

**APTA SS-SEM-S-001-08, Rev. 3**

First Published: September 26, 2008

First Revision: April 1, 2013

Second Revision: February 21, 2020

Third Revision: May 27, 2025

**Security & Emergency Management
Working Group**

Continuity of Operations Plan for Transit Agencies

Abstract: This standard addresses considerations to help transit agencies create and implement a Continuity of Operations Plan. Depending upon an agency's jurisdiction, governance, needs and resources, all transit agencies shall do one of the following:

- develop an independent COOP,
- address COOP elements within an agency's emergency operations plan (EOP), business recovery plan or other agency plan, or
- integrate transit COOP elements within another authority's COOP (e.g., county-level COOP)

Keywords: essential functions, operations, plan

Summary: A Continuity of Operations Plan (COOP) provides a transit agency with a plan to facilitate quick restoration of essential functions after an emergency.



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 Security & Emergency Management Working Group as directed by the Security and Emergency Management Standards Policy and Planning 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. 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 agency'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 document supersedes APTA SS-SEM-S-001-08, Rev. 2, which has been revised. Below is a summary of changes from the previous document version:

- Integrates relevant material from APTA SS-S-SEM-006-09, "Shelter of Transit Vehicles and Nonrevenue Equipment During Emergencies," and APTA SS-SEM-RP-007-09, "Creating an Alternate or Backup OCC," both of which have been sunsetted.
- Makes updates to references, definitions and abbreviations.



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Introduction

This introduction is not part of APTA-SS-SEM-S-001-08, “Continuity of Operations Plan for Transit Agencies.”

APTA recommends the use of this document by:

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

Scope and purpose

This standard provides transit agencies with an outline of the basic elements needed to develop a COOP, identifying a COOP’s purpose, approval process and planning considerations.

Continuity of Operations Plan for Transit Agencies

1. Purpose of a Continuity of Operations Plan

The purpose of the elements of a Continuity of Operations Plan (COOP) is to prepare a transit agency to provide essential agency functions after a significant event that limits or restricts the availability of personnel, facilities or technical systems.

Developing a COOP entails documenting and consolidating procedures and policies to execute essential business functions in the event of an emergency. The COOP is specific to the recovery and restoration of essential business functions or services. The COOP focuses on restoring limited operating capability, usually within a 12-hour period and for a period of up to 30 days. Beyond 30 days, the agency is typically assumed to use the COOP and existing emergency operations or recovery plans to manage cascading impacts.

2. Approval of the COOP

The chief executive officer or other executive management of the transit agency should define the process for approving the initial COOP, as well as regular revisions. Agencies should clearly identify personnel who have the authority to revise the COOP. Transit agencies should consider the COOP a living document, updating it with lessons learned and new information.

3. Identification of essential functions

An agency's COOP should identify essential functions and required resources. Essential functions are functions that enable the agency to sustain vital operations and services while maintaining employee and customer safety, security and well-being. Agencies shall consider how their essential functions interact with one another and evaluate how impacts to one function could affect another function's performance. In determining essential functions, an agency should start planning by listing its basic functions and then separate the essential functions from the nonessential functions. Examples of essential functions for a transit agency may include receiving fuel/power delivery, providing adequate vehicle and wayside maintenance, providing necessary communications, providing paratransit (e.g., dialysis transportation), providing for employee needs (e.g., payroll), providing public information, and maintaining safety and security.

Additionally, agencies should consider how their essential functions rely on functions not traditionally considered essential, such as janitorial, maintenance or financial functions. If transit agencies require these functions to perform an essential function, then they shall be included in continuity planning.

4. COOP elements

After determining the agency's essential functions, planners should evaluate how the agency will perform essential functions under a continuity scenario. Planners shall work with subject matter experts from relevant departments to develop appropriate procedures, policies or guidance to perform critical functions during disruptions to standard business operations. Documentation can provide varying levels of detail depending on agency and department needs. Furthermore, transit agencies should address resource requirements, including those needed to sustain personnel and their responsibilities, within the COOP.

4.1 Activation

The COOP shall identify COOP triggers and activation authorities. Agencies may activate the COOP in-whole or in-part. If it is necessary for the agency to relocate essential functions, the COOP should provide the process or methodology for obtaining operational capability within a provided timeline with minimal disruption to operations.

4.2 Alternate operating facilities

Transit agencies should identify alternate operating facilities to perform essential functions if typical locations could be severely impacted by a plausible all-hazards emergency. Alternate operating facilities should provide sufficient space for needed equipment and for personnel to work in a healthy, safe and secure environment. Agencies should determine specific alternate operating facilities based on an analysis of essential functions. Agencies should create checklists that document minimum facility requirements.

