COUNTY OF ALLEGHENY

DEPARTMENT OF EMERGENCY SERVICES

2010 Flood-Fight Preparedness

Presenters:

Allegheny County Emergency Services

National Weather Service - Pittsburgh

U. S. Army Corps of Engineers - Pittsburgh District

Today's Presentation:

We will present ACES, USACE and NWS resources that can be used to fight floods

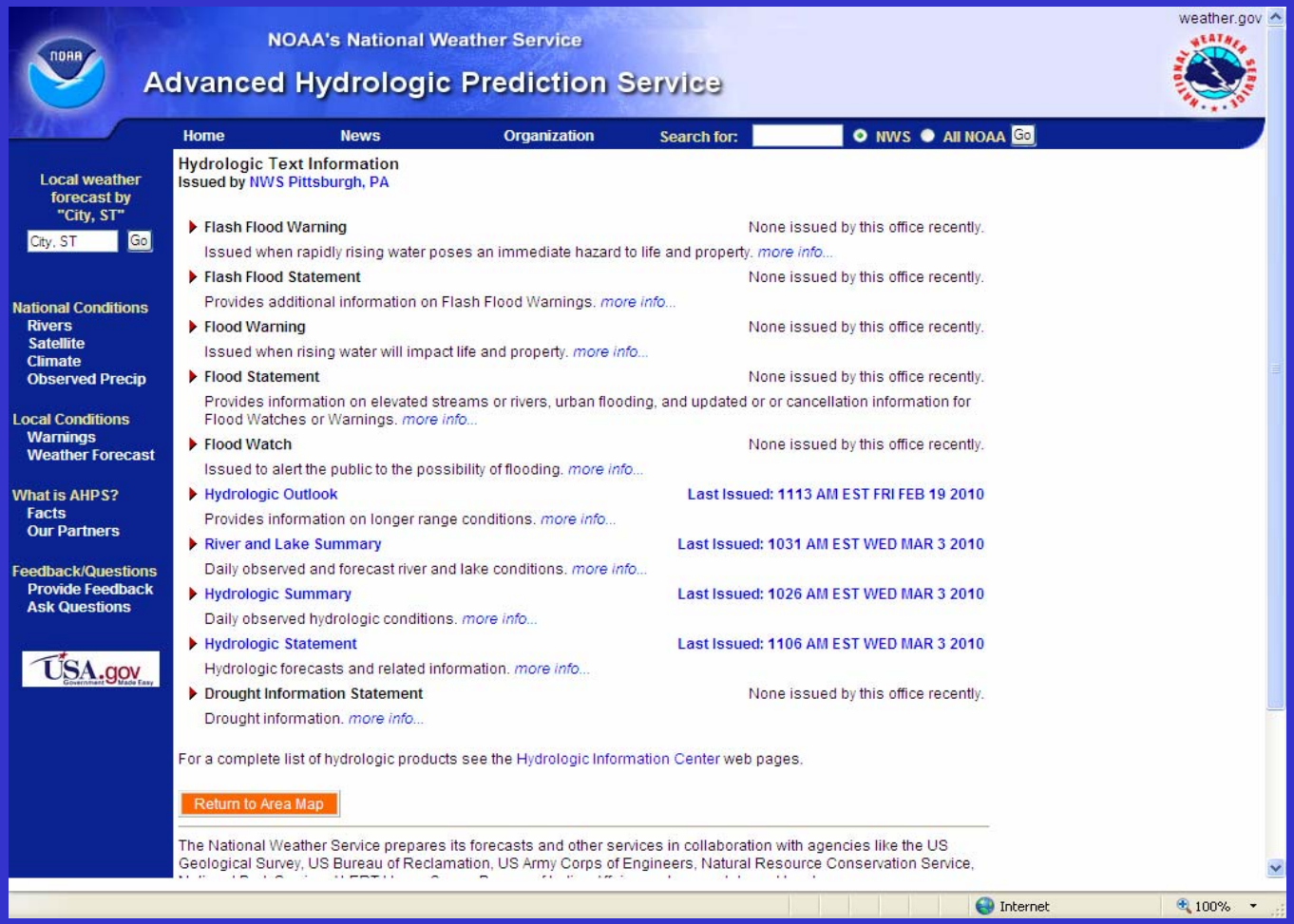
- Before a flood – Preparedness
- During a flood – Response

