



**APTA SS-SEM-RP-017-23**

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Security Emergency Management  
Working Group

# Planning, Developing and Operating a Transit Agency Emergency Operations Center (EOC)

**Abstract:** This recommended practice discusses considerations related to planning, developing and operating a transit agency EOC.

**Keywords:** emergency operations center, emergency planning, design, incident command system, operations, preparedness

**Summary:** This document describes considerations related to planning, developing and operating a transit agency EOC. A well-designed and well-executed transit agency EOCs tailored to an agency's needs and resources should help the agency coordinate, direct, communicate and control transit agency operations and support incident management activities in preparation for and during emergencies, special events or critical incidents.



## Foreword

The American Public Transportation Association is a standards development organization in North America. The process of developing standards is managed by the APTA Standards Program's Standards Development Oversight Council (SDOC). These activities are carried out through several standards policy and planning committees that have been established to address specific transportation modes, safety and security requirements, interoperability, and other topics.

APTA used a consensus-based process to develop this document and its continued maintenance, which is detailed in the [manual for the APTA Standards Program](#). This document was drafted in accordance with the approval criteria and editorial policy as described. Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by the APTA Security Emergency Management Working Group as directed by the APTA Security Standards Policy and Planning (SSPP) Committee..

This document represents a common viewpoint of those parties concerned with its provisions, namely transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any recommended practices or guidelines contained herein is voluntary. APTA standards are mandatory to the extent incorporated by an applicable statute or regulation. In some cases, federal and/or state regulations govern portions of a transit system's operations. In cases where there is a conflict or contradiction between an applicable law or regulation and this document, consult with a legal adviser to determine which document takes precedence.

This is a new document.



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## Participants

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## Introduction

*This introduction is not part of APTA SS-SEM-RP-017-23, “Planning, Developing, and Operating a Transit Agency Emergency Operations Center (EOC).”*

APTA recommends the use of this document by:

- individuals or organizations that operate rail transit systems;
- individuals or organizations that contract with others for the operation of rail transit systems; and
- individuals or organizations that influence how rail transit systems are operated (including but not limited to consultants, designers and contractors).

## Scope and purpose

This recommended practice provides recommendations for transit agencies to consider when planning, designing, developing and operating an EOC that is tailored to individual agencies’ unique requirements and environment.

# **Planning, Developing and Operating a Transit Agency Emergency Operations Center (EOC)**

## **1. Purpose of a transit agency EOC**

Transit agencies may establish EOCs to coordinate, direct, communicate and control transit agency operations and support incident management activities in preparation for and during emergencies, special events or critical incidents (hereafter just called “emergencies”).

While transit agencies may create EOCs with differing capabilities, designs, stakeholders and functions based on their unique requirements and environment, EOCs typically coordinate the following activities:

- collecting, analyzing and sharing information
- supporting, allocating and tracking resource needs and requests
- coordinating plans and determining current and future needs
- providing coordination and policy direction

Transit agency EOCs focus on transit agency activities such as enabling management decision-making, supporting field operations and coordinating activities with partners. A transit agency EOC will complement, not replace, a local or regional EOC operated by a local or regional government body. Transit agency EOCs may go by different names, such as “emergency coordination center” or “incident response support teams,” and their staffing, footprint and role may vary based upon agency size and needs. But all agencies should ensure a functioning structure to coordinate emergency response impacting their agency and service area. This recommended practice outlines considerations and scalable options for transit agencies when designing a structure.

### **1.1 Benefits of a transit agency EOC**

Establishing an EOC should help transit agencies more effectively prepare for, respond to and recover from emergencies affecting the transit agency and community. Furthermore, for foreseen hazards and threats, EOCs may support transit agency prevention and protection activities.

Complemented by comprehensive plans, policies and procedures, EOCs should provide transit agencies with a platform to deliver efficient and structured coordination across a transit agency while promoting accurate situational awareness and decision-making.

### **1.2 Types of hazards handled by a transit agency EOC**

A transit agency EOC should be designed to respond to all types of hazards, which include incidents caused by humans, natural hazards and technological hazards. EOCs can address foreseeable emergencies such as hurricanes, as well as unpredictable events or events with little warning, like earthquakes or terrorist attacks.

Recent events that have prompted transit agencies to activate their EOCs include the following:

- civil unrest
- protests
- winter storms
- public health emergencies
- flooding
- severe weather
- bomb threats/explosions
- hurricanes
- wildfires
- special events

## 2. Application of NIMS models

### 2.1 National Incident Management System (NIMS) overview<sup>1</sup>

The National Incident Management System (NIMS) defines a common, interoperable and comprehensive approach to sharing resources; coordinating and managing incidents; and communicating information for all levels of government, nongovernmental organizations (NGO) and the private sector during all five mission areas of emergency management. As key partners in incident and emergency response in communities throughout the country, transit agencies should adopt the key principles of NIMS and integrate them into their emergency plans, policies and procedures.

NIMS defines three typical types of EOC organizations that can be used to manage incidents:

- Incident Command System (ICS)/ICS-Like Structure
- Incident Support Model Structure
- Departmental Structure

Each model, with applications for transit, is discussed in detail below. Ultimately, NIMS states that EOC organization models should work for the agency or jurisdiction they support, meaning that purism and rigid adherence to doctrine is not required for an EOC to operate under NIMS. Rather, it is adherence to the NIMS management characteristics that will make the EOC consistent with NIMS. EOC staffing, regardless of the chosen model, should be scalable to incident complexity and the resource capability of the impacted agency.

