



Continuity of Operations Plan Template

for Drinking Water and Wastewater Laboratories

[Department/Agency/Laboratory Name]
[Month Day, Year]

[Department/Agency/Laboratory Name]
[Street Address]
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Disclaimer

The Continuity of Operations Plan Template is designed to provide recommendations that may be useful in preparing for events that may disrupt normal operations of drinking water and wastewater laboratories. While it may serve as a reference document for preparation and response to an actual event when rapid decision making is needed, this template does not address all facets of the continuation of essential laboratory activities. It consists of broad recommendations that may be adaptable to a specific situation or incident. Use of this template is voluntary. This template is not a rule; it is not legally enforceable; and it does not confer legal rights or impose legal obligations upon any member of the public, water utilities, the U.S. Environmental Protection Agency (EPA), state and local governments, tribes, or any other agency. While EPA has made every effort to ensure the accuracy of the discussion in this template, the obligations of the regulated community are determined by the relevant statutes, regulations, or other legally binding requirements. In the event of a conflict between the discussion in this template and any statute or regulation, this document would not be controlling. The word “should” as used in this template does not connote a requirement, but may indicate EPA’s strongly preferred approach to ensure effective implementation of legal requirements.

CONTINUITY OF OPERATIONS PLAN TEMPLATE AND INSTRUCTIONS

This document has been tailored for the use of the drinking water and wastewater laboratory communities using *the Federal Emergency Management Agency (FEMA) Continuity of Operations Plan (COOP) Template and Instructions for Non-Federal Entities* and *Association of Public Health Laboratories (APHL) Guidelines for the Public Health Laboratory Continuity of Operations Plan*. This template is customizable and can be expanded or condensed depending on the operational requirements of the drinking water or wastewater laboratory. The COOP template provided in this document is specifically for use by laboratories; however, utility laboratories should ensure that their COOP can be integrated into the utility's overall business continuity plan. Additional information regarding the Water Research Foundation (WRF)/American Water Works Association (AWWA) Business Continuity project can be found at www.waterrf.org.

Drinking water and wastewater laboratories play an essential role in public health and safety. They function to generate critical data used to make informed decisions regarding the implementation of preventative measures and development of effective policies that protect the public. It is imperative that these laboratories be able to continue their essential core functions when events occur that disrupt their normal operation. To ensure continuation of these essential activities, laboratories should have an effective COOP in place.

The purpose of a well designed COOP is to minimize interruption of the laboratory's operation if some internal or external disruptive event were to occur. Having an effective COOP in place ensures that the laboratory's core activities can be resumed within an acceptable period of time following such an incident. It allows the laboratory to shift efficiently from its normal structure and organization to a structure and organization that facilitates rapid recovery and continuation of services. The ability to make this shift without delay is critical for the laboratory to continue as a viable and stable entity during a crisis. The objectives of the COOP are to:

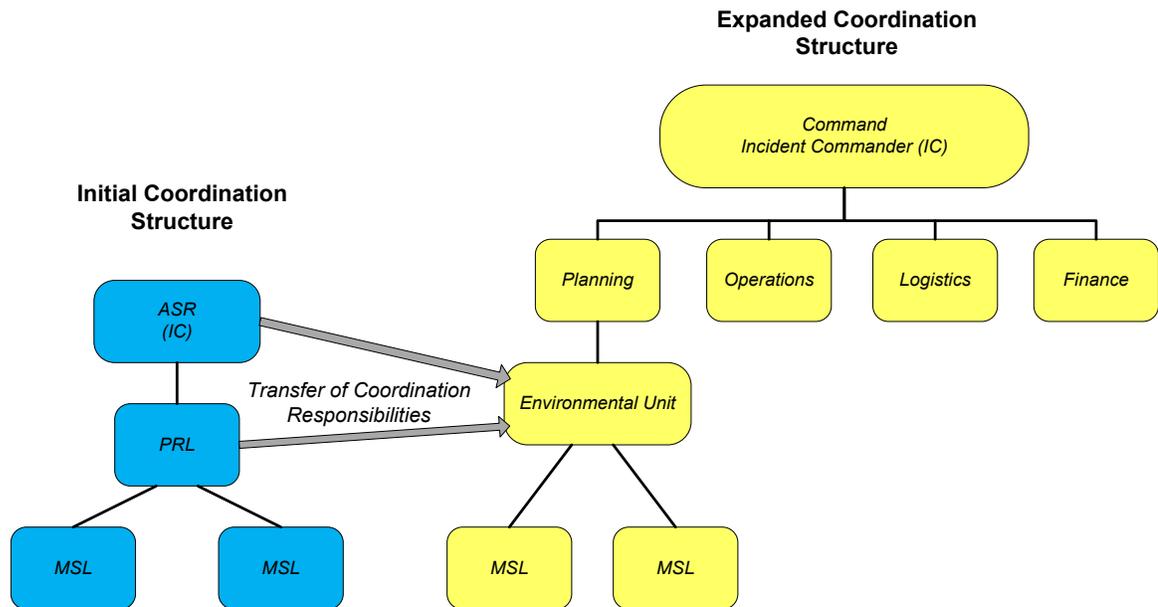
- Establish policies and procedures to assure continuous performance of laboratory testing;
- Identify and pre-arrange for assistance from alternate laboratories, if needed;
- Assure safety of all laboratory personnel;
- Provide communication and direction to stakeholders;
- Minimize the loss of assets, resources, critical records and data;
- Reduce or mitigate disruptions to the laboratory's operation;
- Build infrastructure to support a timely recovery;
- Manage effectively the immediate response to an emergency;
- Provide information and training for employees regarding roles and responsibilities during an emergency and
- Maintain, exercise and audit the COOP at least annually.

