760
Total contracted dollars of active highway construction projects	$ 3,828,900,000
Number of computers-including PCs, printers, and peripherals	525

Maintain and Operate Transportation Systems

Attribute	Measure
Operating budget for 1994 fiscal year for highway system routine maintenance	$548,054,823
FTEs which provide for highway system routine maintenance	7,642
Operating budget for 1994 fiscal year to provide a statewide traffic safety program	$14,449,899
FTEs to provide a statewide traffic safety program	43
Operating budget for 1994 to provide protection at railroad grade crossings	$1,500,000
Operating budget for 1994 fiscal year to maintain and operate ferry and tunnel systems	$10,231,611
FTEs to maintain and operate ferry and tunnel systems	179
Number of computers-including PCs, printers, and peripherals	1,775

Regulate Transportation Systems

Attribute	Measure
Number of FTEs	664
Operating budget for 1994 fiscal year	$49,207,474
Budget requested for 1995 fiscal year	$47,844,567
Number of computers-including PCs, printers, and peripherals	650
Revenues from licenses, fees and permits	$600,789,505
Number of state highway system oversize/overweight permits issued	366,600
Average cost to issue state highway system oversize/overweight permit	$6.53
Number of outdoor advertising sign license & permits issued and renewed	12,014
Cost per outdoor advertising sign license and permit issued and renewed	$86.61
Number of titles issued	3,934,076
Total number of vehicles registered	14,529,843
Average number of days to issue and mail titles	20
Number of motor vehicle consumer complaints resolved	911
Number of motor vehicle consumer complaints filed	989
Average number of weeks for complaint resolution	30

Fiscal Services

Attribute	Measure
Number of FTEs	129
Budget for 1994 fiscal year	$3,834,787
Budget for 1995 fiscal year	$4,321,000
Number of computers-including PCs, printers, and peripherals	475
Total department operating budget for 1994 fiscal year	$3,109,015,124
Total department budget requested for 1995 fiscal year	$3,111,170,715

Contracted Services

Attribute	Measure
Number of FTEs in Contract Management Section	18
Total operating budget for Contract Management Section in 1994	$356,084
Total operating budget for Contract Management Section in 1995	$599,554
Number of Disadvantaged Business Enterprises assisted	2,020
Number of highway construction contractors qualified	600
Number of highway construction projects contracted	2,291
Number of routine highway maintenance contracts awarded	1,072
Number of preventive maintenance project contracts awarded	134
Amount budgeted for preventive maintenance project contracts in 1994	$191,167,205
Number of highway construction contract proposals received per project	4.5

Human Resources

Attribute	Measure
Number of FTEs	128
Budget for 1994 fiscal year	$6,589,691
Budget for 1995 fiscal year	$8,646,445
Number of computers-including PCs, printers, and peripherals	450
Total number of department FTEs (1994 budgeted)	15,616

Information Services

Attribute	Measure
Number of FTEs	352
Budget for 1994 fiscal year	$40,300,000 ($12M equipment)
Budget for 1995 fiscal year	$45,400,000 ($12M equipment)
Number of workstations, terminals, and microcomputers in the department	7,900
Number of applications supported by Information Systems Division	106

Real Property

Attribute	Measure
Number of FTEs	62
Budget for 1994 fiscal year	$2,132,571
Budget for 1995 fiscal year	$2,500,000
Right of way needed in the construction and maintenance of the state highway system	$245,000,000
Average number of days required to acquire highway right of way parcels	567.5
Number of parcels of highway right of way acquired	1,363
Number of highway right of way utility facilities adjusted	167
Number of eminent domain proceedings initiated to acquire highway right of way	499
Number of computers-including PCs, printers, and peripherals	275

Equipment, Materials and Supplies

Attribute	Measure
Number of active vendors as of 1992	21,727
Number of FTEs in Purchasing Section	57
Total operating budget for Purchasing Section in 1994	$1,903,827
Total operating budget for Purchasing Section in 1995	$1,889,369
Amount budgeted for statewide equipment needs (includes automation equipment and stock)	$70,000,000