Data needed for floods:

- Weather information – rainfall, snow cover & temperature
- River levels (stage, gage height)
- River streamflow (discharge)

Data needed for floods:

http://www.weather.gov/water/textprods/index.php?wfo=pbz



Data needed for floods:

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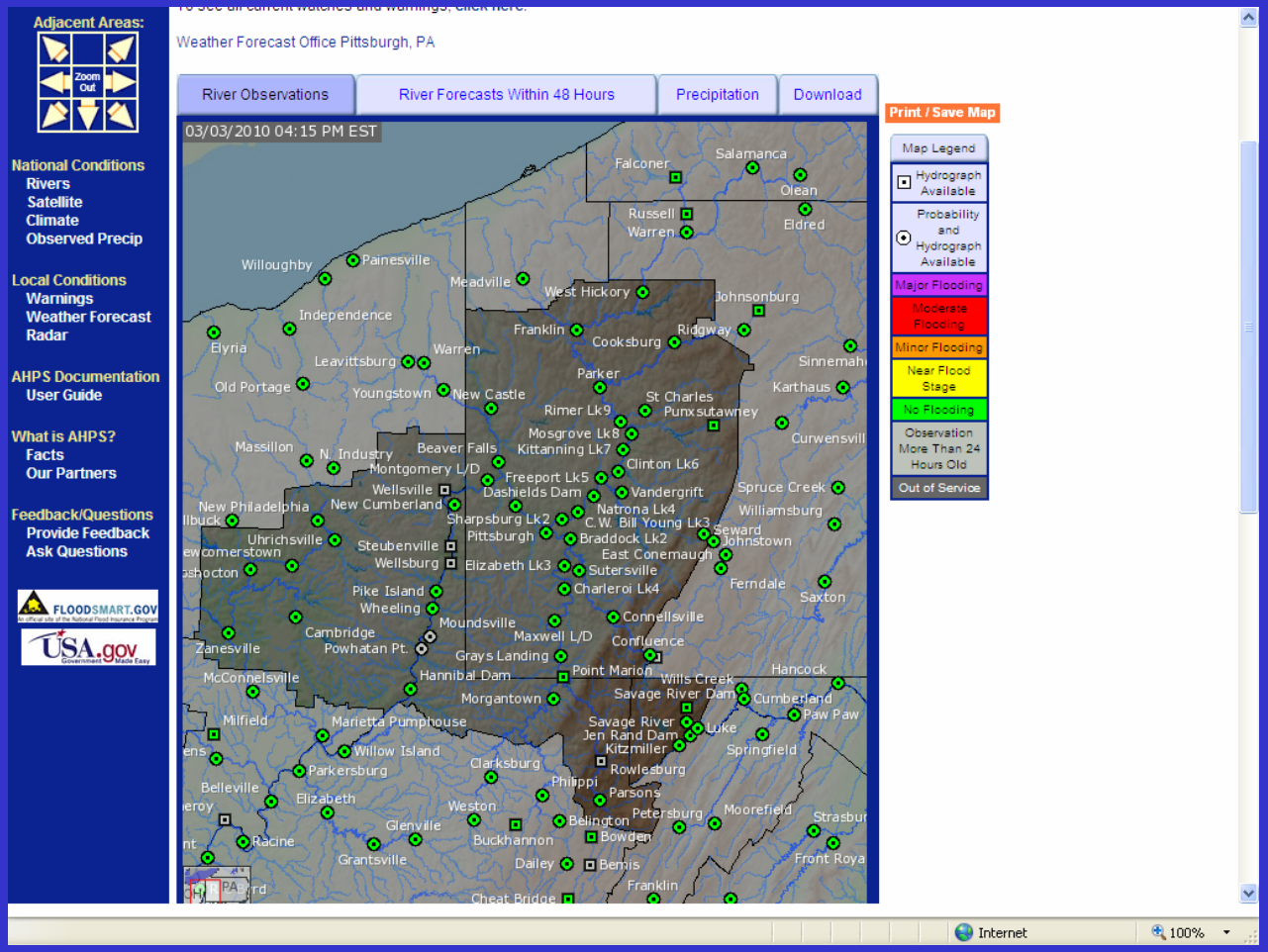

