Emergency Response Preparedness/Planning
Guidance and Best Practices

WASTEWATER SYSTEMS

1.0 INTRODUCTION

This technical guidance is intended to outline the essential elements of emergency response planning for wastewater treatment and collection systems. Relevant regulations are located under the New Jersey Pollutant Discharge Elimination System Rules, N.J.A.C. 7:14A-6.12 (Operation, Maintenance and Emergency Conditions), and the Rules and Regulations Governing Licensing of Water Supply and Wastewater Treatment System Operators, N.J.A.C. 7:10A-1.12 (Duties, records and reports). A sample template is available in Appendix A below to assist the operator with designing an Emergency Response Plan. DEP is currently promulgating new rules that will incorporate best practices for emergency response preparedness/planning to the extent that current rules do not directly address them.

New Jersey regulations utilize the terminology "emergency plan" and "emergency operation plan". These terms may also be interpreted as "emergency response plan" and "action or incident plan", respectively, when encountered in other references.

1.1 PURPOSE

The overall purpose of an Emergency Response Plan (ERP) is to provide safe and proper operations of Wastewater Treatment and Wastewater Collection Systems during emergency events. ERPs are a means to provide a standardized response and recovery protocol to prevent, minimize, and mitigate injury and damage resulting from emergencies or disasters of man-made or natural origin.

The ERP shall also provide a description of how Wastewater Treatment and Wastewater Collection Systems (hereinafter "wastewater system") will respond to potential threats or actual terrorist scenarios identified in the Vulnerability Analysis (VA), as well as additional emergency response situations. Specific Action Plans (APs) should also be included in the ERP, which will be utilized to respond to events and incidents.

1.2 GOALS

The goals of an Emergency Response Plan are to document and understand the steps needed to:

- Prevent, to the best extent practical, the loss of service no matter what the threat or situation.
- Rapidly restore wastewater service after an emergency.
- Minimize wastewater system damage.
- Minimize impact and loss to customers.
- Minimize negative impacts to public health and employee safety.

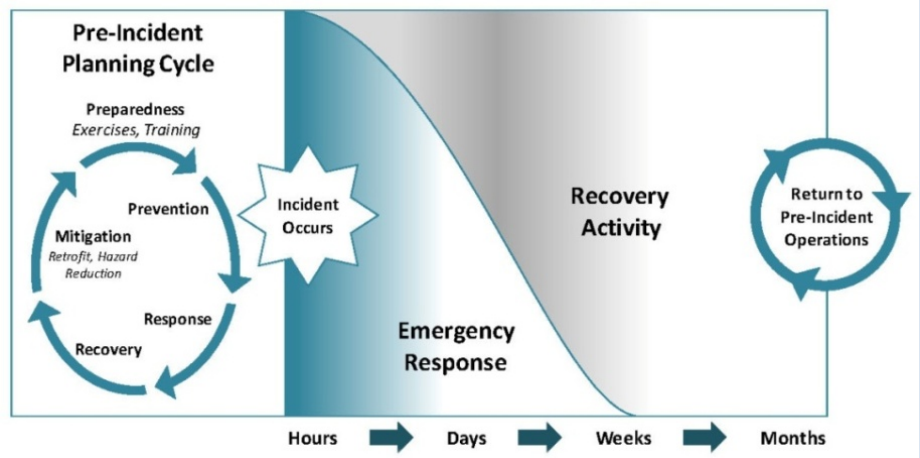
- Minimize adverse effects on the environment.
- Provide emergency public information concerning customer service.
- Provide wastewater system information for first responders and other outside agencies.
- Ensure effective communication between all those involved in an emergency.
- Prevent, avoid or stop threatened or an actual attack to the infrastructure integrity.
- Respond quickly to save lives, protect property and the environment.
- Mitigate the loss of life, property and environmental impacts
- Provide design, maintenance and reporting protocols using standards consistent with FEMA's Public Assistance Guide to facilitate recovery from future catastrophic events.

Wastewater system personnel should also examine its organizational goals and mission statements to see if there are any additional objectives that apply to the ERP.

1.3 PLANNING CYCLE FOR EMERGENCY RESPONSES

Being ready to respond to an emergency incident requires engaging in a continuous cycle of activities that focuses on pre-incident planning, preparedness, prevention, response, recovery, mitigation and return to operations. See Figure 1 for a visual schematic of this process.

