

ACCOUNTING AND MANAGEMENT

20.01 DEFINITIONS

This manual is intended for internal guidance only and is not intended to create a legal or moral duty. Supervisors have discretion, based upon their expertise and the particular circumstances, to deviate from this manual and to conduct additional research or receive input from experts in other areas, as needed.

The functions of Accounting and Management are often construed to be one and the same. While the two are complimentary and work in unison, there are basic differences.

20.01.01 ACCOUNTING

Accounting is the body of scientific principles developed to record and maintain all business transactions and accounts. The accounting function is paramount to an organization's routine business operations. The accounting system allows the payroll to be met and invoices to be paid, as well as providing complex records and statements listing assets, liabilities, revenues, and expenses.

20.01.02 MANAGEMENT

Management is the art of planning, organizing, directing and controlling an organization and its resources. Management's primary function is the making of decisions that will determine the future course of action for the organization over the short and the long term. Management systems utilize the Accounting data to simplify and enhance the decision-making process.

20.02 SYSTEM INTERACTION

In essence, accounting is generally a complex system of formalized record keeping and management is the use of that complex data combined with the manager's skill and knowledge, to execute the decision-making process.

20.03 DEPARTMENT OF HIGHWAYS ACCOUNTING SYSTEM

20.03.01 REMOTE ENTRY MANAGEMENT INFORMATIONAL SYSTEM (REMIS)

20.03.01.01 SCOPE AND PURPOSE

To effectively and efficiently manage highway maintenance, managers must be aware of what is transpiring on a current basis. Such awareness enhances the maintenance manager's skills for making sound and accurate fiscal, operational and

managerial decisions. The Department's computerized accounting system was developed to provide this vital link to management.

20.03.01.02 SYSTEM TYPE

REMIS is a distributed data processing system that actually fulfills a dual role in regard to the Department's many operations, including maintenance. Throughout the Department's many locations, remote computer terminals are connected directly and indirectly to the central computer system in Charleston via communications circuits. This on-line capability allows data to be entered directly into the central computer processing unit from virtually all reporting organizations. Additionally, managers at virtually all reporting organizations can retrieve and review processed data through the same on-line system, thus availing to the manager a myriad of current data and information for managerial decision making.

20.03.01.03 DATA OUTPUT

REMIS, through a succession of menu-driven reports, permits the organizational manager to inquire and review such information as:

- Tracking of Purchase Documents
- Equipment Fleet Data and Maintenance Schedules
- Equipment Cost/Revenue Data
- Preview of Reported Payrolls
- Inventory Stockage Levels and Locations
- Project Tracking Data
- Authorization Expenditures
- Organizational Budget Status
- Current Weather Forecasts

20.03.01.04 DATA TIMELINESS

The majority of REMIS data retrieved will be no more than two reporting days old. Entry of all REMIS data must be maintained current, on a daily basis. It is required that all of the previous day's business/work reports be entered into REMIS on, and not later than, the following work day. The subsequent processing and updating of that data, as entered, will be accomplished the PM after normal business hours-- making that very data available for inquiry and review the next day.

20.03.01.05 SYSTEM ACCESS

Access to REMIS is controlled in that there are restrictions and required steps that must be followed in order to successfully enter the system, initiate changes, or retrieve information. The system's security has built-in safeguards for protecting sensitive information such as payroll.

20.03.01.06 SYSTEM SECURITY

The levels of access to the system for employees will vary, according to each employee's job related responsibilities in updating and retrieving information from the system. Employees required to have access to REMIS will be required to enter their Social Security number and a personal password. The computer then checks its files and data banks to determine what access level(s) the employee is permitted.

20.03.02 ORGANIZATIONAL NUMBERING SYSTEM

The Department utilizes a numbering system to designate the various organizational units of the Department of Highways. These numerical designations provide a means of accounting and gathering operational information on the basis of each individual organization number. This organizational numbering system is broken down by Division, District, and County organizations (refer to Volume I of the Administrative Operating Procedures for the current listing of Organization Numbers.)

20.03.03 ACTIVITY NUMBERING SYSTEM

20.03.03.01 PURPOSE

The Department's Accounting System utilizes a series of Activity Codes to numerically classify and identify the different tasks performed by the Department's personnel. These Activity Code classifications permit analysis of expenditures according to the actual tasks being performed. The application and value of Activity Codes take on added precedence when considering that the budgetary concept is founded primarily on Activity Codes. This is particularly true for maintenance organizations which prepare the Annual/Quarterly Plan by Activity Codes (see Section 20.04.05 of this text.)

