

Policy: IC-07-01

Policy Title: Facility Availability During Emergencies

Policy Purpose: Establish procedures to ensure critical facilities are capable of operating during emergencies

Implementation Date: 07/10/2007

Revision Date: N/A

TOWN OF WESTFIELD PUBLIC WORKS DEPARTMENT

FACILITY AVAILABILITY DURING EMERGENCIES

This policy establishes procedures to ensure that the critical facilities are capable of operating during emergencies and providing damage assessment. This policy is a supplement to the Emergency Action Plan.

Potential Scenarios- The following contingencies have been determined as possibilities in the WPWD area potentially impacting our critical facilities and assets.

Fire – Damage caused by fire could directly or indirectly affect system operation. Fires involving system facilities would likely remove a system asset for an extended period of time. Fires causing damage to utility infrastructure could directly affect services to the plant.

- WPWD Operations Impact
- Structure Damage
- Equipment Damage
- Electrical System Damage

Tornado – Tornado damage could result in direct damage to system assets as well as the utility infrastructure serving the facility. In the event of Tornado, it is likely that the area of damage will be widespread and other contingencies will exist.

- WPWD Operations Impact
- Structure Damage
- Equipment Damage
- Utility Outage
- SCADA or Communication Equipment Damage
- Facility Access Limitation or Isolation

Flood – Flood in this area of the state would not directly affect system assets, however restriction of access to facilities is likely and a plan for egress will be necessary.

- WPWD Operations Impact
- Facility Access Limitation
- Possible Utility Interruption

Earthquake – There is historic evidence that Westfield could experience an earthquake that could cause significant damage to our infrastructure. As with weather related events, an earthquake area of damage would likely be large.

- WPWD Operations Impact
- Structure Damage
- Underground Plant Facility Damage
- Equipment Damage
- Extended Loss of Electrical Utility Service
- Chemical Release
- Facility Access Limitations

Civil Unrest – The affects of Civil Unrest would be a matter of security, possible damage to facilities, and possible sabotage of facilities depending upon the circumstances. Consideration will have to be given for safe work practices in an unstable environment, securing critical assets, and repair of damage.

- WPWD Operations Impact
- Personnel Security
- Structure Damage
- Equipment Damage

Terrorism – The concept of Terrorism leaves several possibilities for direct and indirect affects upon our system. In general an act of Terrorism would involve damage or destruction to facilities, contamination of water, or the malicious release of chemicals from facilities. There is also the likelihood of affects to our system due to acts of terrorism in areas outside of our service territory.

- WPWD Operations Impact
- Personnel Security
- Structure Damage
- Equipment Damage
- Water Contamination
- Extended Power Utility Outage
- Malicious Chemical Release
- SCADA Control Interruption
- Civil Unrest

Critical System Assets- Facilities necessary to maintain services to the WPWD area have been categorized by division and order of importance.

Water Division

In order of importance the following water facility assets are considered critical:

1. River Road Water Treatment Plant
2. Cherry Tree Water Treatment Plant
3. 161st Street Booster
4. 146th Street Tank
5. 161st Street Tank
6. GTE Tank
7. 181st Street Tank
8. Greyhound Water Treatment Plant
9. North Water Treatment Plant
10. Harbour Booster

Wastewater Division

In order of importance the following Wastewater facility assets are considered critical:

1. Wastewater Treatment Plant
2. Towne Road Lift Station
3. Merrimac Lift Station
4. Oak Road Lift Station
5. Washington Woods Lift Station
6. Adios Pass Lift Station
7. Setters Run Lift Station
8. Brookside Lift Station
9. South Lagoon Lift Station
10. South Union Lift Station
11. Cool Creek Station
12. Don Pablo's Lift Station
13. Tank Barn Lift Station
14. AMLI Lift Station
15. Springdale Lift Station
16. Meadows Lift Station
17. South Park Lift Station
18. Westfield Park Lift Station
19. 181st Street Lift Station
20. GTE Lift Station
21. Sandpiper Lakes Lift Station
22. Bridgewater Club Lift Station
23. Andover Lift Station

