

# FLOOD CONTROL



## EMERGENCY OPERATIONS

LOCK HAVEN AREA FLOOD PROTECTION AUTHORITY

Protection: Of our past; in the present; for our future

(REVISED 2/2020)

## INDEX

### GENERAL

### INTRODUCTION

Pages 1-4	S.O.P. – A
Page 5	S.O.P. – B
Page 6	Emergency Management Agency Organizational Chart
Page 7	City of Lock Haven Flood Response Team
Page 8	Additional Manpower Pool
Page 9	Others to be Notified
Page 10	Acronyms
Page 11	River & Stream Gauge Readings Form (Additional Forms End of Manual)
Page 12	Emergency Operations Event Log (Additional Forms End of Manual)
Page 13	Closure #2 Placement of Personnel
Page 14	8 Feet USGS Gauge
Page 15	10 Feet USGS Gauge
Page 16	18 Feet USGS Gauge
Page 17	22 Feet USGS Gauge
Page 18	24 Feet USGS Gauge
Page 19	26 Feet USGS Gauge
Page 20	29 Feet USGS Gauge
Page 21	30 Feet USGS Gauge
Page 22	31 Feet USGS Gauge
Page 23	37.5 Feet USGS Gauge
Page 24	38.5 Feet USGS Gauge

**GENERAL:**

This manual incorporates the emergency requirements set forth in the U.S. Army Corps of Engineers **OPERATIONS AND MAINTENANCE MANUAL** and the City of Lock Haven's **EMERGENCY OPERATIONS PLAN**. In the event of conflict, **THE CORPS' OPERATION AND MAINTENANCE MANUAL REQUIREMENTS WILL TAKE PRECEDENCE**.

**PROCEDURES ARE BASED ON A FORECAST OF CONTINUING  
RISE IN WATER LEVELS**

# FLOOD EMERGENCY OPERATIONS MANUAL

## INTRODUCTION

The Lock Haven Flood Protection Project was authorized by Section 401 (a) of the 1986 Water Resources Development Act. The project was to be constructed to provide protection at least sufficient to prevent any future flood losses to the City from flooding equivalent to a level of flooding 50 percent greater than the level of flooding which occurred as a result of Tropical Storm Agnes in 1972. However, as a result of studies made during the planning and design stages, the final plan that was recommended and constructed was a plan which provides for 200-year protection.

The project protects the City against a 200-year flood on the West Branch of the Susquehanna River and a coincident flood on Bald Eagle Creek. The flood protection system will protect low-lying areas of Lock Haven against flows of 238,000 cfs from the West Branch and 66,220 cfs from Bald Eagle Creek. A minimum freeboard of three feet above the design flowline has been provided.

The project consists of the following features: About 31,500 feet of earth levee, about 2,180 feet of half levee with a reinforced earth wall, and about 750 feet of floodwall, all with appurtenant drainage structures, (38 in all). There are also 5 closure structures, 3 of which are railroad crossings, (2 Norfolk Southern and 1 Nittany Bald-Eagle), 1 at the Jay Street Bridge, and 1 twin-cell reinforced concrete box culvert at the Pennsylvania Canal located on the Hammermill property; 1 sanitary pumping station; 5 ponding areas; and several recreation areas of various sizes and scopes.

Local Cooperation Agreement: The Lock Haven Area Flood Protection Authority (which is made up of 4 residents from the City of Lock Haven and 3 residents of Woodward Township) and the Department of the Army was entered into on 14 March 1991, as required by Section 221 of Public Law 91-611.

The project was divided into three sections: Unit I, Unit IIA and Unit IIB.

Various agreements were entered into with Conrail, (now Norfolk Southern), International Paper, (Hammermill), now First Quality Tissue and the Pennsylvania Department of Transportation, (PennDOT).

**S.O.P.-A**

**STANDARD OPERATING PROCEDURE**

**DIRECTOR OF PUBLIC WORKS**

**FLOOD EMERGENCY ACTION PLAN**

Designation of the Director of Public Works: Shall be responsible for the development and maintenance of, and directly in charge of an organization responsible for the efficient operation and maintenance of all structures and facilities during flood periods and for continuous inspection and maintenance of the project works during periods of low water.