20.03.03.02 MAINTENANCE ACTIVITIES/PERFORMANCE STANDARDS

Maintenance organizations have the most detailed selection of Activity Codes available covering the many and varied maintenance tasks that must be performed. Each maintenance activity code is described in a very detailed form through the Maintenance Performance Standards Manual. A Maintenance Performance Standard exists for each maintenance activity. These Performance Standards list such vital information as a complete description of the activity, the proper time of the year to perform the activity, the expected crew size, the quantity and type of equipment required, anticipated (standard) productivity, and the average daily accomplishment amount. Refer to Volume I of the Administrative Operating Procedures for a complete listing of Activity Codes and see the Maintenance Performance Standards Manual for a complete detailed summarization of Maintenance Activity Codes.

20.03.04 AUTHORIZATION NUMBERING SYSTEM

20.03.04.01 PURPOSE

The Department's accounting system utilizes Authorization Numbers to ensure correct expenditure classifications. The Authorization Number is pertinent, in that generally the first two digits denote further classification of the roadway system and the phase of work being performed. This is particularly true for Non-routine Maintenance Authorizations where the first digit of the authorization denotes whether the work is being performed on Expressway, Trunkline, Feeder, State Local Service, etc., and the second digit defines whether the type of work is Construction or Maintenance related.

20.03.04.02 AUTHORIZATION TYPES

Routine Maintenance Authorizations always begin with the letter "M" as the first digit and the letter "R" as the second unless the authorization concerns Snow Removal and Ice Control, in which case the second digit will be an "S". The remaining digits of Routine Maintenance Authorizations further define the roadway classification, i.e., Expressway, Trunkline, Feeder, State Local Service, etc. Authorization Numbers are utilized on all transactions regardless of the type.

Authorization Numbers are classified into two distinct categories: those Authorization Numbers that are to be utilized on a Department-wide basis and those Authorization Numbers reserved for selected Division organization use only. Refer to Volume I of the Administrative Operating Procedures for a complete menu of Authorization Numbers.

20.03.05 PROJECT NUMBERING SYSTEM

20.03.05.01 PURPOSE

During the project initiation phase, special projects (non-routine) must be grouped in such a manner as to facilitate decision-making for both fiscal and operational management. Project Numbers also allow the prioritization and identification of special projects. Project Numbers are assigned whether or not the project receives actual funding (assigned an Authorization Number).

20.03.05.02 SCOPE

The Project Tracking/Numbering System is administered and coordinated by the Project Control Division. This system classifies projects both according to the reason the work is to be performed as well as to the type of work to be performed. This Project Numbering System is utilized in fund allocation and priority decision-making. Refer to Volume I of the Administrative Operating Procedures for an in-depth explanation of the Project Numbering System.

20.04 MANAGEMENT-DOH MAINTENANCE

20.04.01 MAINTENANCE MANAGEMENT SYSTEM (MMS)

20.04.01.01 DEVELOPMENT HISTORY

The Department's Maintenance Management System (MMS) is a computerized management system developed in-house by Department personnel in the early 1970's. During the initial design of the MMS, Highways personnel reviewed, quite extensively, other State Highway and Transportation Agencies' as well as other governmental agencies' management systems. The MMS was first tested as a concurrently-run pilot program in Fiscal 1974 and actually was implemented on a statewide basis during Fiscal 1975. Since that time, the MMS has undergone a series of changes and enhancements.

20.04.01.02 GOALS AND OBJECTIVES

The MMS in place today is operated very differently than that first system of the 1970's; nevertheless, the goals and objectives of the management system are exactly the same. Those goals and objectives can be defined as:

The creation of a system to manage, i.e., plan, organize, direct and control the highway maintenance program in a standardized manner-- statewide -- with the most productive possible use of available resources.

20.04.01.03 MANAGING HIGHWAY MAINTENANCE

The managing of highway maintenance is certainly not a science, yet the managerial tools provided by the MMS contribute greatly to the manager's success and ability to manage highway maintenance. A maintenance supervisor that is able to utilize the MMS to increase personal awareness and effectiveness of monitoring and controlling will certainly realize a more effective maintenance program and a more efficient maintenance work force.

20.04.02 ROADWAY FEATURE INVENTORY

20.04.02.01 PURPOSE

The first element of a successful highway maintenance program is the knowledge and familiarity of the various roadway features in the manager's confines. When the MMS was first implemented, maintenance personnel developed a Roadway Feature Inventory for all maintenance organizations statewide.

20.04.02.02 USE OF ROADWAY FEATURE INVENTORY

This original Roadway Feature Inventory, in an updated version, exists in the form of a computerized file today. All additions, deletions, and changes to the

Roadway Features Inventory can and should be updated on this very important file. Such a file, when updated properly, becomes an invaluable aid to highway maintenance managers that are interested in developing successful maintenance plans. Refer to Volume VI of the Administrative Operating Procedures for the specific procedures dealing with the Roadway Feature Inventory File.