### 2.2 ICS/ICS-Like Structure

The ICS/ICS-Like Structure<sup>2</sup> is one in which an EOC is organized into the command and general staff of ICS, but each section has the role of coordination rather than operational implementation. Accordingly, the sections have the term “Coordination” in their titles—for example, the Logistics Coordination Section. This usage is to distinguish them from the ICS sections that are on the scene directing incident response. Personnel operating out of the EOC are assigned to one of the four sections, and their duties are to support the EOC and the general response of the agency or jurisdiction, regardless of their normal department or function.

<sup>1</sup> Appendix C of the National Incident Management System, Third Edition, 2017.

<sup>2</sup> “Some jurisdictions/organizations use the standard ICS organizational structure but modify certain titles to create an ICS-like organization that distinguishes EOC functions from their field counterparts.” National Incident Management System, Third Edition, 2017, pg. 36

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As an example of how the ICS structure can apply to a transit EOC, consider a fire at a transit agency facility that causes a service disruption. The role of each section is summarized in **Table 1**.

**TABLE 1**  
ICS Structure Sections and Roles Example

<b>Section</b>	<b>Role</b>
EOC director	Manage the EOC response, brief senior leaders on incident and required policy decisions.
Public information officer	Coordinate with first responder and external partners to issue accurate messaging, communicate information on service disruptions to customers, monitor media for misinformation.
Liaison officer	Communicate with elected officials, board members, nongovernmental organizations and surrounding jurisdictions to understand needs and provide information.
Safety officer	Develop safety plan for agency responders, monitor operations for safety concerns, advise EOC director on safe operations.
Operations Coordination Section	Coordinate resource support for the evacuation of the facility; perform personnel accountability checks; coordinate support for investigations as appropriate; coordinate work to restore, maintain or modify service to impacted facility.
Logistics Coordination Section	Acquire resources (such as generators, light towers, personnel, etc.) as directed by operations; ensure that food, water and supplies are available for agency responders and EOC personnel; work with first responders on routing of emergency resources.
Planning Coordination Section	Collate information and produce situational awareness products (sitrep, common operating picture), lead EOC planning process for the next operational period, track deployed resources, prepare demobilization and recovery plans.
Finance Coordination Section	Procure resources in conjunction with logistics, track costs, seek reimbursement if possible, coordinate insurance and risk management processes.

When considering the implementation of the ICS/ICS-Like Structure in their EOCs, transit agencies should look to staff each section with personnel from the functions in **Table 2** (or agency-specific equivalents). This table is not inclusive, and depending upon needs and available resources, transit agencies can use personnel from other departments or functions.



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**TABLE 2**  
 ICS Structure Sections and Functions Example

Section	Function
EOC director	Emergency management, safety director, security/public safety/police chief
Public information officer	Marketing/communications/public relations, community engagement/relations/outreach
Liaison officer	Government relations/affairs, community engagement/relations/outreach
Safety officer	Safety department, risk management department
Operations Coordination Section	Bus operations, commuter rail operations, light rail operations, paratransit operations, facilities, information technology, public safety/police department/security
Logistics Coordination Section	Bus maintenance, commuter rail maintenance, light rail maintenance, paratransit maintenance, facilities, information technology
Planning Coordination Section	Data/analytics teams, route/service planning, emergency management
Finance Coordination Section	Finance department, procurement department, grants department, human resources department, risk management department

**Benefits of ICS/ICS-Like Structures:**

- The structure provides predefined roles, responsibilities and processes, without the need to develop, train and refine custom processes.
- Personnel may be familiar with the Incident Command System, allowing them to integrate into the EOC structure when activated.
- Agencies will have the ability to use existing ICS training for EOC personnel, with or without modification or customization.

**Challenges with ICS/ICS-Like Structures:**

- Key EOC functions, such as information management, logistics support, public information and policy decisions, do not always fall cleanly into the ICS sections and units.
- This structure requires trained and experienced management personnel, which can be resource-intensive and can remove critical personnel from areas where they may be needed during emergency response.
- When adopting this model, transit agencies should plan to provide training to personnel to function effectively in an ICS-based EOC prior to a disaster. This cannot be completed effectively during an emergency.
- This model can cause confusion or lack of clarity in roles if transit agencies typically have strong ICS personnel on scene.

Overall, transit agencies should consider an ICS/ICS-like model if they need a system that comes with clear guidance and can support inexperienced to moderately experienced on-scene response personnel, as this model can be used to support those personnel or serve as the agency incident command post for systemwide incidents.

### **2.3 Incident Support Model Structure**

The Incident Support Model (ISM) Structure is designed to separate the main functions of an EOC into sections so each function is performed by a single team with a leader. This EOC structure is not designed to

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direct operations on the ground, but instead to support an incident commander with an ICS staff. Therefore, the ISM is made up of four sections:

- **Situational Awareness Section**, responsible for information management, the common operation picture and providing information for public information efforts.
- **Planning Support Section**, responsible for advance planning, response planning, contingency planning and development of any other plans.
- **Resources Support Section**, responsible for ordering, managing, tracking and demobilizing all operational resources needed to support the operation. They work closely with the ICS structure on the ground, if any.
- **Center Support Section**, responsible for ensuring that the EOC is functioning properly, including physical plan, IT, food, supplies, etc.

In addition to the four sections, there may be additional staff who support the EOC director, such as a safety officer or legal adviser.

