Maintenance Management Manual



Revised July 2023

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Manual: Maintenance Management Manual

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Purpose

The *Maintenance Management Manual* has been revised to clarify the addition of a section to the MMA section to describe Landscape Maintenance Agreements.

Chapter 5, Section 2, Municipal Maintenance Agreements, has been revised to include a new section 'Landscape Maintenance Agreements.' This section describes how TxDOT may enter into a separate agreement with a city to maintain various landscape features after a Municipal Maintenance Agreement has been executed.

Contact

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Archives

Past manual notices are available in a <u>PDF archive</u>.

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Chapter 1: Definitions and Planning

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Section 1: Overview

Introduction to Maintenance Management

The Maintenance Management Manual contains the following chapters:

- Chapter 1, Definitions, Planning and Scheduling: Provides guidance for maintenance management.
- Chapter 2, Budgeting: Describes the maintenance budgets that are available to the districts to maintain the state highway system.
- Chapter 3, Level of Service: Defines the appropriate level of maintenance and priorities placed on the work. These levels can be used in planning, performing and evaluating maintenance activities with available funds.
- Chapter 4, Contracting and Purchasing: Explains how TxDOT accomplishes its maintenance mission by effectively supplementing its work force with routine maintenance contracts; preventive maintenance contracts; purchase of service; interagency contracts; state use program agreements and emergency contracts.
- Chapter 5, Agreements, Permits and Reports: Identifies special reports and permits that can apply to maintenance offices.
- Chapter 6, Management Information Systems: Describes the two main management systems that can be used by maintenance staff for planning and evaluation of the level of service provided by maintenance operations.
- Chapter 7, Emergency Management: Identifies the department's responsibilities and provides guidance for emergency response.
- Chapter 8, Pits and Quarry Safety: Describes TxDOT's role in enforcing the Texas Aggregate Quarry and Pit Safety Act.
- Chapter 9, Local Government Assistance Program: Describes the Local Government Assistance Program that requires the Department to assist counties with materials to repair and maintain county roads.

Purpose of this Chapter

The purpose of this chapter is to provide background information for maintenance management. <u>Section 2</u>, "Definitions of Maintenance," includes guidelines and examples of routine, preventive and major maintenance. <u>Section 3</u>, "Maintenance Plans." explains the basic elements required for a one-year plan.

Section 2: Definitions of Maintenance

Purpose of Definitions

Categories have been designed to assist the districts in the performance of maintenance work and are intended to identify work to be performed with maintenance funds. Maintenance funds should not be used to perform construction work.

Definitions of Maintenance Work

Maintenance work is categorized into three areas:

- routine maintenance
- preventive maintenance
- major maintenance.

All three maintenance categories may be performed with state forces or by contract; however, most preventive and major maintenance work should be contracted and funded with Strategy 144 maintenance funds or federal funds. Note that contracted work on Functional Class 6 and 7 roadways can only be completed using maintenance funds.

The following definitions of maintenance activities should be used in determining the type of work activity when addressing planning and budgeting.

Travel Way

The table below defines travel way maintenance categories.

Travel Way

Routine Maintenance	Preventive Maintenance	Major Maintenance
Pavement-related work to include restoration of pavement service- ability including: recondition, rebuild, level up, and overlay. This would include, but not be limited to: pavement repair, <u>crack seal</u> , bituminous levelups with light overlays to restore rideability (overlays not to exceed total average depth of 2"), additional base to restore rideability, and <u>seal coats</u> .	Pavement-related work performed to prevent major deterioration of the pavement. Work would normally include, but not be limited to: milling or bituminous level-ups to restore rideability, light overlays (overlays not to exceed total average depth of 2"), seal coats, crack sealing and microsurfacing. Preparatory work such as milling, repairs or level-ups may also be performed.	Pavement-related work to strengthen the pavement structure for the current and projected future traffic usage. Work should include: restoration of pavement serviceability of roadway. This would include but not be limited to: recondition and stabilize base and subgrade, add base, level up, overlays and seal coats. Pavement widening can be considered major maintenance if done to correct a maintenance problem.

Shoulder and Side Approaches

The following table defines maintenance categories for <u>shoulder</u> and side approaches.

Shoulder and Side Approaches

Routine Maintenance	Preventive Maintenance	Major Maintenance
All shoulder work to restore to its originally constructed condition including: recondition, rebuild, level- up and overlay. This work would also encompass installation and maintenance of public access drives, crossovers, turn lanes and mailbox turnouts.	All shoulder work to prevent major deterioration of the pavement including: milling or bituminous level-ups to restore cross section, light overlays (overlays not to exceed total average depth of 2"), seal coats, crack sealing and microsurfacing. Shoulder repair and widening not to exceed 26' full roadway width.	All shoulder work to restore to its originally constructed condition and/ or to strengthen the pavement structure for the current and projected future traffic usage, including but not limited to: recondition and/or stabilize base and subgrade, add base, level up, and seal coats. Adding shoulders, if done to correct a maintenance problem.

Roadside

The table below defines roadside maintenance categories.

Roadside

Routine Maintenance	Preventive Maintenance	Major Maintenance
All work to maintain the roadside including but not limited to: maintenance and operation of rest areas and picnic areas, litter removal, mowing, placing herbicides, tree and brush trimming and removal, repair and upgrading of guard rails and extruder terminals, repairing slides and side slopes, placing topsoil, sod, shrubs, etc. to reestablish proper grade and vegetative cover and landscaping, removal or treatment of roadside hazards, installation and maintenance of environmental protection devices, and mitigation of spills or hazardous materials.	None.	None.

Drainage

The table below defines maintenance categories for drainage.

Drainage

Routine Maintenance	Preventive Maintenance	Major Maintenance
Replacement, repair and installation	Removal of debris and siltation from	Constructing new drainage channels
of curb, gutter, riprap and underdrain;	channels to prevent damage to	or modification of drainage structures
cleaning, repairing or replacing	structures or flooding of roadways.	to increase drainage capacity.
culverts, storm sewers, erosion	Repair or replacement of slopes and/	Performed only to correct a
controls; reshaping drainage ditches	or riprap to prevent damage to	maintenance or safety problem or to
and channels.	structures or embankments.	protect public or private property.

Structures

The table below defines maintenance categories for structures.

Structures

Routine Maintenance	Preventive Maintenance	Major Maintenance
Repair of substructures, superstructures, decks, joints, approach slabs and railing; spot painting; repair and operation of movable bridges; installation of temporary bridges; repair and installation of fender systems.	Steel structure cleaning and repainting or the installation of other coatings; installation of bridge deck protection; joint cleaning and sealing or replacement.	Bridge rehabilitation, reconstruction, or replacement. Replacement of structures only as a result of major disaster when no other funds or programs are available.

Traffic Operations

The following table describes maintenance categories for traffic operations.

Traffic Operations

Routine Maintenance	Preventive Maintenance	Major Maintenance
Installation, repair and replacement of signs, delineators, illumination, signals and related appurtenances; installation and replacement of striping, pavement graphics, raised pavement markings and rumble strips; maintenance of traffic control cabinets and the corresponding attachments (including but not limited to loop detectors, video cameras, changeable message signs, etc.).	Replacement of striping, <u>pavement</u> <u>graphics</u> , raised <u>pavement markings</u> , and rumble strips may be performed in conjunction with a resurfacing operation.	Installation of new signal systems to upgrade outdated designs.

Emergency Operations

The table below defines maintenance categories for emergency operations.

Emergency Operations

Routine Maintenance	Preventive Maintenance	Major Maintenance
Assistance to traffic during accidents including traffic control, removal of debris and spilled cargo, and snow and ice control. Assistance to traffic during other natural disasters such as floods, tornadoes, hurricanes and fires; removal of debris from the roadway after natural disasters. The District Engineer determines that immediate action is needed to respond to imminent threat to life or property or to prevent disruption of the orderly flow of traffic and commerce. Work off of the right of way, such as assistance to cities, counties and individuals, can be performed only when directed by the local Disaster District Chairman (usually the local Department of Public Safety Captain), Director of the Division of Emergency Management or the Governor.	None.	None.

Section 3: Maintenance Plans

Developing a Maintenance Plan

One of the most important items in maintenance management is developing a good plan to guide operations within the district. Districts should develop long range strategies and one-year maintenance work plans to implement those strategies. The one-year plan should be developed after the respective district maintenance budget has been determined. The plan should be a result of analyzing historical quantities of work performed and the resulting level of service.

Information on quantities of work may be found in the <u>Maintenance Management System</u> (MMS) reports. Levels of service information can be found from the <u>Pavement Management Information</u> <u>System</u> (PMIS) or the Texas Maintenance Assessment Program reports.