24. Viking Meadows Lift Station

SCADA and Controls System

In order of importance the following SCADA and Control assets are considered critical:

1. WPWD Campus RTU / Radio / Antenna
2. 181st Street Tank RTU / Radio / Antenna
3. 146th Street Tank RTU / Radio / Antenna
4. River Road WTP System
5. Cherry Tree WTP System
6. 161st Street Booster System
7. 161st Street Tank System
8. GTE Tank System
9. Waste Water Treatment Plant System
10. 181st Street Tank System
11. Towne Road LS System
12. Merrimac LS System
13. Oak Road LS System
14. Washington Woods LS System
15. Adios Pass LS System
16. Setters Run LS System
17. Brookside LS System
18. South Lagoon LS System
19. South Union LS System
20. Cool Creek LS System
21. Don Pablo's LS System
22. Tank Barn LS System
23. AMLI LS System
24. Springdale LS System
25. Meadows LS System
26. South Park LS System
27. Westfield Park LS System
28. 181st Street LS System
29. GTE LS System
30. Sandpiper Lakes LS System
31. Bridgewater Club LS System
32. Andover LS System
33. Viking Meadows LS System

A determination will be made as to the extent of the damage, the resources needed, the additional personnel needed to perform evaluation, damage control, and the necessary repair.

The coordination of inspections and damage assessment of facilities and infrastructure assets will be coordinated by the appropriate Supervisor or designated alternate.

Water – The Utilities Superintendent will coordinate with the Water Supervisor to dispatch personnel, compile reports, and develop action plans to address needed actions or repairs to reestablish services.

Wastewater – The Utilities Superintendent will coordinate with the Wastewater Supervisor and the Wastewater Collections Foreman to dispatch personnel, compile damage reports, and develop action plans to address needed actions or repairs to reestablish services.

SCADA and Controls – The Instrumentation and Controls Supervisor will conduct system inspections utilizing utility personnel if necessary. An analysis of the system integrity will be completed and a report compiled including action plans to address reestablishing the controls system.

Communication

The Utilities Superintendent and the Instrumentation and Control Supervisor will report the compiled data to the Command Center for the development of action plans. Each will handle the execution of the plans coordinating the needed human and equipment resources as the plan dictates.

Damage Assessment

Damage Assessment Teams will be coordinated within the guidelines of this procedure and all reports will be directed to the appropriate supervision personnel.

Damage Assessment Guidelines

Personnel Security

Should the situation be considered to be potentially unstable from a security prospective, personnel working in the field shall be in teams of no less than two members. Teams will remain together and maintain good communication to alert each other and the Command Center of potential security threats. If any one team member determines that an area or activity is unsafe, the entire team will move to a safe area.

Water Facilities

All water facilities will be inspected for a full report to the Water Supervisor. These inspections will use the following guidelines.

Inspection Team – An Inspection Team will be made up of personnel with operating knowledge of the facility. The make up of an inspection team will be determined based upon the situation and available personnel.

One member of the team will be designated as the Team Leader. Their responsibility will to coordinate the inspection, direct personnel, compile a detailed report of the inspection, and report to supervision.

Facility Access – Before an inspection team can be sent to a facility, it will be necessary to coordinate with local Emergency Management, Police, and Fire authorities. It will be necessary to determine if it is safe for personnel to travel within the community to access facilities. If not, proper escort arrangements will need to be made to assure personnel safety.

If it is deemed safe for WPWD personnel to travel unescorted, responding personnel should exercise caution when traveling to remote facilities. Special attention should be placed on potential hazards brought about by the emergency situation.

If the typical access route to a facility is blocked or impassable, alternate routes using the GIS mapping information will be utilized. If all routes to a facility are impassable, the responding team will notify supervision. Arrangements for the proper equipment and an access plan will be developed and coordinated from the Command Center and communicated to the responding team.