Because drinking water and wastewater laboratories vary considerably within and between states in terms of their organization, structure and operation, each laboratory should develop its own specific COOP. When the laboratory is developing their COOP they should ensure that the plan can be integrated into an Incident Command System (ICS). ICS is a flexible and scalable system driven by the tactical needs of an incident. It provides a common structure and terminology that facilitates the integration and coordination of multiple agencies while still maintaining a chain of command. ICS also provides pre-designated leadership positions, specific span of control and well-understood assigned responsibilities. If an incident causes a disruption

of the laboratory’s operation such that it requires activation of their agency or state emergency operations centers, including activation of the ICS, the laboratory COOP should be able to function within that ICS structure.

An example of an integrated ICS structure, developed for the Water Laboratory Alliance – Response Plan (WLA-RP), is provided below (Figure 1). As indicated in the figure, during a smaller-scale incident or the early phase of an incident the laboratory may act as either an analytical services requestor (ASR), primary responding laboratory (PRL) or mutual support laboratory (MSL) within the constraints of their COOP. As the incident develops and operational requirements warrant, the ICS may be expanded to address the scope and size of the event and provide the incident command (IC) with supporting staff according to a standardized, well understood management structure. If the incident is of sufficient complexity, the IC may activate an environmental unit (EU) within the planning section of the ICS to facilitate environmental data management, monitoring, sampling, analyses and assessment, which would include the efforts by the laboratories.

Figure 1. Integrated ICS Structure



To facilitate the development of a COOP, the template is organized so that laboratories may select all or only certain sections of the template to develop or improve their plan. The purpose of this document is to provide guidance to assist in that developmental process. Once laboratory-specific information is entered into the body of the template, delete the italicized and bolded instructions found throughout the document.

It should be noted that in its current format, the template is unclassified; however, laboratories should be aware of the need to protect specific continuity planning information and restrict access to their individual COOP, as appropriate.

COOP Template and Instructions for Drinking Water & Wastewater Laboratories

Additional background information regarding the FEMA template and an electronic version of the original FEMA template for Non-Federal Entities, in portable document format (PDF) are available on the FEMA website (<http://www.fema.gov/about/org/ncp/coop/templates.shtm>). To request a Microsoft® Word version, please contact the National Continuity Programs, Continuity of Operations Division via e-mail at FEMA-STTLContinuity@dhs.gov. Questions concerning this template may be directed to:

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Additional information regarding the APHL Guidelines for the Public Health Laboratory Continuity of Operations Plan, in PDF is available on the APHL website (http://www.aphl.org/aphlprograms/phpr/Documents/PHL_COOP_Guidelines.pdf)

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BASIC PLAN

The Basic Plan should provide an overview of the laboratory's approach to continuity of operations. It details continuity and laboratory policies, describes the organization and assigns tasks. The plan elements listed in this section will provide a solid foundation for the development of supporting annexes

I. PURPOSE, SCOPE, SITUATIONS AND ASSUMPTIONS

A. PURPOSE

A laboratory COOP has two basic features. It provides a comprehensive, pre-identified list of all core testing and support activities that should be continued if the laboratory experiences a partial or complete operational disruption. In addition, it provides a pre-arranged plan of action to assure that all these core activities are continued without delay. The COOP applies to all of the operations, infrastructure and resources necessary to continue the laboratory activities deemed essential to fulfill its responsibilities. If the laboratory facility, or portions of it, are involved in an event or declared unusable for its normal operation, the COOP is activated immediately. The introduction to the COOP should explain the importance of continuity planning and why the laboratory is developing a COOP. Sample text for this section is provided below.

The overall purpose of continuity planning is to ensure that essential laboratory functions are continued with or without minimal delay under all conditions. **[Laboratory Name]** is committed to continuing all aspects of its critical activities during a reduction of its core services. In addition, **[Laboratory Name]** is dedicated to safely and promptly resuming normal operations after an event. The Plan recognizes that reaching out to other (e.g., local, Environmental Response Laboratory Network [ERLN]/Water Laboratory Alliance [WLA]) laboratories for support may be necessary due to separate or concurrent events, such as the result of a natural disaster, major water main break, pandemic flu or terrorist attack **[other events may apply]**. While the severity and consequences of an emergency cannot be predicted, effective contingency planning may minimize the impact on **[Laboratory Name]**'s mission, personnel and facilities.