Figure 1: Emergency/Incident Planning, Response & Recovery



Source: USEPA & CIPAC

The pre-incident planning cycle is meant to help wastewater systems continuously reevaluate, update and improve their preparedness, response, and recovery planning through assessment, training, exercises, and implementation of improvements (retrofit, physical, and operational) that reduce their vulnerability. When an incident occurs, response begins immediately, followed quickly by the start of recovery. The response activity is most intense when an incident occurs and then tapers off; recovery activity is most intense sometime after the initial response is over, even though it begins at the same time as the initial response. Over hours or days, as the initial emergency situation is stabilized, focus shifts from immediate response and control to recovery and improvement of systems. At the end of the recovery phase, the wastewater system will return to a new level of pre-incident operations. Often, this new level of pre-incident operations will include lessons learned and implementation of actions that improve the operation of the wastewater system.

2.0 PLAN IMPLEMENTATION, EVALUATION, & UPDATE

The ERP should:

- Outline the triggers and procedures for plan implementation;
- Specify communication pathways and identify emergency resources;
- Provide strategies for evaluating plan effectiveness in response to an incident and making improvements;
- Delineate the plan review, approval, and update process; and
- Define the wastewater facility's ERP training program.

The ERP is a dynamic document that must be reviewed periodically and revised to incorporate changes to critical components such as: essential personnel or outside contact information, wastewater system operations, or updates from Vulnerability Analyses or after-incident reviews. A revision log should be kept in the front of the ERP document. The latest approved version should be distributed with initial or refresher training conducted to ensure all essential response personnel are familiar with the ERP, their roles/responsibilities, and resources available during an emergency.

3.0 EMERGENCY PLAN

3.1 REGULATORY REQUIREMENTS

The New Jersey Pollutant Discharge Elimination System (NJPDES) regulations at N.J.A.C. 7:14A-6.12 require NJPDES-permitted facilities to have an operation and maintenance manual that includes an emergency plan. Similarly, the Licensing of Water Supply and Wastewater Treatment System Operators rules at N.J.A.C. 7:10A-1.12(a) require Operation and Maintenance (O&M) procedures that shall be designed to ensure that the system operates properly under emergency conditions. In sum, the required components for an emergency plan are dictated in regulation and the completion and maintenance of an emergency plan is a requirement of both NJPDES permits and Licensed Operator duties.

3.2 VULNERABILITY ANALYSIS

A Vulnerability Analysis is a systematic process for evaluating the susceptibility of critical assets to potential threats and identifying corrective actions that can be taken to prevent, reduce, or mitigate the risk of serious consequences associated with these threats. As stated above, N.J.A.C. 7:14A-6.12(d)3i-ii, the emergency plan shall consist of a Vulnerability Analysis which shall estimate the degree to which the treatment works would be adversely affected by each type of emergency situation which could reasonably be expected to occur, including but not limited to those emergencies caused by natural disaster, civil disorder, strike, sabotage, faulty maintenance, negligent operation or accident.

As defined in the rules, the Vulnerability Analysis shall include, but is not limited to, an estimate of the effects of such an emergency upon the following:

(1) Power supply;

(2) Communication;

(3) Equipment and Supplies;

(4) Personnel;

(5) Security; and

(6) Emergency Procedures to be followed.

A viable emergency plan should identify and analyze the vulnerability of each system component for natural or man-made emergencies. In conducting the Vulnerability Analysis, wastewater system personnel must estimate how the system and its facilities may be affected in emergency situations. This information is essential to determine what preventive actions or improvements are needed and identify the response actions to be undertaken during an incident.

An example of a Vulnerability Analysis Process includes:

- Identify and map the system's components to include wastewater collection systems, pumping stations, force mains, treatment plans, and key valves, security, electrical power requirements and power supply, communication systems, equipment, supplies, telemetry control, computer systems, personnel and emergency procedures to be followed.
- Determine the level of severity for these systems based on the likelihood of major incident(s) that inflicts significant damage and the response actions to be implemented. Evaluate the potential effects on various types of equipment.
- Identify key emergency resources and personnel and how they are to be deployed. Assess the impact of the disaster on the system's operations personnel from both a safety standpoint and the added stress of working in these conditions.
- Define the system's expectations or set performance goals for system components for man-made and natural emergencies.
- Identify improvements that have already been made, and any additional ones planned or proposed.

3.3 PLAN ORGANIZATION

An Emergency Response Plan should be organized into logical sections for ease of reference. Appendices should be utilized for supplementary material such as site and system drawings, phone contact lists, forms and checklists, pre-written press releases, and incident specific Action Plans. The wastewater system's ERP arrangement and structure should reflect their usual documentation approach and format standards. Refer to Appendix A for the Emergency Plan Template.