20.04.03 BASIC EXPENSE STANDARD (BES)

20.04.03.01 PURPOSE

Every management system must have some designated standard by which actual work performance is compared and monitored. Section 20.03.03.02 of this Chapter referred to the Maintenance Performance Standards, which are the Standards for all of the recognized highway maintenance tasks. The Basic Expense Standard (BES) is a computerized file that contains the standard cost accounting for each of the Performance Standards.

20.04.03.02 BES UPDATES

Each maintenance organization under the auspice of the MMS has a BES File for each Maintenance Performance Standard that organization is capable of performing. This BES File is updated annually by the Maintenance Division staff to include the updated cost accounting for labor rates, equipment rental rates, and revised materials and supplies unit costs.

20.04.03.03 USE AND IMPORTANCE OF BES

The BES File is utilized by the maintenance manager when preparing the Maintenance Annual/Quarterly Plans and again by the output Management Control Reports (see Sections 20.04.05 and 20.04.07 of this Chapter.) This standard costing allows the organizational supervisor to develop the Plan around the allocated funds, by pricing each maintenance activity/task, and the BES allows the supervisor control in reviewing the organization's actual expenditures with the standard costs. Refer to Volume VI of the Administrative Operating Procedures for specifics regarding the BES File.

20.04.04 MAINTENANCE ALLOCATION

20.04.04.01 PURPOSE

A very vital segment of the Department's MMS is the allocation of maintenance funds to all Annual Plan Organizations. Annual Plan Organizations are so named because of the Management System's requirement that these organizations prepare and submit Annual or Quarterly Plans. Section 20.04.05 of this Chapter contains more information on Maintenance Plans.

20.04.04.02 SCOPE

The complex formula which makes the equitable distribution of maintenance funds is actually a computer model which allows the flexibility of inputting different criteria/variables for different funding levels. Organizational distribution of funds is based on pre-set percentages assigned on a series of factors such as, geography, climate, roadway mileage, vehicle density, etc. Expressway allocations are based primarily on the quantity of lane mileage.

20.04.04.03 PROCESSING STEPS

Prior to the start of a new fiscal year, the Commissioner and the Business Manager present the Legislature with a proposed Department of Highways Budget Request. Upon approval by the Legislature, the Director of the Maintenance Division is advised of the total amount of the Routine Maintenance Allocation and of any funding requirements desired by upper management. Maintenance Division staff can then develop the maintenance allocation via the computer model, insuring an equitable distribution of maintenance funds as well as honoring the Commissioner's requirements.

20.04.04.04 TRANSMITTAL TO FIELD MAINTENANCE ORGANIZATIONS

Once approved by upper management at Central Headquarters, the maintenance allocation will be transmitted via memorandum to the organizational maintenance supervisors through the District Engineer's office. Refer to Volume VI of the Administrative Operating Procedures for a detailed analysis of the Maintenance Allocation System.

20.04.05 MAINTENANCE PLANS

20.04.05.01 MANAGERIAL PLANNING

Planning is the first element of management. The Department's MMS requires that each budgeted maintenance organization prepare and submit a Plan. During the life of the MMS, Plans have been prepared in either of two ways: Annual Plans or Quarterly Plans. The choice is generally regarded as upper management's prerogative.

20.04.05.02 PREPARATION OF THE PLAN

The Maintenance Plan is developed at the organizational level by the organization supervisors with the assistance of District staff as required. Generally, the organizational supervisor begins to develop a Plan upon receipt of the organization's maintenance allocation - see Section 20.04.04 of this Chapter. The Maintenance Plans are expected to be a product of need as prioritized by the organization supervisor, District management and Central Office policy makers. Of

course, actual work accomplishment is often controlled by the fiscal restraints, but these same fiscal restraints should not control the preparation of the Plan.

20.04.05.03 OBJECTIVE

The primary objective of the Maintenance Plan is to set forth work objectives in terms of work units of particular activities to be performed and the resources (labor, equipment, material) that will be needed to accomplish these work units. A successful maintenance manager will prepare the plan with the optimum combination of resources which produces the greatest achievement of maintenance activities.

20.04.05.04 PLAN/BES INTERACTION

The Maintenance Plan is merged with the BES to provide the mechanism to cost the plan. The organizational supervisor can then compare the cost of the plan to the allocated funds and determine whether more or less work can be planned.