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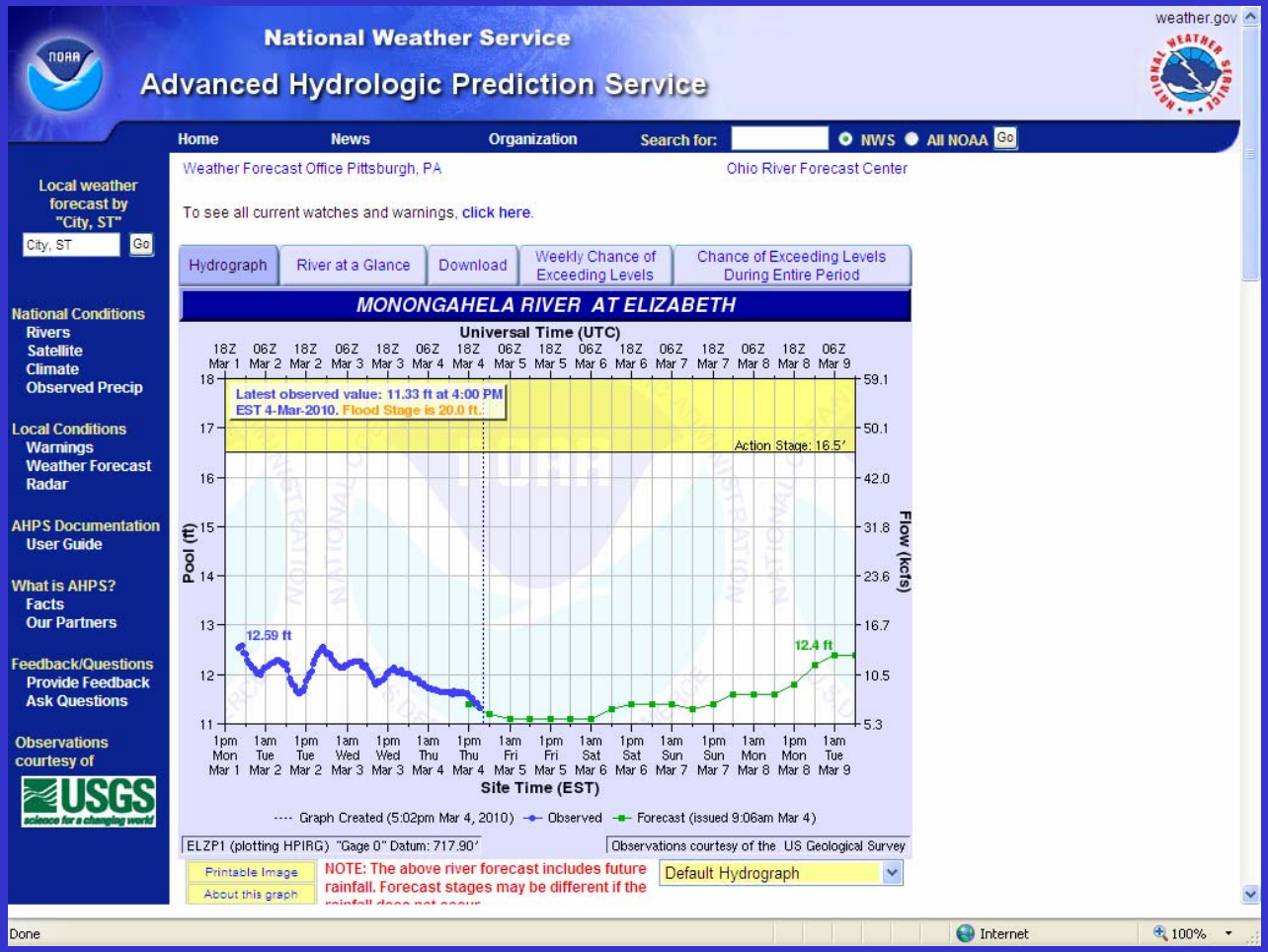

