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16. Abstract This report provides an annotated for the development of guidelines for procuring, managing and evaluating the performance of contract TMC services. The purpose of this project is to develop a technical document that provides guidance and recommended practice to managers, planners, and operators of transportation management centers (TMCs) in making decisions related to outsourcing portions, or the entirety, of their operation to private contractors. Types of outsourcing examined include TMC operations staff, IT / networking support, maintenance of field devices, and service patrols.			
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**Guidelines for Procuring, Managing, and Evaluating the Performance of
Contracted TMC Services**

Draft Annotated Outline

Executive Summary

The executive summary will provide a concise overview of the guidelines and indicate how the guidance is to be used.

Chapter 1 – Introduction

1.1. Background

- 1.1.1. Role of Transportation Management Centers
- 1.1.2. Need for guidance on outsourced TMC services

1.2. Description of TMC Service

- 1.2.1. Types of TMC service
- 1.2.2. Description of how these TMC services are performed

1.3. What is Outsourcing?

- 1.3.1. Description of outsourcing
- 1.3.2. Trends in outsourcing
- 1.3.3. Types of outsourcing models
- 1.3.4. Examples of outsourcing in other industries

1.4. Reasons for Outsourcing TMC Services

- 1.4.1. Why public agencies are looking at outsourcing of service
- 1.4.2. Advantages to outsourcing
- 1.4.3. Disadvantages to outsourcing

1.5. Organization of the guidance document

- 1.5.1. Organization of document
- 1.5.2. Purpose of guidance
- 1.5.3. Objectives

Purpose

The purpose of the introduction chapter will be to introduce the topic of outsourcing as it applies to TMC services. The introduction gives a general description of the guidance document including the intended audience, purpose, objectives, and content.

Key Topics

Background

The background section will discuss what are transportation management centers and the services that are provided. The background will also discuss the purpose and need for the guidance document.

Description of TMC Services

This section will discuss the typical functions within a TMC and the types of TMC services to be included in the guidance. Typical TMC functions that have been outsourced include the following: 1) daily TMC operations; 2) hardware and software support /upgrades; 3) roadside component /device maintenance and repairs; 4) communications installation / upgrade and maintenance support; 5) traveler information / 511 operations; 6) preventative maintenance; and 7) motorist assistance (such as highway helpers or towing services).

What is Outsourcing

This section will describe the concept of outsourcing. Outsourcing is the use of other public or private agencies to accomplish tasks or services that are the responsibility of the primary public agency. In this section, we will also highlight various scenarios (or outsourcing models) that have been successfully used by agencies, including 1) complete outsources (where all of the functions are performed by contractor); 2) blended operations (where an agencies share responsibility for the services performed with a contractor); and 3) on-call operations.

A key to outsourcing is establishing performance-based contracts. Under such outsourcing acquisitions, agencies describe their needs in terms of performance objectives (i.e., desired results) rather than explaining how they want contractors to perform the work. Performance-based contracts include measurable performance standards such as response time or customer satisfaction. The contracts may include monetary and non-monetary incentives to the vendors. This section will also cover the trends in outsourcing and types of outsourcing models from other industries.

Reasons for Outsourcing

This section will discuss the reasons public agencies look toward outsourcing TMC services. Potential reasons for outsourcing include the following: 1) cost savings; 2) lack of qualified or skilled personnel in-house; 3) desire to maintain desired staffing level (or inability to add FTE's); 4) efficiencies in the hiring (both from a time perspective – faster to find “consultant” with qualified personnel than hire and train in-house staff, and from a hiring process standpoint – hiring/firing process of individual can be cumbersome in some agencies); 5) flexibility to change with conditions; and ability to provide services within a funding program (capital versus operational expenditures). This section will include a discussion of advantages and

disadvantages for contracting TMC services. We will attempt to identify advantages and disadvantages from an agency's and a contractor's perspective.

Organization of the Guide

The Guidelines for Procuring, Managing, and Evaluating Contracted TMC Services is organized into three primary sections. Each of these three sections will cover the main topic of procurement, management, and evaluation of services. This section will provide information on how the guidance document is organized and how it is intended to be used.

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Table of types of TMC services
- Table of types of Outsourced services
- Table of advantages and disadvantages of outsourcing some or all TMC functions and services. (Reference Table 2-1 in FHWA's *Guidelines for Transportation Management Systems Maintenance Concept and Plan*)

Other

No other material identified at this time.

