

# Waterford Dam

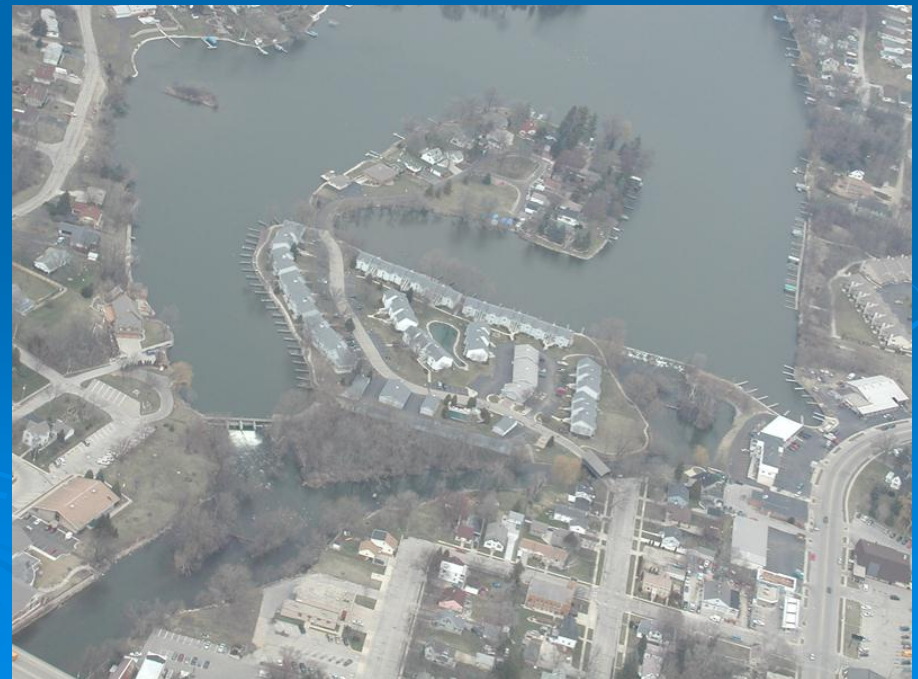
## Dam Failure Analysis and Zoning

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# Presentation

- Dam Regulation
- Dam Failure Analysis
- Hydraulic Shadow Map
- Emergency Action Plan
- Downstream Zoning



# Wisconsin Dam Regulation Dam Safety Program

- Dams are regulated for:
  - Protection of life, health and property from unsafe dams
  - Protection of public rights in navigable waters (Public Trust Doctrine)

# Wisconsin Dam Regulation Dam Safety Program

- Chapter 31 State Statutes - DNR responsible for regulation of state dams
- NR 333 Wis. Admin. Code - Dam Design and Construction
- NR 116 Wis. Admin. Code - Floodplain Management

Protection of life, health and property from unsafe dams

# Waterford Dam

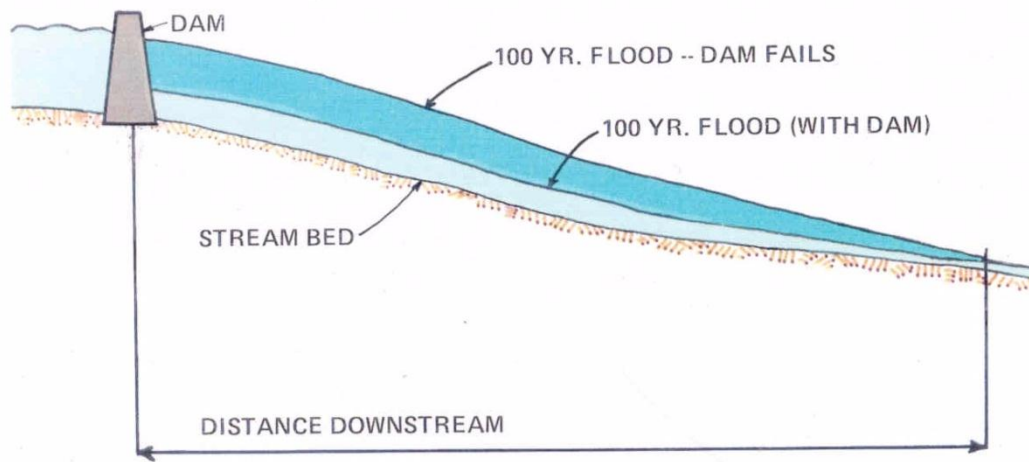
- Classified as Large Dam
  - Structural height = 10 feet
  - Maximum storage = 7500 acre-feet