During an emergency, **[Laboratory Director or assigned person]** continues to exercise general direction, control and overall supervision of laboratory resources. **[Laboratory Director]** has the authority to commit laboratory resources, to ensure the continuation of essential functions, which will help minimize the impact of the disaster on the community. Furthermore, **[Laboratory Director]** will coordinate with the Incident Commander (IC), Environment Unit (EU), utility manager, or other Emergency Operations Centers (EOC) depending on the magnitude of the incident.

B. SCOPE

The scope of the laboratory COOP should include all time-sensitive core activities of the laboratory, including technology and required support. Time-sensitivity refers to activities that should be recovered within a pre-determined, relatively short period of time, for example 24 – 48 hours. The COOP should be developed to address “worst case scenarios”, with the capability to scale down to accommodate smaller disruptions. Ideally, COOPs should address the full spectrum of potential threats, crises and emergencies (natural and man-made). Specific plans of action should be developed and groups of personnel should be identified and trained to implement these pre-defined actions to ensure timely recovery. Sample text for this section is provided below. Please refer to the Essential Functions Annex for additional guidance.

This COOP applies to the functions, operations and resources necessary to ensure the continuation of **[Laboratory Name]**'s essential functions in the event its normal operations are disrupted or threatened with disruption. This plan applies to all **[Laboratory Name]** personnel. **[Laboratory Name]** staff should be familiar with continuity policies and procedures and their respective continuity roles and responsibilities. This document assists **[Laboratory Name]** in the maintenance of its essential missions and functions under all threats and conditions, with or without warning, which includes but is not limited to:

- Personnel
- Equipment
- Supplies and reagents
- Data management
- Clerical and other support personnel

C. SITUATION OVERVIEW

The situation section should characterize the “planning environment,” making it clear why a COOP is necessary. The nature of the work done in the laboratory requires that its COOP be developed as a special part of the business continuity plan of the agency within which it operates. Unlike operation of the rest of an agency, the laboratory requires extensive instrumentation, dedicated space and special air handling. Consequently, the laboratory’s operation cannot be quickly moved to another location and accommodation of its core activities is a complex matter. A thorough analysis of site vulnerability (risk assessment) provides a comprehensive list of potential threats that may disrupt normal laboratory operations, both within the facility itself and within the community where the laboratory is located. Such threats fall into several general categories: extreme weather conditions, major equipment failure, protracted personnel matters, extensive building damage, compromised building utilities, failed communication systems, civil disturbance or acts of terrorism. In this section, laboratories should reference their risk assessment to

summarize the hazards faced by their laboratory and the relative probability and impact of the hazards. Sample text for this section is provided below

[Laboratory Name]'s risk assessment is found at **[insert document name and location or insert risk assessment information in this section of the plan]**. This risk assessment addresses the following:

- Cross training of personnel to ensure redundancy of capability
- Back-up instrumentation
- Electrical power failure (e.g., back-up generators)
- Procedures to rapidly obtain supplies and reagents
- Access to other laboratories for analytical support (e.g., membership within ERLN/WLA and/or Water/Wastewater Agency Response Networks [WARN] to have access to additional resources to address capability and capacity issues during an emergency [e.g., supplies, personnel])
- Information Technology (IT) support and procedures to address Laboratory Information Management System (LIMS)
- Procedures in place to ensure appropriate support staff are available to support laboratory core activities

D. PLANNING ASSUMPTIONS

This section should familiarize the reader with the underlying assumptions made during the planning process. Assessment of the incident and its impact on the laboratory operation will lead to a decision about activation of the COOP. If all of the pre-determined core activities of the laboratory are found to be still intact, activation of the COOP may be unnecessary. If only some of the core activities are affected, the COOP may be activated only partially to accommodate the compromised activities. If the entire laboratory operation is lost, the complete COOP will be activated in response to a "worst case scenario". The level of activation dictates who needs to be involved, who needs to be notified, what needs to be done and where the required activities will take place. Sample text for this section is provided below.

This COOP is based on the following assumptions:

- An emergency condition may require the redistribution of **[Laboratory Name]** resources (e.g., prioritization of critical sample analyses).
- An assessment of **[Laboratory Name]** will be made to determine if, and to what extent the COOP will be activated.
- Ideally **[Laboratory Name]** will begin essential functions within 24 hours or less from the time the COOP is activated, for potentially up to a 30-day period or until normal operations can be resumed.

- In the event that **[Laboratory Name]** is not able to conduct essential functions due to the loss of personnel, equipment or damage to the facility, **[Laboratory Name]** will reach out to other laboratories to obtain the necessary support.
- Samples may need to be shipped to alternate laboratories for analyses.
- Procedures will be in place for preservation and shipment/transport of samples to other laboratories, as necessary, to ensure continuation of essential functions.
- **[Laboratory Name]** is a member of the ERLN/WLA.
- **[Laboratory Name]** as part of **[Utility Name]** is a member of the State WARN.