Chapter 2 – Procuring Contracted TMC Services

2.1. Chapter Overview

- 2.1.1. Purpose of the chapter
- 2.1.2. Relationship to other chapter
- 2.1.3. Background to procurement issues related to transportation management centers

2.2. TMC Services Assessment

- 2.2.1. Introduction to self-assessment
- 2.2.2. Identifying goals and desired outcomes of the agency
- 2.2.3. Identifying how agency goals correlate with TMC services

2.3. Evaluation of Current TMC Services

- 2.3.1. Evaluation of future services
- 2.3.2. Evaluation of current services
- 2.3.3. Candidate TMC services for outsourcing

2.4. Procurement Issues

- 2.4.1. Use of TMC business planning
- 2.4.2. Procurement methods
- 2.4.3. Types of contracts
- 2.4.4. Use of performance measures and incentives in contracts

2.5. Political and Institutional Influences

- 2.5.1. Political influences on procurement of TMC services
- 2.5.2. Organizational influences on procurement of TMC services
- 2.5.3. Other institutional influences on procurement of TMC services

2.6. Selecting the Right Contractor

- 2.6.1. Strategies for Selecting the Right Contractors
- 2.6.2. Evaluation Criteria

Purpose

The purpose of this chapter is to provide guidance to an agency considering contracting for TMC services. Decisions to outsource TMC services must often be made several years in advance of

the anticipated contract start in order to conform to agency fiscal planning requirements and procurement timeframes. If the procurement process is not set up appropriately, then management and evaluation of contract TMC services may be considerably more difficult. An agency should look at its goals and objectives to evaluate if contracting for TMC services would meet its needs. The chapter further gives guidance on how to evaluate current and planned TMC services. Based on an agency's self-assessment, the next section of this chapter provides guidance on procurement considerations relevant for outsourcing TMC services. The last section provides guidance on the political and institutional issues that may influence outsourcing of TMC services.

Key Topics

Chapter Overview The chapter overview will provide the purpose of the chapter and relationship to other chapters. The chapter will also introduce procurement issues related to transportation management centers.

TMC Services Assessment

This section will discuss the use of self-assessment tools within transportation operations. This section will also discuss how an agency assesses its own goals, objectives, and desired outcome. An agency must then evaluate how the TMC services correlate with the broader goals and objectives of the agency. This exercise will allow an agency to identify core functions that must be kept within the agency and functions that may be accomplished by other methods.

Evaluation of TMC Services

This section will discuss a methodology for agencies to evaluate their current and future TMC services. It will also discuss a methodology to determine which TMC services are not performing to their expected capability. Within the current service evaluation, agencies must assess situations wherein in-house staff are transitioned to contracted staff. This section will further discuss how future services (i.e., services that are not in operation yet at the TMC) should be evaluated.

Procurement Issues

This section will identify procurement considerations relevant for outsourcing TMC services. This section will describe how to use the TMC business planning process to prepare for the budgeting, staffing, and training of contracted TMC services (referencing the *TMC Pooled Fund TMC Business Planning and Plans Handbook*). This section will provide a discussion of the types and extent of contracted services applicable for different categories of TMC business models (categories may be taken from Chapter 4 of the *TMC Pooled Fund TMC Business Planning and Plans Handbook*). Because outsourcing sometimes also includes staffing through

agreements with other agencies, this section will also discuss this form of outsourcing that sometimes does not include typical procurement methods.

This section will describe different procurement methods for outsourcing TMC services. This section will also include guidance on the various types of strategies for determining qualified vendors/contractors. Strategies to be discussed include the use of Request for Qualifications (RFQ), Request for Information (RFI), and Request for Proposals (RFP). Considerations will include time of contract, included services, relationships to other contracts that support TMC, flexibility of contract to add new services once in place, costs over time.

A broad discussion of operating versus capital dollar availability for go/no go on contracted services will be included for comparison on in-house versus contracted services. Issues with operating versus capital funds use will also be broadly discussed as they have implications on staff availability and development. There are different sources of funds that can be used to pay for TMC services that can be influenced by a state's financial position.

We will also discuss various procurement types for contracted services (e.g., professional services versus contractual services, and agreements with other entities). In addition, we will also discuss the types of contracting mechanisms that could be used to procure TMC services. These include the following:

- *Firm-fixed-price contract* – contractor is fully responsible for performance costs and enjoys (or suffers) resulting profits (or losses).
- *Fixed-price incentive contracts* (in which final contract price and profit are calculated based on a formula that relates final negotiated cost to target cost): these may be either firm target or successive targets.
- *Fixed-price contracts with award fees* –used to "motivate a contractor" when contractor performance cannot be measured objectively, making other incentives inappropriate.
- *Cost-reimbursement incentive contracts* – used when fixed-price contracts are inappropriate, due to uncertainty about probable costs. These may be either cost-plus-incentive-fee or cost-plus-award-fee.
- *Cost-plus-fixed-fee contract* – allowable and allocable costs are reimbursed and the negotiated fee (profit) is fixed -- consequently, the contractor has minimal responsibility for, or incentive to control, performance costs.