Plan Format

The format of the plan can be tailored to fit the district; however, the following items should be considered:

- Construction—No major maintenance should be planned on sections of roads programmed for construction or reconstruction.
- Rehabilitation or Resurfacing—Maintenance needed to prepare roads scheduled for rehabilitation and/or preventive maintenance should be determined and planned. Work such as base repairs, milling and inlay, edge repairs and blade level ups should be performed in advance to insure proper curing and performance analysis before resurfacing.
- Special Priority Items—Items that have been given special priority or emphasis by the Administration, Division or District should be planned. Examples include:
 - sign upgrade program
 - safety upgrades (Guardrail extruder terminals, attenuator upgrades, etc.)
 - bridge joint cleaning and sealing
 - edge and spot sealing.
- Labor Intensive Activities—These activities should be analyzed to determine if more cost effective measures can be performed. For example, a road that has a large amount of edge raveling or failures should be patched and then edge sealed. The edge seal is a preventive measure that will reduce future labor intensive patching.
- Section Plans—The maintenance plan should start at the maintenance section level and then can be compiled to determine the district plan.

The maintenance plan is developed in the Maintenance Management System (MMS) using the Plan Matrix window. The maintenance plan should be constrained by available resources including

budget and staff. Work is planned by planning activity, which is a grouping of related maintenance function codes. The plan should include state force and contracted work.

Performance guidelines have been developed to assist with constraint of the plan and define the typical resource (labor, equipment, and material) requirements and costs associated with maintenance activities. They provide estimated costs and duration for resources for an activity. These guidelines can then be used later to compare actual performance with estimated performance for each activity. They may also be used to estimate resource requirements for budgeting. Performance Guidelines can be defined at the state, district or maintenance section level and should be reviewed annually at the beginning of the planning cycle. Contractor costs for various activities are also available in the system.

The plan Matrix window may be used as an interactive leveling tool to ensure the quantity of work scheduled across various activities in your plan does not exceed the FTE (full-time equivalent) resources that will be available to execute it.

Chapter 2: Budgeting

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Section 1: Overview

Types of Budgets

Several maintenance budgets are available to the districts to maintain the state highway system:

- The Routine Maintenance Budget (Strategy 105)—is the operating budget for state force work. It includes salaries for maintenance employees, fuels, utilities, equipment parts, supplies and roadway materials.
- The Contracted Routine Maintenance Budget (Strategy 144) is for work associated with routine maintenance accomplished through the use of private sector contractors. There are no direct personnel costs associated with this strategy. It also includes equipment rentals and other services such as grounds and janitorial maintenance.
- The Warehouse Budget is used to provide materials and supplies stocked in the Support Services Division's regional warehouses to the districts. A portion of each district's formula allocated maintenance funds are supplied to the division and used to purchase stock.
- Maintenance Contingency Funds are available for unanticipated expenses. These funds are limited and provided upon approval of request to the Maintenance (MNT) Division.

Allocation Programs

The districts also have funds available from allocation programs to use for preventive maintenance of the state highway system. Each district is allocated a funding amount and projects can be selected, developed, and let to contract with each project's cost debited to the allocated funds available for that category.

• Category 1, Preventive Maintenance and Rehabilitation, provides for the preventive maintenance and pavement rehabilitation on the existing state highway system including the Interstate system. Allocation to the districts is by formula.

Section 2: Maintenance Budget Process

Background

The Routine Maintenance Budget process is performed at the statewide and district levels.

Appropriation Process

The Administration balances the needs in all areas of the department and develops the Department's Legislative Appropriation Request (LAR). The LAR is submitted to the legislature in accordance with Legislative Budget Board (LBB) procedures.

District Allocations

When the legislature passes an appropriation bill for the biennium, the Maintenance Division uses various funding formulas to determine each district's proposed budget.

Budget Formulas

Formulas were developed for each major work activity. The formulas are based upon applicable factors for each activity. Factors include inventory of physical components, condition of those components, and historical costs.

The following items are examples of these factors:

- number of lane miles, center line miles, daily truck miles, daily vehicle miles
- number of picnic areas, signals, and raised pavement markers
- area of bridges and roadside acreage
- pavement condition scores
- previous year's utility costs for luminaires and rest areas.

Section Allocations

The district allocates funds to each maintenance office including traffic and special crews. The allocation of funds is coordinated among the district maintenance office, the area engineers and the maintenance section offices. The district engineer makes final approval of allocated funds within the district.

Section 3: Contract Budget

Contracted Routine Maintenance Budget

The districts use the Strategy 144, Contracted Routine Maintenance budget for district or state let Routine Maintenance Contracts (RMC's). Districts may let "district let" RMC's up to an estimated amount of \$300,000. Any project with an Engineer's Estimate of \$300,000 or more must be let as a "state let" project through the Maintenance Division. Districts have full authority to schedule and let projects without additional approval within their allocated budget.

Category 1, Preventive Maintenance and Rehabilitation, Allocation Program

The preventive maintenance budget is handled as a "bank balance" program with the districts receiving formula-based allocations. The program addresses preventive maintenance to preserve the existing state highway system. The program is authorized by the Commission annually and funds are managed by the Finance Division, Programming and Letting Section.

The program also funds rehabilitation of existing main lanes, structures and frontage roads. The installation and/or rehabilitation of signs and their appurtenances, pavement markings, thermoplastic striping, traffic signals, and illumination systems are also allowed under this category.

Section 4: Cash and Expenditures

Department Accounting Systems

The department uses two accounting systems:

- 1. The department works on a cash-based budget. Budget reports reflect only those items that affect cash. Budget monitoring reports are available at the section, district, and statewide levels. Most maintenance charges (salaries, utilities, contractor payments, etc.) affect the budget in the year they were performed or delivered. Capital equipment purchases however, are encumbered and affect the budget in the year the purchase order was issued. For example, the cost of a front-end loader ordered in July but not delivered until October will be charged against the previous fiscal year budget.
- 2. Expenditures are reported in the <u>Financial Information Management System</u> (FIMS). Expenditures are used to monitor the amount of activity for a particular account, function or road. Expenditures are reported through the Material and Supply Management System (MSMS) for material expenditures, the Equipment Operating System (EOS) for equipment expenditures, and through the Salary and Labor Distribution System (SLDS) for labor expenditures. Expenditures are the consumption of resources regardless of when they are purchased. For instance, material purchased one fiscal year but not used until the next fiscal year will be accounted as cash in the year it was purchased and as an expenditure in the year it was used.

How to Charge Routine Maintenance Expenditures

Routine maintenance expenditures are charged to FIMS Segment 78 to the function codes shown on Code Chart 12.

Where to Find More Information

See the <u>Finance Division manuals</u> for more information on available cash and expenditure reports.

Section 5: Maintenance Contingency Fund

Contingency Fund

A contingency fund has been established to provide a budget for unusual, unanticipated expenditures.

Requests should be made in a memorandum from the District Engineer to the Maintenance Division Director. At a minimum, requests should include the following information:

- district
- county(ies)
- description of work to be performed
- cause of damage
- date of damage
- expected reimbursement amount
- amount of funds needed
- repair method (Emergency Maintenance Contract, Routine Maintenance Contracts (RMC), state forces, etc.).

Typically, requests should be a minimum of \$50,000 and should include a description of the event that created the damage.

Chapter 3: Level of Service

Contents:

Section 1: Overview Section 2: Level of Service Section 3: Environmental Best Management

Section 1: Overview

Levels of Service

The level of service defines the appropriate level of maintenance and the priority placed on the work. These levels can be used in planning, performing and evaluating the various maintenance activities with available funds. Priorities for levels of service have been set for each of the three possible levels of maintenance funding.

- desirable level (highest level of funding)
- acceptable level
- tolerable level (lowest level of funding)

Section 2: Level of Service

Purpose and Goal

The level of service for maintenance will serve as a guide for consistency in planning, performing and evaluating the various maintenance activities with the funds available.

The primary goal of the department's maintenance efforts is to provide the best level of service possible with the funds available for the entire highway system.

Why Guidelines are Needed

Maintenance levels of service are needed to:

- effectively communicate maintenance planning and maintenance performance expectations
- aid in the evaluation of maintenance performance.

Definitions

It is important to understand the following terms when considering level of service guidelines:

- highway component—An identifiable or measurable aspect of the state highway system including (for the purposes of these guidelines) specific pavement conditions.
- level of service—The condition at which a component of the state highway system should be maintained under a given level of funding.
- level of funding—The level of legislative appropriations required to substantially maintain the state highway system at a specific level of service, as established through the budgeting process. The three levels of funding are:
 - desirable (highest)
 - ° acceptable
 - tolerable (lowest)
- substantially maintained level of service—The level of service met or exceeded by 75 percent of a given highway component.

Using the Guidelines

Each highway component should be substantially maintained at the level of service designated for the current level of funding.

Maintenance Priorities

Maintenance priorities are set based on a logical progression of importance. The maintenance priorities for all highway components are as follows:

Priority	Description	
1	Safety—Provide for the safety of the traveling public.	
2	Protection of the investment—Protect the investment of public dollars in the <u>state highway</u> <u>system</u> , its right of way and all its facilities.	
3	User comfort—Provide for the comfort of the traveling public.	
4	Aesthetics—Provide for the beauty and the attractiveness of the roadway and facilities.	

Maintenance Priorities

The tables that follow list the levels of service for the major areas of maintenance.

Pavement Maintenance

The table below lists levels of service for pavement maintenance.