II. CONCEPT OF OPERATIONS

A. PHASE I: READINESS AND PREPAREDNESS

This section should address the readiness and preparedness activities to ensure personnel can continue essential functions. Readiness is the ability of an organization to respond to a continuity event. This phase includes all organization continuity readiness and preparedness activities. Laboratories should only include those readiness and preparedness activities and systems that are applicable to their plan. Sample text for this section is provided below.

[Laboratory Name] will participate in the full spectrum of readiness and preparedness activities to ensure personnel can continue essential functions in an all-hazard threat environment. **[Laboratory Name]**'s readiness activities are divided into two key areas:

- Laboratory readiness and preparedness
- Personnel readiness and preparedness

Laboratory Readiness and Preparedness

[Laboratory Name] preparedness incorporates the use of the following tools and activities:

- Water Contaminant Information Tool (WCIT)
- Selected Analytical Methods for Environmental Restoration Following Homeland Security Events
- Compendium of Environmental Testing Laboratories (Laboratory Compendium)
- Established relationships with local laboratories
- Membership in the ERLN/WLA and WARN
- Annual review of COOP
- Modification of the COOP based on exercises and trainings

Personnel Readiness and Preparedness

[Laboratory Name] personnel preparedness incorporates:

- Annual trainings to familiarize personnel with the COOP
- Cross-training of staff to ensure redundancy of analytical capability
- Exercises

B. PHASE II: ACTIVATION, REPRIORITIZATION AND/OR OUTSOURCING

This section should explain the activation process and procedures to ensure continuation of the laboratory's highest priority, core activities. This involves either prioritizing essential activities or outsourcing these essential activities to other qualified laboratories. While the laboratory activities considered nonessential may be suspended in this situation, all of the essential activities should be accommodated. The plan should explain the outsourcing of laboratory services from the affected laboratory to a supporting laboratory. The plan should also provide a process or methodology for attaining laboratory support from other laboratories with minimal disruption to operations within 12 hours of plan activation to ensure essential functions will begin within 24 hours of plan activation. Sample text for this section is provided below.

To ensure the ability to attain operational capability at the laboratory or at a supporting laboratory with minimal disruption to operations, **[Laboratory Name]** will execute the COOP as described below.

The decision to activate **[Laboratory Name]**'s COOP and related actions will be tailored for the situation and based on projected or actual impact and whether or not there is warning. To support the decision-making process regarding plan activation, key laboratory personnel will use the decision matrix below to support that process.

As the decision authority, **[Laboratory Director]** will be kept informed of the threat environment using all available means, including the **[Laboratory Name]** Emergency Communications Center, regional notification systems, Alertnet systems, local operations and State and local reporting channels and news media.

Alert and Notification Procedures

[Laboratory Director] maintains plans and procedures for communicating and coordinating activities with personnel before, during and after a continuity event.

Before an event, personnel in the **laboratory** will monitor advisory information, including the **[insert applicable systems]**. In the event normal operations are interrupted or an incident appears to be imminent, **[Laboratory Name]** will take the following steps to communicate the laboratory's operating status with all staff:

- (1) **[Laboratory Director]** or designated successor will notify **[insert office/title]** of the emergency requiring lab COOP activation
- (2) **[Insert notification steps here. Include methods of notification, name/group that initiates notification and required responses of all laboratory personnel upon**

notification. If the laboratory maintains an advance team to prepare the continuity site for arrival, include here]

(3) **[Laboratory Name]**'s personnel will notify family members, next of kin and/or emergency contacts of COOP activation

Upon the decision to activate the COOP, **[Laboratory Director]** will notify all **[Laboratory Name]** personnel, as well as other entities with information regarding continuity activation, operational and communications status and the anticipated duration. Additional entities may include:

- EPA Regions
- WARN/WLA
- Local laboratories (e.g., public health)

Prioritization Process

Non-essential functions may need to be suspended to ensure the laboratory is able to provide continuation of essential functions. In this scenario, the laboratory would focus all of its resources on essential functions and may need to suspend non-essential functions or obtain outside support/resources for non-essential activities. Sample text for the prioritization process is provided below.

Once the COOP is activated and personnel are notified, **[Laboratory Name]** will prioritize resources to ensure the continuation of essential functions. **[Laboratory Name]** personnel will perform **[Laboratory Name]**'s essential functions and other continuity-related tasks.

In the event of an activation of the COOP, **[Laboratory Name]** may need to procure necessary personnel, equipment and supplies that are not already in place for continuity operations on an emergency basis. The **[Insert office/title/authority]** maintains the authority for emergency procurement. Instructions for these actions are found **[insert instructions below or insert location of instructions if found in another document]**.