As an example of how the ISM structure can apply to a transit EOC, again consider a fire at a transit agency facility that causes a service disruption. The role of each section is summarized in **Table 3**. Note that all the functions described in the table support an onsite incident commander, and many of the functions performed by an EOC under an ICS structure are not performed by the EOC with an ISM structure.

**TABLE 3**  
ISM Sections and Roles Example

<b>Section</b>	<b>Role</b>
EOC director	Manage the EOC response, brief senior leaders on incident and required policy decisions.
Public information officer	Coordinate with first responder and external partners to issue accurate messaging, communicate information on service disruptions to customers, monitor media for misinformation.
Liaison officer	Communicate with elected officials, board members, nongovernmental organizations and surrounding jurisdictions to understand needs and provide information.
Safety officer	Develop safety plan for agency responders, monitor operations for safety concerns, advise EOC director on safe operations.
Resources Support Section	Acquire and procure resources as requested by the incident commander or other agency departments; track deployed resources; ensure that food, water and supplies are available for agency responders; track costs and seek reimbursement, if possible.
Situational Awareness Section	Collate information and produce situational awareness products (sitrep, common operating picture).
Planning Support Section	Lead EOC planning process for the next operational period; prepare demobilization and recovery plans; plan for service restoration, modification and continuity to impacted facility.
Center Support Section	Ensure that EOC personnel have food, water and supplies; ensure that IT and facilities needs of EOC personnel are met.

When considering the implementation of the ISM structure in their EOCs, transit agencies should look to staff each section with personnel from the functions in **Table 4** (or agency-specific equivalents). This table is not inclusive, and depending upon needs and available resources, transit agencies can use personnel from other departments or functions.

**TABLE 4**

ISM Sections and Functions Example

Section	Function
EOC director	Emergency management, safety director, security/public safety/police chief
Public information officer	Marketing/communications/public relations, community engagement/relations/outreach
Liaison officer	Government relations/affairs, community engagement/relations/outreach
Safety officer	Safety department, risk management department
Resources Support Section	Bus operations, bus maintenance, commuter rail operations, commuter rail maintenance, light rail operations, light rail maintenance, paratransit operations, paratransit maintenance, facilities, public safety/police/security, IT, finance, procurement, human resources
Situational Awareness Section	Data/analytics team, emergency management
Planning Support Section	Emergency management, route/service planning
Center Support Section	Administration, facilities, IT

Benefits of the ISM Structure:

- Consolidating the main functions of an EOC into dedicated teams centralizes management and execution of responsibilities, which may have the benefit of focusing response efforts for the agency.
- This model is designed to support existing, robust incident command structures or subordinate response organization, which many transit agencies already have heavily invested in. This model can leverage those investments while focusing EOC operations on resource acquisition and planning support.

Challenges with an ISM Structure:

- The ISM structure is not standardized similar to ICS, which requires transit agencies to invest resources and time in the development of processes, procedures and training.
- This structure is not designed to operate without an incident command structure or subordinate response organization to support. For incidents that do not have an ICS, such as a weather event with a system-wide impact, this structure does not provide easy mechanisms to coordinate operations, potentially requiring a separate ICS and EOC running at the same time.

**2.4 Departmental Structure**

The departmental structure is the simplest of the three models identified in NIMS. This model is designed to maintain normal agency structures as much as possible. Each relevant department is represented in the EOC, and the whole EOC is coordinated by the emergency manager or similar function. There is no overhead or management staff other than the emergency manager and their staff.

Transit agencies that wish to use the Departmental Structure should identify which departments (which may include all departments) should be represented in their EOC. They should also identify personnel to provide support to EOC operations, such as food, water, supplies, lodging, etc.

If using this model, transit agencies should identify at least three employees from each department to serve in the EOC as departmental representatives. This will allow for consistent representation and a smoother functioning of a departmental EOC. Transit agencies should also identify what functional support the

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emergency manager/EOC director might need to successfully run the EOC, such as resource tracking or information management support.

Benefits of the Departmental Structure:

- It requires the fewest personnel of the NIMS EOC models due to the lack of significant management or overhead personnel requirements.
- It preserves normal reporting structures, allowing personnel to easily integrate into emergency response operations without confusion.
- It requires the least training for EOC personnel because EOC operations are grounded in existing processes, procedures and reporting structures.
- It requires lower footprint and training requirements, which is especially useful for smaller agencies.

Challenges of the Departmental Structure:

- It requires a strong emergency manager/EOC director to implement successfully.
- It requires EOC leadership and emergency management personnel to perform or monitor many of the overhead/management functions performed by specialized staff in the other two models, such as centralized reporting, information tracking, and other cross-departmental or cross-discipline functions.

### **3. EOC planning (plans, policies and procedures)**

For an EOC to efficiently operate at the time of an emergency, it is critical that transit agencies plan prior to an incident and test existing plans for any gaps in response. Responding personnel can use a variety of planning documents to guide response, continuity and recovery activities, including an Emergency Operations Plan (EOP) or a Business Continuity Plan (BCP), a Continuity of Operations Plan (COOP), a System Security Plan (SSP), a Public Transportation Agency Safety Plan (PTASP), and other agency-specific emergency SOPs.

Implementing a strong emergency management program requires strong plans, policies and procedures. These planning documents will lay the foundation for not only a transit agency's emergency management program and training and exercise program, but also the agency's EOC operations. At the time of an emergency, agency emergency plans are put to the test and provide a framework for response activities. As part of, or in addition to, the documents listed above, transit agencies should document the processes, procedures, authorities and requirements for EOC operations in their EOP or a standalone EOC plan.