Pavement Maintenance

Condition	Desirable Level	Acceptable Level	Tolerable Level
Longitudinal Rutting	Maintain as follows:	Maintain as follows:	Maintain as follows:
0 - 500 ADT	< ½ & 50% per WP	< 1" & 50% per WP	< 3" & 25% per WP
501 - 10,000 ADT	< ½ & 50% WP	< 1" & 50% WP	< 3" & 25% per WP
10,001 & up ADT	< ½ & 25% per WP	< 1" & 25% per WP	< 1" & 50% per WP
Alligator Cracking for all ADTs	Maintain with no visible cracks	Maintain with visible cracks , £ 10% per WP	Maintain with visible cracks £ 50% per WP.
Ride Quality	Maintain as follows:	Maintain as follows:	Maintain as follows:
0 - 500 ADT	> 2.5 SI	> 2.0 SI	> 1.5 SI
501 - 10,000 ADT	> 3.0 SI	> 2.5 SI	> 2.0 SI
10,001 & up ADT	> 3.5 SI	> 3.0 SI	> 2.5 SI
Abbreviations: Wheel path (WP), serviceability index (SI), average daily traffic (ADT)			

Roadside Maintenance

The table below lists levels of service for roadside maintenance.

]	Roadside N	<i>Iaintenance</i>	

Component	Desirable Level	Acceptable Level	Tolerable Level
Vegetation	Maintain in accordance with Vegetation Management Manual as follows:	Maintain in accordance with Vegetation Management Manual as follows:	Maintain in accordance with Vegetation Management Manual as follows:
0 - 3,000 ADT	Level 4	Level 4	Level 4
3001 – 10,000 ADT	Level 3	Level 4	Level 4
10,001 & Up ADT	Level 2	Level 2	Level 3
Developed Urban	Level 1	Level 1	Level 1
Litter Control	Maintain as follows:	Maintain as follows:	Maintain as follows:
0 – 3000 ADT	Spot pick-up	spot pick-up	Spot pick-up
3001 – 10,000 ADT	<5 CF/AC	<6 CF/AC	<8 CF/AC
10,001 & Up ADT	<4 CF/AC	<5 CF/AC	< 6 CF/AC
Pavement edges	Maintain < 2" drop off.	Maintain < 3" drop off.	Maintain <3" drop off.
Drainage	Maintain function with minimum blockage, ponding, or erosion.	Maintain function with some blockage, ponding, or erosion with no damage to highway or private property.	Same as Acceptable level.
Rest Areas	0-200 RA-ADT: 8 hrs/day 201-800 RA-ADT: 16 hrs/day 801 & up RA-ADT: 24 hrs/day	0-400 RA-ADT: 8 hrs/day 401-1000 RA-ADT: 16 hrs/day 1001 & up RA-ADT: 24 hrs/day	0-400 RA-ADT: 8 hrs/day 401-1000 RA-ADT: 16 hrs/day 1001 & up RA-ADT: 24 hrs/day
Picnic Areas	Provide for the safety, comfort, and convenience of the traveling public; clean, inviting appearance	Provide for the safety, comfort, and convenience of the traveling public; Occasional litter, with trash receptacles near capacity; few noticeable appearance defects and minor graffiti.	Provide for the safety, comfort, and convenience of the traveling public; Occasional litter, with trash receptacles near capacity; few noticeable appearance defects and minor graffiti.

Operations

The table below lists levels of service for operations.

Component	Desirable Level	Acceptable Level	Tolerable Level
Safety Appurtenances Includes guardrail, crash attenuators, concrete median barriers, driveway culvert safety end treatment, etc.	Maintain all safety appurtenances to original design standards; all hardware functional; no noticeable appearance defects.	Maintain all safety appurtenances to original design standards; all hardware functional; few noticeable appearance defects.	Maintain all safety appurtenances to original design standards; all hardware functional; readily noticeable appearance defects.
Illumination	90% of luminaries operating in each system; hardware functional and neat in appearance; no rust on poles or anchor bolts; no broken transformer bases; no covers missing.	80% of luminaries operating in each system; hardware functional and neat in appearance with few noticeable defects; no rust on poles or anchor bolts; no broken transformer bases; no covers missing.	70% of luminaries operating in each system; hardware functional and neat in appearance with readily noticeable defects; some rust on poles; no rust on anchor bolts; no broken transformer bases; no covers missing.
Traffic Signals	Maintain signal heads in proper alignment; no burned out bulbs; hardware functional and neat in appearance; no rust on poles; efficient timing; no unnecessary vehicle delay.	Maintain signal heads in proper alignment; no burned out bulbs; hardware functional with few noticeable appearance defects; no rust on poles; minimal unnecessary vehicle delay.	Maintain signal heads in proper alignment; no burned out bulbs; hardware functional with few noticeable appearance defects; no rust on poles; minimal unnecessary vehicle delay.
<u>Signs</u> , Mailbox Supports and <u>Delineators</u>	Maintain all signs to original color; excellent night visibility; none damaged or missing; posts straight and rust-free; all sign lights operational. Signs and mailboxes are on approved breakaway posts.	Maintain all signs to original color, all visible at night; posts straight with few noticeable appearance defects; most sign lights operational. Signs and mailboxes are on approved breakaway posts.	Maintain regulatory and warning signs to original color, all visible at night but from reduced distance; readily noticeable defects.
Pavement Markings	Maintain all markings to be functional day and night with no noticeable defects, or change in reflective pavement marking patterns due to missing markers.	Maintain all markings to be functional day and night; painted markings rarely show wear; no noticeable change in reflective pavement marking patterns due to missing markers.	Maintain all markings to be functional day and night; painted markings readily show wear; reflective markers still functional with pattern still apparent.

Operations

Bridge Maintenance

The table below lists levels of service for <u>bridge</u> maintenance.

Bridge Maintenance

Component	Desirable Level	Acceptable	Tolerable Level
Bridges Item & Item Number:	Maintain the following BRINSAP inspection record condition ratings:	Maintain the following BRINSAP inspection record condition ratings:	Maintain the following BRINSAP inspection record condition ratings:
Channel, Culverts, Approaches	38	37	³ 6
Deck, Superstructure, Substructure	38	37	³ 5

Section 3: Environmental Best Management

Reserved for future section

Chapter 4: Contracting and Purchasing

Contents:

Section 1: Overview Section 2: Routine Maintenance Contracts Section 3: Preventive Maintenance Contracts Section 4: Emergency Contracts Section 5: Purchase of Services Section 6: Interagency Agreements and Contracts Section 7: Inmate/Probationer Labor Section 8: State Use Program Section 9: Bridge Preventive Maintenance Program Section 10: Material Purchasing

Section 1: Overview

Purpose of Contracting and Purchasing

The Texas Department of Transportation accomplishes its maintenance mission by effectively supplementing its work force with routine maintenance contracts, preventive maintenance contracts, purchase of services, <u>interagency contracts</u>, <u>state use</u> program agreements, inmate/ probation labor, and emergency contracts. Discussions of each of these valuable tools or a link to manuals that cover the subject are included in this chapter. In addition, this chapter briefly discusses material purchasing and verification of material weights.

Section 2: Routine Maintenance Contracts

When to Use Routine Maintenance Contracts (RMC)

<u>Section 223.001</u> of the Texas Transportation Code requires that all contracts proposed by the department for the improvement of a highway on the state highway system should be submitted for competitive bids. The definition of "highway improvements" includes construction, reconstruction, and maintenance.

Use of the Construction and Maintenance Contracting System (CMCS)

Similar to the way the Design and Construction Information System (DCIS) is used to set up and build proposals for construction projects, CMCS facilitates the routine maintenance contracting process. The district develops and prepares routine maintenance project proposals and inputs the required information into CMCS.

District Let Contracts

The district engineer has the authority to let, award or reject, and execute contracts with an engineer's **estimate under \$300,000**. This authority may not be delegated further.

State Let Contracts

Projects with an engineer's estimate of \$300,000 or more are included in the monthly statewide letting with the construction projects. These projects should be submitted to the Maintenance Division for processing for letting. The State let contracts are awarded or rejected by the Texas Transportation Commission and executed by the Maintenance Division Director.

Contract Administration

Refer to the *Maintenance Contract Manual* for information on pre- and post-award activities and administering the contract.

Section 3: Preventive Maintenance Contracts

Preventive Maintenance Contracts (CPM)

The CPM program was originally created under Commission Minute Order #85883 on June 30, 1987. The purpose of the CPM program is to prevent major deterioration to roadways and bridges through a planned cycle of <u>seal coats</u>, <u>overlays</u>, cleaning and sealing joints in concrete pavement or bridge decks, painting of bridges and other related work. These type projects are now programmed with Category One funding through the Finance Division, Programming and Letting Section and let as a construction contract through the Design Division and the Construction Division.

Section 4: Emergency Contracts

Authority for Expediting Emergency Contracts

<u>Section 223.102</u> of the Texas Transportation Code authorizes the department to promulgate rules for the expedited award of emergency contracts. The rules outlining emergency contract procedures published at <u>Title 43</u>, <u>Texas Administrative Code</u>, <u>Chapter 9.19</u>.

Emergency Contract Procedures

Refer to the *Maintenance Contract Manual* for guidance.