Accessing Additional Resources

Smaller laboratories may not have the personnel or equipment to ensure continuation of essential functions. In this scenario the laboratory would seek assistance from the State WARN, the ERLN/WLA or a commercial laboratory through a contract. Sample Text is provided below.

Upon activation of the COOP, **[Laboratory Director]** will follow the **[insert protocol name/location]** to determine whether emergency assistance in the form of laboratory personnel, equipment, materials and other associated services are necessary, from other water/wastewater or commercial laboratories. **[Laboratory Director]** in conjunction with

[Utility Director] will consult the State-specific Mutual Aid and Assistance Agreement, located **[insert location of the Agreement]** for activation of the WARN.

Depending on the magnitude of the continuity event, **[Laboratory Director]** may seek further support from the ERLN/WLA to provide assistance or conduct analyses. **[Laboratory Director]** will consult the WLA Response Plan (RP), located **[insert location of the WLA-RP]**, for guidance on securing laboratory support. Additionally, **[Laboratory Director]** will consult the Laboratory Compendium and the EPA Regional Laboratory Director for assistance in identifying an appropriate support laboratory.

C. PHASE III: CONTINUITY OPERATIONS

This section should describe the initial arrival process and operational procedures for the continuation of essential functions. Sample text for this section is provided below.

Upon activation of the COOP, **[Laboratory Name]** will continue to perform essential functions until ordered to outsource some or all essential functions due to capacity issues by the **[insert authority]** using **[insert method of notification here]**. At that time, essential functions will either be performed by **[Laboratory Name]** with additional laboratory support or be transferred in whole to local or network laboratories. **[Laboratory Name]** should ensure that the COOP can be operational within 12 hours of plan activation, based on FEMA recommendations.

D. PHASE IV: RETURN TO NORMAL OPERATIONS

The laboratory should develop a plan to return to normal operations once the Laboratory Director or authorized person determines that resuming normal business operations can be initiated. Sample text for this section is provided below.

[Laboratory Name] will return to normal operations when **[Laboratory Director]** or other authorized person determines that the emergency has ended and is unlikely to reoccur. Once the appropriate authority has made this determination in coordination with other state, local and/or other applicable authorities, one or a combination of the following options may be implemented, depending on the situation:

Upon verification that the required capabilities are available and operational and that **[Laboratory Name]** is fully capable of accomplishing all essential functions and operations, the **[insert office/title]** will begin supervising a return of personnel, equipment and documents. The return of personnel, functions and equipment will follow the priority-based plan and schedule outlined below. **[Laboratory Name]** will develop return plans based on the incident and facility within **[insert number]** hours of COOP activation.

- **[Insert priority-based phase-down and return plan here]**

[Laboratory Name] will continue to conduct essential functions through a supporting network laboratory until ordered to cease operations by the **[insert authority]** using **[insert method of notification here]**. At that time, essential functions will transfer back to the laboratory. **[Laboratory Name]** has developed plans to instruct personnel on how to resume normal operations as outlined below. **[Laboratory Name]** will develop resumption plans based on the incident and facility within **[insert number]** hours of COOP activation.

- **[Insert normal operations resumption plan here]**

III. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

This section should include additional delineation of continuity responsibilities of each key staff position. Sample text for this section is provided below.

Key staff positions within **[Laboratory Name]**, to include individual continuity members, those identified in the orders of succession and delegation of authority, **[Laboratory Name]**'s Continuity Coordinator, continuity managers and others possess additional continuity responsibilities. The responsibilities of these key continuity personnel are delineated **[insert location]**.

SAMPLE

The following table shows examples of some continuity responsibilities.

Position	Responsibilities
Director / Laboratory Manager	<ul style="list-style-type: none"> • Assess laboratory operational capability and make decisions regarding COOP activation • Notify laboratory staff and other key individuals with information and guidance • Assure appropriate levels of clerical, purchasing and materials preparation support for core laboratory functions • Ensure all laboratory personnel participate in continuity exercises • Update COOP annually • Maintain ERLN/WLA and WARN contacts • Maintain state & local health department contacts
Laboratory Personnel	<ul style="list-style-type: none"> • Determine status of samples stored in the laboratory, what testing is in progress and what actions to take • Determine what actions are required regarding sample receipt and shipment to alternative laboratories • Update telephone rosters monthly
Information Technology (IT) Personnel	<ul style="list-style-type: none"> • Assure availability of the LIMS to manage laboratory data, including accessioning and reporting

IV. DISASTER INTELLIGENCE

This section should describe the required critical or essential information common to all continuity events. In general terms, it should identify the type of information needed, where it will come from, who will use it, how it will be shared, the format it will be provided in and when (time) the information will be needed. Sample text for this section is provided below.

During a continuity event, **[Laboratory Name]** will require the collection and dissemination of critical information. While specific incidents may require additional or specialized reporting requirements, the following table lists examples of the information that would be collected and reported regardless of incident type.