**Name: Anthony Stopper**

Office: 99 Second Avenue  
Lock Haven, PA 17745

Residence: 61 Vesper Street  
Beech Creek, PA 16822

Office: (570) 893-5613

FAX: (570) 893-5905

Cell: (570) 295-3637

**REQUIRED MATERIALS AND INFORMATION**

The Director of Public Works should have the following materials and information on hand:

- A. Copy of the Levee Operations and Maintenance Manual (O&M)
- B. Copy of the City Emergency Operations Plan
- C. Directory of Points of Contact (O&M)
- D. Notification and Resource Manual
- E. Copy of Event Action Log
- F. Copy of Flood Control Emergency Operations Manual

1. **HIGH WATER WATCH:** A situation wherein the water has reached a level that the Director of Public Works would want to monitor, mainly from late May through Labor Day; this is the period in which the Summer Concert Series is held as well as the swimming season.

A. **WATCH ACTIONS**

1. Report the Public Works facility, located at 99 Second Avenue, Lock Haven, PA. The Director of Public Works MAY choose to remain mobile during the event.
  2. Refer to the Floating Stage High Water Pullout Plan (Addendum A), boat dock and beach operations plans. Take appropriate action.
  3. Alert the City Manager and EMA Coordinator.
2. **LIMITED EMERGENCY CONDITION:** A situation wherein a potential hazard has reached a dangerous level and could affect the safety of the City with very little warning. This condition recognizes a potential serious situation and provides a posture of advanced readiness in place until the serious situation has escalated to a full emergency or the danger has passed. Key FCEOP staff members would be mobilized.

A. **LIMITED EMERGENCY RESPONSE ACTIONS:**

1. Report the Public Works facility, located at 99 Second Avenue, Lock Haven, PA. The Director of Public Works MAY choose to remain mobile during the event.
2. Upon notification of an emergency, notify the City Manager, the CC Communications Center, Chief of Police, Fire Chief, and EMA Coordinator.
3. Notify the Flood Response Team and Levee Patrols and place them on standby.
4. Review Flood Control Emergency Operations Plan.
5. Open official even action log.
6. Review shift schedule for Flood Response Team and Levee Patrols.
7. Review “unmet needs” of flood emergency manpower and equipment.
8. Prepare for a more severe emergency condition.
9. Notify: First Quality Tissue; Norfolk Southern Railroad; PennDOT, as to the emergency condition.

**PROCEDURES ARE BASED ON A FORECAST OF A CONTINUING RISE IN WATER LEVELS**

3. **FULL EMERGENCY**: A situation where the potential emergency activity has increased to the point where full operation of the flood protection system may need to be put into place and will require the full mobilization of the Flood Response Team in preparation for the erection and operation of the closure structures. The levee patrols are required to function on a 24 hour basis to cope with the full emergency condition.

A. **FULL EMERGENCY RESPONSE ACTION**:

MOBILIZATION: Upon receipt of information that a full emergency condition is imminent, the Director should:

- a. Immediately confer with the City Manager, the City's Emergency Management Coordinator, and elected officials.
- b. Activate the Flood Response Team and the Levee Patrol.
- c. Notify the Clinton County Communications Center, First Quality Tissue, Norfolk Southern Railroad, and PennDOT that we are in a flood response and the closure procedures will be initiated.
- d. Ensure all access points to the top of levee are open (open gates, remove bollards).
- e. Activate the Flood Control Emergency Operations Center (FCEOP), ensuring that it is adequately staffed.
- f. Check message and event-action logs to verify that items requiring action are in the process of being completed. Resolve any staff coordination or procedure problems.
- g. Maintain contact with levee watchers, response team personnel, City officials and National Weather Service via 2-way radios and telephones.