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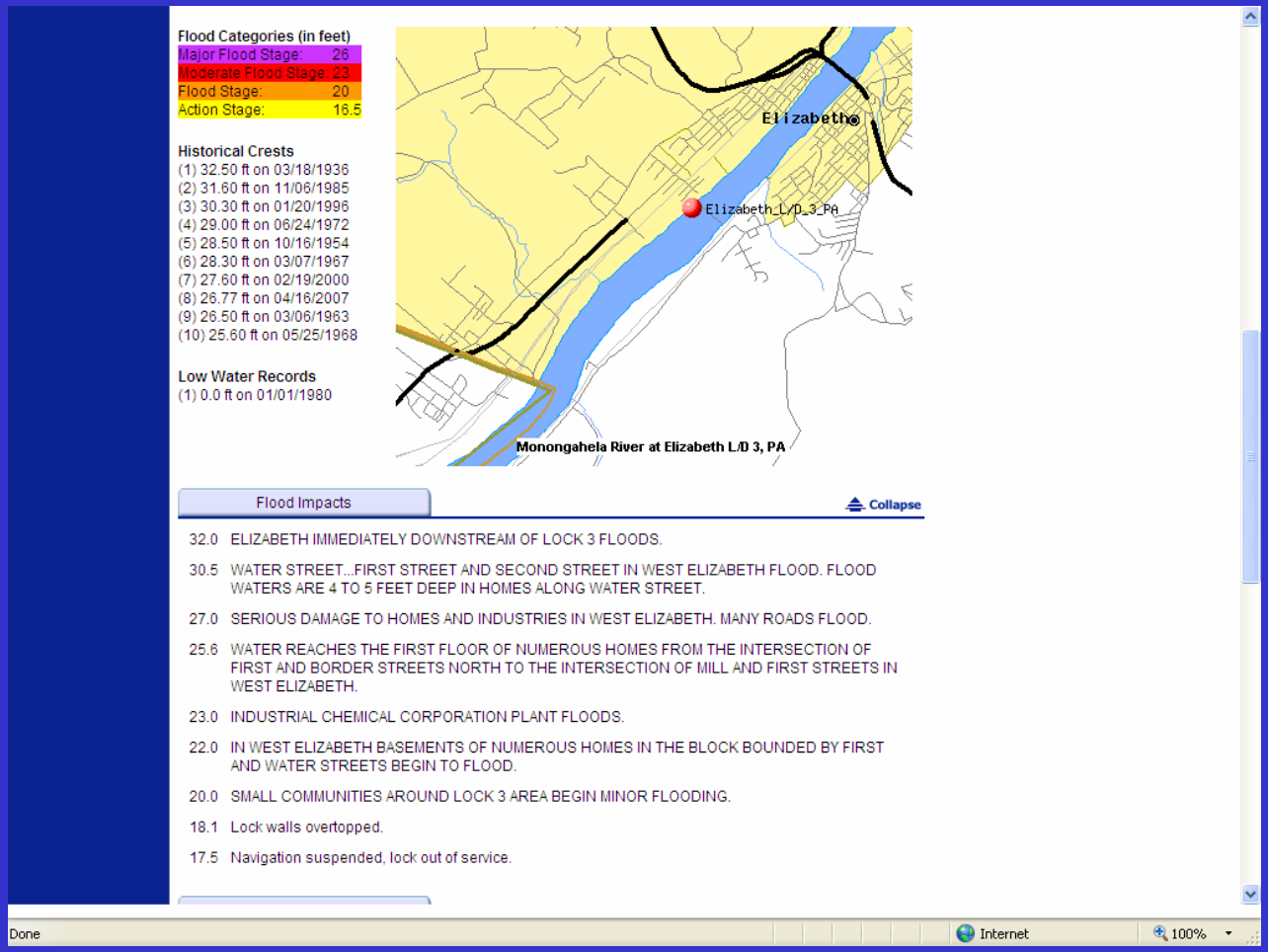
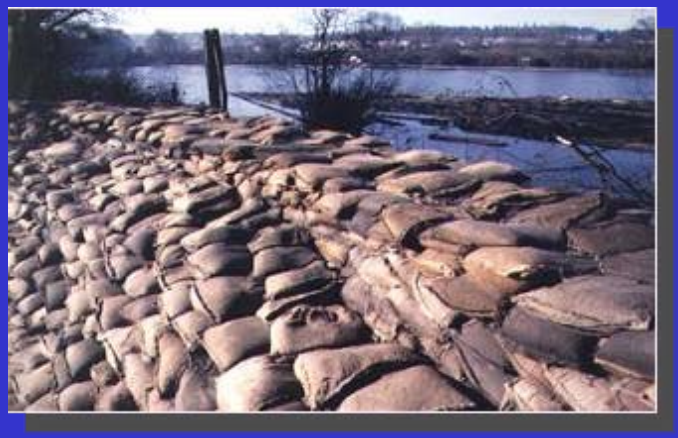