SAMPLE

The following table shows examples of some disaster intelligence collection requirements

Information Element	Specific Requirement	Responsible Element	Deliverables	When Needed	ICS
Operational Status	Available lab personnel	Laboratory Director	Situation briefings Situation reports	Ideally, no later than 6 hours after plan activation	IC or EU
	Ability to conduct essential analyses	Laboratory Director		Daily	
	Percent of lab equipment that is operational	Laboratory Director or designated individual	Laboratory results (preliminary and final)	As available	IC or EU

V. COMMUNICATION

This section should address communication systems needed to ensure connectivity during crisis and disaster conditions. The ability of a laboratory to execute its essential functions depends on the identification, availability and redundancy of critical communications and information technology (IT) systems to support connectivity during crisis and disaster conditions. Sample text for this section is provided below.

[Laboratory Name] has identified available and redundant critical communications systems that are located at the laboratory. Further, **[Laboratory Name]** maintains fully capable continuity communications that support needs during all hazards and threats, to include pandemic and other related emergencies. All **[Laboratory Name]**'s necessary and required communications, IT capabilities and LIMS should be operational within 12 hours of COOP activation. **[Laboratory Name]** has evaluated their LIMS and has become familiar with electronic data deliverables that may be required if data needs to be reported within an ICS to either an IC or the EU.

VI. ASSISTANCE AGREEMENTS

This section should identify processes and procedures for developing and implementing agreements necessary for continuation of the laboratory's essential functions. Clearly defined, well documented arrangements should be made with each alternative laboratory agreeing to assist if the laboratory becomes threatened or disrupted. Such arrangements may include different types of formal agreements. The agreement used will depend on the nature and duration of the assistance requested and the legal and policy issues that should be considered by the institutions involved. In addition, the laboratory should identify and provide funding and specific budgetary guidance and requirements. The following are examples of assistance agreements: (1) Memorandum of Understanding (MOU) – This may be used for short term assistance for defined services. No funds may be involved in this type of assistance agreement; (2) Memorandum of Agreement (MOA) – This may be used for long term assistance for defined services and set funding; (3) Purchase Orders (PO) – These documents constitute a legal offer to buy products or services with agreed on prices. POs are issued by a buyer to a seller and constitute a contract once accepted by the seller; and (4) Emergency Management Assistance Compact (EMAC). This is an interstate mutual aid agreement for use during emergencies and disasters that provides a mechanism for sharing personnel, resources, equipment and assets. Sample text for this section is provided below.

Depending on the type and duration of the emergency **[Laboratory Name]** will have established multiple agreements to ensure timely assistance. **[Laboratory Name]** has established the following non-funded agreements: MOUs and EMACs with alternative laboratories. In the event the emergency renders the laboratory incapable of providing essential functions for an extended period of time, **[Laboratory Name]** has also established funded agreements including MOAs and POs. **[Laboratory Name]** maintains a budget for these funded agreements.

VII. PLAN DEVELOPMENT AND MAINTENANCE

This section should describe the process the laboratory uses to ensure the COOP includes up-to-date information. It identifies who is responsible for updating the COOP and how often it will be reviewed and updated. Sample text for this section is provided below.

[Laboratory Director] is responsible for maintaining **[Laboratory Name]**'s COOP. The COOP will be reviewed by the **[insert office name]** and updated annually from the date of publication.

[Laboratory Name] is responsible for the annual plan review and update. In addition, the COOP will be updated or modified when there are contact information changes or other events that affect continuity processes or procedures. Comments or suggestions for improving this plan may be provided to **[Name and Contact Information]**.

Sample COOP Maintenance Chart

Responsibility	Frequency
Update COOP plan	Annually
Update telephone rosters	Quarterly
Review status of vital files, records and databases	Semi-Annually
Conduct alert and notification tests	Semi-Annually
Develop and lead COOP training	Semi-Annually
Plan COOP exercises	Annually

VIII. AUTHORITIES AND REFERENCES

The key authorities and references on which the laboratory's COOP is based should be listed here. Additional references maybe listed in Annex B. An example of typical authorities and references are provided in Annex B.

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FUNCTIONAL ANNEXES

The functional annexes should add specific information and direction to the Basic Plan. These annexes should clearly describe the policies, processes, roles and responsibilities that laboratories carry out before, during and after any event. These annexes also establish preparedness targets (e.g., training, exercises, equipment checks and maintenance) that facilitate achieving function-related goals and objectives during emergencies and disasters.

I. Essential Functions Annex

The essential functions section should include a list of the laboratory's prioritized Mission Essential Functions (MEFs) or core functions. The COOP should identify the components, processes and requirements that ensure the continued performance of the laboratory's essential functions. Sample text for this section is provided below.

A. IDENTIFICATION OF ESSENTIAL FUNCTIONS

[Laboratory Name] has completed the MEF process to identify those functions that should continue.

Laboratory MEFs

Each laboratory should identify and prioritize their organizational MEFs and ensure the continued performance of those MEFs.

