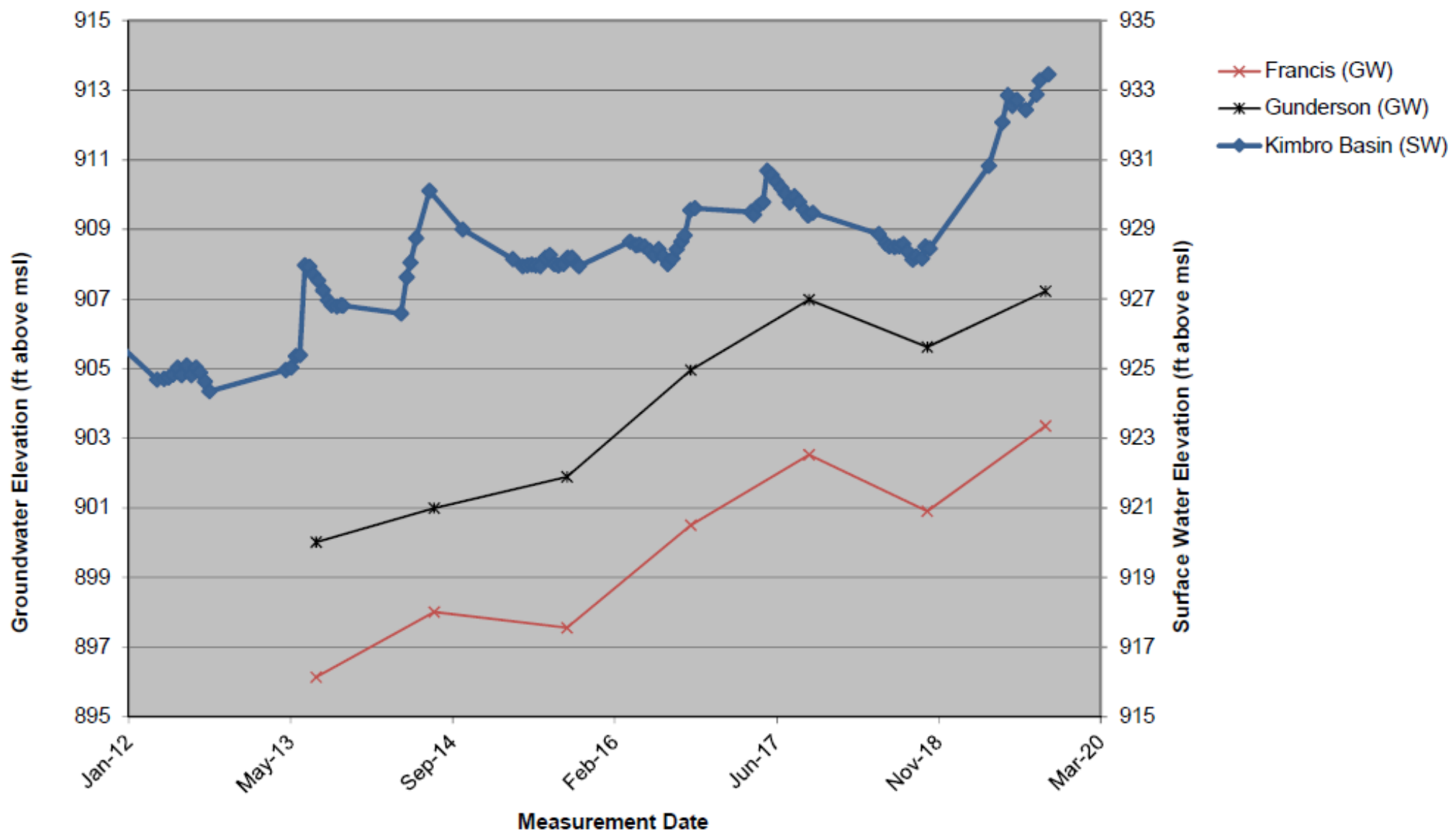
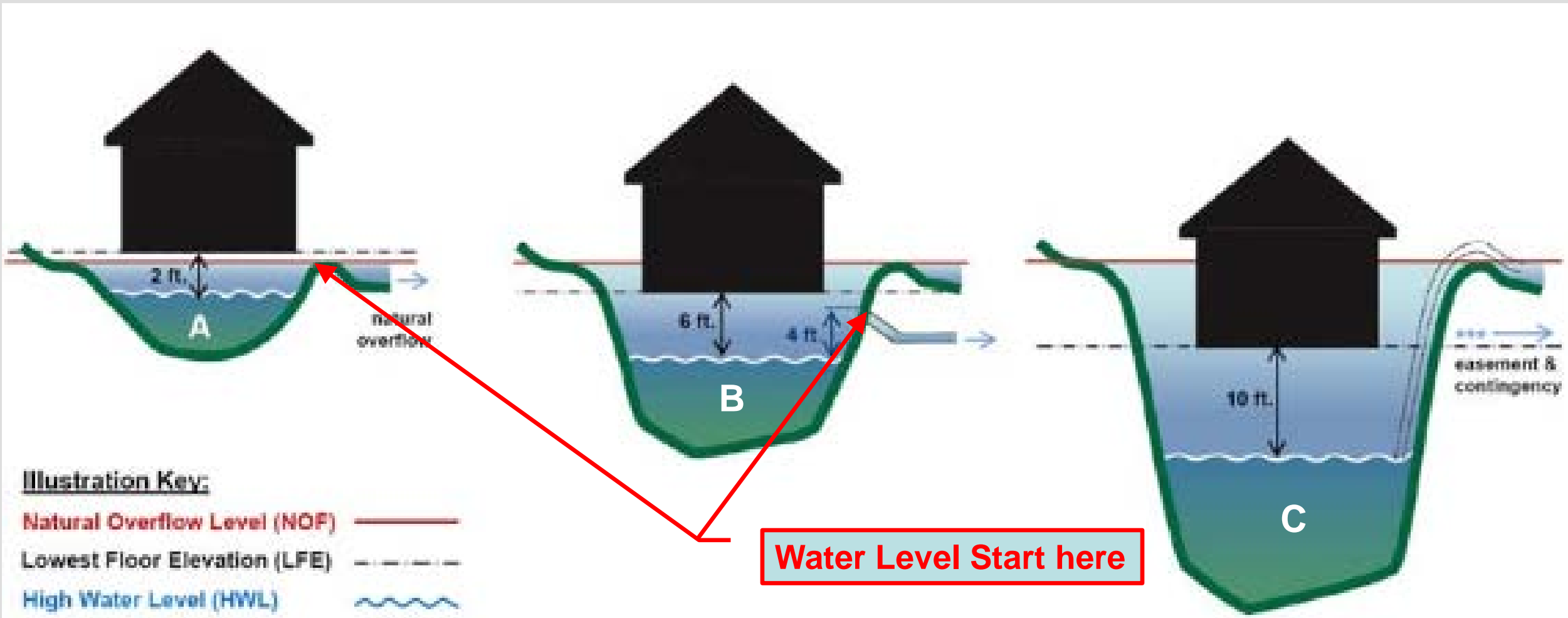
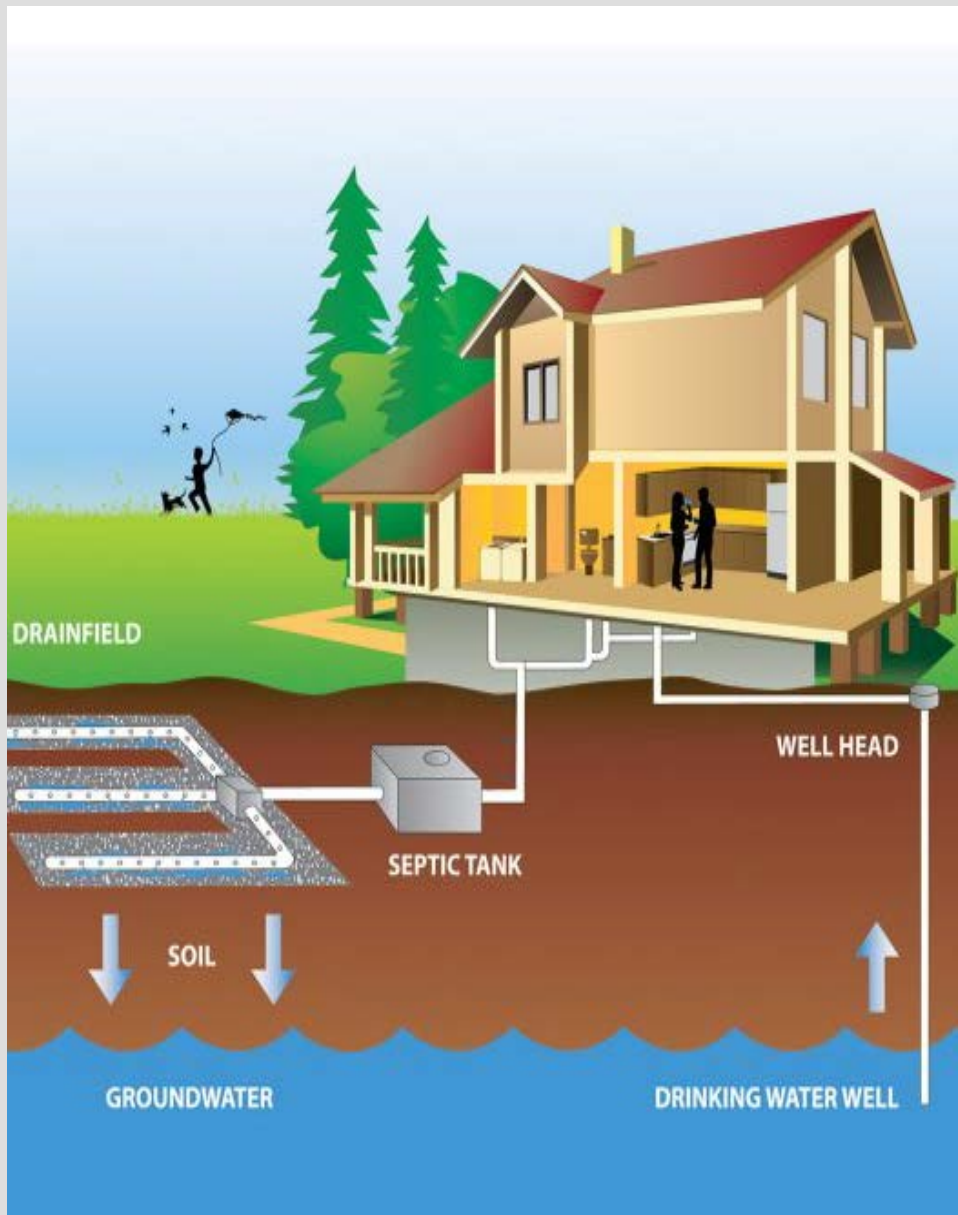