Section 5: Purchase of Services

Authority for Purchase of Services

- <u>Texas Transportation Code, §223.042</u>
- <u>Title 43, Texas Administrative Code, §9.21</u>

Definition of Service

The Purchase of Services method of purchase may be used on certain highway maintenance projects. The total cost of the services cannot exceed \$24,999.99. Materials may be included as part of the purchase order or supplied by TxDOT. These type contracts will usually meet one of the following conditions:

- the project does not require detailed specifications
- there is a need to expedite the project, or
- it would be impractical to use the regular routine maintenance contract letting procedures

Refer to the *Purchasing Manual* for guidance.

Materials and Services Used on the Roadway

All services and materials used on highways must be accounted for in the Maintenance Management System (MMS). The MMS is used by TxDOT to combine all activities and costs for roadway maintenance. When materials and services procured via Purchase of Services contracts are not reflected in the MMS, reported maintenance expenditures are lower than actual. Typical services procured using Purchase of Services contracts which must be brought into MMS via an MMS work order number include (but are not limited to):

- Hazardous Materials Removal
- Intelligent Transportation Services (ITS)
- Traffic Control
- Equipment Rentals with Operator

Typical roadway materials which may be procured using Purchase of Services contracts and must be brought into MMS via an MMS work order number include (but are not limited to):

- Pavement materials such as hot mix, hot mix cold laid, LRA, etc
- Traffic signal and electrical parts

For further information on how to create work orders in MMS for a Purchase of Services requisition and how to create requisitions in Oracle Peoplesoft tied to MMS work orders, see resources on the MMS Support SharePoint site. Services and materials used on highways which are procured using Purchase Orders are not to be charged to overhead or directly to the roadway without an MMS work order in Oracle Peoplesoft.

Section 6: Interagency Agreements and Contracts

Authority

The Interagency Cooperation Act, Chapter 771 of the Government Code, authorizes state agencies to contract with one another when special or technical services are needed and internal resources are not available to the agency needing the service. This act also provides for the performing agency to be reimbursed by the receiving agency for the actual cost of those services. For the reimbursement process, refer to the <u>Financial Management Policy Manual</u>.

Interagency Exchanges of Less Than \$50,000

Interagency exchanges of less than \$50,000 are exempt from the requirements of a written agreement or contract. Agencies involved with this type of exchange may document the exchange with an informal letter agreement. The division director or district engineer will sign letter agreements. A sample letter agreement for interagency exchanges of less than \$50,000 is pictured below.



(Current Letter Head Paper)

Date

Name Address City, State Zip

Dear

As we discussed, this letter confirms our agreement that your office will sort and mail our travel maps. The Texas Department of Transportation will reimburse you \$3,000.00 for this work.

The travel maps will be ready f	or mailing on	(month/day/year). You
should have the maps mailed no later than		(month/day/year). Your
Texas Department of Transportation contact is		(name), who may be
reached at	(phone number).	Constant of the second s

After the mail-out is completed, submit your Interagency Transfer Voucher in accordance with the State Comptroller procedures.

Thank you for your cooperation in this matter.

Sincerely,

Name Division Director

An Edward Opperium Py Emphasis

Figure 4-1. Sample letter agreement for interagency exchange of less than \$50,000

Interagency Exchanges of More Than \$50,000

An interagency exchange of more than \$50,000 requires a contract and must be executed by the executive director or the director of Research and Technology Implementation. These contracts would be processed through Contract Services.

Section 7: Inmate/Probationer Labor

Background

TxDOT has developed agreements that can be used by districts to perform specified maintenance work using inmate or adult probationer labor. These agreements can be executed with the local jurisdictions of the county commissioner's court, sheriff's department, Texas Department of Criminal Justice or the local <u>Community Supervision and Corrections Department</u>, as appropriate.

These agreements should be considered as a supplement to the Routine Maintenance Contracts (RMC) and State Use Program and should not displace any work normally performed by those methods.

Some examples of maintenance work that may be suitable for inmate/probationer labor are:

- removal of litter, graffiti and debris
- brush clearing
- trimming vegetation
- planting trees and wild flowers and performing other landscape maintenance activities
- cleaning signs and delineators
- painting picnic tables, buildings, curbs, crosswalks, litter barrels, guardrail and sign posts
- street-sweeping and silt removal from curb and gutter sections.

Texas Department of Criminal Justice Memorandum of Agreement for Inmate Labor

The department has executed a Memorandum of Agreement (MOA) with the Texas Department of Criminal Justice (TDCJ) for inmate labor. Form 2038 "TDCJ Conservation Work Corps" should be executed between the department and the local TDCJ unit for each specific project. Types of projects suitable for TDCJ labor are those that do not require a set frequency or a specific start and/ or completion date. Short-term projects that may be interrupted without significant consequences are preferred by TDCJ.

Sheriff's Department Agreement For County Inmate Labor

An agreement for the use of county inmate labor may be executed between the department and a local county sheriff's department department using Form 2040 "Agreement for Use of County Inmates for Highway Maintenance". In some cases, the sheriff's department may defer to the county commissioners court for execution of the agreement.

Community Supervision and Corrections Department (CSCD)

An agreement for adult probationer labor may be executed between the department and the local CSCD using Form 2039 "Adult Community Supervision Defendants Community Service Work Program Agreement".

Juvenile Offenders

Districts are not allowed to use juvenile offenders unless a court order has been issued.

Section 8: State Use Program

Authority

The <u>Human Resource Code</u>, Chapter 122, "Texas Council on Purchasing from People with Disabilities," provides the statutory authority for the State Use Program, previously known as the "Set Aside Program".

Background

The objective of the State Use Program is to provide employment to Texans with disabilities through Community Rehabilitation Programs (CRP), who can provide services and/or products while, at the same time, providing government agencies with a means of accomplishing work. <u>Texas Industries for the Blind and Handicapped (TIBH)</u> is the central nonprofit agency responsible for working with department to manage the program. In 1975, the legislature mandated the establishment of a program through which state agencies would purchase products and services produced by workers with disabilities. The law requires the use of this program if a CRP can provide the needed service on time for a fair market value.

Process

Refer to Maintenance Contract Manual for guidance.

Section 9: Bridge Preventive Maintenance Program

Background

The Bridge Preventive Maintenance Program (BPM) was developed to supplement funding for bridge maintenance. It is meant to bridge the gap between routine maintenance funding and the Bridge Rehabilitation and Replacement Program and is not intended to be used for previously scheduled bridge maintenance projects. The BPM is 100 percent state funded from Strategy 144.

The following are examples of the types of work eligible for consideration:

- Joint Cleaning and Sealing
- Joint Repairs
- Steel Piling Repairs
- Bearing and/or Bearing Pad Replacement
- Bearing Supplements for T-Girders
- Cap Repairs for Spalling (Pan and T-Girder Bridges Deck Repairs
- Concrete Repairs for Corrosion Damage
- Concrete Deterioration Treatments for Pre-stressed Beams
- Asphalt Plug Joint
- Bridge Rail Retrofits and Transitions
- Adjust Steel Shoes
- Channel Protection
- Bridge Painting

Eligible Bridges

This program is to address bridge problems early to substantially extend the life. The goal is to address those bridges that are structurally deficient (condition rating of 4 or less for deck, superstructure or substructure) that will not be programed for federal funding in the next 10 years. Bridges that are programmed for bridge rehabilitation or replacement are not eligible for this program, unless recommended by the Bridge Division.

Contracting

BPM projects are let in CMCS under Segment 78 like a routine maintenance contract using "BPS" as the project class. MNT transfers BPM funds to the district's Strategy 144 budget after letting. MNT approval is required prior to contract award for any project that has a low bid greater than 20

percent of the estimate shown on the approved projects list. Districts have signature authority for change orders. Upon request by the district, change orders may be funded with program under-runs if available and with MNT approval.

Section 10: Material Purchasing

Where to Find Purchasing Procedures

The <u>Purchasing Manual</u> outlines procedures for purchasing roadway maintenance materials.

Review by the Maintenance Division (MNT)

Materials that meet TxDOT approved specifications do not require review by MNT; however, the Procurement Division routes material requests not meeting specifications to MNT for review and approval. Districts are encouraged to contact MNT to discuss use of a material with which the district has limited or no experience before submitting a requisition.

Chapter 5: Agreements, Permits and Reports

Contents:

Section 1: Overview Section 2: Municipal Maintenance Agreements Section 3: Personal Injury and Property Damage Claims Section 4: River Water Use Certification Section 5: Wetlands/Streambed Permits Section 6: Storm Water Management Section 7: Major Accident or Unusual Incident Reporting Section 8: Highway Condition Reporting System Section 9: Storage Site Agreements

Section 1: Overview

Summary

This chapter identifies the following special reports and permits that can apply to maintenance offices:

- Municipal Maintenance Agreements—This section explains the process of entering into agreements with each incorporated city for authority to construct, reconstruct, maintain control, supervise and regulate the designated highways within the city's limits and to establish the responsibilities of the department and the city.
- Personal Injury and Property Damage Claims—The two categories of claims and guidelines for handling them are explained in this section.
- River Water Use Certification—This section explains requirements for reporting the use of public waters by the department.
- Wetlands/Streambed Permits—This section identifies permits that are required for work performed on streambeds and/or wetlands.
- Storm Water Management—This section covers policies for maintaining water quality through runoff control.
- Major Accident or Unusual Incident Reporting—This section covers the requirements for reporting major accidents or unusual incidents.
- Highway Condition Reporting System (HCRS)—This section describes system that is used to report highway conditions.
- Storage Site Agreements—This section describes the procedure for leasing storage facilities.