4.0 REFERENCES & RESOURCES

1. *USEPA – WATER: Emergency/Incident Planning, Response, and Recovery*

   http://water.epa.gov/infrastructure/watersecurity/emerplan/index.cfm

2. *Emergency Response Plan Guidance for Wastewater Systems;* Water Environment Research Foundation in Collaboration with USEPA, Final Report 2004

3. *All-Hazard Consequence Management Planning for the Water Sector, Preparedness, Emergency Response and Recovery*; Critical Infrastructure Partnership Advisory Council (CIPAC) Workgroup, November 2009

4. *Protecting Wastewater Infrastructure Assets . . . Asset Based Vulnerability Checklist for Wastewater Utilities;* Association of Metropolitan Sewerage Agencies (AMSA) now renamed National Association of Clean Water Agencies (NACWA), 2002

5. *Emergency Response and Preparedness FlaWARN Best Management Practices for Water and Wastewater Systems;* University of Florida Center for Training, Research and Education for Environmental Occupations, Version 2, Updated May 2008
6. *Domestic Security Best Practices Report Wastewater Group For The Infrastructure Advisory Committee, New Jersey Domestic Security Preparedness Task Force;* Prepared under the direction of: The New Jersey Department of Environmental Protection And The Association of Environmental Authorities, October 15, 2003
7. *National Response Framework;* United States Department of Homeland Security, January 2008
8. *National Preparedness Goal,* United States Department of Homeland Security, First Edition September 2011
9. *FEMA Public Assistance Guide* available online at http://www.fema.gov/pdf/government/grant/pa/paguide07.pdf

5.0 REGULATIONS AND STATUTES

Emergency Planning specific and related requirements can be found at the following location(s):

New Jersey Pollutant Discharge Elimination System Rules (N.J.A.C. 7:14A), specifically at:

- N.J.A.C. 7:14A-6.12(a) through (d) Operation, maintenance and emergency conditions;
- N.J.A.C. 7:14A-22.5(j) Treatment works approval; and
- N.J.A.C. 7:14A-23.5(b) Engineering design reports to be submitted to the Department with treatment works approval applications.

Licensing of Water Supply and Wastewater Treatment System Operators Rules (N.J.A.C. 7:10A), specifically at:

- N.J.A.C. 7:10A-1.12(a) through (c) Duties, records and reports.

Water Supply and Wastewater Operators' Licensing Act, N.J.S.A. 58:11-66.a, which requires that every system (industrial wastewater treatment system, public wastewater collection system, public wastewater treatment system, public water supply system or public water treatment system) shall be operated by at least one licensed operator.

Courtesy copies of N.J.A.C. 7:14A and 7:10A can be found on the Department's web site at http://www.nj.gov/dep/rules/nj_env_law.html.

DISCLAIMER: THIS GUIDE IS INTENDED TO PROVIDE INFORMATION ABOUT HAZARD MITIGATION AND RESOURCES THAT MAY APPLY TO YOUR SITUATION. IT IS NOT INTENDED TO BE ALL-INCLUSIVE OR REPLACE OR IMPOSE NEW REQUIREMENTS BEYOND THOSE ESTABLISHED UNDER EXISTING STATUTES AND REGULATIONS, APPLICABLE BUILDING CODES AND STANDARDS, OR FUNDING CONDITIONS ASSOCIATED WITH FEDERAL AND/OR STATE DISASTER RELIEF AND MITIGATION ASSISTANCE. ALSO, IT WILL NOT BE USED BY THE NJDEP AS A SUBSTITUTE FOR AN EXISTING STATE OR FEDERAL LAW OR RULE FOR ENFORCEMENT PURPOSES.

APPENDIX A

WASTEWATER EMERGENCY PLAN TEMPLATE

EMERGENCY PLAN
WASTEWATER SECTOR

Wastewater System Name: **NJPDES No:**

PI Number:

Physical Address:

City:

State:

Zip Code:

General Phone Number:

Population Served:

Municipalities Served:

Industries Served:

Prepared by (*signature & title*):

Reviewed by (*signature & title*):

Date Completed:

Date Revised:

Plan Distribution

Copies of the emergency plan have been distributed to all wastewater personnel and other officials as indicated below. All employees will be trained on implementation of the plan.