Flood Risk Review: Water & Groundwater Levels



Flood Risk Review: Landlocked





Drinking Water Well

Inundation by surface water

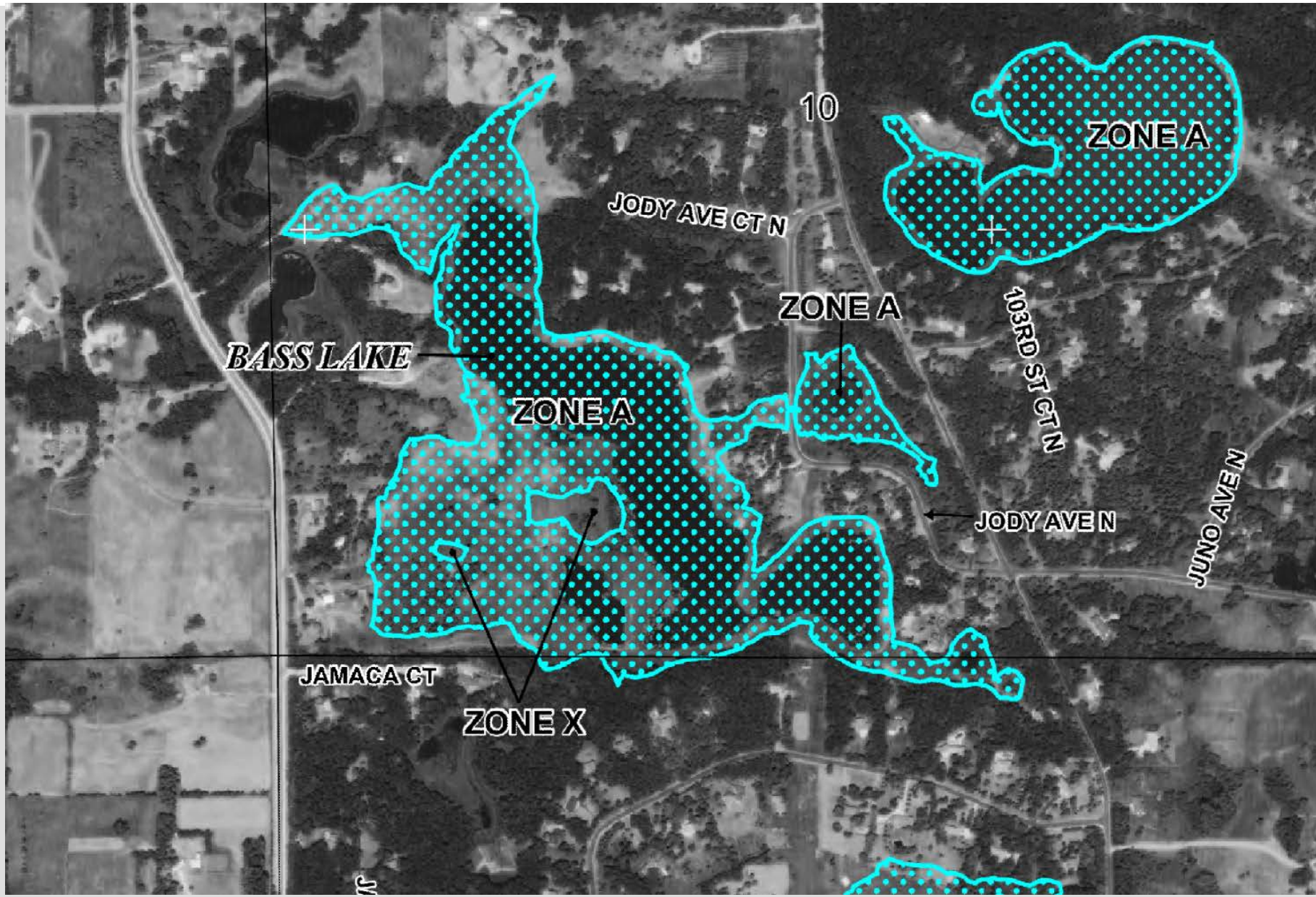
- Pathogens & contaminants get into water
 - *Short Term: Boil water*
 - *Long Term: Disinfect, pump & test*