Ways to Flood Fight:

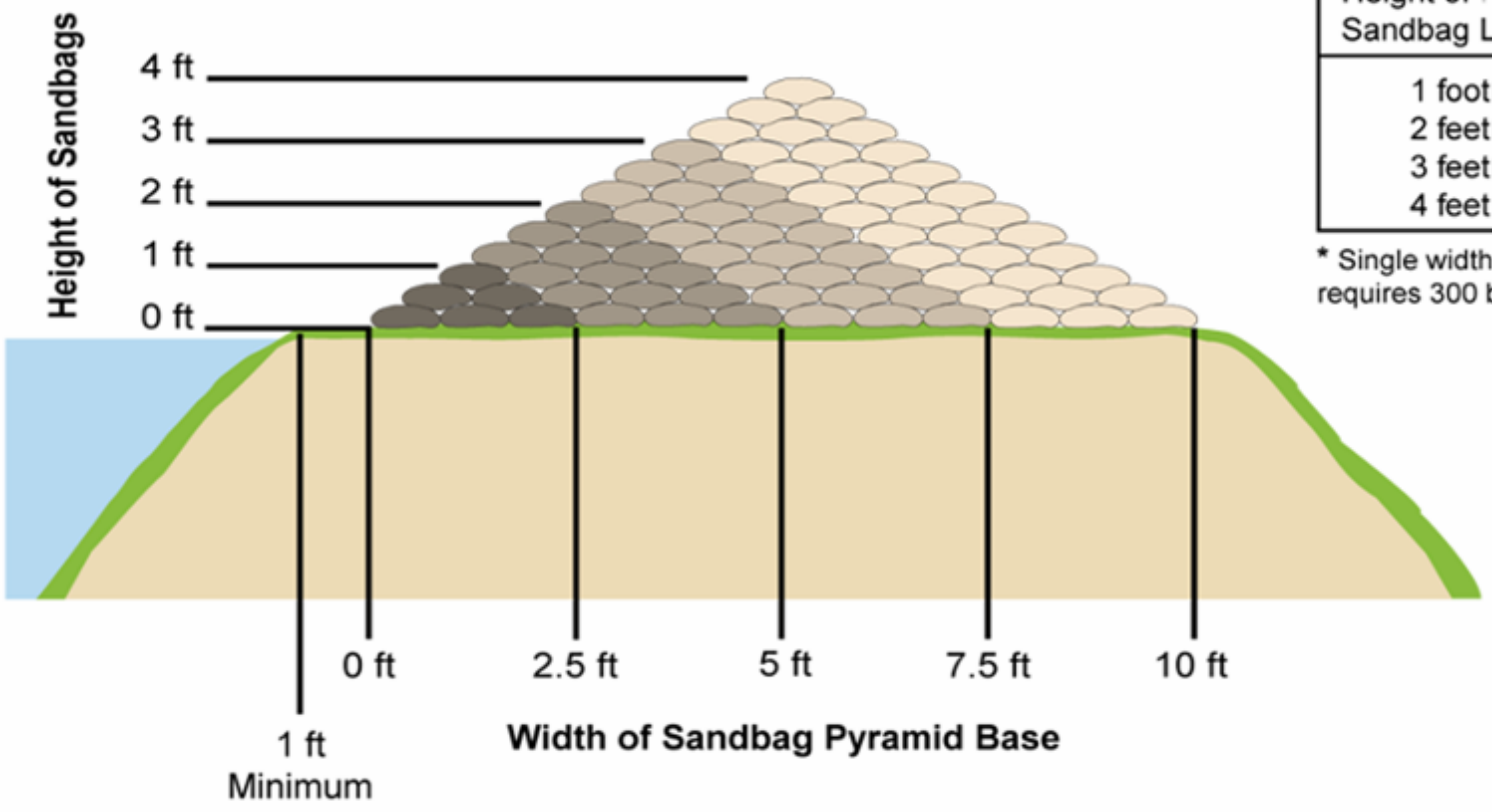
- Sandbags
- Baskets
- Geotechnical Grids
- Impervious Fabrics
- Water Filled Bladders
- Water Weighted Floaters
- Jersey Barriers
- Earth Moving Equipment
- Pumps