[Laboratory Name]'s MEFs are a limited set of their essential core functions that should be continued throughout, or resumed rapidly after, a disruption of normal activities.

[Laboratory Name]'s MEFs, as validated and approved by the **[enter laboratory approving official title if applicable]**, are listed below.

1. Specific laboratory analyses (e.g., bacterial and/or chemical analyses of drinking water to ensure it safe for public consumption)
2. QA/QC analyses (e.g., analyses required to ensure data is of known quality)
3. Data review and validation (e.g., review and validation process to ensure data is accurate)

II. Continuity Facilities Annex

All laboratories should identify and maintain at least one continuity facility and/or membership in ERLN/WLA or WARN, to ensure continuation of the laboratory's essential functions. This section should explain the significance of identifying a continuity facility or additional resources. It should also detail the laboratory's procedure/process for identifying a continuity facility including the advantages and disadvantages of each potential location.

III. Continuity Communications Annex

This section should address communication systems needed to ensure connectivity during crisis and disaster conditions. The ability of a laboratory to execute its essential functions depends on the identification, availability and redundancy of critical communications and IT systems to support essential functions during an incident. Sample text for this section is provided below.

[Laboratory Name] has identified available and redundant critical communication systems. Further, **[Laboratory Name]** maintains fully capable continuity communications that could support the laboratory’s communication and data reporting during all hazards and threats, to include pandemic and other related emergencies. These systems provide the ability to communicate and report data within and outside the organization and are found at **[insert location]**.

SAMPLE

The following table shows an example of tracking modes of communication and data reporting systems that support an organization’s essential functions.

Communication System	Support to Essential Function	Current Provider	Specification	Alternate Provider	Special Notes
Pagers					
E-mail					
Internet Access					
LIMS					
[Insert other options here]					

Ideally, all **[Laboratory Name]**’s necessary and required communications and IT capabilities should be operational within 12 hours of activation.

IV. Test, Training and Exercises (TT&E) Program Annex

This section should focus on the laboratory’s TT&E program. All laboratories should develop and maintain a continuity TT&E program for conducting and documenting TT&E activities and identifying the components, processes and requirements for the identification, training and preparedness of personnel needed to support the continued performance of their MEFs. Sample text for this section is provided below.

[Laboratory Name] has established an effective TT&E program to support the organization’s preparedness and validate the continuity capabilities, program and ability to perform essential functions during any emergency. The testing, training and exercising of continuity capabilities are essential to demonstrating, assessing and improving **[Laboratory Name]**’s ability to execute the COOP.

COOP Template and Instructions for Drinking Water & Wastewater Laboratories

- Training familiarizes personnel with their roles and responsibilities in support of the performance of the laboratory’s essential functions during an event.
- Tests and exercises serve to assess, validate or identify for subsequent correction, all components of the COOP, policies, procedures, systems and facilities used in response to an event. Periodic testing also ensures that equipment and procedures are kept in a constant state of readiness.

[Laboratory Name] performs TT&E events at regular intervals, as shown in the table below.

Note: In your organization’s plan, change the checkmarks to the actual frequency of the TT&E event for your laboratory.

Continuity TT&E Requirements	Monthly	Quarterly	Annually	As Required
Test and validate equipment to ensure internal and external interoperability and viability of communications systems	✓			
Test alert, notification and activation procedures for all personnel		✓		
Test primary and back-up infrastructure systems and services at continuity facilities			✓	
Test capabilities to perform essential functions			✓	
Test plans for recovering critical information systems, services and data			✓	
Test and exercise required physical security capabilities			✓	
Test internal and external interdependencies with respect to performance of essential functions			✓	
Train continuity personnel on roles and responsibilities			✓	

HAZARD-SPECIFIC APPENDICES

The contents of hazard-specific appendices should focus on the special planning needs generated by a particular hazard. These appendices contain unique response details that apply to a single hazard. A key hazard-specific appendix is continuity operations during a pandemic influenza. Laboratories should determine other specific hazards to address, if needed, based upon the results of the laboratory site vulnerability assessment and risk analysis. An example site vulnerability matrix is provided below.

Site Vulnerability Analysis		
Threat	Mitigation	Risk
Electrical power failure	Backup generator	Low
Flooding	Location	Low
Loss of water	None	Medium
Other		

ANNEX IMPLEMENTING INSTRUCTIONS

Implementing instructions should be included as attachments or referenced. Annex Implementing instructions serve to provide additional information on sections presented in the continuity of operations plan. Sample text for this section is provided below.

- *Operational Checklists: A checklist is a simple tool that ensures all required tasks are accomplished so that the laboratory can continue operations at an alternate location. Checklists may be designed to list the responsibilities of a specific position or the steps required to complete a specific task.*

- Laboratory Emergency Calling Directory
- Laboratory Key Personnel Roster & Knowledge, Skills and Abilities Checklist
- Laboratory Emergency Operating Records and IT Checklist
- Laboratory Sampling Equipment Checklist
- Laboratory Instrumentation Checklist
- Laboratory Reagents and Chemicals Checklist
- Contract Laboratory Checklist
- EPA Regional Laboratory Contact List (for ERLN/WLA activation)
- WARN Contact List

ANNEX A. GLOSSARY

[The glossary should list key words and phrases used in the COOP that require explanation. Examples of some key words and phrases that would be used in the COOP are listed below.]

