

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Do not quote or cite.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.

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## 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 lying 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.



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	
<input type="checkbox"/> Other		
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: 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

1) Is the water/wastewater system in operation or partially operating? Describe. If not, what is the cause, power loss or physical damage?  
Collapse of 100,000 gallon elevated water tank

2) Is line power available? If not, are there any obvious reasons (damage overhead lines, line fuses open, line to electrical cabinet damaged)?  
Line power is not available, downed trees and power lines in the immediate vicinity

3) If no power, is there adequate emergency power capacity (i.e., emergency generator) and fuel supply?  
Emergency generators are available, however site is inoperable due to physical damage.

4) Have any pumps been damaged? Describe.  
Throughout system, estimated 50% of pumps are offline, damaged, or destroyed due to storm.

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.  
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.

## 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 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>
<b>6) Is there damage to control systems (SCADA) and ability to operate system manually?</b>  
<b>7) Have treatment units been damaged?</b> Treatment plant sustained moderate/major physical damage to exterior of building.
<b>8) Is there obvious collection system damage (lift stations, grinders)?</b> 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.
<b>9) Are piping systems functioning?</b> several main breaks and leaks are suspected throughout the system.
<b>10) Is there evidence of spills or other reportable activity? Is there a plan to clean-up and treat area?</b> 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.
<b>11) Are operators available?</b> 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: <u>June 1, 2006</u> Time: _____      Pictures Taken?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Installation _____    Wastewater Installation _____    Treatment Facility _____
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>
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.



# 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

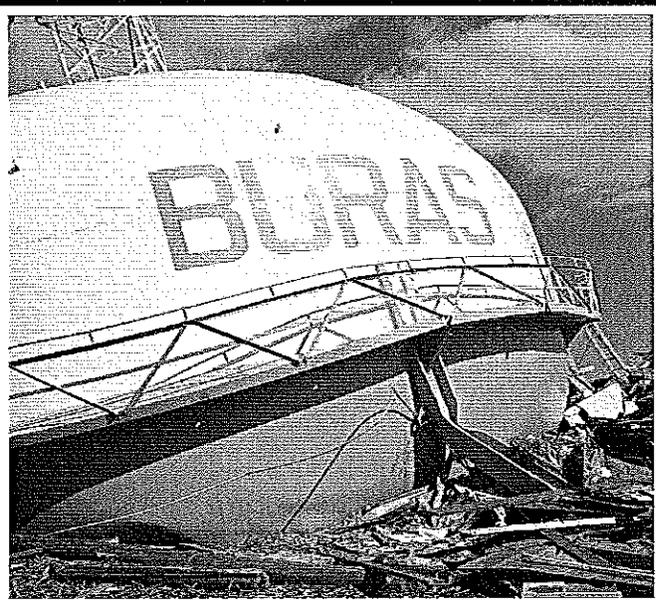
Facility Name: Anytown Elevated Water Tower

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

Person Making Report: R. Mitchell, Damage Assessment Team



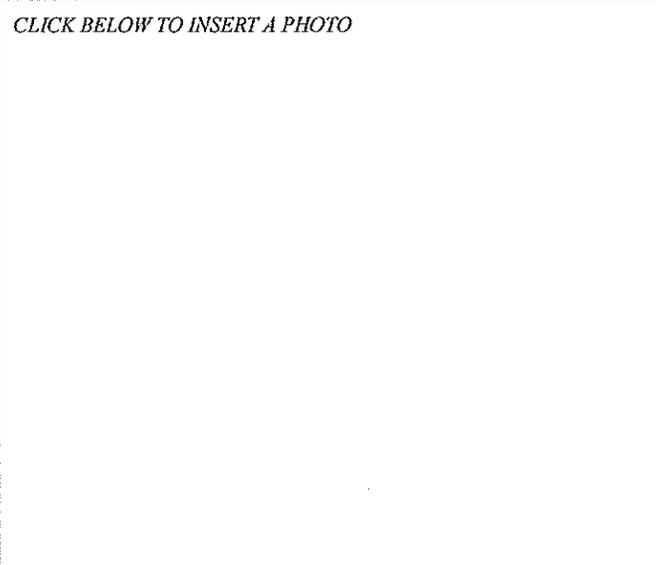
Caption: collapsed water tower, aerial view



Caption: close up of collapsed water tower



Caption: another view of collapsed water tower



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				
	DATE	6/20-25						TOTAL HOURS	HOURLY RATE	BENEFIT RATE/HR	TOTAL HOURLY RATE	TOTAL COSTS
JOB TITLE												
NAME <i>J. Jones</i>	REG.	40						40	17.75	160%	28.33	1133.20
JOB TITLE <i>Supervisor, equipment operator</i>	O.T.	20						20	28.40	109%	30.86	617.20
NAME <i>J. Smith</i>	REG.	40						40	15.25	160%	16.85	674.00
JOB TITLE <i>equipment operator</i>	O.T.	20						20	22.88	109%	23.97	479.40
NAME <i>H. Williams</i>	REG.	40						40	16.00	160%	17.60	704.00
JOB TITLE <i>welder</i>	O.T.	20						20	24.00	109%	25.09	501.80
NAME <i>R. Grey</i>	REG.	40						40	14.25	160%	15.85	634.00
JOB TITLE <i>mechanic</i>	O.T.	20						20	21.38	109%	22.47	449.40
<b>TOTAL COSTS FOR FORCE ACCOUNT LABOR REGULAR TIME</b>												<b>\$ 3145.20</b>
<b>TOTAL COST FOR FORCE ACCOUNT LABOR OVERTIME</b>												<b>\$ 2047.80</b>

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
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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							
<b>GRAND TOTAL</b>							<b>3827.00</b>	

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
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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	STOCK
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
<b>GRAND TOTAL</b>					<b>62,371.25</b>			

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

CERTIFIED  
 Susan Combs

TITLE  
 Finance Director, Anytown DPW

DATE  
 7/1/2006