

## **CHAPTER 7**

### **STAFF ORGANIZATION AND WORKLOAD DISTRIBUTION**

#### **7.1 PAVING OFFICE'S ROLE WITHIN ENGINEERING**

The pavement management office is one of six sections within the Engineering Division of MPW. The other sections within Engineering are:

- Street and Road Design
- Construction Compliance
- Traffic Engineering
- Traffic and Parking
- Permitting

Engineering is one of four divisions within Metro Public Works. Administration and Finance, Waste Management, and Streets and Roads form the other divisions. The Pavement Management office has regular contact with the Administration and Finance Division and the Streets and Roads Division. Each division requires specific communications styles and substance. Additionally, Pavement Management needs to communicate projects and policies through the department's Public Information Coordinator.

The amount of funding associated with the existing pavement management program and the large number of individual projects requires very specific accounting procedures and strong management accountability in terms of policy. The paving office itself is primarily responsible for entering and maintaining material quantity data in spreadsheet form for all contracts. GASB Statement 34 requirements, which require that the value of infrastructure be shown on Metro's balance sheets, provides the option of an asset-management system such as the pavement management program, and that information is essential for both the department financial management and the auditors for Metro itself.

Several items require routine communication between Pavement Management and Streets and Roads. The specific paving projects assigned to in-house forces require specific, clear information regarding location, type of repair, schedule, priority, quantities, utility coordination, etc. Spot repairs such as potholes also require clear, unambiguous directives to avoid crew inefficiencies in locating specific potholes. Projects involving old street cuts may require information from the utility itself.

Streets and Roads provides communication back to the Pavement Management office on several issues. Information on completed work orders need to include actual quantities, crew hours, time to complete, and similar data that would be logged on the pavement management spreadsheets in the same manner as an outside contract project would be. Unresolved issues, significant scheduling delays, and other managerial matters need to be addressed in a clear manner to ensure accuracy. Unrelated problems observed by Streets and Road crews that are relevant to Pavement Management also need to be routinely communicated.

The primary purpose of the metro paving office is pavement management. Within the Pavement Management office itself, the interaction among staff members and outside agencies

representing Pavement Management is a critical element in the existing pavement management process. The paving manager has six areas of supervision: service requests, paving projects, pavement preservation, coordination with utilities, contractual bid administration, and data collection. In addition, there are also administrative responsibilities, including reconciliation of bid quantities with field tabulation of the actual quantities in place and close interactions with the Special Operations section of Public Works to facilitate the in-house paving operations.

## **7.2. CURRENT STAFF ORGANIZATIONAL STRUCTURE AND WORKLOAD**

### **7.2.1 Pavement Management**

Pavement Management is not a single activity, but rather a group of activities dealing with selection of M&R projects. It involves interpreting PMS software output, generating paving lists, and estimating M&R and budget requirements. This function is currently performed by the paving program manager with support from IT Technician, two engineering technicians, and an administrative assistant. A technician generates a list of candidate projects using the PMS software, and a consultant inspects the segments on the candidate list to develop a paving list. The paving manager, with input from staff engineers and technicians, prioritizes and finalizes the paving list based on the consultant's recommendations.

### **7.2.2 Service Requests**

This function involves fielding all requests from citizens, public officials, and other agencies, as well as producing intra-office reports. Service requests are coordinated with the customer service department. Follow-up by an engineering technician is required to ensure satisfactory completion (by field evaluation, work order report, field engineer's verification, or other method). The paving program manager ensures the proper M&R is considered, that the project or task is scheduled in an efficient manner (by combining with a larger project or completed as an individual project), and that the priority of the project is consistent with the pavement management program.

### **7.2.3 Utility Coordination**

This function provides coordination with affected utilities, primarily Metro Water, Nashville Gas, Nashville Electric Service, and occasionally telecommunication providers such as Bell South and Comcast. There are three key areas of coordination that must be accomplished

- Excavation of existing streets by utilities on an emergency or routine basis
- Excavation of existing streets by Metro Public Works for street restoration or improvement projects
- Scheduling of joint improvement projects that provide "win-win" conditions for both the utilities and Public Works.