Security – Before any inspection of a facility, it will be necessary to determine if the facility is secure. If it is believed that facility security has been breached, WPWD personnel are to move to a safe area and request assistance from law enforcement. Under no circumstances are WPWD personnel to enter an unsecured facility until that facility has been cleared by law enforcement.

Structural Damage – The building and facility structures should be closely inspected as personnel enter the area. Any damage should be noted and documented with pictures if possible. Special attention should be made to the safety of the structure and the potential affects any damage found will have on the facilities operation.

Power – It will be necessary to determine if the facility has commercial power. If not, responding personnel should further investigate the incoming power structures and facilities to determine if the damage to the power system is localized to the facility. Special care should be taken when investigating power

systems to avoid injury to personnel. If there is any apparent damage to power systems, all personnel should stay clear of all power lines and equipment and notify the appropriate power utility. All power utility equipment is considered energized until power utility personnel have cleared the area and declared it safe.

All information regarding power equipment damage and power availability will be forwarded to the Command Center.

Emergency Power – If equipped, the on-site Generator should be inspected to determine if it is in working order. If the facility is so equipped, and commercial power is not available, the automatic transfer equipment should have switched and activated the generator. In either case a detailed report of any damage to the generator should be forwarded to the Command Center.

Emergency Power Equipment – If there is no on-site power generation, the equipment to connect portable emergency power should be inspected to determine if it is in working order. This information should be forwarded to the Command Center as well.

Chemical Storage – A detailed inspection of the chemical storage facilities and structures should be completed to assure personnel safety and prevent release of chemicals to the atmosphere. Extreme caution should be taken when performing these inspections to assure personnel safety. If it has been determined that a hazardous release has occurred, all personnel will move to a safe area and notify the appropriate Hazardous Material response resource.

If the chemical storage facilities are deemed sound, the chemical feed equipment should be inspected to determine if it is working order.

All chemical inventories at the facility should be documented with the findings of the inspections of the storage and feed facilities and be forwarded to the Command Center.

Facility Equipment – A detailed inspection of the facility equipment should be completed to determine if it is in working order. All equipment inspected should be listed on the facility report and any damage to the equipment should be noted. It will also be necessary to document any information pertinent to the equipment operation.

Whenever possible pictures should be taken and included in the report regardless of the disposition of the equipment being inspected.

Wastewater Collections

All Wastewater Collection facilities will be inspected for a full report to the Wastewater Collections Foreman. These inspections will use the following guidelines.

Security – As personnel approach any facility it will be necessary to assess the security of the facility and the surrounding area. If it is believed that facility security has been breached, WPWD personnel are to move to a safe area and request assistance from law enforcement. Under no circumstances are WPWD personnel to enter an unsecured facility until that facility has been cleared by law enforcement.

Structural Damage – The building and/or facility structures should be closely inspected as personnel enter the area. Any damage should be noted and documented with pictures if possible. Special attention should be made to the safety of the structure and the potential affects any damage found will have on the facilities operation.

Power – It will be necessary to determine if the facility has commercial power. If not, responding personnel should further investigate the incoming power structures and facilities to determine if the damage to the power system is localized to the facility. Special care should be taken when investigating power systems to avoid injury to personnel. If there is any apparent damage to power systems, all personnel should stay clear of all power lines and equipment and notify the appropriate power utility. All power utility equipment is considered energized until power utility personnel have cleared the area and declared it safe.

All information regarding power equipment damage and power availability will be forwarded to the Command Center.

Emergency Power – If equipped, the on-site Generator should be inspected to determine if it is in working order. If the facility is so equipped, and commercial power is not available, the automatic transfer equipment should have switched and activated the generator. In either case a detailed report of any damage to the generator should be forwarded to the Command Center.

Emergency Power Equipment – If there is no on-site power generation, the equipment to connect portable emergency power should be inspected to determine if it is in working order. This information should be forwarded to the Command Center as well.