Direction & Leadership

Attribute	Measure
Number of FTEs	158
Operating budget for 1994 fiscal year	$18,261,319
Budget requested for 1995 fiscal year	$19,865,729
Number of computers-including PCs, printers, and peripherals	675
Number of travel mail inquiries filled	991,870
Average number of days to respond to travel mail inquiries	3
Number of public information requests answered	405,556
Number of travel information center visitors	3,439,788
Number of "Texas Highways" magazines printed	5,372,634

Business Management

Attribute	Measure
Total number of department FTEs (1994 budgeted)	15,616
Total department operating budget for 1994 fiscal year	$3,109,015,124
Total department budget requested for 1995 fiscal year	$3,111,170,715
Number of computers-including PCs, printers, and peripherals	75

(Sources: Fiscal Year 1994 Operating Budget; Requests for Legislative Appropriations for Fiscal Years 1994 and 1995; 100 Day Report for the fiscal year ended August 31, 1993; Budget and Finance Division)

APPENDIX

BUSINESS INFORMATION AND SYSTEMS PLAN

Retooling TxDOT

Texas Department of Transportation
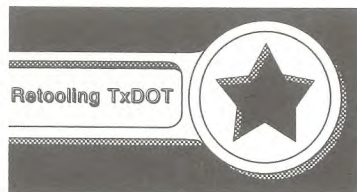
IS BPR Project Description

The goal of each business process retooling (BPR) effort is to analyze the effectiveness and efficiency of business processes, identify business improvements, and consider where technology can be applied to the design of the new processes. New technologies, creative uses of existing technologies, and new application development are fundamental enablers for innovative process design. So that technology will not impede the timely implementation of business improvements, the Information Services (IS) business area was selected as the first business area for business processing retooling. The following is a brief description of the purpose and objectives of the Information Services BPR.

Purpose:

The Information Services BPR will design improvements in the processes, roles, and responsibilities used to deliver information services throughout the Department, encompassing services provided by the Information Systems Division, the Information Resource Management office, and the district/division/special office automation staffs. The retooling team, with assistance from IS representatives from across the organization, will analyze each of the IS processes identified in the TxDOT Business Model to identify improvements to the way in which each function is performed. Additionally, the application support for the information services business area will be evaluated to identify enhancements to existing applications and/or new applications to support the IS processes.

Although the IS community can expect to see some changes implemented during the BPR phase, the key deliverable from the BPR is the definition of business improvement projects designed to implement the new vision. The business improvement projects may define procedure, policy, and/or organizational changes. Some business improvement projects will include the development of application systems to support IS processes.

Objectives:

The following objectives have been established for the Information Services BPR:

* Recommend changes for improving the processes involved in delivering information services to the Department
* Initiate the 'culture change' that is required to shift Information Services to a more customer-oriented organization
* Develop an environment that prepares IS employees for the changes that will result from this effort
* Define policies and procedures for implementing specific objectives recommended in the Business Information and Systems Plan.

Example Activities:

The six IS business processes identified in the TXDOT Business Model are listed below. For each process, examples of the activities that <u>could be</u> included in the IS BPR are listed:

Analyze Information Technology Needs
- Integrate the BISP, Biennial Operating Plan (BOP), and Operations Plan for Automation (OPA) planning processes
- Integrated resource planning for effectively projecting and assigning information resources
- Project submission, approval, and prioritization
- IR procurement requests and approvals

Provide Information Resource Standards
- Data, Application, and Technology Architecture maintenance
- Project management and status reporting
- Data administration policies and procedures

Provide and Support Enabling Information Technologies
- New technology evaluation and implementation
- Hardware and telecommunications support

Develop and Support Applications
- Application development methodologies and tools
- Application and data inventories
- Integration of applications and databases

Perform Information Communication Services
- Communication services for employees and external entities
- Publication services

Provide Information Technology Consulting/Customer Service
- Support business unit/work group and individual application development
- End-user support services for hardware and software tools