Sandbagging:

- Sandbagging is the flood fight method all other systems measure themselves against.
- Sandbags are made of burlap, polypropylene, cotton and other fabrics
- Standard size is 14"X24"
- They are filled one-half to two-thirds full untied with flap folded under
- Tied bags are used to hold plastic sheeting or other items in place
- Results / Issues:
  - Labor intensive to construct, thus slow unless a large number of well organized people are used
  - Removal can be quick if done by equipment, but synthetic bags must be separated from sand before both can be disposed
  - Low seepage
  - 10 ft. wide foot print (4' high structure)
  - Very stable, even on soft soils
  - Not reusable unless hand emptied, cleaned, dried and bundled



Typical Pyramid Sandbag Placement:



Bags Required Per 100 Linear Feet of Levee	
Height of Sandbag Levee	Bags Required
1 foot	600 *
2 feet	2100
3 feet	4500
4 feet	7800

* Single width course 1 foot high requires 300 bags per 100 linear feet.

Basic Sandbag Filling Station:

Basic Multi-Station Sandbag Filling Station:

Basic Multi-Station Sandbag Filling Station:

Commercial Sand Bag Fill Tools:

HESCO Bastion Concertainer®:

HESCO Bastion Concertainer®:

- Concertainer units have a Galfan coated steel mesh framework
- Lined with non-woven polypropylene material
- Integrated cells to provide internal structural integrity.
- The vertical joints are made from helical coils, to form 360 degree hinges.
- Units fold flat when empty, to carry on a standard pallet or skid.
- Units can be quickly installed, since they are fully assembled during manufacturing.
- They can be filled with locally available material, using standard backhoe loaders or similar equipment.
- Results / Issues:
  - Easy & quick to construct and remove
  - High seepage
  - 4 ft wide foot print (4' high structure)
  - Stable, except on soft soils
  - 95% reusable

Jersey Barriers

- Rapidly deployed and removed
- Sandbags and plastic required to form an impervious barrier at joints and bottom
- 3-4' wide foot print with seepage barrier (2.5' high barrier)
- Requires firm and even foundation for maximum stability
- 100% reusable

Honda Trash Pumps

- WT30X – 3 inch pump
- 319 GPM
- Self Priming – 90 seconds at 14.8 feet
- Uses 10W-30 motor oil
- 1.4 gallon fuel tank
- Will run approximately 1.6 hours, depending on load
- Hose Kit includes:
  - 1 – 20' green suction hose
  - 1 – 50' blue discharge hose
  - 1 – 3/8" hole round steel strainer

Honda Trash Pumps

- WT40X – 4 inch pump
- 433 GPM
- Self Priming – 150 seconds at 14.8 feet
- Uses 10W-30 motor oil
- 1.6 gallon fuel tank
- Will run approximately 1.6 hours, depending on load
- Hose Kit includes:
  - 1 – 20' green suction hose
  - 1 – 50' blue discharge hose
  - 1 – 3/8" hole round steel strainer