20.04.05.05 PLAN/MANAGEMENT REPORTS INTERACTION

The Maintenance Plan also appears on the Management Control Reports (see Section 20.04.07 of this Chapter.) This allows the maintenance manager to compare actual work accomplishments with the Plan and where noticeable deviations occur, take the appropriate corrective action. The detailed procedures for the Maintenance Plan are described in Volume VI of the Administrative Operating Procedures.

20.04.06 ORGANIZING AND DIRECTING

Planning was mentioned as the first element of management. Organizing and directing are elements number two and three.

20.04.06.01 ORGANIZING MAINTENANCE OPERATIONS

Organizing highway maintenance occurs through the proper scheduling of maintenance resources. The maintenance supervisor or his/her designee(s) prepares Weekly Work Schedules to guarantee maximum utilization of resources. Refer to Chapter 3 of this text and Volume VI of the Administrative Operating Procedures for the proper procedures and benefits to be derived from Scheduling.

20.04.06.02 DIRECTING MAINTENANCE OPERATIONS

Directing the maintenance operation is achieved through the completion and entry into REMIS of the Daily Work Report(s). The bulk of the data collected by the Department's Maintenance Management System is derived from the Daily Work Reports. It is imperative that this data be reported as accurately as possible, as all levels of the Department's management will utilize the reported data at some time or another.

20.04.06.03 SIGNIFICANCE OF REPORTED DATA

Historical information is very beneficial to highway maintenance managers in preparation of the Maintenance Plan. The quality of this reported historical information often dictates the quality of the plan submitted. All maintenance personnel must constantly strive to improve the accuracy of the Daily Work Reports.

20.04.07 CONTROL - MANAGEMENT REPORTS

20.04.07.01 CONTROLLING MAINTENANCE OPERATIONS

The final, and perhaps the most important element of management, is control. Control of the highway maintenance program is achieved through Management Control Reports. The primary objective of Control is to monitor the work performance and the effectiveness of resource utilization. Control provides management with performance data that can be compared to the Plan. Through the control function, management can revise the Plan or place more emphasis on Organizing or Directing. The control element allows the manager to coordinate the other elements of management.

20.04.07.02 MMS MANAGEMENT CONTROL REPORTS

The Department's MMS provides a series of management reports. Some of the reports are very detailed and specific, other reports allow the manager to easily see deviations at a quick glance. Some of the data provided to maintenance managers by the Management Control Reports are:

Productivity Data:	Measurements of work crews efficiency compared to the standard.
Plan Performance :	Measures Plan compliance and success.
Year-to-Date Accomplishments:	Accumulated work accomplishments as reported.
Year-to-Date Expenditures:	Accumulated expenditures as reported by activity.
Budget Status:	Monitors organizational budget status.

Refer to Volume VI of the Administrative Operating Procedures for a detailed analysis of the Management Control Reports

20.04.08 DAILY WORK REPORT

20.04.08.01 RELATIONSHIP TO MMS CONTROL REPORTS

The computerized Management Control Reports are the direct product of daily work reporting through REMIS. It is therefore understandable that the quality of information derived from the management reports is only as accurate as the data being reported on the Daily Work Report. The MMS provides a report that lists "probable" errors for review and corrections, but this method of error correction is not foolproof. Every maintenance employee involved in the work reporting process must be constantly aware of the importance to report accurately, and each employee must approach the reporting task accordingly.

20.04.08.02 IMPORTANCE OF ACCURATE AND TIMELY REPORTING

With accurate reporting and timely management control reports, the successful maintenance supervisor will be able to quickly review the Management Reports and learn to classify and identify the data. Through this process, managers soon develop the ability to identify significant deviations and take the appropriate corrective action. *This process is MANAGEMENT.*

20.05 SUMMARY

20.05.01 SYSTEM COMPATIBILITIES AND INTEGRATION

The Department is fortunate to have the advanced REMIS Accounting System and the Maintenance Management System. Reporting maintenance work, for the most part, is as simple as completing the Daily Work Report for each crew and entering the data via the on-line REMIS System.

The design and integration of the accounting and management systems is such that all resultant processing and output displays are accomplished by the computer, and depending upon the information desired, a myriad of accounting and/or management data is available for a very current period.

20.05.02 SYSTEM USE BY THE MAINTENANCE SUPERVISOR

The organizational maintenance supervisor truly interested in managing the maintenance program has a host of managerial tools available. The organizational supervisor must develop and practice the skills to plan, organize, direct and control since computers are no substitute for human thought and judgment. Once these basic management skills are developed and in place, the maintenance manager will find the computerized REMIS and MMS Systems to be totally supportive of those management skills.

FOOTNOTE

As more fully set forth in Section 01.01.01, nothing in this manual is intended to create a legal or moral duty and has been created for internal guidance only.