4.2.1 Facility identification and design

Transit agencies should identify an alternate facility that provides sufficient space for needed equipment and for personnel to work in a healthy, safe and secure environment. Whenever possible, the backup facility should be sufficient distance from the primary facility so that a single emergency will not render both facilities inoperable. When determining the alternate location, transit agencies should evaluate the proposed facilities for vulnerability to all potential hazards that may impact their region. Additionally, transit agencies should ensure that the level of security provided for the alternate site meets their requirements for the existing site.

As a practical matter, an agency should explore using its existing facilities to serve as the host for an alternate facility, as this is generally less expensive than maintaining facilities that are used only in times of disaster response. This might entail some expenditure in equipping facilities for dual use (i.e., normal function as well as alternative emergency function). Investments in such a facility may include installation of generators, uninterrupted power supplies or backup water storage. The facility should also be able to accommodate staff overnight if the situation prevents them from commuting as normal.

4.2.2 Equipment and communication

Transit agencies should identify which equipment in their normal sites are required for critical functions and plan to either store or have such equipment available at their alternate site. When identifying equipment, agencies should account for the support that equipment requires, such as IDF closets, higher-than-normal power requirements, local switches or servers, and similar IT or physical requirements. Agencies should consult with their IT and facilities departments to ensure that the alternate site can safely accommodate and power the required equipment.

Transit agencies should address communication systems to ensure agencies have access to critical communication systems (e.g., radios, mobile data terminals, phone lines) at alternate sites. Agencies should evaluate their communication requirements and work with key stakeholders to ensure that equipment can either be permanently installed or brought in to support alternate operations. Transit agencies should consider additional emergency communication systems, such as satellite phones or internet, along with interoperable communication systems such as regional radio systems.

4.2.3 Procedures

Transit agencies should develop procedures to transition from normal operations to operations at an alternate site. Procedures should include decision-making authority, transportation between primary and alternate sites,

facility setup, and external communication. Agencies should also develop processes to regularly test site readiness.

4.3 Communication systems

Transit agencies shall identify communication systems needed to support each essential function and plan for these to be available during COOP scenarios. Critical communication systems may support links with internal departments, field personnel, outside agencies, law enforcement and the public. Based on response needs, transit agencies may need to acquire and allocate mobile communication equipment such as mobile phones and laptops.

4.4 Personnel

Transit agencies shall identify staffing needs to maintain each essential function and plan for staff to be available when needed. Transit agencies should address the following staff planning considerations:

- How many employees are needed to perform each essential function?
- Which employees or job classes will be needed to perform each function?
- Which employees will be reassigned from current duties to assist with the essential functions? Where will they be located, and how will they communicate? Are there any limitations (e.g., collective bargaining agreements) associated with reassigning personnel?
- Will employees require provisions such as transportation, food and lodging?
- How will employees be notified?
- What preparatory training and cross-training needs to be provided to employees who will be called upon to fulfill essential functions that may be non-routine tasks?
- What succession planning is needed?

4.5 Vital/essential records, databases and systems

Transit agencies shall identify and make available vital/essential records, databases and hard copy documents needed to support essential functions. In addition to immediate operational needs, transit agencies shall also consider legal and financial documents and obligations. Transit agencies should maintain appropriate processing and backup of vital/essential records and documents to meet the needs of the agency during and after the disaster recovery phase. Depending on the nature of the emergency, a transit agency's accounting department will need to accurately maintain financial records to acquire emergency-specific funding. The COOP should address how necessary equipment, systems and records will be made available at the alternate location.

System failures can be caused by internal and external software vendors or processes. Agencies shall ensure personnel understand all software that departments use and rely on. Business owners and IT departments shall understand which software is critical and how software interacts with different functions (e.g., cascading impacts). Departments shall plan to operate without specific software, and IT departments should understand the prioritization of those systems to reduce the impact of a continuity event. Agencies shall align COOP and IT Disaster Recovery Plans to ensure that system outage impacts, system dependencies and restoration prioritization agree. Agency planners and IT departments shall maintain, review and update these system inventories regularly, and they should be available during a continuity event.

4.6 Protection and continuity of vehicles

As revenue and nonrevenue vehicles are critical, transit agencies shall identify threats posed by natural, human or technological events for fleets and each transit fleet storage location. Agencies should use existing or newly created preliminary hazard analyses, threat and vulnerability assessments, historical data, and other tools to understand the threat profile for fleets and each facility. Once agencies have identified the hazards

that may impact fleets and fleet storage locations, they shall identify thresholds or situations that may require agencies to move their fleet to an alternate location.

