

An Annotated Outline for a

# **Traffic Management Center Operations Manual**

**A Informational Report**

**Prepared by the  
Management and Operations Committee  
of the ITS Council**

This is an informational report from the ITS Council Committee ITS-100-03. The chair of the committee was Walter Kraft (M). Members of the review panel that produced the report were Raymond Klucens (M), Michael Hartman and Cynthia Levesque.

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Institute of Transportation Engineers, Inc.  
1099 14th Street, NW, Suite 300 West  
Telephone: +1 202-289-0222  
Fax: +1 202-289-7722  
ITE on the Web: [www.ite.org](http://www.ite.org)

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## Table of Contents

Topic	Page
1 Emergency and Other Contact Numbers.....	3
2 Daily Operation.....	4
2.1 Management Center Functions.....	4
2.2 Personnel.....	4
2.3 Hours of Operation.....	4
2.4 Staffing.....	4
2.5 After-Hours, On-Call Roster.....	4
2.6 Remote Operation.....	4
2.7 Security Procedures.....	4
2.8 Maintenance Checklist.....	4
2.9 Startup/Shutdown.....	4
2.10 Failure Recovery.....	4
2.11 Agency/Jurisdictional Contacts.....	4
2.12 Notification Procedures.....	4
2.13 Contact with Media.....	4
3 Control System Operation Procedures.....	4
3.1 Operator Interface.....	5
3.2 Operational Procedures.....	5
3.3 Incident Management.....	5
4 Maintenance Procedures.....	5
4.1 Routine Maintenance.....	5
4.2 Preventative Maintenance.....	5
4.3 Spare/Backup Equipment.....	5
4.4 Emergency.....	5
4.5 Contract Maintenance.....	5
5 System Operations Logs.....	6
5.1 Operations.....	6
5.2 Maintenance.....	6
5.3 Events.....	6
5.4 System Reports.....	6
5.5 Traffic Data.....	6
5.6 Risk Management.....	6
6 Operational Concepts.....	6
6.1 Traffic Control Concept Strategy.....	6
6.2 Traffic Monitoring.....	6
6.3 Data Analysis and Warehousing.....	7
6.4 Interagency Coordination.....	7

6.5	Inter-Jurisdictional Coordination.....	7
6.6	Emergency Procedures .....	7
7	Control Center Description/System Field Devices.....	7
7.1	Location .....	7
7.2	Access/Security .....	7
7.3	Layout.....	7
7.4	Fire Suppression.....	7
7.5	Power Source/Location .....	7
7.6	HV/AC .....	7
7.7	Data Communications .....	8
7.8	Voice Communications .....	8
7.9	Network Communications .....	8
7.10	Field Device Descriptions .....	8
8	System Documentation .....	8

## Introduction

This draft TMC Management and Operations Manual outline is meant to serve as a model “checklist” for the development of similar manuals used in deployed environments. This version of the draft has been reviewed by a number of public agency representatives in the Dallas–Fort Worth, Texas region and by ITE’s Management and Operations (M&O) Committee of the ITS Council.

The purpose of the outline is to provide a reference for agencies that are writing and/or updating their own operations manuals for Traffic Management Centers. In practice a document of this nature may be structured in multiple parts but for the purpose of this outline only one document is illustrated. The ITS Council hopes that this outline will serve as a helpful checklist for development of a tailored M&O manual.

