Northern Utah Flooding Event

Presented by:
Nibley City, Logan City and Cache County
Nibley City
Introduction
Nibley’s Flood Event

- Started Feb 6, peaked on Feb 10-11, several homes are still experiencing groundwater infiltration
- 2”-4” inches of rain combined with about 3 ft. of snow on the ground and warm temperatures caused an unusual amount of runoff
- Their was increased groundwater and surface water levels that flooded hundreds of homes in Nibley City
- This put increased pressure on Nibley’s sewer and stormwater infrastructure
Rain continues to cause problems throughout Cache Valley

Raw sewage backs up into Wellsville homes—storm water pumped into city sewer likely to blame

FURTHER INFO FROM LOGAN CITY ON FLOODING/SEWERS

Flood warning posted for Bear River below Cutler Dam
Home Flooding
Home Flooding
Stormwater Infrastructure
Sewer

- Nibley City sewer system started to receive more water than ever before.
- Water came from the following
  - Water leaking into sewer pipes
  - Water leaking through manholes
  - Residents pumping and draining water into sewer system
Actions Taken

- Educating public

- Sent out message through City’s communication systems about dangers of putting ground/stormwater in sewer system

- Ordered not to use sewer system

- Sealed manholes and checked for other leaks.

- Monitored lift station very carefully
Public Outreach

- Nibley City Used Several Methods
  - Social Media (Facebook, Twitter)
  - Website
    - City posted all updates, tips to stop flooding, flood information and other recourses on website
  - Nibley Community Alert System
Update: Sat 2/11 8:21 am - Sewer flows from Nibley are still many times the normal rate. We are waiting to hear how the sewer treatment plant in Logan is doing before we make any changes. The request to significantly limit the use of drains in your home is still in place.

Update Fri 7pm: Sewer flow in our system has improved and you may use your drains SPARINGLY. We will notify residents when we have reached normal sewer flow rates and will at that point lift the request to li...
Thanks for your help and cooperation this week. The sewer usage advisory has been lifted! RESUME NORMAL USE OF YOUR DRAINS! Have a dishes party, take a shower etc. Reminder ALL flood/stormwater in and around your home should be discharged in your yard or street (NOT the drains in your home). Drinking water is safe.

**Resume Normal Use of Drains in NIBLEY**

Dishes PARTY!  Regular Shower

Get More Likes, Comments and Shares
Boost this post for $15 to reach up to 2,900 people.
Thank you to our sandbag helpers today. We appreciate everyone’s cooperation and willingness to help a neighbor.
Pump stormwater to:

YARD OR STREET

The extreme weather conditions we have been experiencing have resulted in many Nibley residents having water in their homes and basements. As residents work to pump this water from their homes, it is apparent that much of this water is being dumped into the City’s sewer system. Please do NOT discharge floodwater or groundwater into the sewer system. The City’s sewer system is currently receiving more water than it has ever handled before. Nibley City is concerned that the system could become overwhelmed, which would result in raw sewage backing up into homes. It has been reported that this scenario is already happening in Wellsville. Please use hoses or other methods to divert floodwaters into streets and stormwater systems rather than floor drains, sinks, tubs or manholes.

If you discover water or sewage coming UP through your drain notify us IMMEDIATELY 435-752-0431
Future and Repairs

- Nibley City has created an after action report with a list of things that need to be fixed or changed to avoid the problems we had.
  - Infrastructure
  - Working with community members
  - Planning
  - Equipment
- Minimal Cost this time - $15,000
Infrastructure

- Regular cleaning and inspections of sewer and stormwater pipes
Working with Community

- Nibley City staff have held meetings with residents who live in some of the hardest-hit areas of the City to work with them to resolve long-term problems.
  - Muffins with the Mayor
  - One-on-one meetings
  - Neighborhood workshops
Planning

- New Code
  - Require a stamped report from an Engineer establishing the ordinary high groundwater elevation and finished floor elevation for a subdivision
  - Changed Street Code to allow for Low-Impact Development for stormwater retention and detention
Planning