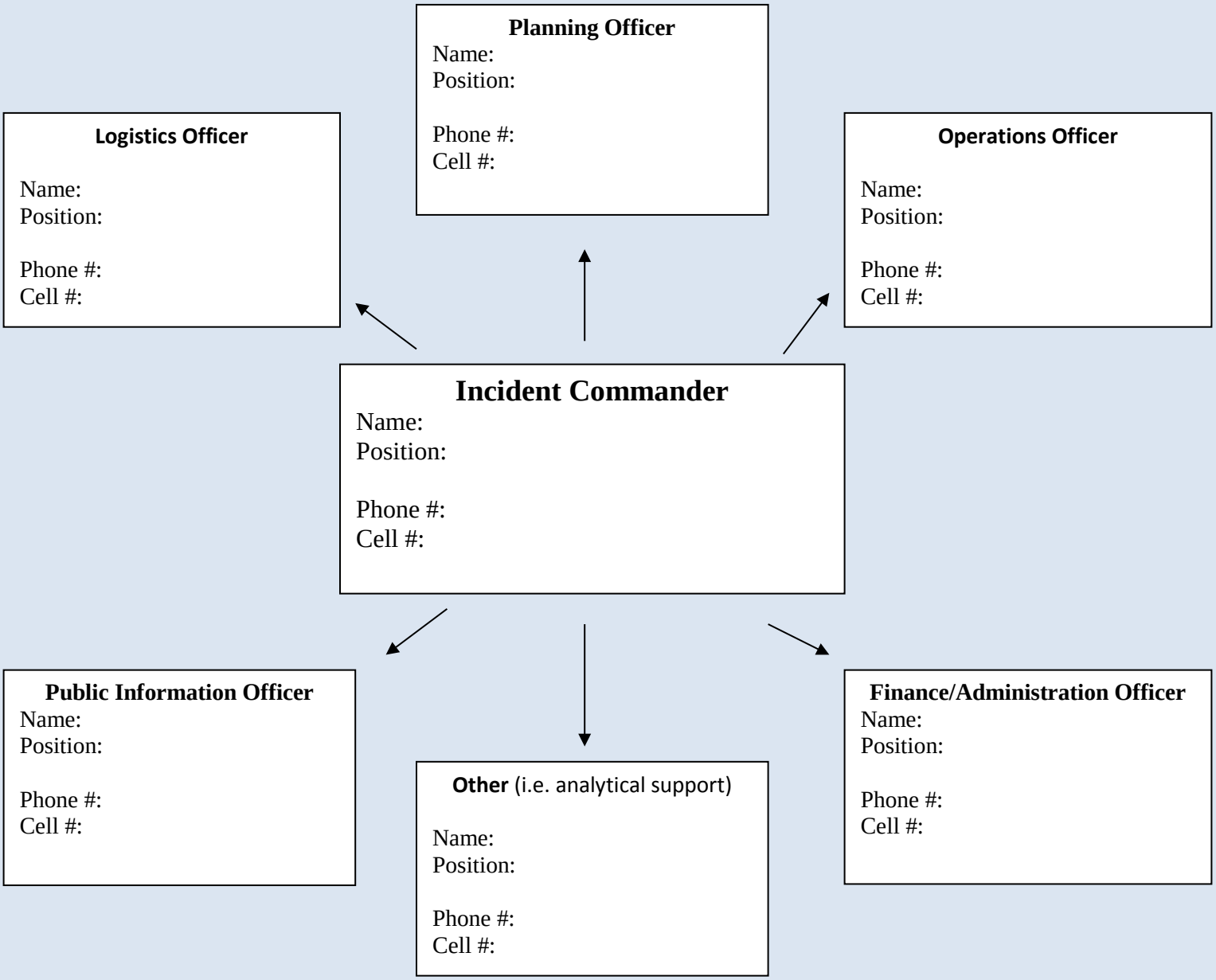
Recipient	Distributed By	Date

Table of Contents

Section 1 – Emergency Response Team
(Roles/Contact Information)

The following chart depicts our Emergency Response Team members and their contact information.

Team Members:
(Available 24/7)



Section 1 – Emergency Response Team (Responsibilities)

Incident Commander: This individual is reachable 24 hours a day, 7 days a week and is responsible for decision-making during the event and for coordinating efforts with local emergency responders. All personnel involved in the incident will report to the Incident Commander. Should the incident escalate, the Incident Commander may delegate this position to an official from local, State or Federal government and assume a support role: in this situation a full briefing of the situation will be given to the incoming Incident Commander and all staff will be notified of the change.

Public Information Officer: This individual will be the primary spokesperson to the media or other organizations requesting information concerning the event. All Staff are advised to refer any requests for information directly to the Public Information Officer and not to talk directly to members of the press.

Planning Officer: This individual(s) is responsible for developing an Action Plan for responding to the incident and who will evaluate incoming information and revise the Action Plan as necessary.

Operations Officer: This individual(s) is responsible for carrying out the Action Plan and directing resources.