Septic System

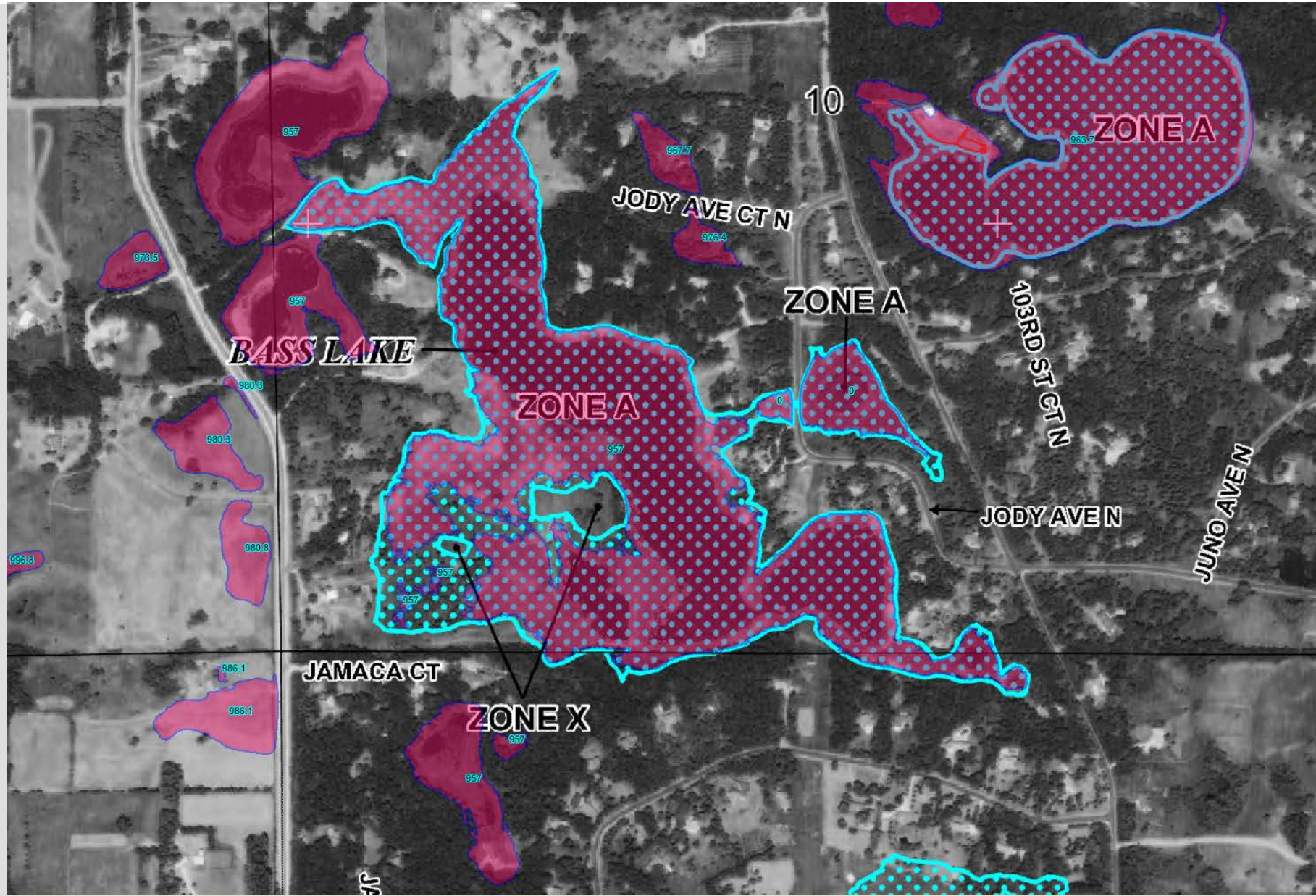
Inundation by surface water

- System will backup
- Groundwater within 3 feet
- Groundwater contamination
- **Lake contamination**