4.6.1 Safe relocation site identification and written agreements

Transit agencies shall identify safe relocation sites that will provide protection for their fleet from potential hazards or threats. Locations may differ depending on the hazard or threat. For example, areas of higher elevation away from flood zones are suitable for protection against flooding but may not be appropriate for protection against brush fires if they are near areas with high fire risk. Although rail transit agencies have limited options, some locations along rail routes may offer better protection than others. As an example, tunnel alignments offer more protection from adverse weather conditions such as hurricanes and tornadoes, but low-lying track areas may be susceptible to flooding.

Considerations in selecting a suitable fleet refuge area include the following:

- availability and proximity of fueling locations for buses
- extent of protection of fleet and equipment from the approaching hazard
- ease of securing fleet and equipment
- ease of transport of employees to safe location
- ease of recovery of vehicles and equipment once the hazard has ceased
- protection of fleet and equipment from vandalism and theft
- potential for operating service from the safe location in the event the main location is inoperable for an extended period

If transit agencies identify suitable locations owned by other agencies or private entities, they should create memorandums of understanding or contracts to use others' sites prior to an emergency. Agreements should cover topics such as cost, insurance, damage remediation and liability. Agencies should review these agreements on a regular basis to ensure that they are current and meet the needs of both the property owner and the agency.

4.6.2 Fueling locations

When considering shelter locations, transit agencies should identify alternate fueling locations that can support their operations from their vehicle refuge area. This is especially important for non-diesel fueled fleets, such as those using hydrogen, compressed natural gas, and battery electric bus (BEB) infrastructure. If alternate bus storage locations are significant distances away from the normal fueling locations, then transit agencies should identify additional fueling facilities along the access routes.

Transit agencies should also consider utilizing mobile fueling services such as fuel cubes, tankers and generators to support operations at alternate locations. This can be achieved through internal agency resources, mutual aid agreements or contracts with third parties. If relocation is anticipated before an emergency, transit agencies can stage these resources at the relocation site to support COOP operations or resumption of service.

4.6.3 Fleet security

Transit agencies shall identify security requirements needed at alternative vehicle storage facilities. Transit agencies should provide staffing by transit agency employees, transit police, local law enforcement or private security, as needed, depending on the location. Valuable equipment may require enclosed and/or locked facilities.

4.7 Other equipment

Transit agencies shall identify other critical equipment to continue operations. Other critical equipment may include heavy maintenance equipment, maintenance-of-way equipment, or electric charging infrastructure. Once identified, transit agencies should examine possible alternatives or backup plans (e.g., mutual aid agreements, rental options, or emergency procurement authorities) to acquire and address the use of such equipment.

Some transit equipment (e.g., jacks for working on rail vehicles, bus tugs) may be specialized and hard to acquire on short notice. In cases where the critical equipment may be difficult to source, agencies should identify workarounds or changes to operations that may be required in the event that the critical equipment cannot be replaced.

4.8 Supply chain and vendors

Transit agencies shall identify consumable and repeatedly purchased items (e.g., spare parts, fuel or fare media) that are critical to sustaining their operations. Transit agencies shall understand their supply chains for critical items and identify backup suppliers in the event that the primary supplier is not able to provide the critical item. Some items may have significant lead times and agencies should consider the cost-effectiveness of keeping supplies of these items on hand. If available, transit agencies should take advantage of existing supply chain or inventory analyses to identify risks to their supply chains. Transit agencies should also apply existing supply chain data to understand how long they could operate without additional deliveries of critical items and consider how they can change their operations to maintain stockpiles of critical items. If critical items are available only from a single provider, such as custom parts or spares for obsolete equipment, agencies should develop contingency plans to replace, modify usage of, or discontinue the processes that require the unavailable critical items.

In addition to analyzing suppliers, agencies should review their vendors that provide critical services, such as fuel delivery, purchased transportation or communication services. Agencies should consider how they would replace the critical services if the primary provider is not able to provide the service. This could include finding an alternate supplier, modifying the service requirement or shifting in-house personnel to provide these services. If service providers are sole-source providers, such as certain IT services, agencies should develop contingency plans to address gaps in support.