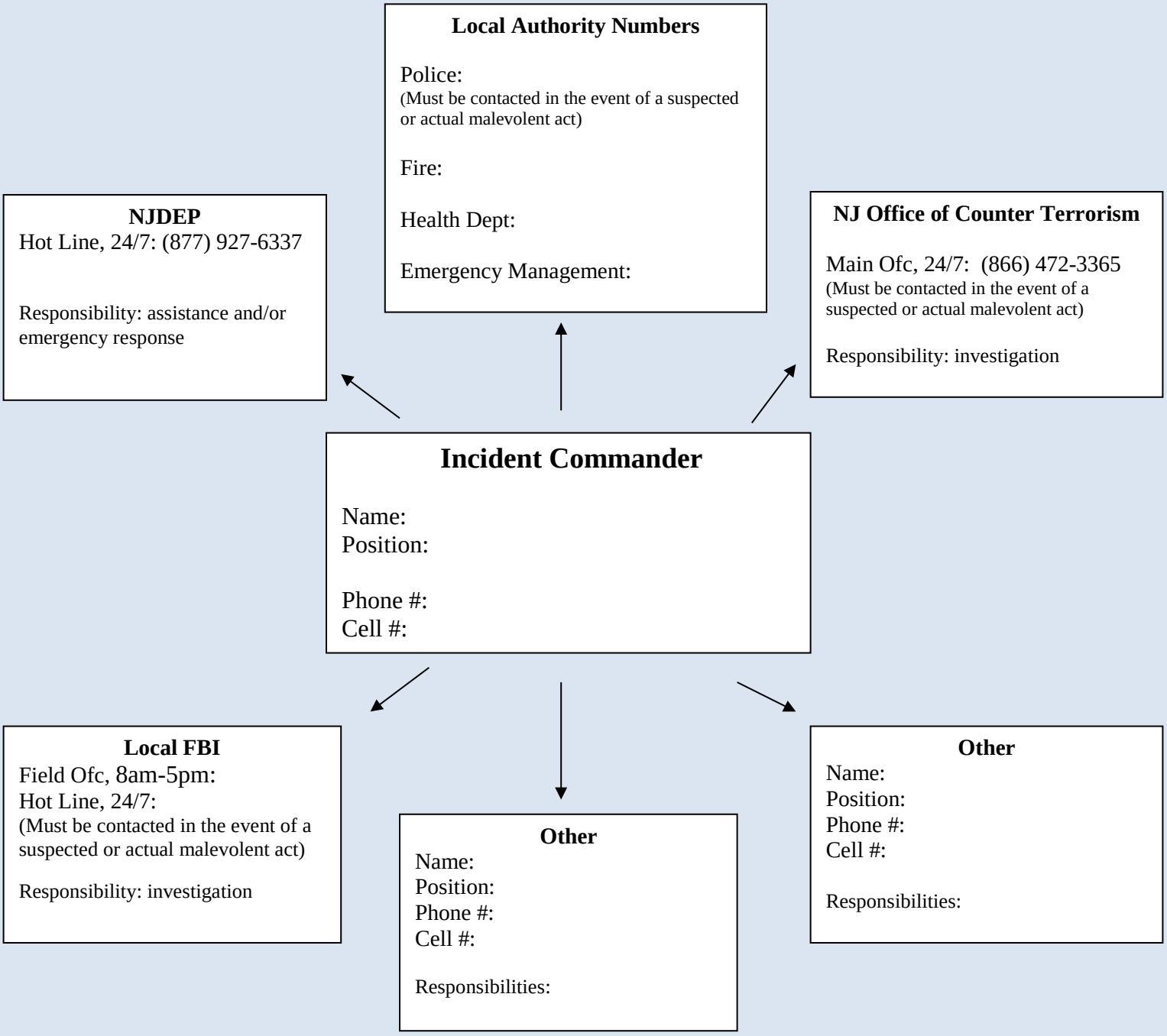
Logistics Officer: This individual(s) is responsible for providing the necessary resources and any additional services required for responding to the incident.

> **Note**: The duties of Planning, Operations and Logistics may be carried out by one individual or by several, depending on the size and severity of the incident.

Finance/Administration Officer: This individual is responsible for on-site financial management, especially the provision of funds to obtain the necessary equipment or supplies required to respond to the incident. This individual will activate contracts, deal with vendors and make cost estimates of alternative strategies. This individual can also monitor the costs associated with responding to the incident, although this is a secondary function.

Section 1 – Emergency Response Team
(External Notifications)

The NJDEP will be notified, in accordance with N.J.A.C. 7:14-6.10, as soon as possible but no later than within two hours of any emergency that has the potential to threaten human health or the environment. The following charts establish other agencies to be contacted in the event of an emergency and identify the contact person (where applicable) and phone number:



Other Emergency Contacts and Phone Numbers

The following *sensitive or special needs populations* (hospitals, nursing homes, childcare centers, schools, etc.) exist within our service area and will be contacted directly in the event of an emergency:

Facility Name	Contact	Population Type	Phone # (24/7)

Additional contact information for utilities (including account numbers) and the media:

Organization	Contact	Phone (day)	Phone (24/7)
Electric Company			
Gas Company			
Sewer/Water Company			
Telephone Company			
One Call			
Other			