#### **3.1 Authorities**

Agency EOPs or EOC plans should clearly identify the authority of the Emergency Operations Center. These documents should outline what decisions the EOC can make and which are reserved for other actors, such as executive leadership, boards of directors or external entities. Each transit agency will have different delineations between these partners during emergency response, and it is critical that questions of authority and jurisdiction are addressed prior to an incident, to prevent operational and legal challenges from arising during an emergency response.

#### **3.2 Plans and EOC documentation**

Transit agencies should document processes for their EOCs to ensure consistent performance and training for EOC personnel. Specific areas such as information management, resource management, decision-making and coordination with external entities should be included in these documents. Agencies can choose to include these processes and procedures in their EOP or in a separate EOC plan.

In addition to documenting processes in overarching documents such as the EOP or a separate EOC plan, transit agencies should create position-specific checklists or guides for responding personnel. Position checklists or guides should include what responsibilities the relevant position has, processes personnel should use to execute the responsibilities, and other activities required by agency protocols. If using the ICS/ICS-Like Structure, transit agencies can adapt existing ICS guides and task books to create position checklists and guides.<sup>3</sup> Otherwise, transit agencies can use existing agency checklists or guides as a starting point for their EOC roles and responsibilities or position guides.

During EOC operations, transit agencies may choose to develop EOC Action Plans or Incident Action Plans (EAPs or IAPs) that utilize the standardized processes contained in the Incident Command System. These EAPs or IAPs are generally developed using [ICS forms](#) and contain details of EOC strategies and tactics, as well as information on key personnel and safety messaging. Agencies may choose not to develop EAPs or IAPs or may utilize alternative formats or methods for gathering and sharing this information.

### 3.3 EOC activation

Transit agencies should address trigger points and activation thresholds for their EOCs in their EOP or standalone EOC plan. These plans should identify who has the authority within the agency to activate the EOC and what thresholds or types of incidents trigger an activation. These plans should also include details on the process for notifying responding personnel of an EOC activation. Agencies should ensure that they have multiple avenues to notify employees in the event that a failure of the primary notification system occurs.

In NIMS, FEMA recommends that agencies identify three levels of activation: Normal Operations/Steady State (Level 3), Partial Activation/Enhanced Steady State (Level 2), and Full Activation (Level 1). As part of the agency EOP or standalone EOC plan, transit agencies should define what each level represents for their EOC operations and what potential triggers would prompt the activation of an EOC to each level. Transit agencies can explore additional guidance and information on EOC activations in Appendix C of NIMS, Third Edition.

### 3.4 EOC operations

Transit agency EOCs are generally focused on five areas:

- Policy Group
- Resource Management
- Information Management
- Procurement
- Public Information

Transit agencies should develop processes and procedures that address how each of these functions are to be carried out in their EOC.

#### 3.4.1 Policy Group

Agencies should identify who within their EOC has specific authority to make decisions during an emergency. If decisions are beyond the delegation of authority documented in the agency's EOP or

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<sup>3</sup> [United States Coast Guard](#) and [Federal Emergency Management Agency](#) guides are available.

standalone EOC plan, EOC directors must refer them to the Policy Group for deliberation and adjudication. These decisions and action items may come in the form of one of these topics:

- service suspension (see APTA SS-SEM-RP-015-19, “Suspension of a Service of a Public Transportation System and Recovery,” for more on service suspension plans)
- financial expenditure
- human resources
- office closures

Agencies should not only identify the decision-maker but also capabilities and action items, which may need to be approved through the Policy Group or executive leadership.

Agencies may centralize all decision-making with the general manager/CEO or incident commander; give it collectively to a senior management/executive team or Policy Group; or may assign specific decisions to individual positions, such as a chief operating officer, vice president of finance or finance section chief. However agencies decide to divide decision-making, delineations must be documented in an agency EOP or standalone EOC plan.

### **3.4.2 Resource Management**

Agencies should identify and document specific processes for the following:

- requesting resources
- tracking resources
- utilizing resources
- demobilizing resources
- remediating resources

Agency processes should include specific documentation that meets the reimbursement requirements for local, state or federal disaster funding reimbursement sources. Documentation should also capture information required to request assistance from local, regional or state EOCs, and utilize existing processes to request those resources. Requests under mutual aid agreements should also be documented and follow the processes outlined in the agreement. Support or requests without agreements should meet the requirements of FEMA’s “Public Assistance Policy Book,” Chapter 6, Subsection IX: Mutual Aid. Transit agencies should discuss mutual aid policies, procedures and legal requirements with their legal counsel and/or state emergency management agencies.

Processes should identify the following:

- how requests for assistance are received from both internal and external requestors
- who has the authority to prioritize the requests
- what criteria they will use to prioritize them

Once resources are dispatched, EOCs should have procedures for resource tracking and accountability. Resources should be tracked until demobilization, and any repair, rehabilitation or other work required due to the response should also be tracked. Agencies should integrate their resource management and financial tracking processes to ensure the most accurate accounting of emergency expenditures.

In coordination with the on-scene commander, transit agency EOCs may coordinate a staging area where resources can be kept in a state of readiness to support incident response if needed. Staging areas should be

located in a safe location and provisioned to support personnel and equipment for the expected duration of the incident.