We will also include in the section a discussion about the use of incentives and remedies for non-performance. Incentives can be monetary, non-monetary, positive, or negative. They can be based on cost, on schedule, or on quality of performance. We will discuss the advantages and disadvantages of potential types of incentives, including 1) cost-based incentives; 2) award-fee contract arrangements; 3) Award-term contract arrangements; 4) schedule incentives; and 5) past

performance. In addition to discussing different types of incentives, we will also discuss potential remedies for non-performance. We will also include guidance on factors to consider when contemplating the use of incentives.

A discussion of applicable TMC performance measures for outsourced services will be included (some material will be associated to the TMC Pooled Fund *TMC Performance Monitoring, Evaluation, and Reporting* document).

Political and Institutional Influences

This section will discuss the influences that political and organizational structures may have on the success of procuring TMC services.

Selecting the “Right” Contractor

In this section, we will provide guidance on the strategies that can be used for selecting the right contractor for providing TMC services. In the section we will discuss the importance of competition when it comes to procuring TMC services. We will also provide guidance on techniques that agencies can use to “downselect” different contractors. We will also discuss the use of oral presentations, and other strategies that agencies can use in the selection process. We will also discuss the importance of using past performance in the evaluation process.

In addition to this guidance, we will also discuss potential evaluation criteria that agencies can use to assess a contractors ability to perform these services requested. We will discuss how evaluation criteria needs to be developed to reflect an agencies mission statement and operational objectives. We will also discuss strategies for “weighting” different (and sometimes competing) selection criteria. We will also attempt to provide examples of both good and poor evaluation criteria.

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Flowchart or process diagram that show evaluation process to proceed with procuring contractor services (“go-no go” decision)
- Table comparing in-house versus contracted scenarios

Other

No other material identified at this time.

Chapter 3 – Managing Contracted TMC Services

3.1. Chapter Overview

- 3.1.1. Purpose of chapter
- 3.1.2. Relationship to other chapters

3.2. Management Structures

- 3.2.1. Management by the public sector
- 3.2.2. Management by the private sector
- 3.2.3. Management by a third party

3.3. Staffing and Scheduling

- 3.3.1. Hiring and termination
- 3.3.2. Pay and promotion
- 3.3.3. Termination
- 3.3.4. Staffing for holidays and employee leave
- 3.3.5. Staffing for hours of operation

3.4. Accommodations and Equipment

- 3.4.1. Office space and work areas
- 3.4.2. Equipment and vehicles

3.5. Management Tools and Reporting

- 3.5.1. Tools for management
- 3.5.2. Performance measurement and reporting

3.6. Comparative matrix

Purpose

This chapter discusses the management of TMC services that are outsourced or contracted to a public or private entity. Both management of the contract and management of the contracted

employees will be discussed. Advantages of different management structures will also be discussed.

Key Topics

Chapter Overview

The overview will provide the purpose of the chapter and relationship to other chapters. In this section, we will provide guidelines on how agencies that procure contracted TMC services should manage those services. In this chapter, we will discuss various management structures and provide guidance related to staffing and scheduling issues, accommodating additional staffing and equipment, and tools for managing and reporting on contracted services. We will also include guidelines as how to address these issues in procurement contracts.

Management Structures

This section will discuss the important issues managing contracted services. Management strategies and issues that will be included in this section are as follows:

- Developing or incorporating an oversight committee
- Defining roles, responsibilities, and relationships between agency and contractor staff,
- Assigning accountability for managing contract and contractor performance
- Including the contractor in the decision-making process
- Reviewing contract and contractor performance
- Asking the “right” questions, and
- Reporting on contractor’s past performance.

Also in this section, we will identify and discuss different management structures used to oversee outsourced TMC services including:

- Outsourced services managed by public sector
- Outsourced services managed by private sector with public sector oversight
- Outsourced services managed by third party