Utility coordination is performed by an engineering technician, who is responsible for administration, compliance with Metro patch design standards, and field inspection.

### **7.2.4 Contract Design, Administration and Paving Construction Inspection**

The design and administration of pavement restoration contracts for outside services is handled by Collier Engineering, a local engineering firm which has a five year contract with

Metro Public Works. Collier provides the engineering design for the various projects, prepares bid documents, administers the contract, provides construction observation, and issues routine reports to Public Works. Additionally, Collier inspects paving projects completed in-house. The information that Collier provides regarding time of completion and actual quantities is an input to the spreadsheets and service reports maintained and administered by the paving office. Information on a project's completion is also significant when close communication with a utility is needed. A staff engineer oversees and administers the contractor, and is responsible for ensuring the project designs adhere to Metro standards.

### **7.2.5 Data Collection**

Data collection is the process of gathering information required to make informed decisions about the paving schedule and making it available to the decision makers. The most visible type of data collection is the pavement condition survey. Historically, Metro has used contractors to perform distress data collection. Staff engineers and technicians oversee data collection and perform quality control checks of the data collection process.

## **7.3 STAFF ORGANIZATIONAL STRUCTURE AND WORKLOAD**

Due to the pavement management program, new skills and new lines of communication have developed among functional units within Metro Public Works and among Metro departments. Managers now consider pavement strategies as well as project scope, location, and priority. Project priorities under a comprehensive pavement management program are different from previous procedures. Managers are now able to articulate the reasons a road repair is being delayed or accelerated, how one location was chosen over another, why one treatment strategy is more appropriate than another, and how the entire process actually saves money while improving the quality of pavement throughout the community. Workloads among staff have shifted because of the pavement management program implementation, and adjustments to individual tasks and responsibilities. The recommended organization chart for the Metro Pavement Management Office is shown in Figure 7.1.

Understanding the impact of the pavement management program on current workloads, the new skills required, the nature and character of the communication needed, the changing objectives, and the adjustment of workloads in the future are all key to successful implementation of the pavement management program within Metro government. The pavement management system has had a positive impact on each function.