Section 2: Municipal Maintenance Agreements

Purpose

Jurisdiction of highways, streets, or roads within an incorporated city rests with the governing body of the incorporated city except on those declared as controlled access highways by the Texas Transportation Commission, according to <u>Transportation Code §203.003</u>. It is necessary to enter into an agreement with each incorporated city for authority to construct, reconstruct, maintain, control, supervise, and regulate the designated highways within the city's limits and to establish the responsibilities of the department and the city, in accordance with Minute Order 58588 dated October 28, 1966.

Execution

A <u>Municipal Maintenance Agreement</u> should be executed with every incorporated city within the state that is crossed by a state highway. The Municipal Maintenance Agreement should be executed in duplicate; one copy is required for the city and one for the district. In addition to the agreement, it is necessary to secure a copy of the authorization for the city to enter into an agreement. Typically, this authorization is a resolution or ordinance officially verified by the city secretary.

Required Documentation

Refer to the table below to identify the appropriate <u>forms</u> for documentation.

If the city charter requires:	Then:
a resolution	Form 1037 (Resolution) is the only documentation required.
an ordinance, and the city has a mayor,	Form 1037 (Ordinance) is the only documentation required.
an ordinance, and the city has no mayor,	Forms 1037-1 and 1037-2 are required.

Requirements for City Resolution or Ordinance

When the responsibilities of each party have been defined and are in accordance with the policy, then the agreement with the appropriate exhibits should be presented to the city for approval. Upon approval by the city, the district engineer should execute the agreement for the state, provided the agreement is satisfactory and in accordance with policy.

Exhibits

Exhibits delineating the division of responsibilities between the state and city may be shown in the form of a map or a detailed listing of highways and duties.

Revision

Approximately every two years, and after census results are released, the Municipal Maintenance Agreements should be reviewed. If changes are required, the exhibits to the agreement should be revised to include the changes. These changes should reflect the addition of new routes, revised routes, changes in city limits and abandoned routes. Revisions to the general requirements or to the municipality's or the state's responsibilities should not be made. New agreements should be executed.

Inactive Cities

A number of communities have incorporated for purposes of securing federal grants for water and sewer systems or other purposes, but they do not have an active city government. In these cases, a Municipal Maintenance Agreement cannot be executed; therefore, the highways within these cities should be treated as rural sections.

Landscape Maintenance Agreements

After execution of a Municipal Maintenance Agreement, the State may also enter into a separate Landscape Maintenance Agreement (Form 2043) with an incorporated city to maintain all or particular landscape elements for various segments on certain non-controlled access state highways. In some instances, the State may elect to provide landscape improvements and the City would take over maintenance of the landscape improvements or a City may elect to make the improvements and maintain the landscape improvements.

The City is responsible for all utility costs associated with the maintenance of all landscape improvements.

Section 3: Personal Injury and Property Damage Claims

Types of Claims

The department typically deals with two types of claims:

- claims against the department or its employees
- damage claims by the department against an individual, company or organization for damage to a highway facility.

Claims Against the Department

When a district or division is notified of a claim against the department, the Occupational Safety Division (OCC) should be notified immediately. No information should be volunteered without proper coordination through OCC. Refer to the <u>Occupational Safety Manual</u> for details.

Damage Claims

Refer to the <u>Financial Management Policy Manual</u> on Crossroads for information on damage claims.

Each district will appoint a Damage Claim Coordinator and submit their name to MNT. MNT will keep a list of District Damage Claim Coordinators and update it annually through a survey of all districts. If a District Damage Claim Coordinator changes within a district during the year, the District will notify MNT so that the change may be recorded. MNT will furnish the updated list to FIN.

Each district will establish a Standard Operating Procedure (SOP) to determine, review and document property damage for reimbursement of damage claims. At a minimum, the SOP will document how a district determines, investigates and reports damage claims in accordance with the Financial Management Policy Manual, Chapter 4 Payment (Claims), Sec. 10: Claims by TxDOT Concerning Damage to Highway Property.

Once the SOP is created, District Damage Claim Coordinators should train the appropriate district personnel on how to implement it so that every accident can be properly documented in advance of repairs, regardless of the existence of a damage claim or accident report.

The District Damage Claim coordinator shall review Crash Records Information System (CRIS) reports monthly (at minimum) and provide a report to the District Engineer including the number of damage reports and the number of active claims for each Maintenance Section within their district.

If the department has a reasonable claim and if the responsible party can be identified, the district/ division will seek reimbursement from the responsible party and/or their insurance company. If

there is a death or serious injury to the responsible party or passenger in the damaging vehicle, the district engineer may use discretion regarding whether to contact the family.

Reimbursement to the department for damage claims is transferred back to the district's budget.

Responsibilities for damage claims on roadways under performance based total maintenance contract are unique to and detailed in the contract.

Section 4: River Water Use Certification

Authority

By authority of an Order of the Texas Water Rights Commission (currently known as the Texas Commission on Environmental Quality) dated September 11, 1968, the department is authorized to take and use small amounts (truck tanks) of water from public sources for maintenance and repair of the state highway system performed by state forces.

Reporting

The department is required to file a report with the Texas Commission on Environmental Quality (TCEQ) stating the amount of unmetered public waters used for this purpose during each calendar year. The Maintenance Division reports this information to the TCEQ. Accordingly, each district must submit an annual estimate of this usage to the Maintenance Division at least a week before February 15. Districts reporting water use to a TCEQ Watermaster should report to the Maintenance Division that their water use for the year has been reported to a regional watermaster and, to avoid double reporting, not report quantities.

Section 5: Wetlands/Streambed Permits

Clean Water Act

Section 404 of the Federal Water Pollution Control Act Amendments of 1977 (Clean Water Act) authorizes the U.S. Army Corps of Engineers (Corps) to regulate material removed from or placed into "waters of the United States." The jurisdiction of this law includes not only navigable waters but most other waters and wetlands adjacent to such waters.

Waters of the United States

Waters of the U.S. can be any of the following:

- Natural streams which carry water
- Dry river beds that can carry water
- Mud flats, sand flats
- Meadows, Playa lakes and
- Numerous other areas that may or may not have water in them at the time of observation.

Wetland Defined

The Corps and the U.S. <u>Environmental Protection Agency</u> (EPA) jointly define wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Three characteristics identify wetlands: vegetation, soil and hydrology. Indicators of all three must be present during some part of the growing season for an area to be a wetland. The area may be a wetland if any of the following exist:

- The area is in a floodplain or has low spots in which water stands at or above the soil surface during the growing season. **Caution**: Many wetlands lack both standing water and waterlogged soils during at least part of the growing season
- The area has plant communities that commonly grow in areas with standing water for part of the growing season. Examples include cypress swamps, cordgrass marshes, and cattail marshes.
- The area is periodically flooded by tides, even if only by strong, wind-driven or spring tides.

Section 404 Permits

Section 404 Permits are required by the <u>U.S. Army Corps of Engineers</u> (USACE) in relation to work that will add or remove discharge of material in "waters of the U.S." and associated wetlands. For additional guidance refer to the Environmental Manual.

Activities That Require Permits

Activities in wetlands or streambeds that may require a permit include, but are not limited to:

- placement of fill material
- excavation
- levee and dike construction
- mechanized land clearing
- bridge and road construction

Activities typically do not require a 404 Permit, if they:

- Do not disturb the soil underlying a Water of the U.S.
- Do not result in the placement of fill material into a Water of the U.S.
- Do not involve the removal (dredge) of material from a Water of the U.S.

Before beginning any work in streambeds or suspected wetlands, consult your district environmental coordinator to determine if a permit is needed.

404 Permitting for Maintenance Activities

Maintenance activities that involve dredge or fill of material within a Water of the U.S. can usually be permitted under the Section 404 Nationwide Permit Program (NWP). These permits address specific activities that would result in pre-approved impacts, and authorizes those activities and impacts as long as the permittee complies with the conditions of published permit being sought. Some activities that typically do not require 404 permits are grass and wildflower establishment, noxious weed control, chemical vegetation control, right of way mowing and trimming.

There are currently over 40 types of nationwide permits, with several that are frequently used to permit maintenance activities. With few exceptions, anticipate that pre-construction notice (PCN) will be required and provided to the USACE prior to the work being performed. Once an approval has been obtained from the USACE, the activity may commence. Plan ahead and consult with your district environmental coordinator to determine the most appropriate 404 permit type. A listing of all 404 Nationwide Permits can be located on the USACE website.

Section 6: Storm Water Management

Introduction

Maintenance of the highway system should be performed not only with the goals of safety and efficiency but also in an environmentally sensitive manner. One of the most important environmental issues confronting the department is water quality. Although the impacts of runoff pollution on receiving waters from our facilities may not be significant, it is generally recognized that responsible agencies may be required by federal and state regulations to apply the best management practices available to reduce pollutant loads entering water bodies.