4.9 Additional resource requirements

Transit agencies shall identify critical physical resources required, beyond those specifically covered in previous sections, to sustain each critical function and plan for these to be available when needed. Extraordinary provisions (e.g., transportation, food and lodging) may be necessary to support critical employees. When appropriate, transit agencies should coordinate their plans with partners to facilitate resource sharing during an emergency.

4.10 Delegation of authority and order of succession

The COOP shall establish pre-delegated authorities for making policy determinations to ensure adequate oversight and coordination of the essential functions.

Additionally, the COOP shall identify critical management positions and technical experts needed to implement and sustain each essential function. For each of these individuals, the transit agency should identify one or more alternative individuals who will be authorized to assume the post if the primary individual is unavailable, along with any rules governing the limitations and conditions of the authorization.

4.11 Notification and contact lists

The transit agency shall develop a notification procedure and maintain contact lists and notification call-down rosters necessary to implement and sustain essential functions and account for staff. The COOP shall detail procedures for maintaining and updating contact lists.

Notification procedures may use a cascading structure to ensure that agencies activate a chain of command structure early in the process. A cascading structure first lists contact information for executive managers and individuals with primary responsibilities for implementing tasks within each essential function (along with appropriate alternatives). Each task leader, such as a department manager, would then implement the department-specific notification procedure to notify the necessary personnel.

4.12 Training and exercises

The transit agency shall provide appropriate training for individuals who may need to fill essential roles and/or assume unconventional responsibilities within the COOP. Agencies should provide training prior to COOP activation.

Additionally, transit agencies should conduct exercises periodically to validate the COOP and identify any gaps. In practice, transit agencies will gain efficiencies by assessing COOP activities during other emergency response exercises. COOP exercises should involve the activation of alternate operating facilities and remote networks. See APTA SS-SEM-S-004-09, “Transit Exercises,” for additional details about conducting and evaluating exercises in the transit environment.

4.13 Devolution

Devolution provides planning and program guidance to ensure the continuation of any essential functions in the event of the loss of capabilities. Although this may be a part of traditional COOP planning, devolution may not apply to all transit agencies or functions and should be documented as needed.

4.14 Reconstitution

The transit agency should consider what procedures, if any, are needed to resume normal operations. Consideration should be given to how the agency will inform employees that the COOP is no longer in effect and steps to resume regular service. See APTA SS-SEM-RP-015-19, “Suspension of Service of a Public Transportation System and Recovery,” for additional details about service recovery.

Related APTA standards

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

APTA SS-SEM-RP-009-09, “Emergency Communication Strategies for Transit Agencies”

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

References

Federal Emergency Management Agency, COOP development, worksheets, examples and training guidance at <http://www.fema.gov/planning-templates>.

Federal Emergency Management Agency, “Continuity of Operations Plan Template and Instructions for Federal Departments and Agencies,” July 2011.
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www.wrc.noaa.gov/wrso/oep-coop/fpc-65.pdf

Transportation Research Board, Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies (NCHRP Report 525, Vol. 8, and TCRP Report 86, Vol. 8), and other resources at <http://www.trb.org/Publications/Blurbs/156474.aspx>.

Definitions

Emergency Operations Plans (EOPs): Emergency Operations Plans should be written to include the incident command system and be NIMS compliant. EOPs should be reviewed annually and should be written in an all-hazards approach as to plan for a wide variety of disasters. The Emergency Operations Plan replaces the term “disaster plan.” An EOP is not the entire plan but rather the method by which the transit agency will function when an emergency is declared.

essential functions: Activities or tasks that an agency must perform in a safe manner, following an emergency event that limits or restricts an agency’s employees or physical resources, in order to provide limited vital services needed to sustain the industrial/economic base of the area.

Abbreviations and acronyms

BEB	Battery Electric Bus
COOP	Continuity of Operations Plan
EOP	Emergency Operations Plan
IDF	intermediate distribution frame
IT	information technology
NIMS	National Incident Management System
TCRP	Transit Cooperative Research Program

APTA-SS-SEM-S-001-08, Rev. 3
Continuity of Operations Plan for Transit Agencies

Document history

Document Version	Working Group Vote	Public Comment/ Technical Oversight	Rail CEO Approval	Policy & Planning Approval	Publish Date
First published	—	—	—	—	Sept. 26, 2008
First revision	—	—	—	—	April 1, 2013
Second revision	July 19, 2019	Sept. 13, 2019	Dec. 3, 2019	Jan. 3, 2020	Feb. 21, 2020
Third revision	Dec. 6, 2024	Jan. 31, 2025	Feb. 21, 2025	Apr. 25, 2025	May 27, 2025