

Disaster/Disaster #/Date:

Hurricane John / 4007-DR-ST/ 06-01-2006

Utility Name:

Anytown Department of Public Works

Utility Location:

Anytown, ST

Damage/Cost Report-Elevated Water Tower Damage from Hurricane John

Draft – 06/30/2006

This report is assembled as a template using blank forms provided by U.S. EPA's website tool on Federal Funding for Utilities (Water/Wastewater) in National Disasters (Fed FUNDS).

The information assembled is fully developed by the utility and
there is no assurance or guarantee of any funding.

Do not quote or cite.

Purpose

This summary report details damages to the Anytown elevated water tower during Hurricane John. This report also includes any associated cost estimates and response actions taken by the Anytown Department of Public Works to repair the elevated water tower site.

Table of Contents

I. Executive Summary of Disaster

II. Executive Summary of Damage and Costs

III. Documentation of Damage and Costs for Elevated Water Tower Site

1. WARN Water System Status Report (1 pg.)
2. Suggested Questions for Water/Wastewater Utilities / Damage Assessment Form (3 pgs)
3. Photo logs (1 pg.)
4. Emergency Repair Form (1 pg.)
5. FEMA Force Account Labor Summary Record Form (1 pg.)
6. FEMA Rented Equipment Summary Form (1 pg.)
7. FEMA Materials Summary Record Form (1 pg.)

IV. Reference Documents

I. Executive Summary of Disaster

Hurricane John came ashore in Anytown on June 1, 2006 at 7:45 am as a Category 3 hurricane on the Saffir-Simpson Hurricane Scale with recorded sustained maximum winds of 100 mph. High winds, rain, and flash flooding caused by high storm surges impacted Anytown with flood levels varying between 6 ft and 8 ft throughout the affected area. In preparation of Hurricane John, a voluntary evacuation was conducted beginning May 29 for residents of Anytown in low laying flood prone areas, residents in mobile homes, and any residents with medical equipment that required electrical power. At approximately 3:00 pm, Anytown emergency officials began conducting initial damage assessments to determine the extent of damages to the community and local infrastructure.

II. Executive Summary of Damage and Costs

Utility officials and members of Anytown's damage assessment team began by reviewing monitoring data on the utility's computer systems to determine what percentage of pump stations were offline, the approximate number of service interruptions, and if there were water main breaks/leaks. A damage assessment team visited off-line pump stations and suspected water main breaks to determine if debris removal was needed before repairs could begin, or if the location of the pump station/water main was completely destroyed. This information was then transmitted to the local EOC for its review.

Initial Damage Assessments show that Anytown Department of Public Works sustained the following damages:

- Collapse of the 100,000 gal elevated water tank that services 60% of Anytown's drinking water customers
- Over 50 % of the 75 pump stations were off-line, damaged, or destroyed
- Wastewater treatment plant sustained major damage, and is not operational
- 40% of customers serviced by Anytown are experiencing the loss of at least one service, however the majority are without water and wastewater services.
- The mutual aid agreement with the City of Marksburg was activated and Anytown requested a type-II water distribution system damage assessment and repair team and two type-II water main leak location teams on June 3, 2006 for five days.

III. Documentation of Damage and Costs for

Elevated Water Tower Site

This section contains documents that relate to the repair/replacement of the collapsed Anytown elevated water tower due to high winds sustained during Hurricane John. Upon the completion of the noted repairs, Anytown DPW will work with the designated FEMA Public Assistance representative to complete a project worksheet for reimbursement of costs associated with the repair of the elevated water tower. Wherever possible, Anytown has chosen to complete the necessary FEMA forms to expedite the project worksheet formulation process.

1. WARN Water System Status Report (1 pg.)
2. Suggested Questions for Water/Wastewater Utilities / Damage Assessment Form (3 pgs)
3. Photo logs
4. Emergency Repair Form
5. FEMA Force Account Labor Summary Record Form (for employees completing elevated water tower repairs)
6. FEMA Rented Equipment Summary Form (for rented equipment used during repair of elevated water tower)
7. FEMA Materials Summary Record Form (for materials purchased to repair elevated water tower)

IV. Reference Documents

Insurance Policies

1. Geico insurance policy # 23234

- policy covers \$10,000,000 for acts of nature, including floods
- policy includes buildings and contents/ small equipment
- Utility contact is Robert Moore at 123-456-7899

2. Geico insurance policy #879801

- policy covers acts of nature, including floods
- policy covers utility vehicles, and large equipment such as dump trucks, bobcats, and front end loaders
- policy pays replacement value for vehicles and equipment
- Utility contact is Robert Moore at 123-456-7899

Maintenance Records

- contact Judy Douglas @ 123-456-7881 in the records department. Please have the following information available to expedite your request
 - Type of facility (drinking water or wastewater)
 - Facility location

Codes and Standards

- Anytown has adopted the following standards and codes for its elevated water tank
 - ASME B31
 - ASME B16
 - ASTM Volume 01.01

Emergency Procurement

See Anytown's Procurement Policy Guide, Section VI, Emergency Procurement (pg. 132) for details of the emergency procurement policy.