4. **EVACUATION**:

**THIS IS A DECISION THAT WILL BE MADE BY THE CITY'S EMERGENCY MANAGEMENT AGENCY**

5. **RECOVERY:** When flood conditions are considered safe for the closure structures to be reopened.
- a. Reopen the closure structures.
  - b. Make the proper notifications in accordance with the O&M manual and the Flood Control Emergency Operations Manual.
  - c. Release unneeded personnel as deemed appropriate.
  - d. Make a detailed inspection of the Flood Protection System and report any evidence of distress to the U.S. Army Corps of Engineers, as per the O&M Manual.
  - e. Ensure all gates are closed and bollards are replaced.



**S.O.P.-B**

**STANDARD OPERATING PROCEDURE**

**FORECASTS**

**FLOOD EMERGENCY ACTION PLAN**

**NEVER DEPEND UPON RUMOR OR HEARSAY FOR GUIDANCE**

1. **SEQUENCE OF OPERATIONS:**

The order in which the various features of the project are placed in service are based on readings from the USGS gauge located at Sta. 177+15, (approximately opposite Hanna Street) and are shown in the **Flood Operations Plan** (Exhibit J).

The USGS gauges is calibrated, so that "0" is equal in elevation to 535.18.  
This is an automated gauge accessible by telephone anytime day or night.

Two other gauges are located on the Bald Eagle Creek, one on the Castanea Bridge, and the other on the Route 220 Bald Eagle Creek Bridge (access through Hammermill). Neither is an automated gauge. It must be noted, however, that a reading on the USGS gauge cannot be transferred directly to a corresponding reading on the bridge gauges. My experience has shown that the bridge gauges are typically about 3 feet lower than the USGS gauge.

The official Federal agency in Pennsylvania for forecasting river stages is the Middle Atlantic River Forecasting Center. Web Site - <https://www.weather.gov/marfc/>

**Middle Atlantic River Forecasting Center  
National Weather Service  
328 Innovation Boulevard  
Suite 330  
State College, PA 16803  
1-814-231-2403**



**CITY OF LOCK HAVEN**  
**FLOOD RESPONSE TEAM**

**PURPOSE:** Teams primary function is to assist in the erection of the closure structures under the direction of the Levee Superintendent. The team will consist of the following personnel:

<u>NAME</u>	<u>OFFICE</u>	<u>HOME</u>	<u>CELL</u>	<u>RADIO</u>
JARED GIST	570-893-5917	570-398-1674	570-447-7335	CITY 7-1
TONY STOPPER	570-893-5613		570-295-3637	CITY BASE 3
LORI STOVER	570-893-5917		570-367-9165	CITY BASE 2
JOSHUA BECHDEL/LEVEE	570-893-5917		570-660-4047	
 <b><u>STREET DEPARTMENT</u></b>				
KYLE DALE	570-893-5917		570-660-3309	CITY 3-1
TOM GALLAGHER	570-893-5917	570-726-8360	570-295-2966	CITY BASE 3
BEN CONFER	570-893-5917		570-660-7162	CITY BASE 3
DARRELL SHADE	570-893-5917		570-660-7714	
JEREMY WALLACE	570-893-5917		570-295-9367	
KYLE LONG	570-893-5917		570-502-1020	
WILLIAM BRININGER	570-893-5917	814-383-2408	814-360-5497	

**ADDITIONAL MANPOWER POOL**

**WATER DEPT**

<u>NAME</u>	<u>WORK</u>	<u>HOME</u>	<u>CELL</u>	<u>RADIO</u>
CUMMINGS HENRY	570-893-5917	570-865-5395	570-295-5370	CITY 5-1
BRIAN SHIRK	570-893-5917		570-295-7533	
DARYL CLEMENTS	570-893-5917	570-726-8018	570-660-3230	
ELWOOD DUCK	570-893-5917	570-748-7754	570-295-7979	
KYLE FOX	570-893-5917	570-725-3053	570-502-9879	