## Acknowledgments

This outline was developed starting from documents provided by Beth Ramirez (City of Dallas, Texas), John Thai (City of Anaheim, California) and others. Jim Carvell (Texas Transportation Institute) incorporated aspects of these documents and coordinated reviews and comments from various operating agencies in the North Texas Region. Ed Seymour (Texas Transportation Institute) as the architect of this document, worked with the M&O Committee to solicit edits and reviews of the drafts. The ITS Council acknowledges the contributions of the following M&O Operations Committee members for their assistance:

Walter Kraft, PB Farradyne  
Frank Dolan, Monroe County, New York  
Bahman Izadmehr, City of Newark, New Jersey  
Les Jacobson, PB Farradyne  
Ed Seymour, TTI  
Al Kosik, Texas Department of Transportation  
William Kloos, City of Portland, Oregon

## 1. Emergency and Other Contact Numbers

### Discussion:

One of the first items in an operations manual could be a phone list of emergency agencies, support agencies and personnel that may be called for assistance and coordination. These phone numbers could include: police, fire, courtesy patrol vehicles, transit, emergency maintenance operations (for freeways, streets, bridges and pump houses), street operations, 911 PSAP operations, towing services, operational personnel contact information (including home phones, cell phones, pagers and email). In regions characterized by a large number of jurisdictions, supplemental maps illustrating the physical boundaries for agency responsibilities could be included.

## 2. Daily Operation

### 2.1 Management Center Functions

### 2.2 Personnel

Examples: Organization chart: supervisory, operators, maintenance, job descriptions, routine and emergency telephone/pager contacts.

### 2.3 Hours of Operation

Examples: Workdays, holidays, weekends, special events, emergencies.

### 2.4 Staffing

Examples: Workdays, holidays, weekends, special events.

### 2.5 After-Hours On-Call Roster

Examples: Routine and emergency voice/fax/pager contacts.

### 2.6 Remote Operation

Examples: Procedures for operation from remote terminal.

### 2.7 Security Procedures

Examples: Access to control system interfaces, equipment, etc.

### 2.8 Maintenance Checklist

Examples: Routine checks for office and/or field equipment operation.

### 2.9 Startup/Shutdown

Examples: Emergency shutdown, planned shutdown, restart, cold start.

### 2.10 Failure Recovery

Examples: Automated and manual failure recovery procedures and capabilities.

### 2.11 Agency/Jurisdictional Contacts

Examples: Routine and emergency voice/fax/pager contacts.

### 2.12 Notification Procedures

Examples: Routine and emergency media/agency/jurisdiction notification.

### 2.13 Contact with Media

Examples: Policies for media event notification, response to media inquiries, receiving incident notification. Limits, hours, dates of courtesy patrol operations.

## 3. Control System Operation Procedures

### Discussion:

This is the nitty-gritty detail of day-to-day electronic hardware and software system operation and may be largely based on documentation furnished by system suppliers. These documents may also include specific public agency policies and procedures.

### **3.1 Operator Interface**

### **3.2 Operational Procedures**

Examples: Manual operation, automated operation, traffic responsive operation, free operation, default operation. Applicable software manuals could be referenced.

### **3.3 Incident Management**

Objectives: Procedures developed by the agency to respond to non-routine occurrences including debriefing.

## **4. Maintenance Procedures**

### **Discussion:**

This is electronic hardware and software system maintenance of the operations center related equipment. The procedures will be largely based on documentation furnished by system suppliers but with specific agency policies and procedures incorporated. Maintenance of the field equipment that interacts with the operations center will require similar procedures that may be incorporated herein or compiled separately.

### **4.1 Routine Maintenance**

Examples: Typical daily checks, adjustments and minor component replacement.

### **4.2 Preventative Maintenance**

Examples: Scheduled preventative maintenance performed by the agency or vendor.

### **4.3 Spare/Backup Equipment**

Examples: Inventory of spare and backup equipment. Listing of suppliers, vendors and contractor contact information (e.g., phone, pager, e-mail) associated with equipment and software related to the system.

### **4.4 Emergency**

Examples: Non-routine procedures, notification of responsible party (agency or contractor), shut down.

### **4.5 Contract Maintenance**

Examples: Procedures/warrants for calling in private maintenance contractor. Phone numbers, pager numbers, etc. of contract maintenance organizations. Agency policies on the interaction between agency staff and contract employee responsibilities. Topics such as agency access to records, to components (both spare and damaged) and field/office sites could be addressed.