Policy

The department should use best management practices when contracting for or performing maintenance on the state's highways and rights-of-way. Although the publication "Storm Water Management Guidelines for Construction Activities" was developed for construction, it is a good guide and has measures that can be used directly for maintenance activities. One of the basic principles is to ensure proper use, storage and disposal of materials to minimize and/or prevent storm water pollution. The development and implementation of best management practices minimize runoff of contaminants from pavements and bridges.

Texas Pollutant Discharge Elimination System (TPDES) - Construction General Permit (CGP) (TXR150000)

This permit was issued as part of the Texas Pollution Discharge Elimination System (TPDES), for discharging storm water from construction sites to the surface waters of the state. Although the title of the permit only mentions construction, it also affects maintenance. It allows storm water discharges from state force contract maintenance work sites provided that specific guidelines are followed. Work that disturbs less than one acre is generally excluded from the regulatory requirements. Therefore, unless a work activity is excluded from construction general permit (CGP), it must comply with the CGP's requirements.

CGP Excluded Activities

The following maintenance activities are excluded from requiring compliance with the CGP, regardless of the acreage involved.

- Work "performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance." In other words, ditch and channel cleaning for maintenance reasons.
- Routine grading of dirt roads, clearing of the rights of way and shoulder blading.
- Pavement work such as seal coats, overlays, and spot base repair.

While these activities are excluded from the CGP requirements, they may still require a U.S. Army Corps of Engineers 404 permit. In addition, even if an activity is excluded, but it has the potential to produce erosion, always employ best management practices.

Activities Not Excluded from the CGP

Any maintenance activity, not excluded above, should be considered a construction activity. Contact your District Environmental Quality Coordinator for guidance.

CGP - Notices of Intent/Notices of Termination

The procedures for filing Notices of Intent (NOI) and Notices of Termination vary by District. Contact your District Environmental Quality Coordinator (DEQC) for specifics.

When applicable, follow these general guidelines for determining your level of CGP coverage.

- Projects impacting less than one acre do not require coverage under CGP, but do require appropriate Best Management Practices (BMP).
- Projects not exempted by the CGP that disturb one or more acres require a Storm Water Pollution Prevention Plan (SW3P) and a Construction Site Notice (CSN) to be posted on the site prior to beginning work.
- Projects not exempted by the CGP that disturb five or more acres require a Notice of Intent (NOI) to be submitted to TCEQ prior to the commencement of earth disturbing activities. A Notice of Termination (NOT) must be submitted to TCEQ after construction is complete and the site has been re-vegetated to 70 percent of the native background cover.

CGP Summary

In summary, it is necessary to:

- Preserve the existing vegetation when possible
- Minimize disturbances
- Re-vegetate quickly (generally should be initiated within 14 days after activities temporarily or permanently cease on portion of the site)
- Install sediment controls (e.g. silt fence, rock filter dam) at all down-slope boundaries of the site, and side-slope boundaries when appropriate.

Section 7: Major Accident or Unusual Incident Reporting

Reporting

When any major accident or unusual incident occurs on the highway system which impedes traffic movement or highway operations, or affects the highway facility through closure, detour or work stoppage, notify the Occupational Safety Division (OCC). Refer to the <u>Occupational Safety</u> <u>Manual</u> for an explanation of the types of accidents to report.

Section 8: Highway Condition Reporting System

Purpose

The Highway Condition Reporting System (HCRS) allows the department to collect, process, and display accurate and timely highway condition information for all roads on the state highway system. The major elements of HCRS are the HCRS Data Entry Web page and the HCRS Statewide Web site. The Travel Division's <u>Highway Condition Report Manual</u> contains more information.

Section 9: Storage Site Agreements

General Procedure

Each district or division desiring to lease storage sites should furnish the Maintenance Division (MNT) a memo giving detailed reasons why the storage site is necessary. The agreement should be executed on the standard Form 2042, Agreement For Storage Site Lease. The district engineer should sign the agreement before it is submitted to MNT for execution and handling.

When leasing railroad property, the railroad company prepares a lease agreement that the department must sign prior to final execution by the railroad.

Submission

Submit each lease to MNT a minimum of thirty days in advance of the effective date.

Chapter 6: Management Information Systems

Contents:

Section 1: Overview Section 2: Maintenance Management System Section 3: Pavement Management Information System Section 4: Texas Maintenance Assessment Program

Section 1: Overview

Introduction

Management systems and assessment programs are used by maintenance personnel for planning and evaluating the level of service provided by maintenance operations. These include the:

- Maintenance Management System (MMS)
- Pavement Management Information System (PMIS)
- Texas Maintenance Assessment Program (TxMAP).

Maintenance Management System (MMS)

MMS is used to provide data for planning and scheduling maintenance activities. This chapter includes a brief introduction to this system.

Pavement Management Information System (PMIS)

Like MMS, the PMIS provides standard reports used for evaluating and planning. This chapter includes a brief introduction to this system.

Texas Maintenance Assessment Program (TxMAP)

TxMAP is a program that collects and reports maintenance performance data for pavement, roadside, and traffic operations elements of randomly selected roadway sections.

Section 2: Maintenance Management System

Maintenance Management System (MMS) Defined

The MMS is a web-based application that provides detailed statistics on highway maintenance activities in order to accomplish the following:

- provide data on work load and cost of maintenance activities to support budgeting and planning efforts
- provide a tool for analyzing maintenance activities so that production efficiency can be improved
- identify sections of highway with high maintenance costs as candidates for rehabilitation
- document the work accomplished in order to support the department's budget requests to the legislature
- provide data to compare costs of maintenance activities performed under contract with those performed by state forces
- provide tools to plan maintenance work including labor, equipment and material.

For more information on how to enter data or obtain reports from MMS, refer to the MMS tutorials on the <u>Maintenance Division's SharePoint site</u>.

Function Codes for Maintenance

Designated function codes categorize work activities. Maintenance work must be charged to detailed function codes shown in <u>Code Chart 12</u>. Detailed descriptions of these function code can be found in the Code Chart 12 Guidelines posted on the <u>Maintenance Division Crossroads site</u>. Function codes are divided into eight general areas of maintenance work listed below:

Work Area Codes	Description	
100 series	Base and Subgrade	
200 series	Bituminous Surface	
300 series	Concrete Pavement	
400 series	Shoulders & Approaches	
500 series	Roadside	
600 series	Bridge Maintenance	
700 series	Traffic Service	

Function Codes for Maintenance Work

Function Codes for Maintenance Work

Work Area Codes	Description	
800 series	Extraordinary Maintenance	

MMS Interfaces

The department uses the MMS to input roadway maintenance data into the following systems:

MMS Interfaces

System	Abbreviation	Tracks
Salary and Labor Distribution System	SLD	employee time
Equipment Operations System	EOS	equipment use
Material Supply Management System	MSMS	material use

Interfaces between the <u>Construction and Maintenance Contract System</u> (CMCS) and SiteManager allow the MMS to capture contract maintenance activity data.

Section 3: Pavement Management Information System

Pavement Management Information System (PMIS) Defined

The PMIS is an automated system for storing, retrieving, analyzing, and reporting pavement condition information. It can be used to retrieve and analyze pavement information to compare maintenance and rehabilitation treatment alternatives, monitor current pavement conditions, and estimate total pavement needs. Refer to the *Pavement Management Information Systems Manual* for additional information.

Section 4: Texas Maintenance Assessment Program

Texas Maintenance Assessment Program (TxMAP) Background

TxMAP was developed by the Maintenance Division in 1999 to document the condition of the state highway system and to meet the requirements of Government Accounting Standards Board Statement 34 (GASB34).

Benefits

Annually, the program collects maintenance performance data on approximately 4000 one mile roadway sections and the associated right of way. Assessments are performed on 5% of the non-interstate highway system centerlines miles and 10% of the Interstate system centerline miles in Texas. The annual TxMAP report provides the Administration information on how effectively the districts are performing the maintenance. It also documents the overall condition of the highway system and allows maintenance managers to monitor conditions to determine resource needs. Performance data through 2012 can be found on the Maintenance Division Crossroads site. In 2013, the Maintenance Division began loading the performance data into the Maintenance Management System.

Chapter 7: Emergency Management

Contents:

Section 1: Overview Section 2: Disasters and National Emergencies Section 3: Federal Reimbursement Programs Section 4: Oil and Hazardous Material Spills Section 5: Emergency Planning Roles and Responsibilities

Section 1: Overview

Purpose of This Section

Manmade and natural emergencies by their very nature are difficult to handle. This section provides guidance for emergency response.

Authority

The State of Texas Emergency Management Plan was issued under the authority of the <u>Texas</u> <u>Disaster Act of 1975</u>, Chapter 418 of the Texas Government Code.

Natural and Manmade Disasters

The <u>State Emergency Management Plan</u> identifies the responsibilities of all appropriate state agencies. The plan is available online on the Texas Department of Public Safety website. The Maintenance Division (MNT) is responsible for coordinating department disaster operations including basic National Incident Management System (NIMS) training.