**SEWAGE TREATMENT PLANT**

<u>NAME</u>	<u>WORK</u>	<u>HOME</u>	<u>CELL</u>	<u>RADIO</u>
JAY FRAZIER	570-893-5920	570-962-2838	570-484-1590	CITY 4-1
GEORGE BROWN	570-893-5920	570-748-8324	570-295-6801	
STEVE PACKER	570-893-5920	570-748-9643	570-502-0156	
ABBI RATHMEL	570-893-5920	570-769-2490	570-295-0043	
CALEB ROGERS	570-893-5920		814-404-3722	
DAVE SORGEN	570-893-5920	570-748-1070	570-295-3797	
BILL TODD	570-893-5920		570-502-4427	
HENRY JOLLOFF	570-893-5920		570-367-9860	

**CITY FIRE DEPT.**

<u>NAME</u>	<u>WORK</u>	<u>HOME</u>	<u>CELL</u>	<u>RADIO</u>
ERIC BRUNGARD CITIZENS	570-748-3593		570-367-9679	
TYLER WOODING HOPES	570-748-5958		570-295-8821	
BOB NEFF HAND IN HAND	570-748-6462	570-748-7565	570-295-8105	

**OTHERS TO BE NOTIFIED THAT WE ARE IN A FLOOD RESPONSE**

<b><u>NAME</u></b>	<b><u>DEPARTMENT</u></b>	<b><u>OFFICE</u></b>	<b><u>HOME</u></b>	<b><u>CELL</u></b>	<b><u>RADIO</u></b>
GREGORY WILSON	CITY MANAGER	570-893-5907		716-640-5830	
TONY STOPPER	DIR. PUBLIC WKS	570-893-5613		570-295-3637	CITY BASE 3
MIKE GLANTZ	SEWER DEPT.	570-893-5920	570-748-5883	570-858-1529	CITY BASE 4
EDWARD WATSON OR	AIRPORT	570-748-5123	800-224-7511	800-224-7511	
DOUG WENKER	AIRPORT	570-748-5123	570-769-7148	570-295-7952	
ROBERT NEFF	FIRE ADMINISTRATOR	570-748-6462		570-295-8105	
NORM WOLFROM	DEPUTY CHIEF		570-748-9032	570-220-9682	
KRISTIN SMITH	POLICE CHIEF	570-893-5630		570-377-0991	