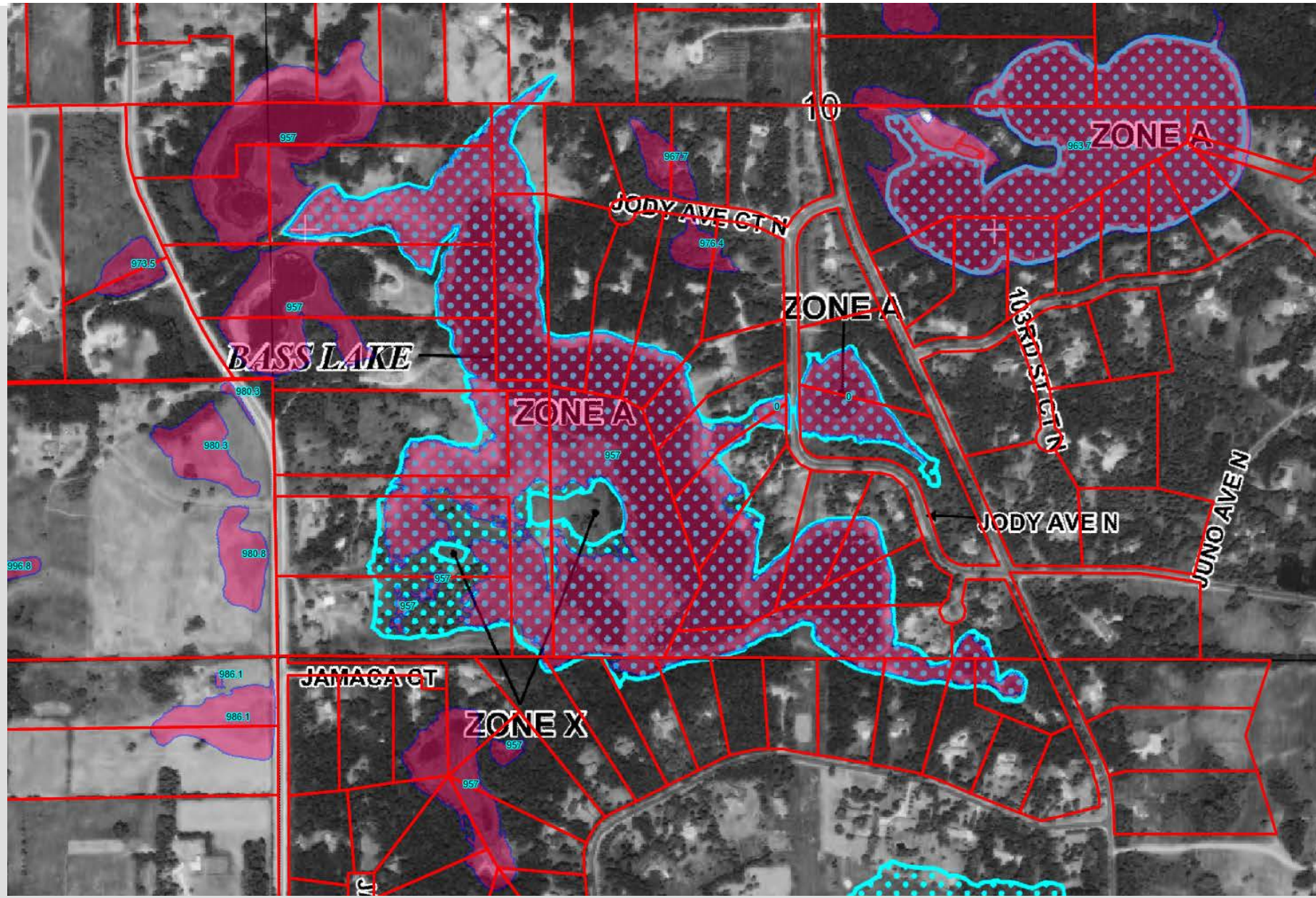
Flood Risk Review: FEMA & BCWD Review



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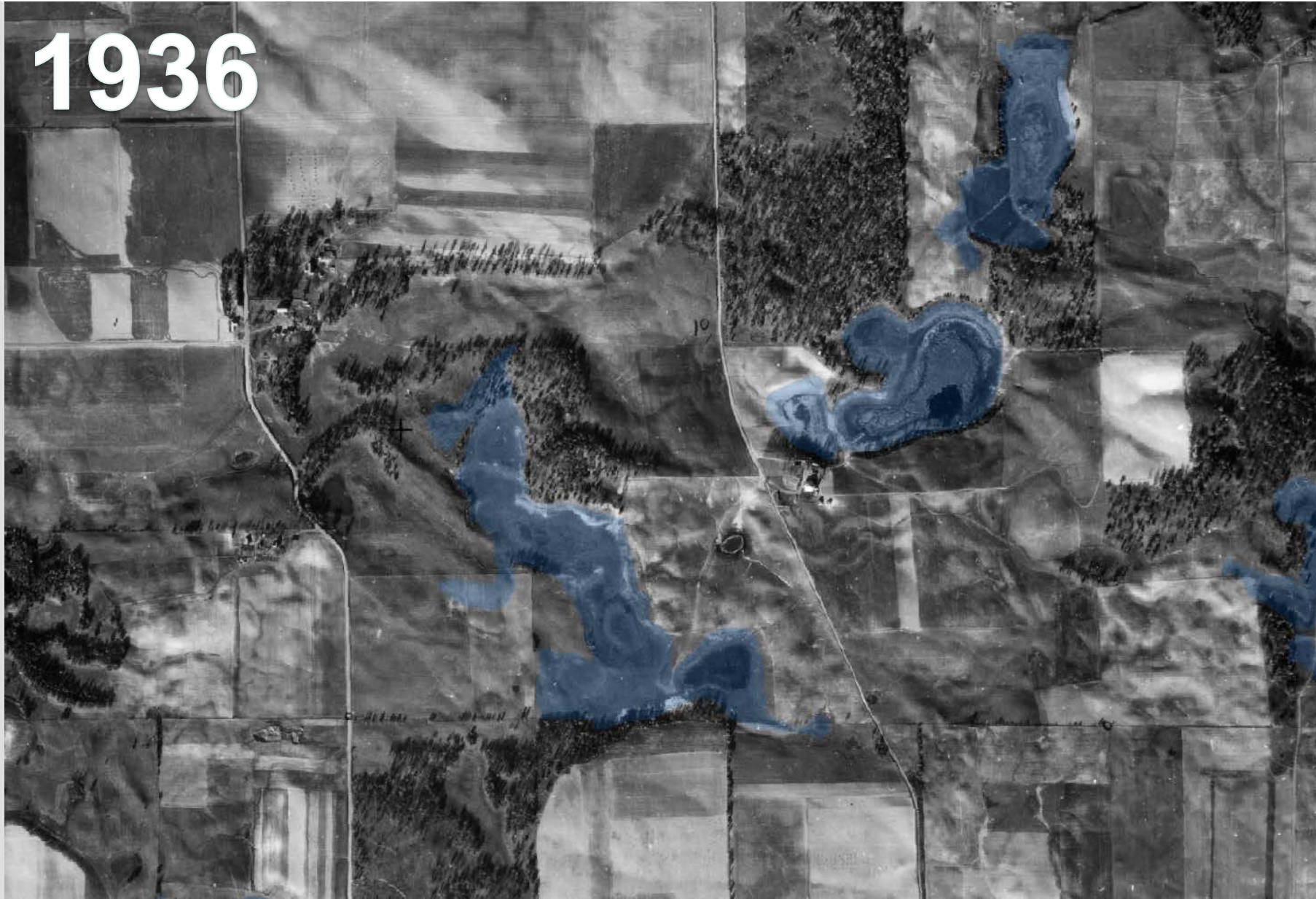
Analysis took into consideration property features such as roads, driveways, buildings – in green, wells – as pink X's, septic location – Yellow dots.