<input type="checkbox"/> This is an exercise	<input checked="" type="checkbox"/> This is NOT an exercise	Situation Status Report #001-060306		
WARN Water System Status Report				
1. Date: 6/1/2006	2. Time: 4:30pm	3. Incident Name: Hurricane John		
4. Utility Name: Anytown DPW	5. Contact: John Thomas, Anytown DPW Director			
6. Phone: 123-456-7890	7. E-mail: j.thomas@anytown.st.us			
8. Fax: 123-456-9871	9. Alt. Phone: 123-456-7892		10. Other:	
11. Overall Status:	<input type="checkbox"/> Green (normal)	<input type="checkbox"/> Yellow (no mutual aid required)	<input checked="" type="checkbox"/> Red (some mutual aid required)	<input type="checkbox"/> Black (significant mutual aid required)
12. Prognosis:	<input type="checkbox"/> No Change		<input type="checkbox"/> Improving	<input checked="" type="checkbox"/> Worsening
13. Utility EOC Activated:	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No	
14. Proclamation of Local Emergency by Local Government:	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No	<input type="checkbox"/> Unsure
15. Critical Issues: (and actions taken):	<input checked="" type="checkbox"/> Pipes _____ <input checked="" type="checkbox"/> Pump Stations 50 % of the 75 pump stations are off-line, damaged, or destroyed <input checked="" type="checkbox"/> Tanks/Reservoirs 100,000 gal elevated water tower destroyed <input type="checkbox"/> Wells _____ <input type="checkbox"/> Connection(s) Status/Flow change request(s) _____ <input type="checkbox"/> Power/Communications _____ <input type="checkbox"/> Chemical Supply/Leak _____			
16. Water Quality	Contamination : <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Undetermined _____ Water Quality Order : <input type="checkbox"/> Boil Order <input type="checkbox"/> Do Not Drink <input checked="" type="checkbox"/> Do Not Use Order Issued by : State EMA Est. Date/Time of Lift: undetermined			
Status Detail	Status		Remarks	
15. Percentage of potable water system inoperable:	40	%	40% of customers serviced by Anytown are experiencing the loss of at least one service, however the majority are without both services	
16. Anticipated duration of outage: (hours/days)	undetermined		damage assessments are still being conducted, many roads and streets are still impassable	
17. Number of Jurisdictions affected:	#1	Anytown city limits and surrounding unincorporated areas that Anytown DPW services		
18. Number of people affected:	#20,000			
19. Mutual aid received in last 24 hours:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
20. Mutual aid needed in next 24 hours:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Mutual aid agreement with the City of Marksburg is in the activation process	
21. Actions taken by Utility:	damage assessments underway to determine the exact extent of damage to the system and resulting outages.			
22. Actions taken by Coordinating Partners:				

WARN Wastewater System Status Report					
INCIDENT Hurricane John			REPORT #:001-060306		
Date/Time:June 3, 2006, 5:00pm					
Utility Name:Anytown DPW					
City and County:			General Phone Number:123-456-7890		
Contact:John Thomas, Anytown DPW Director					
E-mail:		Cell Number:		Fax:	
General Location of Emergency: Anytown and unincorporated jurisdictions in service area					
Has Utility EOC been activated: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/>					
Declaration of Local Emergency: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unsure <input type="checkbox"/>					
Critical Issues (and actions taken):	<input checked="" type="checkbox"/> Pipes several suspected water main breaks and/or leaks				
	<input checked="" type="checkbox"/> Lift Stations estimated 30%of lift stations are offline, damaged, or destroyed				
	<input type="checkbox"/> Outfall _____				
	<input type="checkbox"/> Chemical Status _____				
	<input checked="" type="checkbox"/> Power/Communications loss of power to wastewater treatment facility, unknown damages				
Treatment Status	<input type="checkbox"/> Operational <input checked="" type="checkbox"/> Non-Operational				
	<input type="checkbox"/> Release of Untreated Wastewater Amount: _____				
	<input type="checkbox"/> Has Untreated Wastewater reached a water way: _____				
	Comments: power outage, unknown other damages				
Status Detail		Status	Remarks/Comments		
Percentage of wastewater system inoperable:		40 %	estimated		
Anticipated duration of outage: (hours/days)		unknown			
Number of jurisdictions affected:		# 1	Anytown and surrounding unincorporated jurisdictions		
Number of people affected:		# 20,000			
Mutual aid received in last 24 hours:		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Mutual aid needed in next 24 hours:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Actions taken by Utility:		damage assessments in progress, mutual aid activation in progress			
Actions taken by Coordinating Partners:					
Form Completed By: John Thomas					
Name:John Thomas		Title:director, Anytown DPW			
Signature:					
Phone Number: 123-456-7890		Cell Phone:123-456-7894			
Additional Notes: As damage assessments are completed and additional info is gathered, this form will be amended					