Facility Equipment – A detailed inspection of the facility equipment should be completed to determine if it is in working order. All equipment inspected should

be listed on the facility report and any damage to the equipment should be noted. It will also be necessary to document any information pertinent to the equipment operation.

Whenever possible pictures should be taken and included in the report regardless of the disposition of the equipment being inspected.

Underground Plant Assessment – An assessment of any affects of the emergency to underground structures should be made during the inspection of critical facilities. Should the emergency involve circumstances that may adversely affect underground plant assets, it may be necessary to execute inspections of critical infrastructure. Additional inspections that may be necessary outside of the inspection of facilities will be determined based upon the circumstances of the emergency. These inspections will be coordinated by the Wastewater Collections Foreman.

Accessibility – Can WPWD personnel, and other authorized personnel, gain access to the facility through normal means. If not the report should include possible alternatives to access.

SCADA and Controls Systems

All SCADA system components and critical instruments will be analyzed for proper operation and system reliability. The Instrumentation and Control Supervisor and assigned utility personnel will complete a detailed assessment of the SCADA and Controls systems. The Instrumentation and Control Supervisor will report all findings and recommended action plans to the Command Center and coordinate repairs.

Security – Is the WPWD campus secure. If it is believed that facility security has been breached, WPWD personnel are to move to a safe area and request assistance from law enforcement. Under no circumstances are WPWD personnel to enter an unsecured facility until that facility has been cleared by law enforcement.

Power – Is there power at the WPWD campus? If not, is the emergency generator operable and has it been activated?

Communications – Communication with all remote control units must be evaluated and notes made as to failures in the PLC Communications network.

Critical Communication Failure – If communications have been lost to a critical infrastructure asset that would adversely affect it's operation, efforts must be made to maintain control of that asset to maintain system reliability.

Critical Communication Infrastructure Failure – Failure of critical communication assets and equipment must be addressed. During the initial evaluation, priority must be given to equipment that provides links for communication throughout the system.

A full report of the systems integrity will be made to the Command Center. This will include recommendations for corrective action, actions currently underway to resolve issues, and the needed resources to reestablish the system and make repairs.

A handwritten signature in black ink, appearing to read 'BAH', is positioned above the typed name.

Bruce A. Hauk, Director
Westfield Public Works Department

Westfield Public Works

Waste Water Treatment Plant

Damage Assessment Report

Facility Name		Date	
		Time	
Address		Inspector	
City			
Township			

Facility Use

Security				Accessability					
Area		Secure Facility		Secure Breached	Roadways		Acces Plant		Acces
		Unstable					InAccess Egress		InAccess
Electrical									
Comercial Power		OK	Generator		Yes		Automatic		
		Out			No		Manual		
Generator Status		Available	Gen Run		Running		Fuel		
		Out of Ser	Status		Stopped				
Structure									
Building		OK	Outdoor		OK				
		Damage	Structure		Damage				

Facility Notes

Equipment

SBR1						SBR2					
Inlet Valve		OK	Mixers		OK	Inlet Valve		OK	Mixers		OK
		Damage			Damage			Damage			Damage
Discharge Valve		OK	Aerators		OK	Discharge Valve		OK	Aerators		OK
		Damage			Damage			Damage			Damage
Notes						Notes					
SBR3											
Inlet Valve		OK	Mixers		OK						
		Damage			Damage						
Discharge Valve		OK	Aerators		OK						
		Damage			Damage						
Notes											

Digesters

Digester 1						Digester 2					
Inlet Valve		OK	Mixers		OK	Inlet Valve		OK	Mixers		OK
		Damage			Damage			Damage			Damage
Discharge Valve		OK	Aerators		OK	Discharge Valve		OK	Aerators		OK
		Damage			Damage			Damage			Damage
Notes						Notes					

Lift Station

Pumps

Pump 1						Pump 2					
Motor		OK	Availability		Available	Motor		OK	Availability		Available
		Damage			Out of Ser			Damage			Out of Ser
Pump		OK				Pump		OK			
		Damage						Damage			
Notes						Notes					