Staffing and Scheduling

This section will discuss the hiring and human resources functions (benefits, leave, training, performance evaluations, etc.) and how these are outsourced or shared between public agencies and private firms. In this section, we will reiterate the various outsourcing models that have been used in TMC operations [1) complete outsource 2) blended operations, and 3) on-call operations], and will discuss the pros and cons of each outsourcing model. Factors effecting

staffing decisions to be addressed include the following: hiring and firing policies and practices of the agency, training, performance evaluation, pay and promotion, termination, vacation / holidays. We will also include a discussion of staffing needs for part-time operation versus 24 hour, 7 days a week operation. We will also discuss the necessary structure that private agencies must have to be able to handle HR functions within a public environment (e.g., field versus home office support – how much and to what extent). We will also discuss the advantages of hiring “professional” versus “personnel” staff (i.e., hiring a firm with ITS experience for staff versus hiring a personnel firm that just provides bodies). Other issues that will be discussed will include procedures for handling HR issues, staff turnover, training, etc. We will attempt to compare these figures to agencies providing in-house staffing. Where applicable, staffing discussions will reference existing guidance documents, including the TMC Pooled Fund Study document *TMC Staffing and Scheduling for Day-to-Day Operations*.

Accommodations and Equipment

TMC services will need different office space, equipment, and access to vehicles. This section will discuss how contracted staff will be accommodated in or out of the TMC in support of performing the TMC services. Public agencies may provide different levels of support in terms of office space, computing equipment, phone access, storage space, and internet access.

Management Tools and Reporting

This section will discuss different tools and performance reporting requirements for managing TMC services. Some of the tools, especially operational manuals, may serve as a set of requirements for services. The TMC Pooled Fund Handbook for *Developing a TMC Operations Manual* might serve as a resource for describing these guidelines.

It is important to establish performance measurement during the procurement phase in order to implement strategies. Performance measurement will be discussed and linked to the discussion in Chapter 2.

Comparative Matrix

There are several variables that may influence which management practices are appropriate for the various TMC services being outsourced. This section will provide a matrix that compares various operations currently in use with the influential factors. For example, the management practice (e.g., outsource to public agency, full outsourcing to private firm, or partial outsourcing to private firm) will be compared to the TMC services (e.g., daily TMC operations, hardware and software support /upgrades, roadside component /device maintenance and repairs, communications installation / upgrade and maintenance support, traveler information / 511 operations; or motorist assistance).

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Matrix showing example of management practices used by agencies to monitor contractor performance.

Other

No other material identified at this time.

Chapter 4 – Evaluating Contracted TMC Services

4.1. Chapter Overview

- 4.1.1. Purpose of the chapter
- 4.1.2. Relationship with other chapters

4.2. Discussion of Performance

- 4.2.1. Importance of performance
- 4.2.2. Types of services to monitor

4.3. Use of Performance Measures

- 4.3.1. Guidelines for setting criteria
- 4.3.2. Types of performance measures

4.4. Quality Assurance

- 4.4.1. Record keeping procedures
- 4.4.2. Reporting periods
- 4.4.3. Enforcement procedures
- 4.4.4. Risks

4.5. Evaluation Measurement Matrix

Purpose

The purpose of this chapter is to provide guidance on how to evaluate the different types of TMC services being performed. Evaluation should focus on the performance. There are several performance outcomes that should be monitored resulting from how the services are carried out by the contracted staff.

Key Topics

Chapter Overview

The overview will provide the purpose of the chapter and relationship to other chapters.

Discussion of Performance

This section will discuss the different performance outcomes that are important to a TMC including the performance of the transportation management system, the performance of the TMC, the performance of the collective staff providing the TMC services, and the performance of individuals. The broad areas for performance measurement include operational, financial, personnel/equipment resources and customer satisfaction.

- Contracted Services
- Housekeeping
- Maintenance
- Components
- Software
- Operations/Administrative services
- Emergency operations

Use of Performance Measures

This section will examine what performance measures are being used (or have been used) in TMCs where services are outsourced. In addition, recommended means of quantifying the performance including operational, financial, and personnel/equipment resources. This section will also provide guidance and or recommendations for setting monitoring and enforcement procedures (see Article 12 Gonzales.pdf).

This section will also discuss the types of performance measures. Types may include the following:

- Outcome vs. Output
- Customer-Oriented vs. Agency Centric
- Component vs. Functional vs. Programmatic (or Objective) – Oriented

In addition a discussion on the types of performance measures, we will also discuss different strategies for assessing performance. Strategies to be discussed include the 1) random sampling; 2) periodic sampling; 3) trend analysis; 4) customer feedback; and 5) third-party audits. We will also provide some guidance that agencies can use for determining the appropriate type of assessment measure.

Quality Assurance and Quality Control Plan

This section will examine tools for an on-going monitoring of quality of services being provided at the TMC.

- Recordkeeping Procedures

- Reporting periods
- Enforcement Procedures
- Risks

Information will also be provided on the elements and structure of a quality assurance/quality control plan.

Evaluation Measurement Matrix

This section will develop an evaluation measurement matrix that can provide tracking of performance measures.