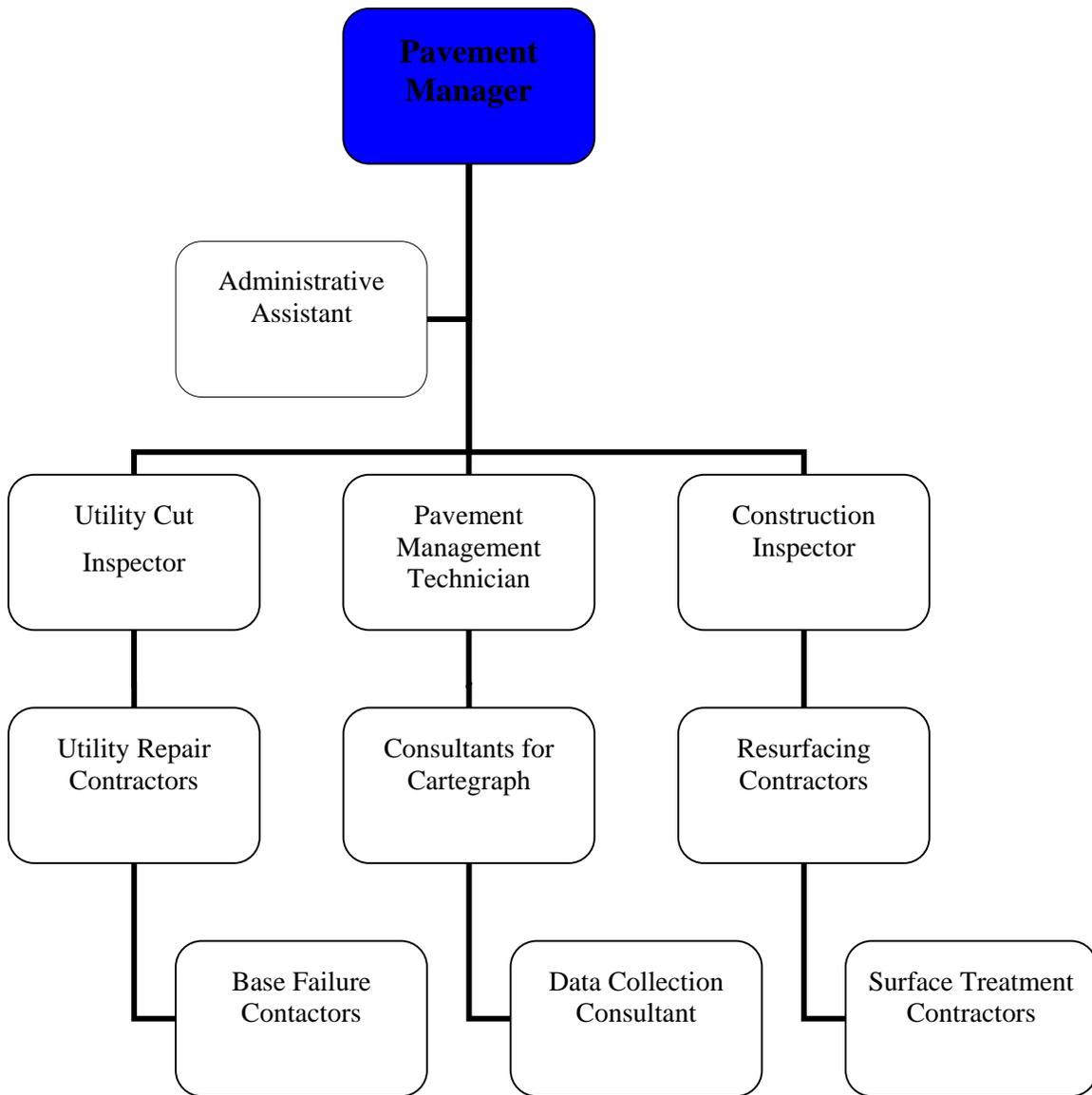


Figure 7.1. Recommended organization chart for Pavement Management Office.

#### 7.4 FUTURE OBJECTIVES

Responsibilities within the Paving Office will continue to evolve. The new tools provided by the pavement management system will provide opportunities to modify existing job objectives or define new objectives. The most likely job objective change is anticipated to be the area of utility coordination.

Excavation of existing streets by utilities is handled by permit, but ensuring such permits are actually obtained on a timely basis is difficult, especially in an emergency. The location of the cut must be accurately recorded, and an acceptable area and method of repair must be determined. Follow-up is essential to confirm that the cut was in the location as recorded, that the scope was consistent with the permit, and that the repairs meet Metro Public Works policy. Results of the final inspection should be recorded in the pavement management system.

Street restoration or improvement by Metro Public Works may impact utilities. Valve and manhole lids must be raised for overlay projects or marked and protected during milling operations. Deeper excavations for storm water systems, crown or super-elevation adjustments, or curb and gutter replacement also require utility notification and coordination.

Pavement management systems offer the potential for improving the third type of utility coordination: joint scheduling of major capital improvements by Metro Public Works and utilities. Because the pavement management system can project repairs several years in advance within a financially constrained model, Metro Public Works can commit to restoration and other maintenance projects with reasonable assurance of its ability to honor those commitments. Utilities already program major improvements years in advance, and they can achieve cost savings by making those improvements at the same time that the road project is under construction. Such coordination can provide cost savings or both Public Works and the utilities as well as reduce delays and inconvenience for the public.

Other future job objectives are likely to involve the following areas: pavement marking coordination, intelligent transportation system loop detection system coordination, pedestrian controls and bicycle lane assignments, traffic calming systems, pavement coloration techniques, and pavement texture systems.

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