Organization	Contact	Phone (day)	Phone (24/7)
Newspaper – Local			
Newspaper – Regional			
Radio			
Television			

Major Users Emergency Contacts and Phone Numbers

The following large commercial, industrial, or government entities exist within our service area and will be contacted directly in the event that discharges to our system must be restricted:

Facility Name	Contact	Population Type	Phone # (24/7)

Section 2 – Emergency Communication Procedures (Communications Equipment Inventory)

An inventory of our communications equipment (cellular phones, two-way radios/Nextel phones, etc.) is as follows:

Type	Assigned to	Location	Number/Frequency/Channel

Section 2 – Emergency Communication Procedures (Communications Plan)

The following is a written description of our notification procedures and means of implementation that accounts for the loss of any mode of communication.

Section 3 – Critical Customers within the Wastewater Service Area (Wastewater System Priorities)

This section establishes wastewater system priorities and assigns the best use of our wastewater resources to maintain services to critical customers during an emergency. Using *high*, *medium* or *low*, the chart to follow establishes the priority given to each customer category, our assessment of the amount of wastewater discharge, and the method(s) of sustaining wastewater operations. In some instances customers were contacted directly to determine wastewater service needs.

Customer Category	Priority	Quantity of Wastewater Discharge	Method(s) of Sustaining WW Operations
Emergency Services (EMS, Fire, Law Enforcement, EOCs)			
Medical Facilities (Hospitals, Long-term Care, Other)			
Emergency Shelters & Sensitive Populations			
Government Facilities			
Public Utilities (Electric, Gas, Water, etc.)			
Industrial/Commercial Facilities			
Other			

Section 3 - Wastewater System Priorities (Emergency Provisions)

This section details emergency procedures for Treatment, Pumping, Collection, Force Mains, and Sludge Management:

Critical Process/Component	Emergency Procedures
Treatment	
Pump System	
Collection System	
Force Mains	
Sludge Management System	

Section 4 – Resource Inventory
(Personnel Protection)

This section provides direction for wastewater system personnel regarding the *safe* response to an emergency situation and covers Evacuation Procedures, Assembly Areas/Staff Accountability, Shelter Locations, and First Aid Equipment. Additionally, this section establishes the frequency of staff training (workshops, tabletop exercises, drills, refresher training, etc.) regarding the content of this plan and use of personal protective equipment and other safety protocols.

First Aid Equipment

Type	Location

Evacuation Procedures

Assembly Areas/Staff Accountability

Shelter Locations

Staff Training Frequency and Course Content

Date	Course Location	Course Description

Section 4 – Resource Inventory
(Plant Equipment)

This section serves as a quick inventory of the available equipment, either maintained on-site or from a neighboring wastewater system. Provisions for procuring appropriate equipment takes into consideration the Vulnerability Assessment process of identifying critical components. This section also provides contact information for supplies, equipment repair, and emergency services.

Inventory of Available Equipment/Parts

Auxiliary Power Sources/Fuel

Type/Capacity	Location

Spare Pumps/Motors

Type/Manufacturer	Service Capabilities	Location

Spare Pump Parts

Part	Location

Spare Collection System Parts

Part	Location

Spare Treatment Parts

Part	Location

Reserve Chemicals

Chemical	Location

Contact Information for Equipment Repair and Supplies

Organization	Contact Name/Title	Phone (day)	Phone (24/7)
Electrician			
Plumber			
Pump Specialist			
Soil Excavator/Backhoe Operator			
Equipment Rental (Power Generators)			
Equipment Rental (Chemical/Chlorination)			
Equipment Repairman			
SCADA Repair Service			
Pump Supplier			
Fuel Distribution			
Pipe Supplier			
Local/Regional Analytical Laboratory			
Chemical Supplier(s)			
Sludge Handling			
Sludge Reseeding			
Other			

Section 4 – Resource Inventory
(Property Protection)

This section details procedures for protecting and securing wastewater system facilities, equipment, and vital records. Additionally, this section provides information for wastewater system personnel regarding lock-out procedures, restricted access protocols, and in the event of a criminal act, perimeter security and evidence preservation.

Protection and Security of Facilities, Equipment, and Vital Records

Lock Out Procedures

Restricted Access Protocols

Incident Perimeter Security and Evidence Preservation

Section 5 -
Interim Wastewater Flow Reduction
(Wastewater Discharge Restrictions)

This section establishes the adopted wastewater discharge restrictions to be implemented by our system during an emergency situation. Restrictions and conservation measures may be imposed on users (residential/non-residential/industrial and commercial) within the area served by our system depending on the severity of the wastewater emergency situation.