### 3.4.3 Information Management

One of the key activities of an EOC is information management. EOCs are designed to provide agencies with a clearinghouse for incident-related information and to create a common operating picture for responders and executives to make the best decisions with the best available information. In order to fulfill this mission, transit agencies should design processes to collate, validate and disseminate information to key stakeholders. Agencies should make plans to regularly compile and distribute situation reports (sitreps). Sitreps should be created to provide a concise and easy-to-use summary of the incident and response activities. It is critical that agencies identify the types of information they wish to have in a sitrep and build processes to consistently collect that data during EOC operations.

Agencies should also consider building a common operating picture platform that collates information from inside and outside the agency into a series of usable maps, dashboards, pictures and other data-display mechanisms. These platforms provide close to real-time information to responders to allow them to make decisions about incident response. Identifying what data is needed during response and building those data pipelines prior to an incident is a key to success in providing a clear and usable common operating picture.

Finally, transit agencies should plan to hold regular EOC briefings to ensure that EOC personnel have a clear picture of the whole incident. It is essential that EOC briefings be concise, information-dense and comprehensive. Transit emergency managers should create processes that facilitate effective briefings as an integral part of EOC response.

### 3.4.4 Procurement

Transit agencies should identify processes for emergency procurement during EOC operations that are compliant with state, local and federal laws and guidance. These processes should include the following:

- determinations of authority
- assignment of specific responsibilities
- reporting requirements
- regular communication with requestors
- accountability for purchased items and services

### 3.4.5 Public Information

Transit agencies should create processes for providing timely, accurate and actionable information for the public, and they should ensure that this information is available in accessible formats and commonly spoken languages other than English. Processes should include the following:

- identification of key messages
- development of messaging and associated products,
- legal review and leadership message approval
- dissemination mechanisms
- media and messaging monitoring

Transit agencies should plan to participate in a Joint Information System and/or Joint Information Center that their local Emergency Operations Center(s) may operate to ensure that accurate and consistent messaging is disseminated by all responding agencies.



## 4. EOC staffing considerations

Transit agencies should assess several considerations when determining staffing for their transit center EOC. In addition to determining staff sections and roles (See Section 2, “Application of NIMS models”), transit agencies should consider agency staffing policies and limitations, shift schedules (e.g., three 8-hour or two 12-hour shifts), EOC training requirements, facilities and space (e.g., desk space, restrooms, parking), capabilities, and partners and stakeholders with representation. Transit agencies should also consider immediate staffing needs to activate an EOC, as well as those required to sustain extended EOC operations.

Transit agencies should plan for in-person, virtual and hybrid EOC activations. Virtual and hybrid EOCs allow agencies to pull together key personnel and decision-makers quickly and can increase the EOC’s flexibility, responsiveness and effectiveness. Virtual and hybrid EOCs require that distinct roles and responsibilities be assigned and procedures rigorously adhered to during an activation. If these items are not implemented, EOC processes can quickly devolve into person-dependent responses that burden key personnel and leave others isolated from response activity. Procedures should include clear methods for sharing critical information, requesting resources, decision-making and dissemination in a virtual or hybrid environment. Transit agencies should consider adapting collaboration or critical incident management software or platforms for virtual and hybrid EOC usage.

Ultimately, transit agencies should develop a staffing approach that provides flexibility and scalability to confront a range of simple and complex emergencies.

## 5. Regional coordination with EOCs

Transit agency EOC staff should coordinate with agencies and organizations inside and outside their jurisdiction that may provide assistance during an emergency. These may include EOCs operated by local, county, regional and state government agencies that have response and recovery roles and responsibilities, as well as other entities with shared responsibilities or dependencies (e.g., other transportation partners, critical infrastructure).

Coordination with other EOCs will vary based on an incident, the jurisdictions involved, the organization, and physical/virtual presence options and limitations. During an emergency that requires EOC activation, transit agencies should maintain options to both send transit representatives to partners’ EOCs and to incorporate external stakeholders within the transit agency EOC. Transit agencies should designate an employee to serve as a liaison or agency representative in a local, regional or state EOC in order to gather information, inform incident response objectives, and communicate incident response requirements between the transit agency and the EOC.

Transit agencies should regularly participate in local, regional and state preparedness activities with the intent of integrating the agency’s incident response processes and EOC personnel into the broader jurisdictional responses as appropriate. This may include serving in an ESF-1 Transportation or Transportation Branch role in a local or regional EOC.



## 6. EOC site selection and design/construction

### 6.1 EOC site selection

When selecting an EOC site, transit agencies should consider the following:

- minimization of human-caused, natural and technological hazards
- collocation with or separation from administrative staff and leadership
- collocation with or separation from agency bus and/or rail operations center
- collocation with or separation from security operations center
- availability of space to use separate areas for different functions
- ability to convert space between day-to-day and emergency/EOC use
- location of backup EOC

The EOC should not be sited immediately adjacent to higher surrounding terrain; unsecured buildings owned by unfamiliar parties; or vegetation, drainage channels, ditches, ridges or culverts that could provide concealment. All power, gas, water, wastewater and communication-critical lifelines should have at least one layer of redundancy or backup. Primary and backup lifelines should be physically separated. This may require infrastructure lifelines to cross the site perimeter at multiple locations. All controls; interconnections; exposed lines; and other vulnerable elements of power, gas, water, wastewater and communications infrastructure systems should be protected from access and exploitation by surveillance and/or physical countermeasures. If possible, utility providers should not be required to enter the EOC's secure perimeter to service their equipment, nor require an agency escort.