Suggested Questions for Water/Wastewater Utilities Damage Assessment Form

Date: <u>June 1, 2006</u>	Time: _____	Pictures Taken? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Installation <input checked="" type="checkbox"/> Wastewater Installation <input type="checkbox"/> Treatment Facility <input type="checkbox"/>		
Plant Facility Name: <u>Anytown Elevated Water Tower</u>		
Address or Location: <u>Unit Block, Buel Avenue, Anytown, ST</u>		
Person Making Report: <u>John Thomas, Anytown Public Works</u>		
1) Is the water/wastewater system in operation or partially operating? Describe. If not, what is the cause, power loss or physical damage? <u>Collapse of 100,000 gallon elevated water tank</u>		
2) Is line power available? If not, are there any obvious reasons (damage overhead lines, line fuses open, line to electrical cabinet damaged)? <u>Line power is not available, downed trees and power lines in the immediate vicinity</u>		
3) If no power, is there adequate emergency power capacity (i.e., emergency generator) and fuel supply? <u>Emergency generators are available, however site is inoperable due to physical damage.</u>		
4) Have any pumps been damaged? Describe. <u>Throughout system, estimated 50% of pumps are offline, damaged, or destroyed due to storm.</u>		
5) Has flooding occurred? If so, determine (Y/N) or describe extent of flooding/damage to key buildings, transformers, motor controls, motors, electrical equipment, chemical feed system, stream bank erosion, protective berms. <u>Collapse of 100,000 gal elevated water tank that services 60% of Anytown's drinking water customers due to high winds sustained during Hurricane John.</u>		

Suggested Questions for Water/Wastewater Utilities Damage Assessment Form

Date: June 1, 2006 Time: _____ Pictures Taken? Yes No

Water Installation Wastewater Installation Treatment Facility

Plant Facility Name: Anytown Elevated Water Tower

Address or Location: Unit Block, Buel Avenue, Anytown, ST

Person Making Report: John Thomas, Anytown Public Works

6) Is there damage to control systems (SCADA) and ability to operate system manually?

7) Have treatment units been damaged?

Treatment plant sustained moderate/major physical damage to exterior of building.

8) Is there obvious collection system damage (lift stations, grinders)?

Undetermined amount of lift stations are offline and thought to be damaged and/or destroyed. Many locations are inaccessible to crews conducting damage assessments and emergency repairs where feasible.

9) Are piping systems functioning?

several main breaks and leaks are suspected throughout the system.

10) Is there evidence of spills or other reportable activity? Is there a plan to clean-up and treat area?

No evidence of spills, however the treatment plant sustained moderate/major damage to the facility that houses chemicals. If spills are noted, facility crews will clean up per any facility spill/response plans.

11) Are operators available?

A reduced number of operators are available. Anytown issued a voluntary evacuation notice prior to the storm and operators that were not on duty/call may have evacuated with their families.

Suggested Questions for Water/Wastewater Utilities Damage Assessment Form

Date: June 1, 2006	Time: _____	Pictures Taken? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Installation _____ Wastewater Installation _____ Treatment Facility _____		
Plant Facility Name: Anytown Elevated Water Tower		
Address or Location: Unit Block, Buel Avenue, Anytown, ST		
Person Making Report: John Thomas, Anytown Public Works		
12) Is there supply/access to treatment chemicals (e.g., chlorine, lime)? Unknown		
13) Is there a need for short term assistance (lab support, treatment chemicals, fuel, operators, pumps, heavy equipment and vehicles, etc.)? Possible assistance may be needed. Crews are still conducting damage assessments and exact needs are not known at this time.		
14) Will this system require alternate source of drinking water to meet customer needs? Are interconnects with neighboring systems possible? Yes. Anytown has sustained the loss of the 100,000 gallon water tank that serviced a large percentage of the drinking water customers. Interconnects with neighboring systems are under investigation.		
15) Does this system required coliform testing before it may be used for human consumption? Yes		
16) Has a precautionary boil water notice been issued? Yes		
17) Have the customers been advised to conserve water at this time? yes		
18) Have there been by-passes of raw sewage that may adversely impact the potable water system (describe)? Unknown at this time.		
19) What is the location (e.g., GPS coordinates) for critically damaged facilities/equipment? N 29.48233; W 90.54846.		