Flood Risk Review: Landlocked Lake Levels



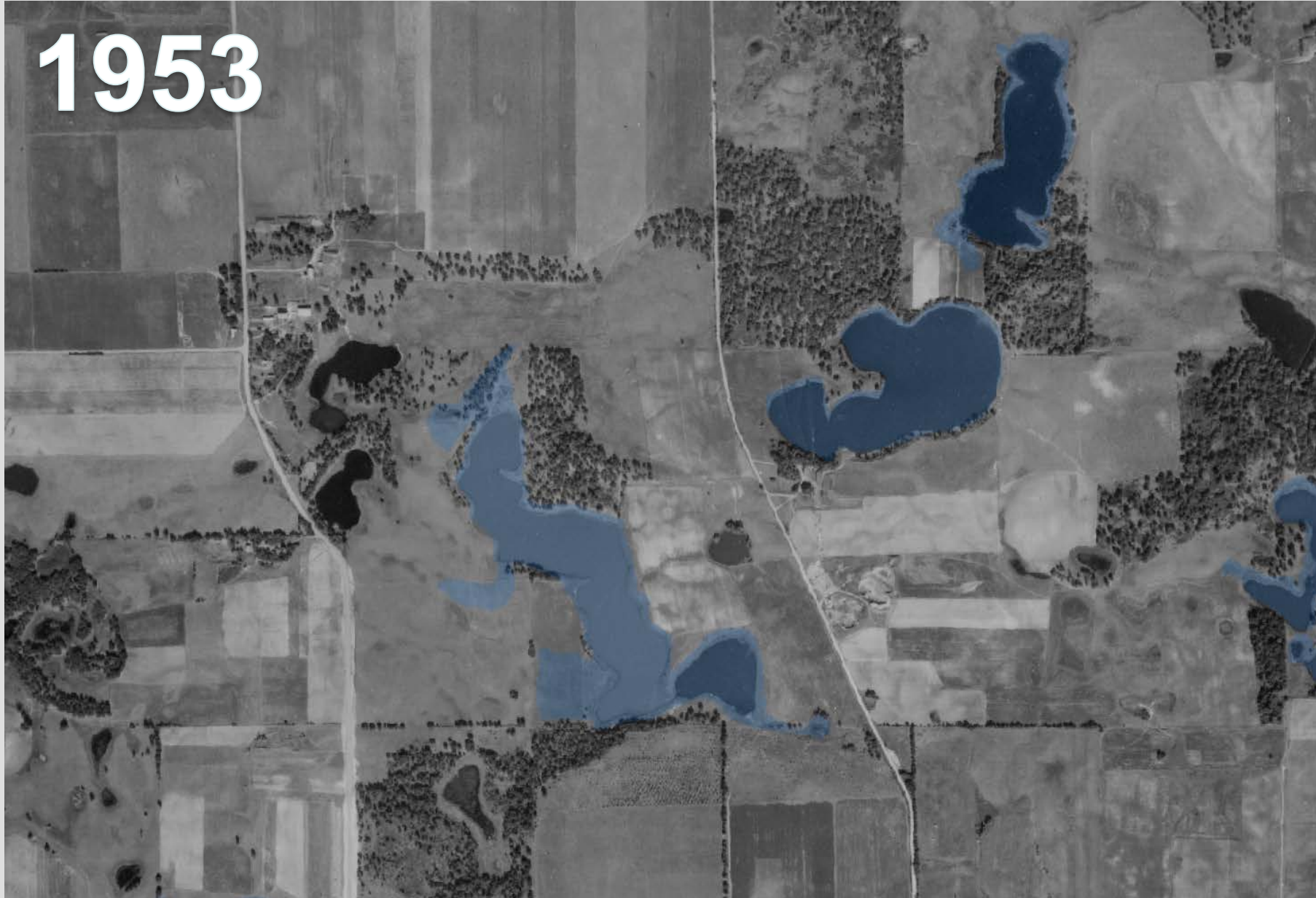
1936



Flood Risk Review: Landlocked Lake Levels



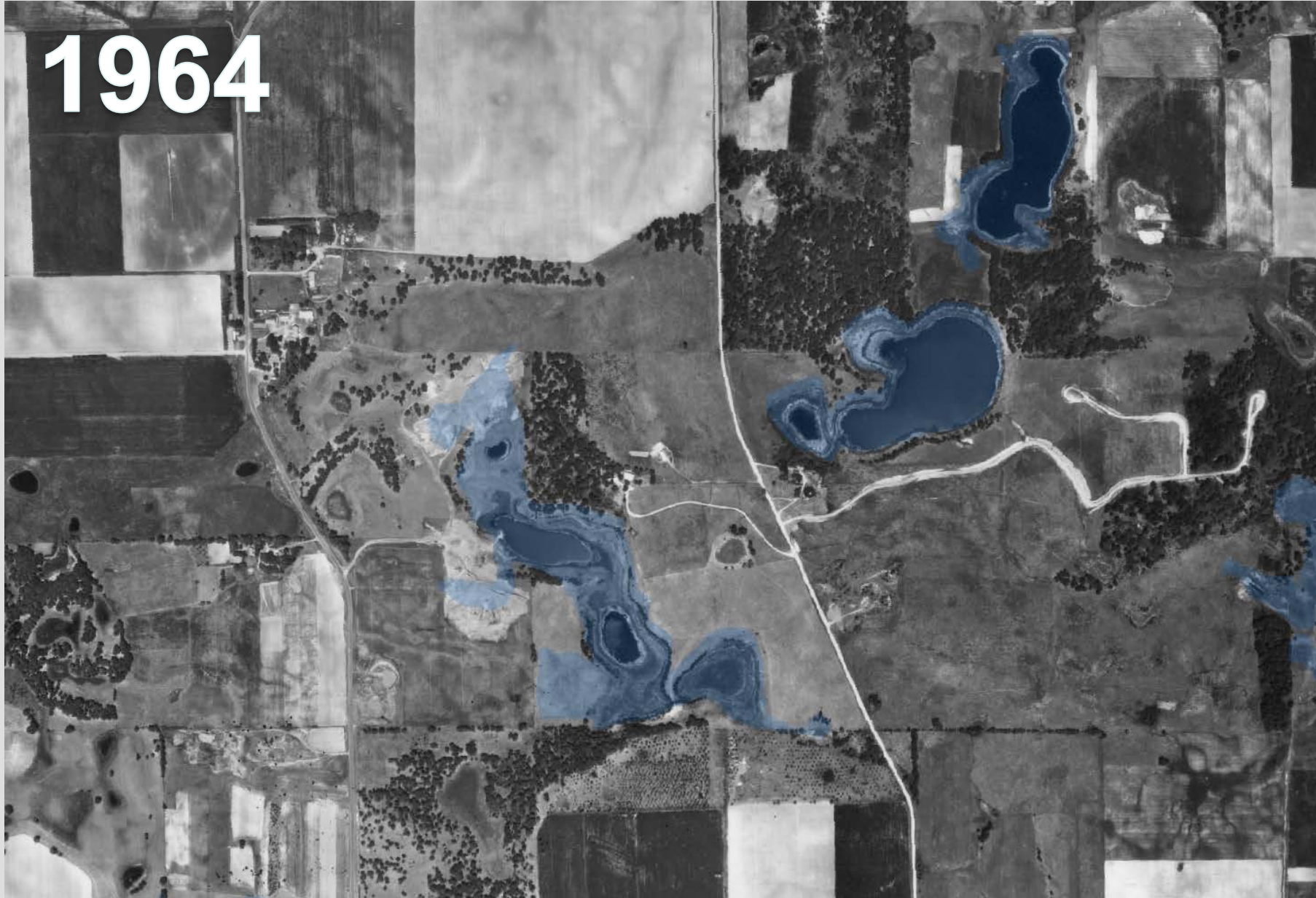
1953



Flood Risk Review: Landlocked Lake Levels



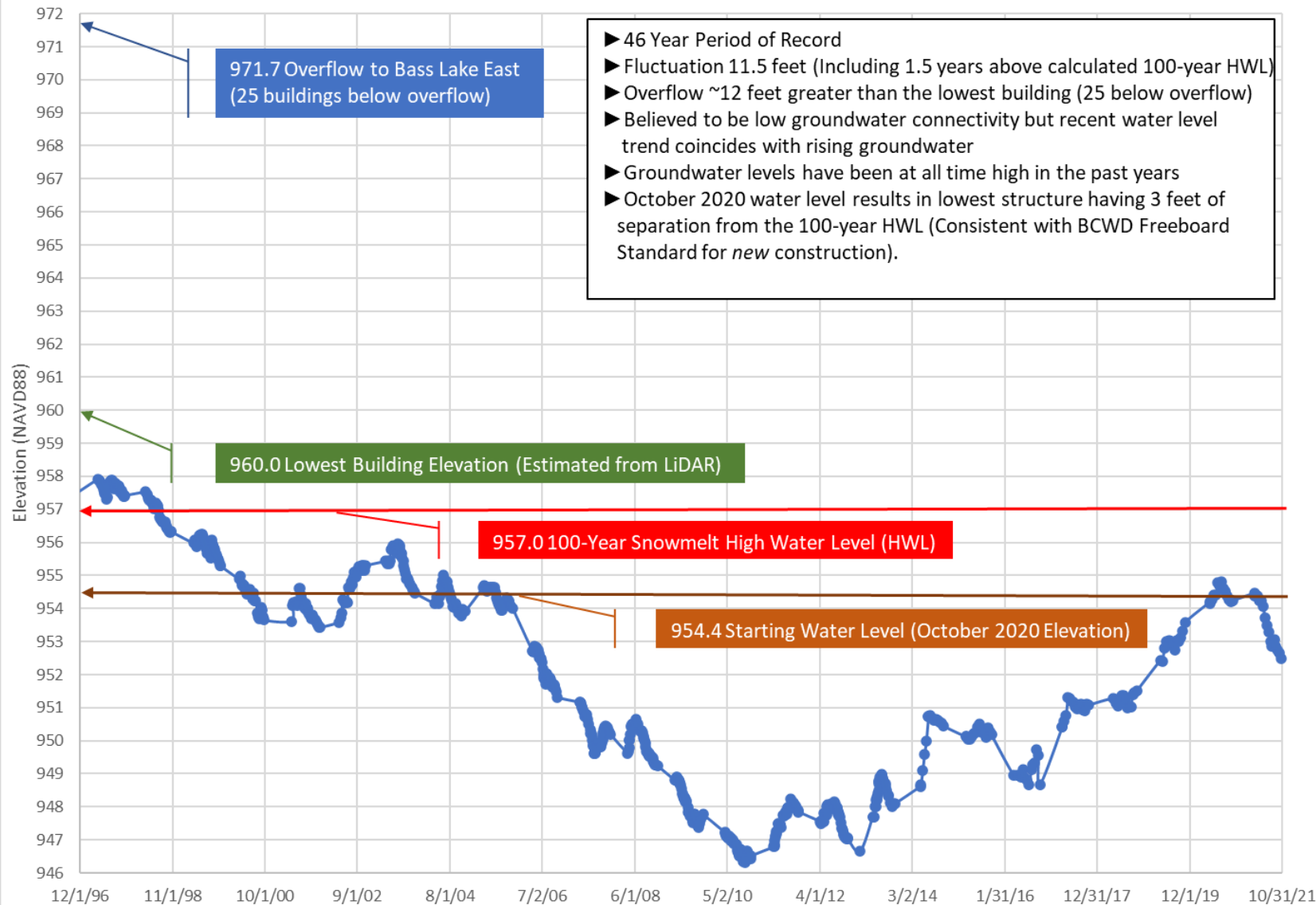
1964



Flood Risk Review: Landlocked Lake Levels



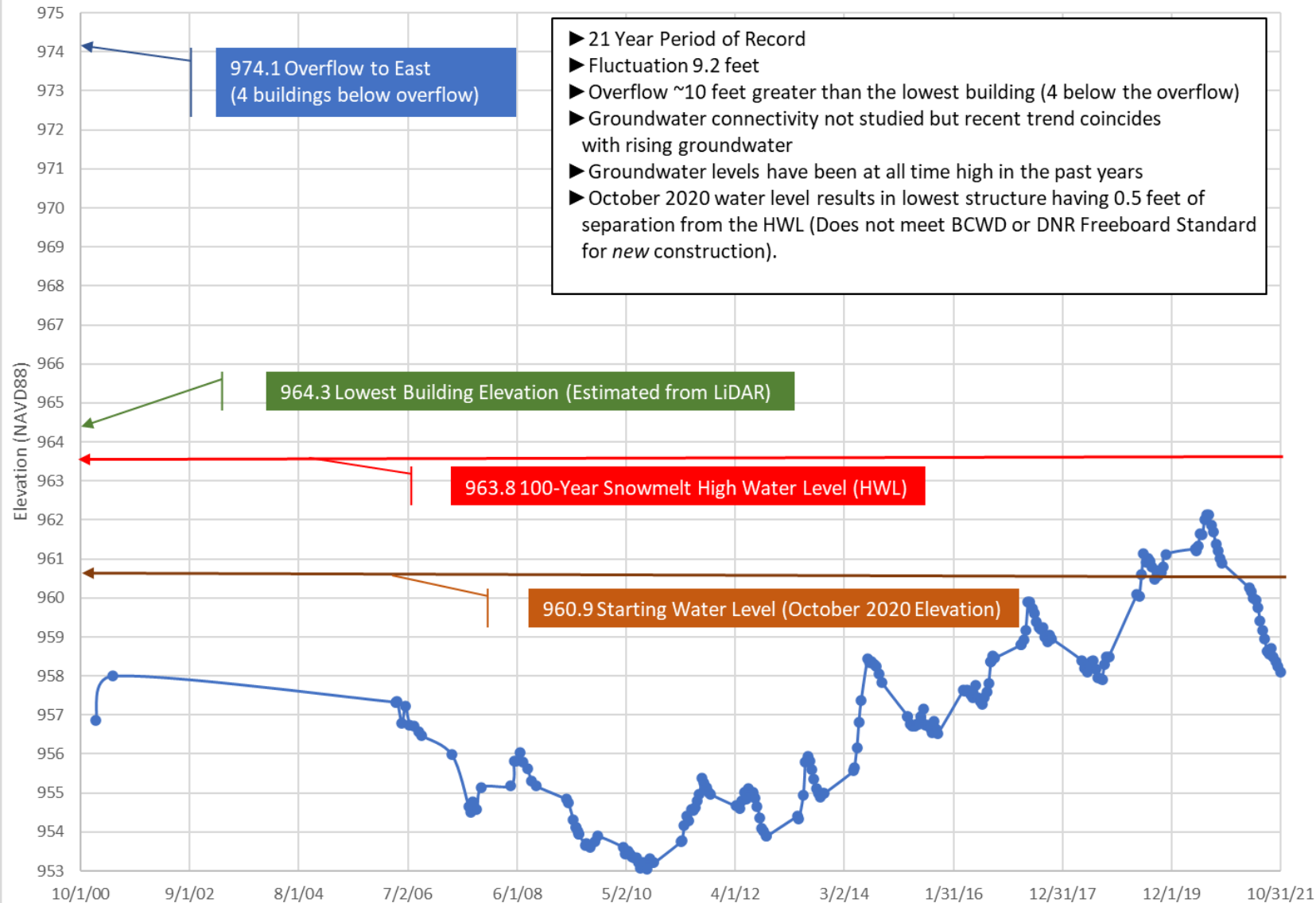
Bass Lake West Water Elevation

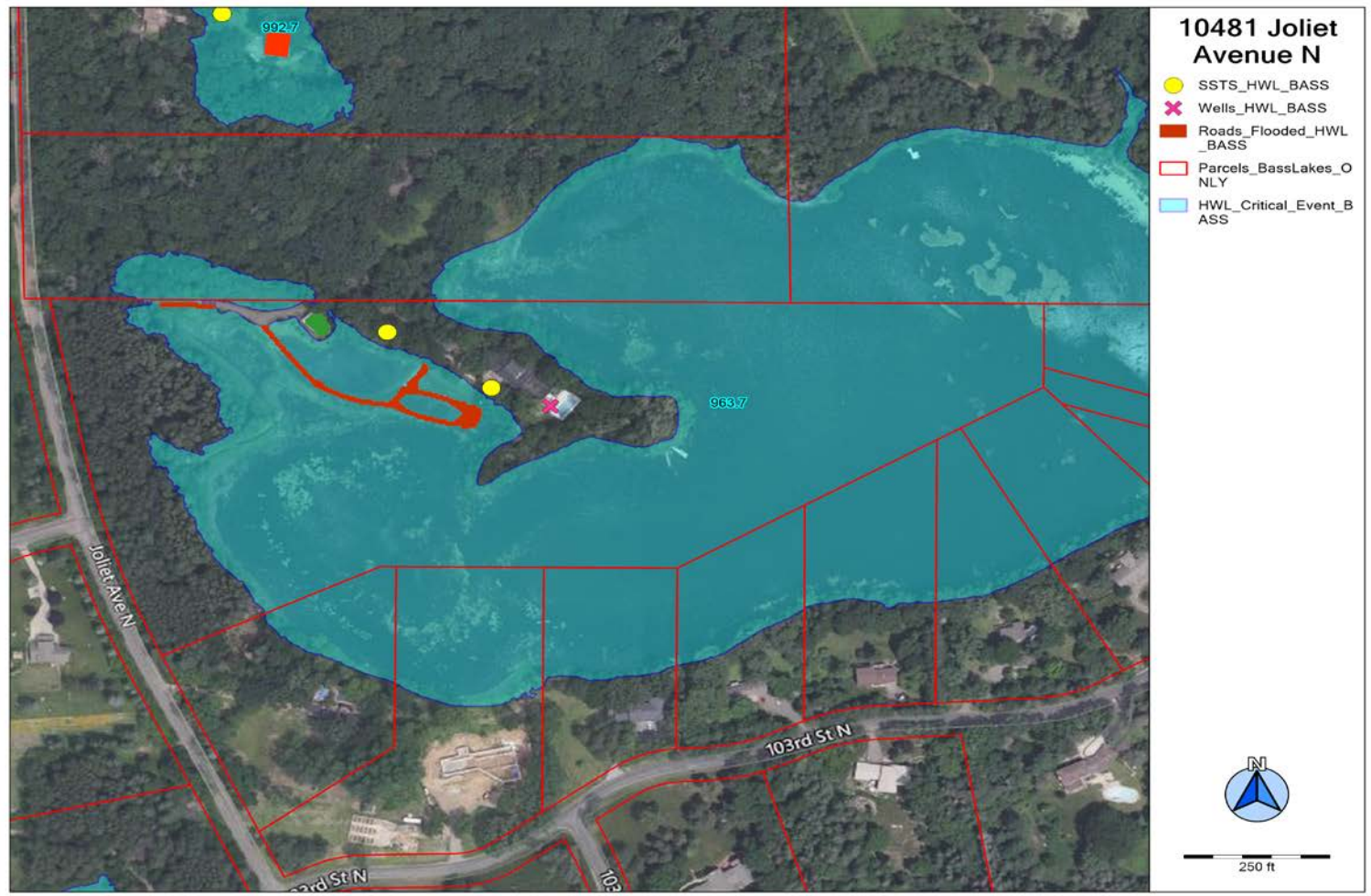


Flood Risk Review: Landlocked Lake Levels



Bass Lake East Water Elevation





Buildings

1 at Risk of Inundation

–Landlocked depression, disconnected from Bass Lake

Roads/Driveways

1 Property at Risk

–Inundated driveway up to 1 foot depth

Wells & Septic Systems

0 at Risk

–Following landowner surveys

No Data on Septic and/or Wells

43 Properties

–Desktop screening found no significant concerns given undeveloped state or building(s) proximity to the flood footprint.

When to Take Action?