## ACRONYMS

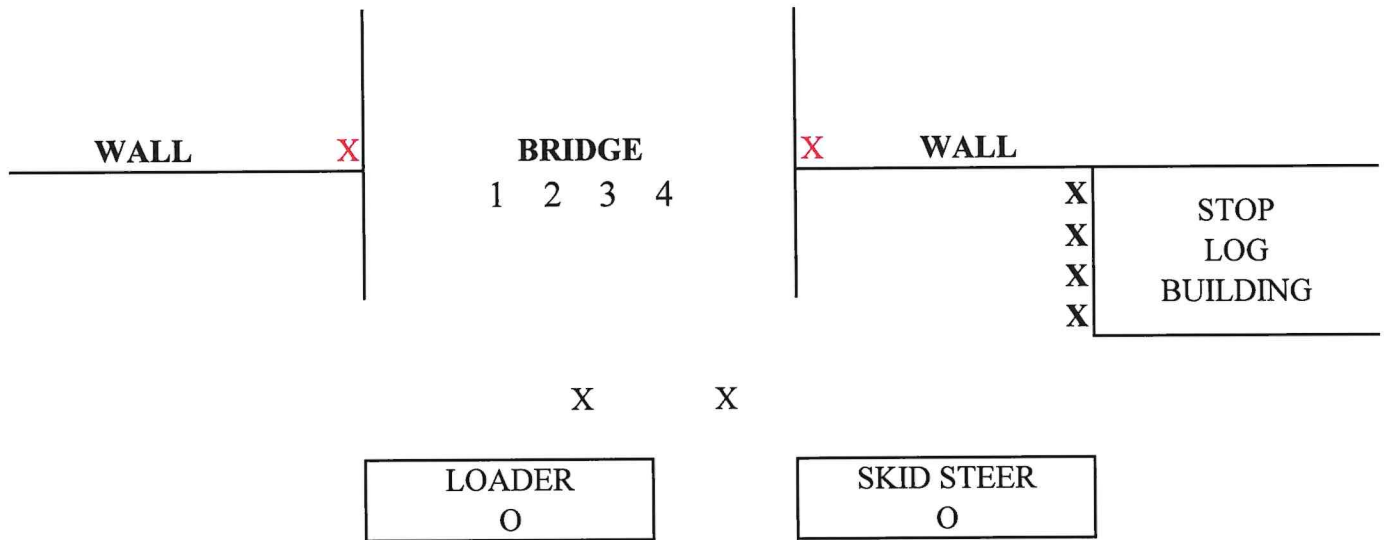
EOC	EMERGENCY OPERATIONS CENTER
EMA	EMERGENCY MANAGEMENT AGENCY
EOP	EMERGENCY OPERATIONS PLAN
PEMA	PA EMERGENCY MANAGEMENT AGENCY
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
SOP	STANDARD OPERATING PROCEDURE
EMC	EMERGENCY MANAGEMENT COORDINATOR
RACES	RADIO AMATEUR CIVIL EMERGENCY SERVICES
LEPC	LOCAL EMERGENCY PLANNING COMMITTEE
EBS	EMERGENCY BROADCASTING SYSTEM
TCP	TRAFFIC CONTROL POINT
ACP	ACCESS CONTROL POINT
ARES	AMATEUR RADIO EMERGENCY SERVICE
PSP	PA STATE POLICE
FCOC	FLOOD CONTROL OPERATIONS CENTER
FCEOP	FLOOD CONTROL EMERGENCY OPERATIONS PLAN
LHAFPA	LOCK HAVEN AREA FLOOD PROTECTION AUTHORITY
STP	SEWAGE TREATMENT PLANT
O&M	OPERATIONS AND MAINTENANCE MANUAL







**PLACEMENT OF PERSONNEL**



**10 PEOPLE NEEDED**

**X=INDICATES GROUND PERSONNEL**

**X=REQUIRES SAFETY HARNESS**

**O=EQUIPMENT OPERATOR**

**8 FEET USGS GAUGE**

**- ELEVATION GRANT STREET DAM**

**10 FEET USGS GAUGE**

**- WALKWAY AT AMPHITHEATER COVERED**

**NOTIFY BEACH OPERATIONS (MID JUNE THRU MID AUGUST)**

**BEACH (570) 893-5929**

**NOTIFY DIRECTOR OF COMMUNITY LIFE RELATIVE TO SUMMER  
CONCERT SERIES (MEMORIAL DAY THRU LABOR DAY)**

**KASEY CAMPBELL**

**(C) 215-510-9291**

**(W) 570-893-5612**

**PREPARE TO REMOVE HANDRAILS FROM BEACH SEATING AREA**

**- REFER TO THE FLOATING STAGE, BOAT DOCK AND BEACH HIGH WATER SOP PLANS**

## **18 FEET USGS GAUGE**

- PREPARE TO REMOVE REMAINING RAILINGS FROM BEACH AREA**
- CHECK BEACH HOUSE AND REMOVE ANY DAMAGABLE ITEMS**
- TURN POWER OFF TO BEACH HOUSE**

**22 FEET USGS GAUGE**

**- PREPARATIONS FOR CLOSURE NO. 3**

**REFERENCE:** O&M MANUAL PAGES 6-5 & 6-6  
**FLOOD CONTROL EMERGENCY OPERATIONS  
MANUAL S.O.P. (H)**

**NOTIFICATIONS:** NORFOLK SOUTHERN RAILROAD  
**NORFOLK SOUTHERN TRACK SUPERVISOR  
CHRIS FOUNTAIN 1-412-579-8489 (CELL)**  
**NORFOLK SOUTHERN EMERGENCY LINE 1-800-453-2530**  
**SIGNAL SUPERVISOR - KEVIN WHITE 570-971-0055**