Role of the Department

During any major emergency or disaster, the department may be required to provide assistance both on and off the right of way. Disaster emergency services provided to the public by the department should be in accordance with the State Emergency Management Plan. Each district must develop and distribute standard operating procedures for emergency preparation, response and recovery. All employees must be trained in the standard operating procedures including basic National Incident Management System (NIMS) training.

Section 2: Disasters and National Emergencies

General Policy in All Disasters

When requested by the disaster district chairperson, the department has the authority to perform emergency operations off the state highway system. Districts have full authority to implement an emergency response activity as long as they are in compliance with applicable state law and TxDOT Policy.

Texas Division of Emergency Management (TDEM)

The Governor, by executive order, has appointed the director of the Texas Department of Public Safety (DPS) as director of the TDEM. The director is also designated chairman of the State Emergency Management Council. TDEM administers the statewide comprehensive emergency management plan and keeps the Governor informed of emergency situations which might call for the use of state resources.

State Emergency Management Council

The State Emergency Management Council has been established to include representatives of each agency of state government whose legal functions relate to important phases of emergency management. The Council will advise and assist in all matters relating to disaster preparedness, emergency response, and disaster recovery. MNT serves on the Emergency Management Council to coordinate the department's overall emergency operations.

Disaster District Committees

The state is divided into "disaster districts" which utilize Department of Public Safety (DPS) district and subdistrict boundaries. Disaster district committees consist of counterpart representatives of each agency and departments having an emergency service function on the State Emergency Management Council. The Highway Patrol captain of each DPS district or lieutenant of the DPS subdistrict serves as the chairperson of this committee. This chairperson convenes the district disaster committee in the event of a disaster or threat thereof, or as directed by the Texas Division of Emergency Management. Use of TxDOT resources off the highway is only authorized through the disaster district chairperson, TDEM director, or the Governor, unless there is an imminent threat to life and property.

When mayors or county judges have exhausted their resources in attempts to manage, control or mitigate the effects of an emergency or disaster, they may request state assistance through the disaster committee chairperson.

Disaster District Committee Chairperson

In the absence of a disaster declaration by the Governor, the disaster district chairperson may request TxDOT assistance and support if, in the chairperson's opinion, the assistance is for lifesaving operations or to relieve suffering and hardship as a result of a natural or man-made disaster event.

Section 3: Federal Reimbursement Programs

General Policy

For auditing and reimbursement purposes, cost records should be maintained for all emergency operations accomplished, especially those operations performed in assisting local governments and other agencies off the right-of-way. The record retention period for emergency operations cost records is three years past the "closeout date". Closeout can take many years and does not occur until all federal reimbursement payments have been made to the Department, per disaster, and a closeout form has been completed.

Federal Highway Administration (FHWA)

The FHWA administers Federal-Aid System Emergency Relief (ER) Funds for emergency and permanent repairs to facilities on the federal-aid system. This includes local government agency roads functionally classified Rural Major Collector or above. (Federal-aid highways are all the public roads not functionally classified as either local or rural minor collectors.) Temporary operations, emergency repairs, and preliminary engineering including consultant work may proceed without prior FHWA authorization.

Permanent restoration work should not be performed prior to FHWA authorization unless performed as part of emergency repairs.

In addition to the actual repairs, ER funds may also be used for reasonable design and construction engineering costs on approved projects. More information can be found in FHWA Emergency Relief Manual.

To obtain emergency relief funds, all proposed projects must be prepared and submitted to the FHWA though the Maintenance Division.

The districts are responsible for the state oversight of all Emergency Relief projects including those with state forces. Detailed information about the state oversight can be found in the *Maintenance Contract Manual*.

Federal Emergency Management Agency Program (FEMA)

This program, administered by FEMA, provides for emergency and permanent repairs to facilities on the state highway system. In addition to the actual repairs, FEMA funds may also be used for engineering, planning, supervision, design, and inspection.Recent changes in Federal reimbursement limit the assistance from FHWA or FEMA. During any major emergencies the Maintenance Division will inform the districts which federal agency will be assisting with reimbursements.

Section 4: Oil and Hazardous Material Spills

Policy

Department personnel may only participate in containment, clean up, or neutralization of material that has been determined to be non-hazardous to their health or safety. For more information about TxDOT's hazardous material cleanup policy, including notification requirements, see the *Occupational Safety Manual*, Chapter 5, <u>Section 6</u>.

Abandoned Hazardous Materials

If hazardous materials are abandoned on TxDOT's right of way, and the responsible party cannot be identified, it becomes TxDOT's responsibility to ensure proper disposal. It is recommended that a blanket purchase order for containment, material identification, and material disposal be developed. A blanket purchase order could also be used in non-emergency situations. Contact the Environmental Division for assistance with abandoned hazardous materials found on the right of way. In some cases, the TCEQ may elect to use their own hazardous material contract. For additional assistance, contact the TxDOT Emergency Management Coordinator.

Responsibility: TxDOT personnel should follow standard safety procedures and report pertinent information to their supervisor immediately. TxDOT supervisors should contact the district hazardous materials coordinator and local law enforcement officials if needed. hazardous materials coordinators should oversee removal and disposal when the responsible party cannot be identified. TxDOT personnel likely to encounter abandoned hazardous materials require Hazard Materials Awareness (SFH430) Training.

Process:

- Waste is discovered by TxDOT personnel or is reported to TxDOT.
- Restrict access to material. Keep the public away from any hazard, and provide traffic control.
- Survey the scene from a safe distance. Access the integrity of the container(s);
 - ° the existence or possibility of runoff
 - presence of any dead animals are nearby
 - the distressed nature of surrounding vegetation
 - evaluate any markings on containers
 - ° assess the physical characteristics of material
- If determined an emergency, due to location, material characteristics, etc., proceed directly to contract for containment, material identification and material disposal.
- Determine responsible party.

- evaluate labeling on container(s) from a safe distance to determine whether a potential responsible party can be identified
- contact party to pick up and properly dispose of container(s)
- if responsible party cannot be identified, contact TCEQ regional office for possible assistance in identifying the responsible party

Reference:

Texas Transportation Code, §§224.031 and 224.032

State of Texas Emergency Management Plan

Contracting: Contracting for cleanup, testing, and disposal is to be handled by:

- Third party—trucking company or manufacturer
- TCEQ—should they assume responsibility for the clean-up
- District—Contact Environmental Division for assistance, if the responsible party is not taking appropriate actions or if TCEQ has not assumed responsibility for the clean-up.

Hazardous Substance Spill Contingency Plan

The TCEQ is the lead agency in hazardous material spill response. Emergencies involving spillage, release, and/or abandonment of known or suspected toxic/hazardous materials are the prime responsibility of the TCEQ. (Ref. Texas Water Code) It is important for department employees to remember that only trained personnel should ever approach a fire or spill. **Department personnel are specifically prohibited from handling, cleaning up, or otherwise coming in contact with toxic/hazardous materials at accident scenes or abandonment sites on the department's right of way.** Doing so may adversely affect the health and/or safety of department personnel.

Section 5: Emergency Planning Roles and Responsibilities

District and Division Responsibilities

During emergencies and disasters, various personnel throughout TxDOT have different responsibilities for the mitigation, response and recovery. This section delineates some of the necessary responsibilities that each position holds.

Maintenance Section

Each maintenance section should have emergency preparedness plans in place. These plans should include:

- 24 hour contact information for:
 - Maintenance section employees
 - Maintenance section employee emergency contacts
 - District office response personnel
 - Area office response personnel
 - Division response personnel
 - Maintenance section personnel from adjacent sections
 - Public Information Officer
 - ° Law enforcement dispatch centers
- Written plan to ensure law enforcement has latest TxDOT contact information
- Methodology to ensure employee accountability for emergency response
- Planned pre-event meetings with law enforcement and other response agencies
- Inclement weather plans, if applicable, to include
 - Snow and Ice Control Plan in accordance with the <u>Snow and Ice Control Operations</u> <u>Manual</u>
 - Hurricane procedures, including H-120 hour checklists
 - Flood response procedures
- Traffic accident response procedures
- Hazardous material spill response procedures
- Highway Condition Reporting System update procedures
 - Designation of personnel to be notified

- Designation of a recommended minimum of three authorized HCRS users to update conditions during and after an event
- Procedures to notify those HCRS users of conditions to be updated
- FHWA notification procedures using <u>Form 2111</u> in accordance with the <u>Occupational Safety</u> <u>Manual</u>
 - Designation of personnel to be notified
 - Procedures to notify those users of conditions to be reported
- Documentation procedures
 - Designation of personnel to take photographic documentation
 - Designation of personnel to ensure correct task numbers are used for various charges
- 24 hour scheduling typically two crews (day and night) working 12 hour shifts
 - Scheduling of crews for designated shifts
 - Assignment of dispatch duties for designated shifts
 - 24 hour access issues all employees have ability to access necessary facilities, equipment, and materials
- Staffing plans during pandemic flu
- Procedures to ensure appropriate materials are on hand in sufficient quantities for various emergencies.