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Matrix (an example of which is shown below) that shows the development of performance measures.

	Desired Outcome	Required Service	Performance Standard	Monitoring Method	Incentives/ Disincentives for Meeting or Not Meeting the Performance Standard
Description	What do we want to accomplish as the end result of this contract?	What task must be accomplished to give us the desired result?	What should the standards for completeness, reliability, accuracy, timeliness, quality and/or cost be?	How will we determine that success has been achieved?	What carrot or stick will best reward good performance or punish poor performance?
Example	TMC must be able to maintain full staffing levels during weather and other emergency events.	The contractor shall provide qualified operators to adequately staff TMC during emergency events	TMC shall have full compliment of operators during 95% of all emergency events.	Review of operator time sheets. Random sampling during weather event.	+/- .5% of total task order price if performance standard met.

- Table that shows example of performance measures that can be used by evaluate and monitor TMC services contracts. (See Florida DOT RFP for District Wide Intelligent Systems (ITS) Operations Support Services Contract)
- Example of a quality assurance/quality control plan

Other

No other material identified at this time.

Chapter 5 – Summary

5.1. Chapter Overview

- 5.1.1. Purpose of the chapter
- 5.1.2. Relationship to other chapters

5.2. Lessons Learned

- 5.2.1. Lessons learned on procurement
- 5.2.2. Lessons learned on management
- 5.2.3. Lessons learned on evaluation

5.3. Recommendations

- 5.3.1. Recommendations for procurement
- 5.3.2. Recommendations for management
- 5.3.3. Recommendations for evaluation

Purpose

The purpose of this chapter is to synthesize the information from the primary chapters and present concise information on lessons learned and recommendations on how to successfully approach procurement, management, and evaluation of contracted TMC services.

Key Topics

Chapter Overview

The overview will provide the purpose of the chapter and relationship to other chapters.

Lessons Learned

This section would provide practical lessons learned from past and current practice of outsourcing TMC services. The lessons learned will be grouped by the major chapters of procuring, managing, and evaluating TMC services.

Recommendations

This section would provide recommendations from each of the three major sections of the guidance on procurement, management, and evaluation. The recommendations will address the issues public agencies should resolve in order to successfully contact for TMC services.

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Summary table of recommendations
- Traceability table of management and evaluation issues to the procurement process

Other

No other material identified at this time.

Chapter 6 – Case Studies

6.1. Background

- 6.1.1. Role of chapter
- 6.1.2. Relationship to other chapters

6.2. Case Study 1 - TMC Operations

- 6.2.1. TMC Service overview
- 6.2.2. Agencies involved
- 6.2.3. Successful outcomes
- 6.2.4. Lessons learned

6.3. Case Study 2 – TMC Operations

- 6.3.1. TMC service overview
- 6.3.2. Agencies involved
- 6.3.3. Successful outcomes
- 6.3.4. Lessons learned

6.4. Case Study 3 – ITS Maintenance

- 6.4.1. TMC service overview
- 6.4.2. Agencies involved
- 6.4.3. Successful outcomes
- 6.4.4. Lessons Learned

Purpose

The purpose of this chapter is to describe in greater detail three case studies. The chapter will use case studies that provide different contracted TMC services. Issues related to procurement, management, and evaluation.

Key Topics

Case Studies

These Case Studies of where TMC services have been outsourced will be review. The case studies will comment specifically on the procurement methods, management methods, and evaluation methods used at that TMC.

TMC Operations – Complete Outsourcing Example (proposed)

TMC Operations – Partial Outsourcing Example (proposed)

TMC Maintenance Outsourcing Example (proposed)

Key Tables/Figures

The following tables and/or figures are identified as possible visual aids to help communication guidance information:

- Table comparing the three case studies and their use of outsourced services

Other

No other material identified at this time.

Chapter 7 – References

7.1. Reference List

- 7.1.1. List of references
- 7.1.2. Review of selected references

7.2. Example Documents

- 7.2.1. Example contracts
- 7.2.2. Example scopes of work
- 7.2.3. Example request for proposals

Purpose

The purpose of this chapter is to provide the user with references of source material used in the formulation of the guidance. Listing of references, a summary of selected references, and example documents will be provided.

Key Topics

Reference List

A literature review was performed to identify applicable references. The full list of references will be included in this chapter. Several references were found to be valuable in developing the guidance. Highlights from selected references will be summarized.

Example Documents

This section will provide example contracts, scopes of works or request for proposals on outsourced TMC services from three locations. The examples included will be representative of best practices.

Key Tables/Figures

None anticipated

Other

No other material identified at this time.