Emergency Repair Form

Instructions: This form should be used to document all emergency repairs that are conducted to restore service after a disruption. Begin by recording the date and location of the work site. If an address is unknown, use GPS coordinates or mile markers. List the names of all employees on the crew that are performing the work detailed on this form and the number of hours worked to make the repair by each employee. Take photos of ALL damages before beginning repairs that show as much of the damage as possible. If the damage covers a large area, take multiple photographs from different angles and log the photo numbers in the space provided. When describing the work performed, be as descriptive as possible and include measurements where applicable. All equipment that was used to make repairs should be detailed along with the amount of time the equipment was used. If equipment was rented to complete repairs this should be noted and all receipts and rental agreements should be kept with this form and turned in at the end of each shift/day. If an equipment operator was required to operate the equipment, make sure the operator's name is included with the employees performing the work. If an additional vehicle is used to transport large equipment, make sure to include that vehicle as well.

Date: 06/20/2006

Location of Work/Address:

N 29.48233; W 90.54846.

Employee(s) Performing Repairs

Employee Name	Hours Worked
J. Jones	9
J. Smith	10
H. Williams	10
R. Grey	8
G. Davis	9
B. Lewis	10

Photo Log Number(s) of Damage: 001-060406

Description of Work Performed: Replace and install the following (after removal of debris)

1. Foundations to restore anchor bolts elements – 4 each
2. Lattice work legs to support elevated water tank – 4 each
3. 100,000 gallon, steel plate, 28-FT tall x 26-FT diameter, elevated water tank – 1 each
4. 150 HP to 4000 GPM pump and associated electrical power to supply water to the elevated tank – 1 each
5. Cast iron piping and associated valves connected to water tank – 200 LF
6. 100kW diesel fueled emergency generator – 1 each
7. 8 – FT high, 6 gauge chain link fencing – 30 LF

Vehicle Usage

Vehicle ID	Drive Time	Stand By Time
MC21 (pickup truck)	3.5	
MC19 (pickup truck)	2.5	

Equipment Used

Type	Hours Used
Loader, Wheel, 130 HP, Caterpillar	10
Dump Trucks	10
Crane	8
Backhoe-loader	8

Description of Materials Used to Make Repair: Chain saws, various small tools. This was day one of a multiple day repair job. Day one consisted of removal of debris from site, repairing any minor damage to foundation, and site preparation for replacement of 100,000 gallon elevated water tower.

Photolog

Instructions: This form should be used to document photographically the status of the utility's systems and facilities immediately after a disaster event when it is safe to do so. Please include photos from various angles so that as much damage as possible is shown. For each photo, a caption should be included that tells what the picture is of.

Initials
RM

Date: 06/04/2006

Time: 11:30AM

Facility Name: Anytown Elevated Water Tower

Address or Location: Unit Block Buel Avenue, Anytown, ST

Person Making Report: R. Mitchell, Damage Assessment Team



collapsed water tower, aerial view
Caption:



close up of collapsed water tower
Caption:



another view of collapsed water tower
Caption:

CLICK BELOW TO INSERT A PHOTO

Caption:

**DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
FORCE ACCOUNT LABOR SUMMARY RECORD**

PAGE _____ OF _____

O.M.B. No. 1660-0017
Expires December 31, 2011

APPLICANT Anytown		PA ID NO. 000-FFFFF-00	PROJECT NO. SPW-F08	DISASTER 4007-DR-ST / 06012006								
LOCATION/SITE Unit Block, Buel Avenue, Anytown, ST		CATEGORY F		PERIOD COVERING June 20-25, 2006								
DESCRIPTION OF WORK PERFORMED Repair of collapsed elevated water tower												
NAME	DATES AND HOURS WORKED EACH WEEK					COSTS						
	JOB TITLE	DATE	6/20-25						TOTAL HOURS	HOURLY RATE	BENEFIT RATE/HR	TOTAL HOURLY RATE
NAME J. Jones	REG.	40						40	17.75	160%	28.33	1133.20
JOB TITLE Supervisor, equipment operator	O.T.	20						20	28.40	109%	30.86	617.20
NAME J. Smith	REG.	40						40	15.25	160%	16.85	674.00
JOB TITLE equipment operator	O.T.	20						20	22.88	109%	23.97	479.40
NAME H. Williams	REG.	40						40	16.00	160%	17.60	704.00
JOB TITLE welder	O.T.	20						20	24.00	109%	25.09	501.80
NAME R. Grey	REG.	40						40	14.25	160%	15.85	634.00
JOB TITLE mechanic	O.T.	20						20	21.38	109%	22.47	449.40
TOTAL COSTS FOR FORCE ACCOUNT LABOR REGULAR TIME										\$ 3145.20		
TOTAL COST FOR FORCE ACCOUNT LABOR OVERTIME										\$ 2047.80		
I CERTIFY THAT THE INFORMATION ABOVE WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.												
CERTIFIED Susan Combs			TITLE Finance Director, Anytown DPW					DATE 7/1/2006				

**DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
RENTED EQUIPMENT SUMMARY RECORD**

PAGE _____ OF _____

O.M.B. No. 1660-0017
Expires December 31, 2011

APPLICANT Anytown, ST				PA ID NO. 000-FFFFF*00	PROJECT NO. SPW-F08	DISASTER 4007-DR-ST / 06012006		
LOCATION/SITE Unit Block, Buel Avenue, Anytown, ST				CATEGORY F	PERIOD COVERING June 20-25, 2006			
DESCRIPTION OF WORK PERFORMED Repair of collapsed elevated water tower								
TYPE OF EQUIPMENT Indicate size, Capacity, Horsepower Make and Model as Appropriate	DATES AND HOURS USED	RATE PER HOUR		TOTAL COST	VENDOR	INVOICE NO.	DATE AND AMOUNT PAID	CHECK NO.
		W/OPR	W/OUT OPR					
Loader, Wheel, 130 HP, Caterpillar	6/20-6/25	20.00		820.00	Total Equipment Rentals	1514526	7/1/2006	14975
	41							
Auger, Truck Mntd	6/20-6/25	29.00		464.00	Total Equipment Rentals	1514526	7/1/2006	14975
	16							
Crane	6/20-6/25	95.00		1425.00	Total Equipment Rentals	1514526	7/1/2006	14975
	15							
Truck, Flatbed	6/20-6/25	43.00		1118.00	Total Equipment Rentals	1514526	7/1/2006	14975
	26							
GRAND TOTAL						3827.00		
I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.								
CERTIFIED Susan Combs		TITLE Finance Director, Anytown DPW				DATE Any 7/5/2006		

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
MATERIALS SUMMARY RECORD

PAGE 1 OF 1

O.M.B. No. 1660-0017
Expires December 31, 2011

APPLICANT Anytown	PA ID NO. 000-FFFFF-00	PROJECT NO. SPW-F08	DISASTER 4007-DR-ST / 06012006				
LOCATION/SITE Unit Block, Buel Avenue, Anytown, ST		CATEGORY F	PERIOD COVERING June 20-25, 2006				
DESCRIPTION OF WORK PERFORMED Repair of collapsed elevated water tower							
VENDOR	DESCRIPTION	QUAN.	UNIT PRICE	TOTAL PRICE	DATE PURCHASED	DATE USED	INFO FROM (CHECK ONE) INVOICE <input type="checkbox"/> STOCK <input checked="" type="checkbox"/>
KC Electric	various electrical parts	1	2115.85 EA	2115.85	6/15/2006	6/20-25	X
Farmers Coop	8-FT high, 6 gauge chain link fencing	300LF	4.25 per LF	1275.00	6/15/2006	6/20-25	X
Pittsburgh Tank and Tower Co.	Foundations to restore anchor bolts	4	5135.35 EA	20541.40	6/12/2006	6/20-25	X
Pittsburgh Tank and Tower Co.	Lattice work legs to support elevated water tank	4	1500.00 EA	6000.00	6/12/2006	6/20-25	X
Pittsburgh Tank and Tower Co.	100,000 gallon, steel plate, 28-FT tall x 26-FT diameter, elevated water tank	1	25789.00	25789.00	6/12/2006	6/20-25	X
Farmers Coop	Fence repair materials	1	150.00	150.00	6/15/2006	6/20-25	X
Farmers Coop	5-FT high x 20-FT wide opening, double-wide swing gate	1	500.00	500.00	6/15/2006	6/20-25	X
Pittsburgh Tank and Tower Co.	Cast iron piping and valves	200LF	30.00 per L	6000.00	6/10/2006	6/20-25	X
GRAND TOTAL —				62,371.25			

I CERTIFY THAT THE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED
Susan Combs

TITLE
Finance Director, Anytown DPW

DATE
7/1/2006