100-year water increase is about 3 feet (Both lakes)

Lake level drawdown is normally less than 2 feet per year

- Greater vertical distance from the water the better (Freeboard)
- Desired – Six feet between events
- Ideal – Ten feet between events

If the water level is greater than your comfort level in a given year –

- Consider enacting a flood action plan for your property
 - Identify low areas & areas prone to erosion
 - Plan protection measures for infrastructure & to prevent water intrusion
 - Estimate time to implement
 - Quantify and source protection measures
 - *Know what's on-hand within short notice – County, landscape supply, hardware store*
 - *Identify items with long lead time, e.g. landscaping, sump pump secondary power source*



Flood Risk Review: What You Can Do

Flood Mitigation Strategies (Low Tech):

Runoff/Snow & Ice Management

- Direct/store away from the structure where it will not cause erosion
- Clean and maintain conveyances (gutters, ditches, culverts)

Landscape to Protect Structure

- Hold/direct water away from structures

Sump Pump with Secondary Power Source

- Consider a secondary portable pump for removing water faster

Exterior French Drain

- Direct discharge away from structure

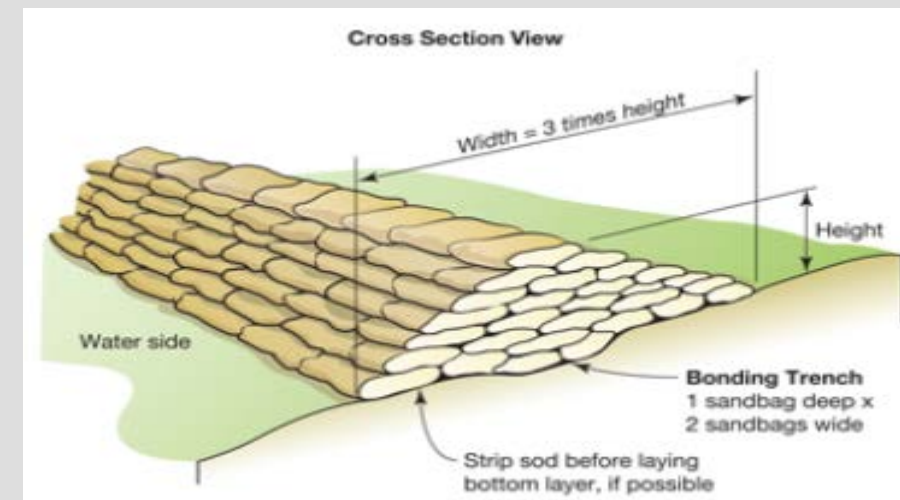
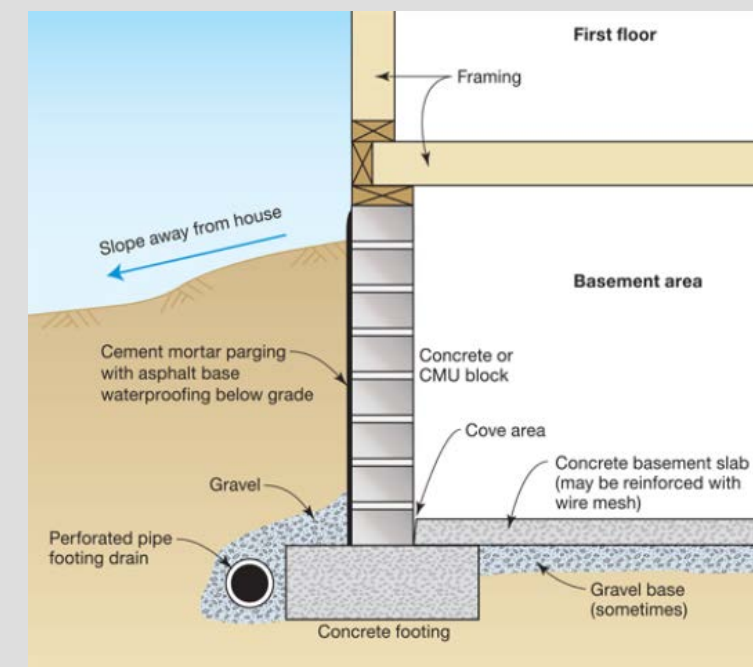
Apply Waterproof Sealants or Membranes

- In addition to other mitigation strategies

Sandbag Barrier

- Temporary & requires advance notice
- Address internal drainage

Purchase Flood Insurance





Work with Local Government:

Regulate new & re-development to adhere to stormwater runoff standards

Anticipating water level increases –

- Increase level monitoring during periods of high water
- Localized groundwater measurements

Knowledge sharing –

- Current state of the science in flood response planning
- Linking residents with available guidance & informational resources



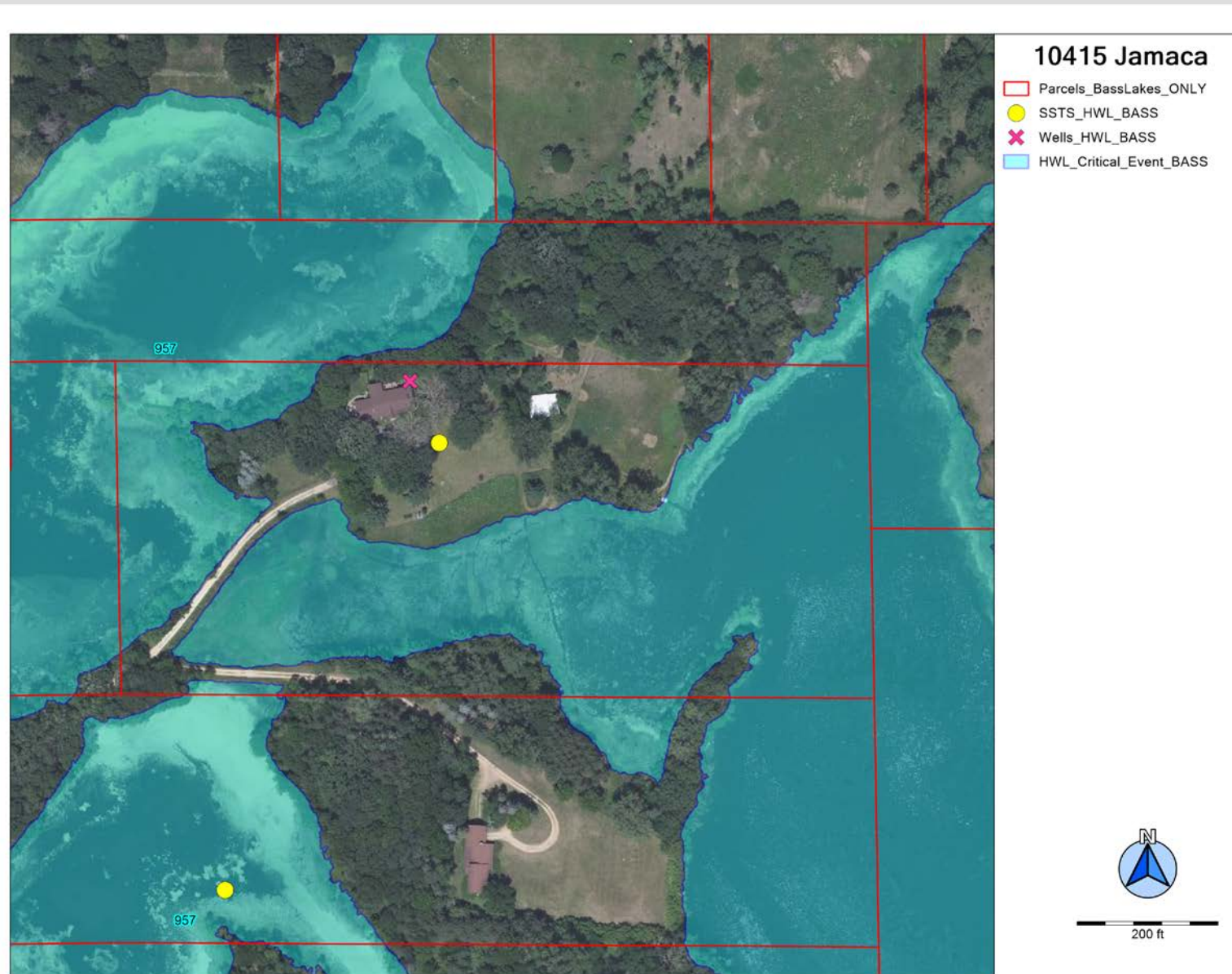
Knowledge Share:

- [WCD Flooding](#)
 - [Links to local flood preparation information](#)
- [MnDNR LakeFinder Website](#)
 - Lake levels updated monthly
- [MnDNR Floodplain Management Group](#)
 - Technical & Non-technical resources on mapping, insurance, flood preparation
- [Lake & Flood Elevations Online](#)
 - Interactive map with FEMA & MnDNR flood related layers
- [FEMA Map Service Center](#)
 - Official floodplain map, study, insurance
- [ASFPM Reduce Flood Risk](#)
 - Flood facts & mitigation resources for all audiences