Godwin CD150M Dri-Prime® Pump

- Close coupled centrifugal pump with vacuum priming compressor mounted to a diesel engine.
- Total of 6 (3 per side) 11' Hard Suction Lines (6" Hose with 8" Fittings)
- Will handle raw sewage, slurries and liquids with solids up to 3" in diameter.
- Maximum flow of 1700 GPM

Potable Water Buffalo Trailers

- PWBTs 1, 2, 3 & 4
- 325 gallon capacity plastic (poly) tank - non-baffled
- Top Fill
- 4 – Garden hose type valves/discharges
- Trailer mounted
- 3500 GVWR w/electric trailer brakes
- 7-blade RV type plug

Non-Potable Water Buffalos

- 6 – 1300 gallon poly tank
- 1 – 1500 gallon poly tank
- Top fill
- Each buffalo is supplied with a discharge manifold
- Needs cribbing or pallets to raise off ground. Need approximately 2 feet of lift.

Portable Light Trailers

- Light Trailer 1 & 2
- Mfg: Amida
- 8kw diesel generator
- 4 – 1500 watt lights (metal halide or mercury vapor)
- single phase
- 15 gallon fuel tank
- Trailer mounted
- 4-flat trailer plug (no brakes)
- 2" ball receiver
- Hand crank winch (to raise/lower tower and lights)
- 3 – leveling jacks (2 front / 1 rear)

Portable Light Trailers

- Light Trailer 3
- Mfg: Allmand
- 8kw diesel generator
- single phase
- 4 – 1250 watt metal halide lights
- 30 gallon fuel tank
- Trailer mounted
- 4-flat trailer plug (no brakes)
- 2" ball receiver
- Hand crank winch (to raise/lower tower and lights)
- 3 – leveling jacks

Portable Light Trailers

- Light Trailer 4
- Mfg: Allmand
- 20kw diesel generator
- singe phase and 3 phase available
- 4 – 1250 watt metal halide lights
- 50 gallon fuel tank
- 2 – trailer mounted electric cord reels (100' of cord) w/power boxes
- Trailer mounted
- 4 – flat trailer plug (no brakes)
- 2" ball receiver
- Electric Winch (to raise/lower tower and lights)
- 3 – leveling jacks

Mobile Command Posts

Sandbagging Tools - Web Sites

- http://www.freedomsafetyproducts.com/
- http://bagladyinc.net/Flood_Fighter.html
- http://www.gobagger.com/

- http://www.bucketbagger.com/
- http://bagladyinc.net/Sanding_Truck_Attachment.html

- http://bagladyinc.net/Megga_Bagger.html
- http://www.thesandbagger.com/

Flood Fight Technology - Web Sites

- http://hesco-bastion.com/
- http://www.geocellsystems.com/index.htm

- http://www.portadam.com/index.html
- http://www.aquafence.com/index.html
- http://www.aquadam.com/index.htm
- http://www.floodwalls.com/FloodWalls/index.htm
- http://www.hydroresponse.com/wipp.htm

- http://www.hydroresponse.com/flood_barrier.htm
- http://www.hydroresponse.com/watergate.htm
- http://www.hydroresponse.com/floodgate.htm

Before, During, & After a Flood - Web Sites

- **Flood Outlook:**
  http://www.hpc.ncep.noaa.gov/nationalfloodoutlook/
- **Rainfall:**
  http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml
  http://www.crh.noaa.gov/ind/precip.php
- **Snow Cover:**
  http://www.nohrsc.noaa.gov/
- **WaterWatch:**
  http://water.usgs.gov/waterwatch/
- **AHPS: Advanced Hydrologic Prediction Service:**
  http://newweb.erh.noaa.gov/ahps2/index.php?wfo=pbz

Allegheny County Flood Preparedness Website:

http://www.alleghenycounty.us/emerserv/floodprep.aspx

QUESTIONS ? ? ?

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