**CLINTON COUNTY 570-748-2936  
COMMUNICATIONS CENTER  
RADIO: CITY UNITY TO DISPATCH**

**PERSONNEL:** AT LEAST 4 1 OF WHOM CAN OPERATE A  
CUTTING TORCH!

**EQUIPMENT:** TRUCK  
CUTTING TORCH  
SANDBAGS } LOCATED AT AIRPORT EQ. BLDG.  
TARPS }  
LADDER } LOCATED AT STOP LOG BUILDING  
WINCH OR CABLE

**24 FEET USGS GAUGE**

**- PREPARATIONS FOR ERECTION OF CLOSURE NO. 2**

**REFERENCE: O&M MANUAL PAGES 6-6, 6-7 & 6-8**

**FLOOD CONTROL EMERGENCY OPERATIONS  
MANUAL S.O.P. (H)**

**INSTRUCTION SHEET LOCATED IN STOP LOG  
BUILDING**

**NOTIFICATIONS: PENN DOT**

**CHRIS MANEY, COUNTY MANAGER  
ADAM BECHDEL, ASST. MANAGER  
ERIC THOMPSON, ASST. MANAGER**

**570-726-2200  
570-660-7811 (AFTER HOURS)  
570-660-6977 (AFTER HOURS)**

**COMMUNICATIONS CENTER 570-748-2936  
RADIO CITY UNIT - DISPATCH**

**WOODWARD TOWNSHIP 570-748-6871**

**PERSONNEL: 10 PERSONS NEEDED**

**EQUIPMENT: STOPLOGS }  
LADDERS }  
SLINGS }  
TARPS }  
TOOLS }  
FRONT END LOADER W/BOOM }  
BACKHOE }  
AIR COMPRESSOR }**

**LOCATED IN STOP LOG BUILDING**

**26 FEET USGS GAUGE**

**- BEGIN CLOSING CLOSURE NO. 2**

**- PREPARATIONS FOR CLOSURE NO. 4**

**REFERENCE: O&M MANUAL PAGES 6-8 & 6-9**

**FLOOD CONTROL EMERGENCY OPERATIONS  
MANUAL S.O.P. (H)**

**NOTIFICATIONS: NITTANY BALD-EAGLE RAILROAD**

<b>FLOOD EVENT/ ANY EMERGENCY</b>	<b>DISPATCH ALTOONA EAST</b>	<b>1-404-877-9523</b>
	<b>BUFFALO MAIN DISPATCH</b>	<b>1-404-877-9506</b>
	<b>PETE SYMONS TRACK SUPT.</b>	<b>570-220-7041</b>

**ROUTINE CLOSING JIM MACKEY GENERAL MGR. 1-814-355-4736**  
**1-814-280-2315 CELL PHONE**

**FIRST QUALITY TISSUE**

<b>FRONT DESK</b>	<b>570-893-5863</b>
<b>HEAD OF SECURITY - JODI BUCK</b>	<b>570-502-2457</b>
<b>CELL PHONE</b>	<b>570-295-4389</b>

**PERSONNEL: AT LEAST 4 1 OF WHOM CAN OPERATE A  
CUTTING TORCH!**

<b>EQUIPMENT:</b>	<b>TRUCK</b>	
	<b>CUTTING TORCH</b>	
	<b>SANDBAGS</b>	<b>} LOCATED IN SHED ON SITE</b>
	<b>TARPS</b>	
	<b>LADDER</b>	
	<b>WINCH OR CABLE</b>	



**30 FEET USGS GAUGE**

**- BASE ELEVATION CLOSURE NO. 2**

**31 FEET USGS GAUGE**

**- BEGIN CLOSING CLOSURE NO. 1**

**- BEGIN CLOSING CLOSURE NO. 4**

**37.5 FEET USGS GAUGE**

**- OVER TOPPING OCCURS ALONG ROUTE 220  
EMBANKMENT AND THE AIRPORT**

**38.5 FEET USGS GAUGE**

**- TOP OF LEVEE**