Activation – Once a continuity of operations plan has been implemented, whether in whole or in part, it is considered “activated.”

All Hazards – The spectrum of all types of hazards including accidents, technological events, natural disasters, terrorist attacks, warfare, chemical or biological including pandemic influenza, radiological, nuclear and explosive events.

Communications – Voice, video and data capabilities that enable laboratory to conduct mission essential functions. Robust communications help ensure that the laboratory will have the ability to communicate internally and with other entities (including with other Federal agencies, State, territorial, tribal, local governments and the private sector), as necessary.

Continuity – An uninterrupted ability to provide services and support, while maintaining organizational viability, before, during and after an event.

Continuity Facilities – Locations, other than the primary facility, used to carry out essential functions, particularly in a continuity situation.

Continuity of Operations – An effort within individual agencies to ensure they can continue to perform their Mission Essential Functions and Primary Mission Essential Functions during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies.

Emergency Management Assistance Compact (EMAC) – This is an interstate mutual aid agreement for use during emergencies and disasters that provides a mechanism for sharing personnel, resources, equipment and assets.

Essential Functions – The critical activities performed by organizations, especially after a disruption of normal activities.

Facilities – Locations where the laboratory operates. Facilities must be able to provide staff with survivable protection and must enable continued and enduring operations.

Memorandum of Agreement/Memorandum of Understanding – Written agreement between departments/agencies that require specific goods or services to be furnished or tasks to be accomplished by one organization in support of the other.

Mission Essential Functions – The limited set of laboratory functions that must be continued throughout, or resumed rapidly after, a disruption of normal activities.

Purchase Orders (PO) – These documents constitute a legal offer to buy products or services with agreed on prices. POs are issued by a buyer to a seller and constitute a contract once accepted by the seller.

Risk Analysis – The process by which risks are identified and evaluated.

Risk Assessment – The identification and assessment of hazards.

Site Vulnerability – The process of identifying hazards/risks associated with the laboratory that could impact its ability to continue essential functions during an incident.

Testing, Training and Exercises – Measures to ensure that the laboratory's COOP is capable of supporting the continuation of the laboratory's essential functions throughout the duration of a continuity situation.

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ANNEX B. AUTHORITIES AND REFERENCES

[This annex should list the authorities and references used in this plan. Examples of authorities and references are provided below.]

AUTHORITIES and REFERENCES:

- [Enter title of organizational policy or directive here].
 - [Enter title of organizational policy or directive here].
- 1) [Enter title of organizational policy or directive here].
 - 2) Directive 51/Homeland Security Presidential Directive 20, *National Continuity Policy*, dated May 9, 2007.
 - 3) Continuity Guidance Circular 1, *Continuity Guidance for Non-Federal Entities (States, Territories, Tribal, and Local Government Jurisdictions and Private Sector Organizations)*, dated January 21, 2009.
 - 4) Continuity Guidance Circular 2, *Continuity Guidance for Non-Federal Entities: Mission Essential Functions Identification Process (States, Territories, Tribes, and Local Government Jurisdictions)*, dated July 22, 2010.
 - 5) FEMA Continuity of Operations Plan Template Instructions.
 - 6) FEMA Continuity of Operations Plan Template.
 - 7) Association of Public Health Laboratories (APHL) Guidelines for the Public Health laboratory Continuity of Operations Plan.
 - 8) FEMA Comprehensive Preparedness Guide 101, *Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans*, dated March 2009.
 - 9) [Enter title of organizational plan, guidance, etc.].
 - 10) [Enter title of organizational plan, guidance, etc.].

ANNEX C. ACRONYMS

[The acronyms and abbreviations used in the organization’s continuity plan should be listed and defined in this annex. Examples of acronyms are listed below.]

APH	Association of Public Health Laboratories
ASR	Analytical service requestor
AWWA	American Water Works Association
BCP	Business Continuity Plan
COOP	Continuity of operations
EMAC	Emergency Management Assistance Compact
EOC	Emergency Operation Center
ERLN	Environmental Response Laboratory Network
EU	Environmental Unit
FEMA	Federal Emergency Management Agency
IC	Incident Commander
ICS	Incident Command Structure
IT	Information Technology
LIMS	Laboratory information management system
MEF	Mission Essential Function
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSL	Mutual support laboratory
PO	Purchase order
PRL	Primary responding laboratory
RP	Response Plan
TT&E	Test, Training and Exercise
WARN	Water/Wastewater Agency Response Networks
WCIT	Water Contamination Information Tool
WLA	Water Laboratory Alliance
WRF	Water Research Foundation