Westfield Public Works

Waste Water Lift Station

Damage Assessment Report

Facility Name		Date	
		Time	
Address		Inspector	
City			
Township			

Facility Use

Security

Area		Secure	Facility		Secure
		Unstable			Breached

Electrical					
Comercial Power		OK	Generator		Yes
		Out			No
Generator Status		Available	Gen Run		Running
		Out of Ser	Status		Stopped

Structure Building		OK	Outdoor		OK
		Damage	Structure		Damage

Facility Notes

Equipment

Pumps					
HS 1			HS 2		
Motor		OK	Availability		Available
		Damage			Out of Ser
Pump		OK			Available
		Damage			Out of Ser
Notes					Notes

HS 3			HS 4		
Motor		OK	Availability		Available
		Damage			Out of Ser
Pump		OK			Available
		Damage			Out of Ser
Notes					Notes

Valve Structure

Check Valve		OK	Piping		OK
		Damage			Damage

Notes

Underground Plant

Piping		OK
		Damage

Notes

Westfield Public Works

Water Facility

Damage Assessment Report

Facility Name

Address

City

Township

Date

Time

Inspector

Facility Use

Security

Area

Secure

Unstable

Facility

Secure

Breached

Electrical

Commercial

Power

Generator

Status

Structure

Building

Facility Notes

Secure

Unstable

Facility

Secure

Breached

OK

Out

Generator

Yes

No

Running

Stopped

OK

Damage

Outdoor

Structure

OK

Damage

Structure

Damage

Automatic

Manual

Pumps									
HS 1					HS 2				
Motor	OK	Availability	Available	Out of Ser	Motor	OK	Availability	Available	Out of Ser
Pump	Damage	OK	Damage	OK	Pump	Damage	OK	Damage	OK
Notes	Notes								
HS 3					HS 4				
Motor	OK	Availability	Available	Out of Ser	Motor	OK	Availability	Available	Out of Ser
Pump	Damage	OK	Damage	OK	Pump	Damage	OK	Damage	OK
Notes	Notes								

Wells		Well 1	Well 2	Well 3	Well 4
Motor	OK Damage	Availability Out of Ser	OK Damage	Availability Out of Ser	OK Damage
Pump	OK Damage	OK Damage	OK Damage	OK Damage	OK Damage
Notes	Notes				
Motor	OK Damage	Availability Out of Ser	OK Damage	Availability Out of Ser	OK Damage
Pump	OK Damage	OK Damage	OK Damage	OK Damage	OK Damage
Notes	Notes				

Westfield Public Works
 Damage Assessment Report
 Water Facility

Facility Name _____ Date _____
 Address _____ Time _____
 City _____ Inspector _____
 Township _____

Facility Use _____

Security Area	Secure Unstable	Facility	Secure Breached
Electrical			
Commercial Power	OK Out	Generator	Yes No
Generator Status	Available Out of Ser	Gen Run Status	Running Stopped
Structure Building	OK Damage	Outdoor Structure	OK Damage

Facility Notes _____

Equipment				
Pumps	HS 2			
HS 1				
Motor	OK Damage	Availability	Available Out of Ser	OK Damage
			Availability	Available Out of Ser

Pump	<input type="checkbox"/> OK <input type="checkbox"/> Damage	Pump	<input type="checkbox"/> OK <input type="checkbox"/> Damage
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Notes	
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HS 3	HS 4
Motor	Motor
<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage	<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage
Pump	Pump
<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser	<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser

Notes	
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Wells

Well 1	Well 2
Motor	Motor
<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage	<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage
Pump	Pump
<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser	<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser

Notes	
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Well 3	Well 4
Motor	Motor
<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage	<input type="checkbox"/> OK <input type="checkbox"/> Damage <input type="checkbox"/> OK <input type="checkbox"/> Damage
Pump	Pump
<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser	<input type="checkbox"/> Availability <input type="checkbox"/> Available <input type="checkbox"/> Out of Ser

Notes	
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