### 6.2 EOC design/construction

When designing and constructing an EOC, transit agencies should consider the following:

- protective measures, to include layered vehicle barriers, controlled or staffed ingress/egress gates, security fencing, lighting and surveillance
- controlled vehicle and pedestrian entrances and exits
- access control and restriction for designated areas
- seating configuration and adaptability to support planned workflows
- expected staffing levels
- separate conference rooms and workspaces
- storage for dedicated perishable and nonperishable EOC supplies
- access to kitchen, commissary and break areas
- media staging area separate from EOC and normal agency operations

As appropriate, EOC design, construction and operations plans and related information should be marked as Sensitive Security Information (SSI) and protected accordingly. See APTA SS-SIS-RP-007-10, "Sensitive Security Information Policy," for more information on SSI considerations.

## 7. Equipment, technology and supplies

Transit agencies should develop processes and procedures that address how information technology and information management systems and infrastructure for communications and data management are handled in their EOCs.

## **7.1 Information technology and information management system**

### **7.1.1 Geospatial data and analysis capability**

The EOC should have the capability to access geographical information quickly and effectively. This information can take the form of specialized databases or incident logs that list critical infrastructure. Knowing the precise location of buildings, roads and critical infrastructure is key when dispatching first responders, determining evacuation routes, and securing areas during events such as civil unrest and bomb threats. When combined with adequate hazard prediction and monitoring capabilities, geospatial information provides a powerful capability to identify at-risk populations during hazards such as flash floods, tornadoes and downwind chemical hazards. Precise information about buildings can also help to identify facilities that may require a large-scale evacuation.

### **7.1.2 Crowdsourcing in emergency management**

Transit agency EOCs can utilize crowdsourcing as a method for gathering open-source ideas, content or services and then curating this data into consumable and informative products. Digital volunteer networks (DVNs), which lead specific crowdsourcing efforts, are the virtual equivalent of field-based voluntary organizations. DVNs can divide the collection, analysis and visualization of data between trained volunteers, resulting in products that increase situational awareness and identify resource gaps to emergency managers.

### **7.1.3 Hazard prediction and monitoring capability**

The EOC should utilize hazard prediction to predict and monitor impending or existing hazards. This may include computer modeling for chemical or radioactive hazards, as well as the ability to monitor severe weather and earthquakes. Since EOCs vary in size, scope and capability, EOCs may or may not have staff trained in and familiar with hazard prediction and monitoring capability. EOC leaders should consider hazard prediction and monitoring training and expertise when recruiting staff and assessing skill sets. When this expertise is not available within the EOC, consider establishing partnerships with this capability in the region.

### **7.1.4 Automated emergency notification system**

Transit agency EOCs should utilize an automated emergency management system to immediately detect and notify the EOC of events such as earthquakes. The emergency management system may consist of commercial off-the-shelf software or specialized applications that the EOC has developed. This system should help users manage the incident and track resource deployment, response teams and other response capabilities according to the jurisdiction's plan. The system should also manage diverse data elements including status reports, incident alerts and response plans.

### **7.1.5 Personnel qualification and certification system**

When establishing an EOC, transit agencies will have to choose the minimum qualification for specific positions. The National Qualification System (NQS) establishes guidance and tools to assist stakeholders in developing processes for qualifying, certifying and credentialing deployable incident management and support personnel. NQS can help EOCs build or refine qualification, certification and credentialing processes, making them effective and consistent nationwide. NQS was developed as a supplement to the Resource Management component of NIMS.

### 7.1.6 New and emerging technology for EOCs

Transit agency staff should continue to monitor and implement new and emerging technologies in their EOCs. New developments in technology have led to quicker notification time, enhanced/encrypted communication channels, and advances in unmanned aerial systems. A few examples are below:

- geographic information systems
- unmanned aerial systems (UAS) and UAS interceptors
- mobile devices (mobile phones, tablets, laptops, access to GETS or WPS or third-party emergency communications services)
- enhanced radio systems

### 7.1.7 Security systems

When establishing an EOC, a transit agency will have to ensure that it has access to security systems. Systems to consider include the following:

- **Physical security information management (PSIM):** Aligns communications, alarm details, captured video, responsibility assignments and report generation.
- **Video management system (VMS):** Improves enterprise situational awareness and collaboration between departments, improves security response, and decreases maintenance efforts.
- **Access control system:** Provides identification details, card reader details, portal controls and vehicle gate controls; improves enterprise situational awareness by consolidating all access control and intrusion detection alarms in a single location and platform.
- **Intrusion detection system:** Improves enterprise response times by consolidating all access control and intrusion detection alarms in a single location and platform.
- **Radio communications:** Improves response times, situational awareness and coordination with first responder partners.
- **Supervisory Control and Data Acquisition (SCADA) systems:** Allow for EOC access to monitor SCADA activities.

## 7.2 Infrastructure for communications and data management

### 7.2.1 Incident management software

When considering the establishment of EOCs, transit agencies should consider different options for incident management software. There are multiple free and paid options with preexisting solutions that may fit what the EOC needs. Different available products provide a number of different services, such as multitiered situational awareness of incident support and management activities during an event or a central hub for incident response teams with a standardized approach to assess, plan and respond to incidents. Agencies should evaluate the current versions of products to see if they will meet their needs and also keep abreast of updates, as they are rolled out regularly. Agencies should keep in mind the maintenance costs/requirements of different products when deciding (initial setup and maintenance).