## 5. System Operations Logs

### Discussion:

Descriptions of procedures and logs (manual and automated) associated with documenting system operation.

#### 5.1 Operations

Examples: Operation periods, on-line/off-line periods, manual overrides, etc.

#### 5.2 Maintenance

Examples: Outages, resolution of problems, etc.

#### 5.3 Events

Examples: Incidents (planned and unplanned), etc.

#### 5.4 System Reports

Examples: System operation evaluation parameters, etc.

#### 5.5 Traffic Data

Examples: Historical data, data analyses, etc.

#### 5.6 Risk Management

Objectives: Some guidance to operators of what to keep, log, save, or discard in response to the agency's risk-management policies.

## 6. Operational Concepts

### 6.1 Traffic Control Concept Strategy

Objectives: What is our role in the regional transportation community and how do we approach delivery of services?

Examples: Broad overview of control concepts, for example:

*Signal Systems:* traffic responsive or pre-timed signal system, network control, arterial control, isolated control, response to incidents, etc.

*Freeway Systems:* incident detection and response, Courtesy Patrol Dispatch, dynamic message sign (DMS) strategies, highway advisory radio (HAR) procedures, ramp metering strategies, lane control signal (LCS) guidelines, etc.

*Other Systems:* operational concepts for transit, tunnels, tollroads, ports, coast guard, etc.

### 6.2 Traffic Monitoring

Objectives: Physically, how do we monitor traffic/transportation here?

Examples: Intersection vehicle detection, system detection, freeway vehicle detection, speed, volume, occupancy CCTV, environmental, emergency radio and 911 monitoring, definition of "public space" and "private



space” for orientation of video cameras, media policies (e.g., release of video images, archiving of video), comparison of traffic reporting agency (public and private) data to promote precision and accuracy with the public agency system, etc.

### **6.3 Data Analysis and Warehousing**

Examples: Traffic data, incident data, operational data and other data and information to be analyzed and saved. This should include a discussion of how agency-specific data fits into a regional operational environment.

### **6.4 Interagency Coordination**

Objectives: How do we work with our internal partners?

Examples: Coordination with departments within the agency, for example:  
*City:* police, fire, 911, public works, etc.  
*State:* maintenance, safety, etc.

### **6.5 Inter-Jurisdictional Coordination**

Objectives: How do we work with our regional partners?

Examples: Description of coordination with other jurisdictions and agencies, summary of formal/informal agreements, relationship to regional ITS architecture and standards.

### **6.6 Emergency Procedures**

Objectives: Overview of emergency procedures, related to notification, monitoring and coordination.

## **7. Control Center Description/System Field Devices**

### **7.1 Location**

Examples: Address, latitude/longitude, etc. of building(s).

### **7.2 Access/Security**

Examples: Building and system security, access to buildings, access to specific rooms (including control rooms), guard duty schedules, etc.

### **7.3 Layout**

Examples: Plan view of control center.

### **7.4 Fire Suppression**

Examples: Controls, cutoffs, operation, etc.

### **7.5 Power Source/Location**

Examples: Controls, cutoffs, operation, etc.

### **7.6 HV/AC**

Examples: Controls, cutoffs, operation, etc.

### **7.7 Data Communications**

Examples: Terminals, equipment location, etc.

### **7.8 Voice Communications**

Examples: *Landline Instruments*: location, numbers, extensions, terminals, policies, etc.

*Radio communications*: unit locations, call signs, policies, etc.

### **7.9 Network Communications**

Examples: Local area and wide area networks, other networks.

### **7.10 Field Device Descriptions**

Examples: Identification of the databases where current descriptions of the field devices are maintained, including the locations where any passwords are kept.

## **8. System Documentation**

Examples: Maintaining vendor maintenance documentation, securing documentation revisions, procedures for updating maintenance document bibliography.