PHASE I Restrictions (available wastewater collection/treatment capabilities determined to be below normal)

PHASE II Restrictions (substantial threat to the public health and safety)

PHASE III Restrictions (further reduction of wastewater flow required)

PHASE IV Restrictions (disaster stage)

Section 6 – Emergency Situations
(Incident Characterization)

This section establishes our field and/or crisis protocols for performing threat evaluation, site characterization, and response actions.

Optional Resource: Various worksheets and report forms, such as the *Threat Evaluation Worksheet*, *Security Incident Report Form*, *Phone Threat Report Form*, and *Public Health Response Action Worksheet* are located throughout our facility to ensure their use during an emergency situation. Copies of the Response Guidelines worksheets and forms utilized by our system are included as Appendix I of this plan.

During an emergency situation, as part of incident characterization, sample collection and analyses are required to ascertain the extent of contamination and/or safety of the water supply or wastewater system. To ensure the timely analyses of samples, sample collection and analytical services will be provided by in-house staff and/or contract laboratory(s) as indicated below:

Sampling and Analytical Services

Subsection 7 – Emergency Situations
(Analysis & Response to Emergency Situations)

This section identifies and evaluates anticipated emergency situations and establishes the appropriate actions and responses. The following emergency situations were analyzed:

A. Floods/Hurricanes
B. Power Outages
C. Pollution Episodes
D. Earthquakes
E. Major Collection System Failure
F. Major Slug Source/Treatment Interference
G. Major Treatment System Failure
H. Major SCADA or Other Automated Control Failure
I. Chemical Accidents
J. Explosion Affecting System Infrastructure
K. Job Actions (i.e., strikes, walkouts, etc.)
L. *****Insider Threat (i.e., disgruntled employee, contractor, etc.)
M.*****Terrorist Threat (i.e., terrorist activity involving intentional sabotage/contamination)

Note: Events caused by malevolent acts are a crime and therefore dictate crime scene preservation, evidence protection measures, and appropriate investigative techniques such as chain of custody for sampling activities and photographic documentation.

The potential effects of each emergency situation on the following system components were assessed:

A. Sources
B. Treatment System
C. Pumping System
D. Collection System
E. Personnel
F. Power Supply
G. Materials and Supplies
H. Communications

This process has enabled our system to identify critical and/or weaker components for each situation and to provide for a strengthening of these components to better respond to an emergency situation.

No actual emergency situation will conform completely to a planned response and therefore the actual responses may be derived from several scenarios. The following general actions will be followed for all emergency situations:

- Take or direct any **immediate** response measures that are obviously needed to reduce risk to the public (see specific emergency response action below).
- Notify the wastewater system administration and applicable government agencies.
- Determine and implement appropriate corrective actions to reduce and eliminate the effects of the emergency.
- Inform consumers of the emergency situation as soon as possible, and again as the status changes.

Each emergency situation (items A through M, previously listed) was evaluated and provided with a specific emergency action plan as outlined below:

Emergency situation: **Floods/Hurricanes**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Power Outages**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Pollution Episodes**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Earthquakes**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Major Collection System Failure**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Major Slug Source/ Treatment Interference**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Major Treatment System Failure**

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Major SCADA or Other Automated Control Failure**

Recovery Time Assessment: _____

Action Plan: •

Emergency situation: **Chemical Accidents/Spills**

Recovery Time Assessment: _____

Action Plan: •

Emergency situation: **Explosion Affecting System Infrastructure**

Recovery Time Assessment: _____

Action Plan:
•

Emergency situation: **Job Actions (i.e. strikes, walkouts, etc.)**

Recovery Time Assessment: _____

Action Plan:
•

Emergency situation: **Insider Threat** (i.e., disgruntled employee, contractor employee)

Recovery Time Assessment: _____

Action Plan:

-

Emergency situation: **Terrorist Threat** (intentional sabotage/contamination)

Recovery Time Assessment: _____

Action Plan:

-

Subsection 8 – Vulnerability Assessment
(Continuity of Operations)

This section establishes our daily operational protocols. These written protocols establish a complete description of our source(s), treatment, pumping & collection system, routine operation & management procedures, and operational monitoring requirements and are detailed in our Emergency Operations Plan dated (insert date) (included as Appendix II to this plan). In the event of an emergency, any person so designated can implement the necessary procedures to ensure continuity of operations.

Additional system operational data can be found at the following locations:

Item	Location
Collection System Maps	
Daily Operator Reports	
Technical Manuals	
Other	

Subsection 9 – Emergency Situations
(Preliminary Damage Assessment)

The preliminary damage assessment report will be utilized after an emergency situation to assess the extent of the damage caused by the emergency situation and the need for repair, replacement or abandoning of facilities.