### 7.2.2 Cybersecurity

Cybersecurity is a growing concern recognized by all transit agencies where appropriate actions are urgent and required to reduce operational and financial risk. When establishing an EOC, transit agencies should protect their computer systems against cyberattacks such as denial of service or malicious code. To mitigate cybersecurity vulnerabilities and intentional acts against the transit agency to the lowest possible level, transit agencies can utilize a wide range of cybersecurity resiliency tools such as alerts, warnings and notifications (AWNs) and site hardening. See APTA SS-ESC-RP-001-14, “Cybersecurity Considerations for Public Transit,” for more information about cybersecurity recommendations and requirements.

### 7.2.3 Maintenance

To maintain a working EOC, transit agencies should ensure that their technology is always up to date. Technology updates should be planned as part of maintaining the EOC and should be routine.

### 7.2.4 Communication technology

When establishing an EOC, transit agencies should ensure that the facility has telecommunications capabilities including teleconferencing, videoconferencing, text messaging and faxing. The EOC should also have a quality internet connection and access to mobile Wi-Fi hotspots and portable routers and boosters.

### 7.2.5 Backup system requirements

All transit agencies should be able to switch to a backup system when required. All backup systems should work in a variety of situations or conditions. Training and exercising on a routine basis help to ensure that backup systems work under varied conditions. Backup systems should consider secure communications when needed. Transit agencies should coordinate with IT on disaster recovery/redundancy, off-site and on-site redundancy, and virtual redundancy.

## 8. EOC alternates and continuity of operations

When considering the establishment of EOCs, transit agencies create a primary EOC, but should also consider the pre-designated identification of at least one alternate EOC as part of the agency COOP. The purpose of this facility is to ensure that the agency can continue to coordinate an effective response to emergencies and disasters in the event of an impact to the agency's primary EOC. Agencies have multiple options when identifying alternate EOCs and continuity options and can have plans to use one or more of the options depending upon circumstances and agency impacts.

### 8.1 Identify an internal alternate EOC

Agencies may wish to identify another agency-owned or -leased facility that can host the alternate EOC. This option may provide the benefit of flexibility and control, as agencies will not be dependent on other partners to provide access to resources or a facility.

As with a primary EOC, agencies should evaluate the accessibility and safety of any proposed backup facility. Transit agencies should ensure that the alternate EOC is not within close proximity to the agency's primary EOC. Agencies should undertake a hazard analysis of the building they intend to use for their alternate EOC to understand the potential risks the facility faces. Transit agencies should evaluate their alternate EOC facility for potential impacts from the following:

- technical hazards
- natural hazards
- security hazards

Transit agencies will have to decide what level of risk they are willing to accept for the location of their alternate EOC, and no two agencies will have the same level of risk or considerations. Agencies should document these hazard analyses and include them in plans for activating their alternate EOC so decision-makers have access to that information when determining whether to activate.

When assessing the specifications for an alternate EOC, transit agencies should decide what capacity and capabilities they wish to have. Considerations include potentially having only partial capability or reduced capacity compared with the agency's primary EOC. This allows more flexibility in siting and maintaining an alternate EOC but may impact the ability of an agency to respond to an incident when using the alternate

EOC. Transit agencies must determine a balance between capability and cost when considering size and capability of an alternate EOC.

Once transit agencies have decided on the location for their alternate EOC, they should decide on the type of alternate EOC they wish to have. FEMA continuity guidance divides other continuity facilities (including EOCs) into three types: hot, warm and cold.

### **8.1.1 Hot alternate EOCs**

Hot alternate EOCs are fully equipped with working utilities, equipment and capabilities. A hot alternate EOC is a turnkey solution that requires minimal startup time, as they are essentially a second fully equipped EOC. Hot alternate EOCs require regular maintenance of systems, updating of computers and testing to ensure that they can be used immediately if the agency's primary EOC is not available. Transit agencies considering this type of alternate EOC should plan for the budgetary and personnel requirements of maintaining a fully functional site, including utilities, software licenses, system upkeep and security.

### **8.1.2 Warm alternate EOCs**

Warm alternate EOCs are equipped with working utilities, some equipment and partial EOC capabilities. Warm alternate EOC sites require some setup to convert them from their primary function to use for an EOC. Often, a warm alternate EOC has another use, such as a conference room or meeting space, and requires time and effort to turn into a functional alternate EOC when needed. Warm alternate EOCs can have varying levels of equipment and functionality. Transit agencies considering the adoption or creation of a warm alternate EOC should decide what level of readiness they desire from their facility. Generally, increased levels of readiness require higher levels of budgetary and personnel support to maintain their readiness. Transit agencies considering this type of alternate EOC should determine the specific level of capability they desire and then plan for budgetary and personnel requirements for maintaining that level of readiness.

### **8.1.3 Cold alternate EOCs**

Cold alternate EOCs are not equipped with working utilities, equipment or EOC capabilities. Cold alternate EOCs require significant work to bring them to operational readiness when activated. Cold sites are often no more than an empty shell of a facility, such as a warehouse, and require effort by a multidisciplinary team of personnel from facilities, IT, safety and operations to bring them to full readiness. Because of the low level of resources required to maintain this type of facility, it is often the least costly option. When considering the creation of a cold alternate EOC, transit agencies should budget for maintenance and periodic exercises to validate the ability to activate the facility from its cold state. Agencies should also consider the trade-off in annual maintenance vs. the ability to quickly activate as necessary.