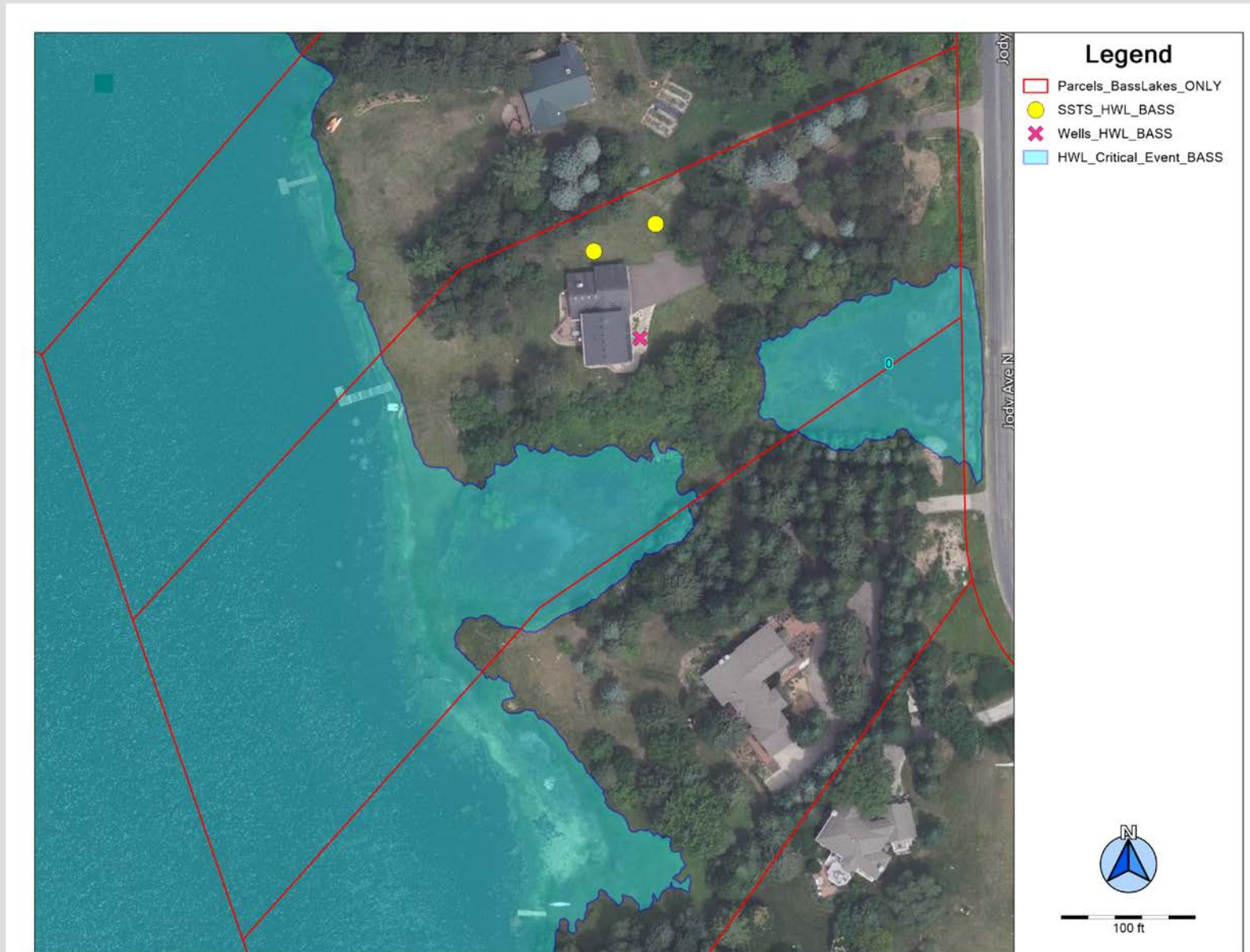


**Low risk doesn't mean no risk –
Everyone is in a floodplain, it's
just a matter of for what event.**

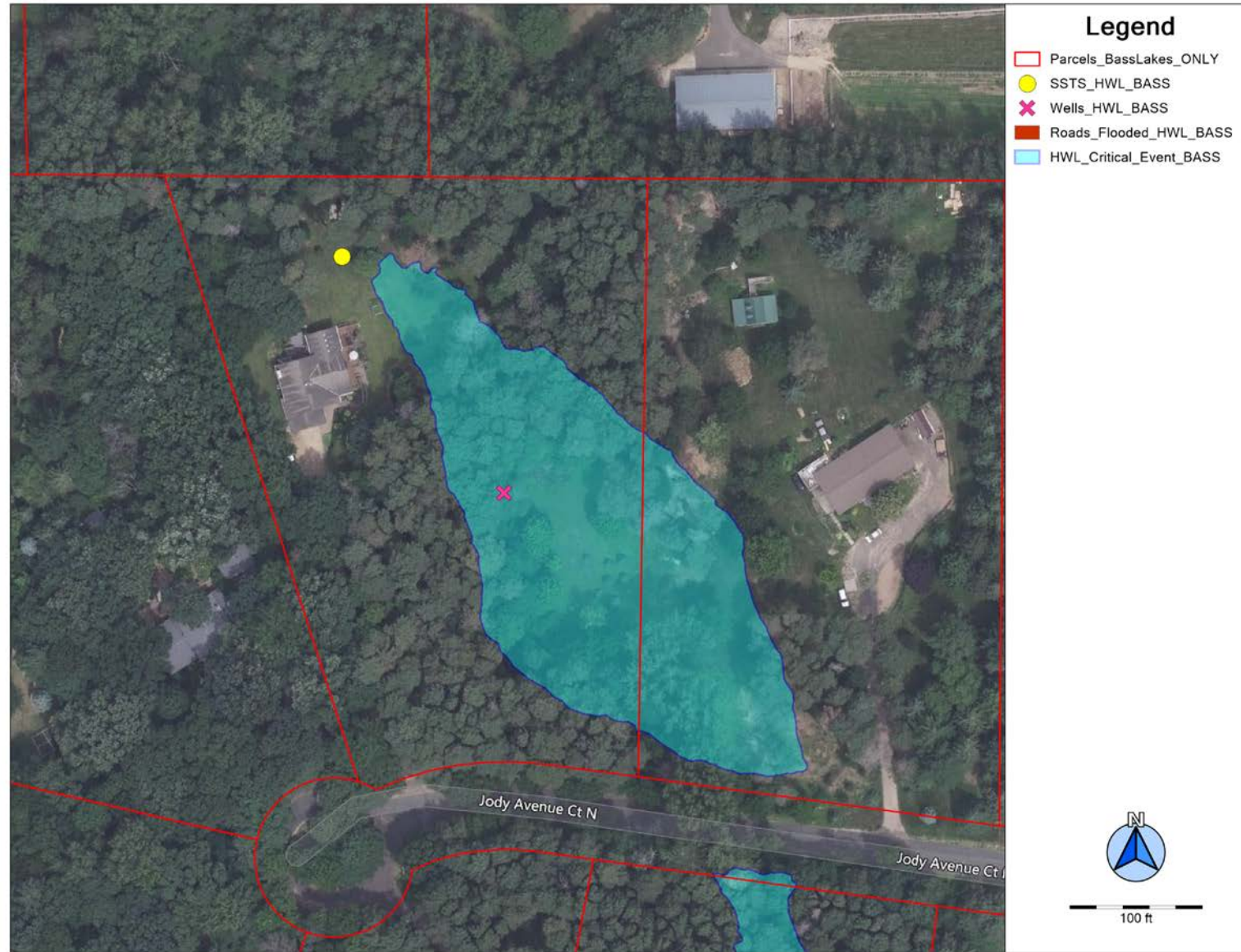
Flood Risk Review: Findings Property Review



Flood Risk Review: Findings Property Review



Flood Risk Review: Findings Property Review



Flood Risk Review: Findings Property Review