- Future Code and other projects
  - Canal and stormwater regulations
  - Planning new infrastructure to fix problems
  - Change of code to give the City greater ability to hold developers accountable for infrastructure they install
  - Continued research to manage ground water in a suburban setting
- Tabletop and community-wide training drills
Planning

- **Flood Plain**
  - Maintain natural and beneficial functions of the floodplain
  - Many cities across the country have passed laws to not allow home development in 100-year flood plain or required that all buildable area is out of the flood plain

- **Other Flood Tips**
  - Protect open space/less hardscaping
  - Design and require stormwater facilities and network to be resilient to all types of flooding events
  - Create laws and plans to protect sewer and stormwater infrastructure
  - Educate public about proper water disposal
Flooding at Logan City’s
Wastewater Facilities
February 2017
“Poonami 2017”
460 Acres of Aerated Lagoons

Serve 7 Cities:
Logan
Nibley
Providence
River Heights
North Logan
Hyde Park
Smithfield
240 Acres of Wetlands

Constructed for polishing of treated wastewater from Lagoons
Lagoons average 13 MGD
Lagoons Headworks
Lagoons Headworks cont.
Lagoons Headworks cont.

Sandbags diverted overflowing influent into lagoons

Small portion of overflowing influent leaked past sandbags into toe drain.

Lagoon Cell A1

Overflowing influent

Sandbags diverted influent into clarifier and was pumped into lagoons.

Toe Drain

Clarifier
How we handled it

30 – 40 volunteers from other departments within the city responded.
Filled Sandbags ~ 1000 bags
Laid Sandbags

Sent PSA to ask for reduced water usage from citizens & businesses
What we have learned?
Cache County - 2017 Floods

- Rapid response needed
  - 469 miles of road to cover
  - Snow/Ice plugged culverts
  - Water backup at bridges
  - Large amounts of erosion/debris
  - 75 damage locations (map)
  - ~60 additional flood locations
  - 100’s of homes in jeopardy
- This was a unique event
Cache County - 2017 Floods

- Our Response:
  - Understand what to respond to
    - Roads & Infrastructure
    - Homes with surface flooding
    - No basements
  - Need to move water
    - Clearing ditches/culverts
    - Pumps with little success
    - Multiple road cuts (understanding the consequences)
  - Insufficient Temporary Signs
    - Borrow signs/cones/anything
    - Triage locations
Cache County - 2017 Floods

- Public Communication
- Land owner assistance
  - Emergency Manager 1st day on job was mid-event
  - Understanding our capacity & limitations
  - Communicate our capacity & limitations
    - Public, utilities, other jurisdictions
    - Enable our crew to focus on broader flooding, not home by home

- Road closures
  - Multiple major and numerous smaller roads closed
    - Intermittent vs. Full closures
  - Failure of public respect of closures
    - Coordinate with Sheriff’s office
Cache County - 2017 Floods

- Tracking the Issues
  - Multiple Sites
  - Need to assess and track damage (disaster relief)
  - Provide information to public, elected officials, and emergency/utility services
- Piggy backed on our existing GIS system
  - Permanent Signs, Road Hazards, Storm Water, etc.
  - Weed Tracking
  - New: Flood Tracking
    - ~3hrs to implement
Cache County - 2017 Floods

- How we track
  - *Any* IPad/Smartphone
  - Collector App
    - Georeferenced location
    - Attach images
    - Enter field notes
  - Live link to County website
    - Public access to all imagery, closures, etc.
- Basic site ~15-20 minutes
- www.cachecounty.org
Cache County - 2017 Floods

- How we track
  1. Locate a Site
  2. Start Collector App
  3. Track 6 fields of information (drop downs, open comment)
  4. Pictures/Video with iPad/Smartphone camera
  5. Hit Submit

- https://www.slideshare.net/sspinnovations/collect-or-for-arCGIS