## **8.2 MOU/MOA with other agencies for use of facility for alternate EOC**

Transit agencies may wish to identify and create MOUs/MOAs with partners that have operations centers or other facilities (such as conference centers or computer labs) that could function as alternate EOCs. In doing so, agencies should look at the contractual/legal/agreement requirements for exercising this option. When creating these agreements, agencies should understand the limitation in availability, capability, IT access and facility access that may exist when utilizing a facility from another agency. These limitations should be included in the plans for activating and using the alternate EOC. Considerations in planning can include items such as alternatives if the facility is not available, long-term usage of a partner facility, transition back to a primary EOC, and additional facility or IT requirements in a shared facility setting.

This solution may allow for a warm alternate EOC site because it is a facility or operations center that is maintained and used by another agency, but it may also limit the ability to configure or adapt the facility for transit agency use. This option is often very cost-efficient or even cost-free unless used. Agencies should look

at this option if they have limitations in alternate space in house, are looking for a low-cost alternate EOC or have strong partnerships with other agencies.

### 8.3 Virtual EOC

In some circumstances, it may be appropriate for agencies to create or maintain virtual EOC structures as their alternate EOCs. In practice, this means the EOC can operate from any location, group of locations or even employees' homes. As discussed in Section 4, the virtual EOC concept requires investment in training, processes and systems that will allow agency personnel to collaborate during emergency response.

Agencies designating virtual EOCs as their primary alternate EOC should understand that virtual EOCs are not appropriate for all circumstances. If personnel are impacted directly, employee homes or agency facilities are lacking in power or internet, or cellular systems are disrupted, it would be challenging, if not impossible, to operate a virtual EOC. In such circumstances, agencies should have processes and procedures to activate a physical alternate EOC using one of the options identified above.

## 9. Training and exercises

### 9.1 Training

Transit agencies should develop training for personnel assigned to their agency EOC. Training program should include both core emergency management concepts such as NIMS and ICS, as well as agency-specific information on resources, policies and procedures. Agencies should develop specific training plans for key positions within the EOC that may include more advanced training than general EOC representatives.

Depending on the model transit agencies choose for their EOC (see Section 2), they may wish to include ICS training up to the 400 level for ICS personnel or EOC training including IS-2200 and/or G-2300. For agencies that choose the Departmental Structure or Incident Support Model Structure, ICS training may not be necessary for EOC personnel. For agencies that choose an ICS or ICS-Like Structure, they should follow the recommendations made in the NIMS Training Plan for EOC personnel.

Training should consist of initial training and regular refresher training for all assigned EOC personnel. As plans are updated annually, personnel should be made aware of changes so they are able to implement them if called upon to do so. Transit agencies should develop training plans that ensure continuous engagement for EOC personnel at the appropriate level for their level of responsibility.

### 9.2 Exercises

Transit agencies should include their EOCs in their comprehensive exercise programs. Agencies should conduct EOC exercises at least annually using a variety of objectives, hazards and scenarios. Exercises should be designed using HSEEP methodology and standards, and should consist of opportunity for familiarization with plans, policies and procedures, as well as challenges for personnel to identify gaps in those plans, policies and procedures.

All assigned EOC personnel should be included in the exercise schedule so primary departmental representatives and leadership personnel are not the only ones being exercised; this will help ensure continuity of operations and familiarization of EOC personnel. Exercises or exercise series should be designed to ensure that all capabilities and teams within an EOC are tested as frequently as possible. Agencies should also take advantage of exercises as opportunities to introduce new personnel to EOC operations. They should work with external partners to develop and run exercises to increase coordination and collaboration experience.

See APTA SS-SEM-S-004-09, "Transit Exercises," for additional details about exercises in the transit environment.



## Related APTA standards

APTA SS-ESC-RP-001-14, “Cybersecurity Considerations for Public Transit”

APTA SS-SEM-S-004-09, “Transit Exercises”

APTA SS-SEM-RP-015-19, “Suspension of a Service of a Public Transportation System and Recovery”

APTA SS-SIS-RP-007-10, “Sensitive Security Information Policy”

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## Abbreviations and acronyms

<b>AWN</b>	alerts, warnings and notifications
<b>BCP</b>	Business Continuity Plan
<b>COOP</b>	Continuity of Operations Plan
<b>DVN</b>	digital volunteer networks
<b>EAP</b>	EOC Action Plan
<b>EOC</b>	Emergency Operations Center
<b>EOP</b>	Emergency Operations Plan
<b>FEMA</b>	Federal Emergency Management Agency
<b>GETS</b>	Government Emergency Telecommunications Service
<b>IAP</b>	Incident Action Plan
<b>IT</b>	information technology

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<b>NIMS</b>	National Incident Management System
<b>HSEEP</b>	Homeland Security Exercise and Evaluation Program
<b>IAP</b>	Incident Action Plan
<b>ICP</b>	Incident Command Post
<b>ICS</b>	Incident Command System
<b>ISM</b>	Incident Support Model
<b>MOA</b>	memorandum of agreement
<b>MOU</b>	memorandum of understanding
<b>NQS</b>	National Qualification System
<b>PSIM</b>	physical security information management
<b>PTASP</b>	Public Transportation Agency Safety Plans
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>sitrep</b>	situation report
<b>SOP</b>	standard operating procedure
<b>SSI</b>	Sensitive Security Information
<b>SSP</b>	System Safety and Security Plan
<b>UAS</b>	unmanned aerial system
<b>VMS</b>	video management system
<b>WPS</b>	Wireless Priority Service

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