Preliminary Damage Assessment Report

Rapid Damage Assessment Form

Date: _____ Time: _____ Pictures Taken? Yes __ No __

Water Installation ___ Wastewater Installation ___ Treatment Facility ___

Plant Facility Name: _____

Address or Location: _____

Person Making Report: _____

1. Power Supply Line Power Condition: Power is On ____ Power is Off ____

   (If Line Power is On Skip to #2)

   Are there visible damages to overhead lines? Yes __ No __

   Are line fuses open? Yes __ No __

   Are there trees or limbs visible on electrical lines? Yes __ No __

   Is the service line to electrical cabinet damaged? Yes __ No __

2. Flooding – Is the facility accessible? Yes __ No __

   Is the facility under water? Yes __ No __

   Is there evidence of inundation (high water marks)? Yes __ No __

3. Electrical Status – Is there a generator on-site? Yes __ No __

   Is generator operating? Comments: _____

   Is the electrical panel damaged? Yes __ No __

   Is SCADA equipment operable? Yes __ No __

   Are there any breakers tripped inside panel? Yes __ No __

Number of pumps on-site ___, Are all operational? Yes __ No __

4. Other Damages – Are piping systems functioning? Yes __ No __

Are pumping systems functioning? Yes __ No __

Are treatment units compromised? Yes __ No __

Are tanks and storage systems compromised? Yes __ No __

Is there evidence of spills or other reportable activity? Yes __ No __

5. Comments: For recording Comments, for your explanation of any Box checked "Yes," and for recording you Field Notes, use the back of this sheet.

Estimated Cost to Repair Damage:
_____

Subsection 10 – Emergency Situations
(Detailed Damage Assessment)

Below is a detailed damage assessment form that may be used to assess the severity of damages to utility facilities. When the repairs have been completed, the information, including the tracking number, should be submitted to the supervisor.

Detailed Damage Assessment Form

Date: _____ Time: _____ Pictures Taken? Yes __ No __

Water Installation ___ Wastewater Installation ___ Treatment Facility ___

Plant Facility Name: _____

Address or Location: _____

Person Making Report: _____ Title: _____

Tracking Number: _____

1. Type of damage to facility:

2. Resources needed for repairs:

Materials:

Equipment:

Labor:

3. Estimated time to repair facility:

4. Recommendations for mitigating problem or damages:

5. Comments: For recording Comments, and for recording Field Notes, please use the back of this sheet.

Subsection 11 – Emergency Response Evaluation (Emergency Response Evaluation Report)

At the conclusion of an emergency event, our Emergency Response Team will assemble and prepare an *Emergency Response Evaluation Report* to evaluate the timeliness and effectiveness of our Emergency Response Plan. Communication, critical decision-making, available resources, local emergency response coordination, and the integration of external resources will be evaluated. Based on our evaluation and subsequent recommendations, if any, the Emergency Response Plan will be revised as accordingly. The *Emergency Response Evaluation Report* will address the following:

Emergency Response Evaluation Report

Brief description of the emergency situation (causes, chronology of events, damages and impact):

Questions and Answers:

1. Was the Incident Commander notified and the emergency response team assembled in a timely manner?
2. Were the appropriate external notifications made in a timely manner?
3. Were there any difficulties in reaching the appropriate internal (team members)/external contacts?
4. Were the communication resources sufficient?
5. Do additional communication resources need to be acquired?
6. Does the communication plan need to be revised?
7. Was the chain-of-command clear to all individuals involved?
8. Was incoming information disseminated to the appropriate individuals in an efficient manner?
9. Were sufficient in-house resources available for use?
10. Would having additional resources on hand facilitate a quicker response time and/or lessen the impact of the emergency situation?
11. Were outside services deployed in an efficient manner and according to the timeframes specified within their respective contracts?
12. Did the Emergency Response Team and other responding staff act in a safe manner, following all safety protocols and procedures?
13. Should staff be provided with additional training to ensure their knowledge of the safety protocols?
14. Does the emergency response plan require revisions?

Description of recommendations (actions/procedures that could significantly lessen the impact of the emergency situation):

Subsection 12 – Other Considerations (Emergency Response)

1. Labor issues - identify which electricians and other service personnel will be responsible for making connections to generators and other key equipment.

2. Fuel - include generator and other equipment operations as well as for essential employees to travel to and from sites.

3. Maps and Drawings - accurate delineation/mapping of all significant infrastructure components (field equipment, treatment plants, pipe connections, pumps, etc.) are needed to enable location for repair/resource requests or filing an outage report with various agencies. Mark outs cannot be accessed if they are obliterated by sand, debris or flood waters. Information should be kept current and available in an emergency.

4. Emergency Access - curfews and road blocks prohibit essential personnel from reporting to work sites. Driver License information and Employee I.D. information needs to be included in the plan documentation. Alternative routes to sites need to be planned in advance.