District Maintenance Management

- Provide charge information. Projects will be created in the Maintenance Management System (MMS) and a unique task number will be generated by the system.
 - Districts must track all applicable work done to mitigate the damages from eligible disasters by assigning task numbers to either a specific type of work, a specific location or to a specific county for countywide damages and by using the correct charge information.
 - For statewide disasters, the Maintenance Division will create the project in the MMS project and disseminate the task number to ensure consistency across district borders.
- Manage mobilization of emergency response crews. Districts may be called upon to mobilize forces to another district. District maintenance administration must ensure:
 - Logistics support (food, water, fuel, lodging, etc.) of mobilized forces is made available at the receiving district
 - Correct charge information (MMS project(s), MMS work orders, task numbers, districts, county, etc.)

- Coordination with the TxDOT Emergency Operations Center (when activated)
- Employee compliance with safety policies
- Equipment is interchangeable with inter-district equipment (equipment interoperability)
- Ability to communicate with inter-district personnel (communications interoperability)
- Hurricane Response Reentry Plan has been reviewed and district is aware of its function as a support district, responding district or staging district. Plan can be found on the <u>MNT</u> <u>Emergency Management website</u>.
- Ensure the TxDOT EOC website is updated. As requested, update survey or other information on the <u>TxDOT EOC website</u> on the MNT Crossroads page under EOC procedures.
- Ensure the district EOC is manned and operated. Districts may find it beneficial to open a district emergency operations center based on the disaster's impact or duration. District maintenance office personnel are responsible for the planning and operation of this center. District EOC procedures may be based on the TxDOT EOC operations manual located on the MNT Emergency Management website under EOC Operational Procedures.
- Ensure each maintenance section has planned and prepared appropriately. Perform annual reviews of each maintenance section's emergency plans.
- "Ensuring reimbursements are received from applicable federal agencies.
 - For eligible events, special procedures must be followed to secure reimbursements from FHWA or FEMA. Refer to the <u>"Federal Reimbursement Process"</u> link on the MNT website for guidance.
 - Ensure local government agencies are informed of the FHWA Emergency Relief Program.
- Overseeing and managing the emergency contracting processes. Guidance is in the *Maintenance Contract Manual*.
- Performing the duties of the District Homeland Security Coordinator. The Homeland Security Coordinator is responsible for all district homeland security issues, including:
 - Serving as point of contact for the district on homeland security matters
 - Receiving and distributing homeland security correspondence
 - Managing homeland security action plans
 - ° Coordinating critical infrastructure emergency plans
 - Ensuring all applicable personnel have received homeland security training
 - Ensuring all potential responders are adequately trained on NIMS.
- Ensuring maintenance sections and district personnel are trained in and perform the required reporting requirements (HCRS, FHWA Alert Bulletin Form 2111, etc.)
- Coordinating off-system assistance with the Disaster District Chairman

- Providing personnel for the Disaster District Committee Emergency Operations Center (DDC EOC) when requested. The Department liaison at the DDC EOC must have the authority to make immediate decisions on behalf of the Department. This liaison will assist with the coordination of disaster response and their duties will include:
 - Receiving and managing requests for assistance from the DDC
 - Coordinating TxDOT activities with other agencies
 - Working with officials from local jurisdictions to ensure effective relief operations.
- Working with the TxDOT EOC, if activated, or, if not activated, working directly with the TxDOT Emergency Management Coordinator and the State Operations Center.
- Ensuring the district has a valid Business Continuity plan. The plan should be reviewed periodically for necessary updates and additions.
- Reviewing and ensuring familiarity with the State of Texas Emergency Management plan and annexes. TxDOT is the primary agency for Annex K, "Public Works and Engineering." TxDOT is a supporting agency for multiple annexes, including Communication, Direction and Control, Evacuation, Fire Fighting, Hazard Mitigation, Hazardous Materials and Oil Spill Responses, Public Information, Recovery, Terrorism incident Response, and Transportation.
- Ensuring compliance with the National Incident Management System (NIMS).
- Performing the duties of the district Government Emergency Telecommunications Service (GETS) and Wireless Priority Service (WPS) coordinator.

Maintenance Division Management

TxDOT's Emergency Management statewide point of contact, under the Maintenance Division Director, has various emergency preparedness responsibilities, including:

- Ensuring all TxDOT employees are prepared for emergencies
- Serving as primary liaison to the Texas Division of Emergency Management
- Serving as primary liaison to the Federal Highway Administration for all emergency response activities
- Guiding disaster response activities statewide
- Guiding hurricane response planning activities
- Guiding Homeland Security preparedness activities
- Guiding Pandemic Flu planning activities
- Serving as a Texas Drought Preparedness Council member
- Serving as Emergency Management Council member
- Ensuring NIMS compliance

- Serving as primary liaison for the FHWA emergency relief reimbursement program
- Serving as primary liaison for the FEMA reimbursement program
- Maintaining the statewide emergency contact list
- Maintaining the Statewide Listing of Maintenance Supervisors and Area Engineers
- Serving on the State Emergency Response Commission.

Chapter 8: Quarry and Pit Safety

Contents:

Section 1: Overview

Section 1: Overview

The Texas Aggregate Quarry and Pit Safety Act was passed in 1991. The purpose of the legislation was to protect the public good by requiring safety devices for certain pits and quarries and regulate public access. The Act assigned enforcement responsibility to the Railroad Commission of Texas, but in 2003, responsibility was transferred to the Department. The primary duty of inspecting pits and issuing safety certificates assigned to the Maintenance Division.

Texas Law and Code

The Quarry and Pit Safety Act is codified in the <u>Natural Resource Code</u>, <u>Chapter 133</u>, <u>Quarry</u> <u>Safety</u>. The Quarry and Pit Safety rules are in the <u>Texas Administrative Code</u>, <u>Title 43</u>, <u>Part 1</u>, <u>Chapter 21</u>, <u>Subchapter M</u>.

Safety Certificate Required

A safety certificate is required when a pit is five feet or deeper and is located within 200 feet of a public road.

District Requirements

When traveling highways, county roads or city streets, in the course of normal duties, district personnel should inform the Maintenance Division of any of the following conditions:

- New pits or quarries within 200 feet of a public road.
- Locations of any new pit or quarry that the district or contractors are excavating for material for department use.
- Pits or quarries that are less than 50 feet to the property line of the nearest property not owned or leased by the operator.

Further Information

Further information on the <u>Aggregate Quarry and Pit Safety Program</u>, including contact numbers and forms, can be found on the TxDOT website.

Chapter 9: Local Government Assistance Program

Contents:

Section 1: Overview

Section 1: Overview

County Assistance

The Local Government Assistance Program was established in 1997 under <u>Transportation Code</u> <u>§201.706</u> and requires the Department to assist counties with materials to repair and maintain county roads giving preference to counties with an above average number of overweight trucks receiving weight tolerance permits. The legislation requires, after 1999, that at least \$6,000,000 worth of assistance, in the form of materials, be provided to the counties each fiscal year.

The rules for this program (<u>43TAC §29.3</u>) provide the procedure to be used to determine the allocation to each county. Maximum use of surplus materials on hand is expected to meet the allocations. Surplus materials are materials that the District Engineer deems to be in excess of the district's need. New materials will be made available when surplus materials on hand are not available in sufficient quantities or the haul distance or cost is prohibitive.

Program Allocation Method

- 65% of the allocation is based on the county's percent of the total number of weight tolerance permits issued in the state.
- 20% of the allocation is based on the county's percent of the total vehicle miles on county roads in the state.
- 15% of the allocation is based on the county's percent of the total lane miles of county roads in the state.

Division Responsibility

- Beginning of the fiscal year, calculate the value of assistance for each county based on the program's allocation method.
- Distribute to the districts' operating budgets the county value assistance for each district based on the sum total of the counties' allocation within the districts.
- Notify the districts by memo the value of assistance for each county within the district.

District Responsibility

- Beginning of the fiscal year the District Engineer determines available surplus material on hand.
- Annually, notify each county within your district of the assistance available to them.
 - <u>Sample Letter</u>

- Provide the county a list of available surplus materials on hand and location, along with the unit cost of the material.
- In accordance with 43 TAC §29.3, advise the counties to provide a written request within 45 days from time of notification for materials.
- Furnish available surplus material to counties as requested.
- If surplus materials on hand are not sufficient to meet the annual value, new materials will be made available.
- Follow Support Services Division's guidance for issuing out existing stock materials or the purchasing of new materials. Guidance can be found at the following Crossroads link: <u>https://crossroads.dot.state.tx.us/SSD/Pages/Catalog-Management.aspx</u>
- Account for and report the value of the materials issued to each county when requested.

Assistance to Cities

Under various riders to the biennial General Appropriations Act, the Department has been authorized to assist the cities with the maintenance of city streets by providing engineering and maintenance expertise on roadway maintenance. Surplus materials will be given to a local government upon request after the Department has complied with the requirements of Transportation Code §201.706. For those cities that adopt or have adopted either a street use fee for maintenance or a specialized fee for street accessibility improvements as part of their local utility fees, the Department is authorized to coordinate its accessibility programs with those cities including providing engineering expertise where possible.