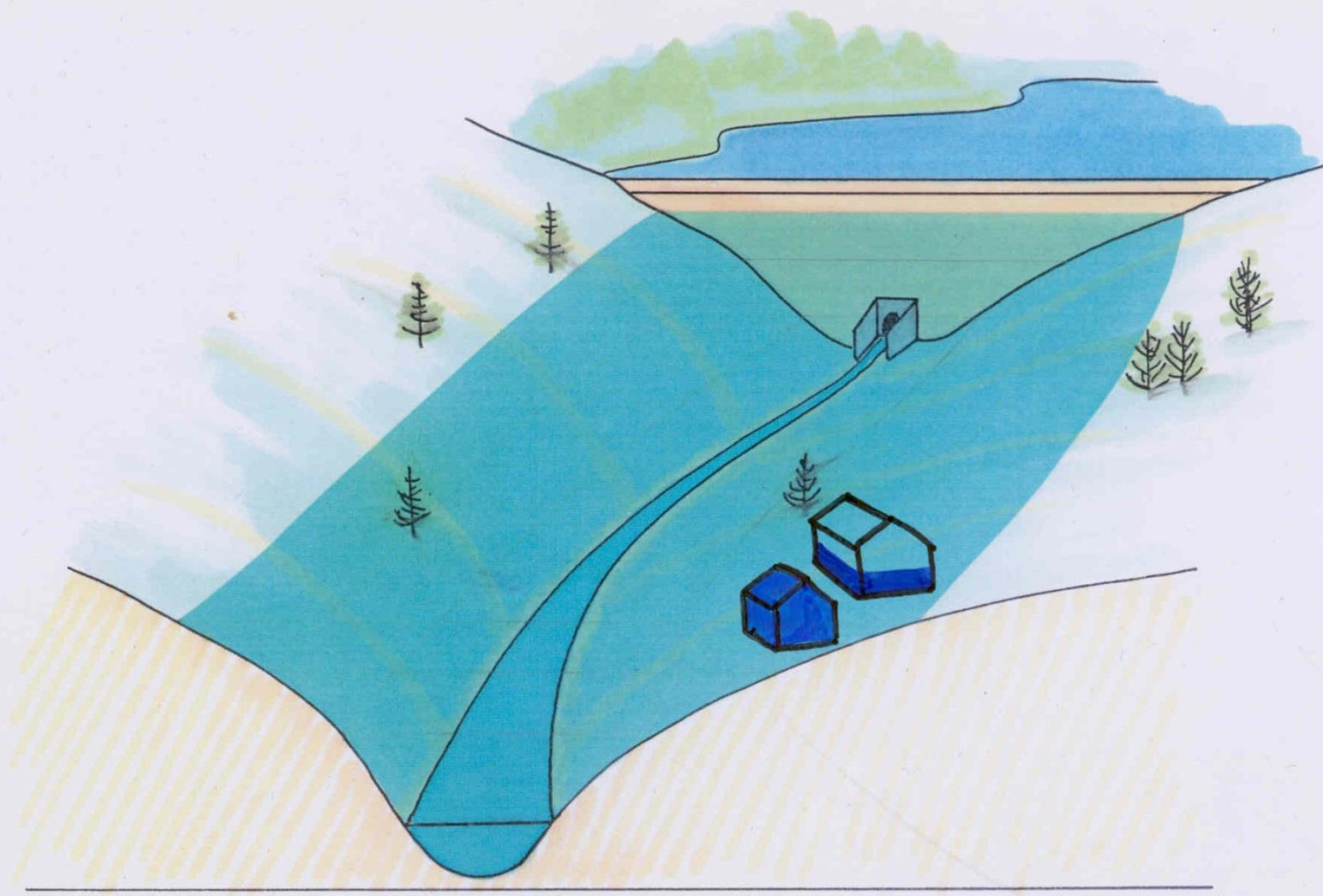


# Dam Failure Analysis

- Used for three purposes
  - Identify the inundation area and determine the hazard potential
  - Determine the design capacity requirements
  - Incorporate into the Emergency Action Plan
  
- Data intensive analysis done by engineering consultant

PROFILE

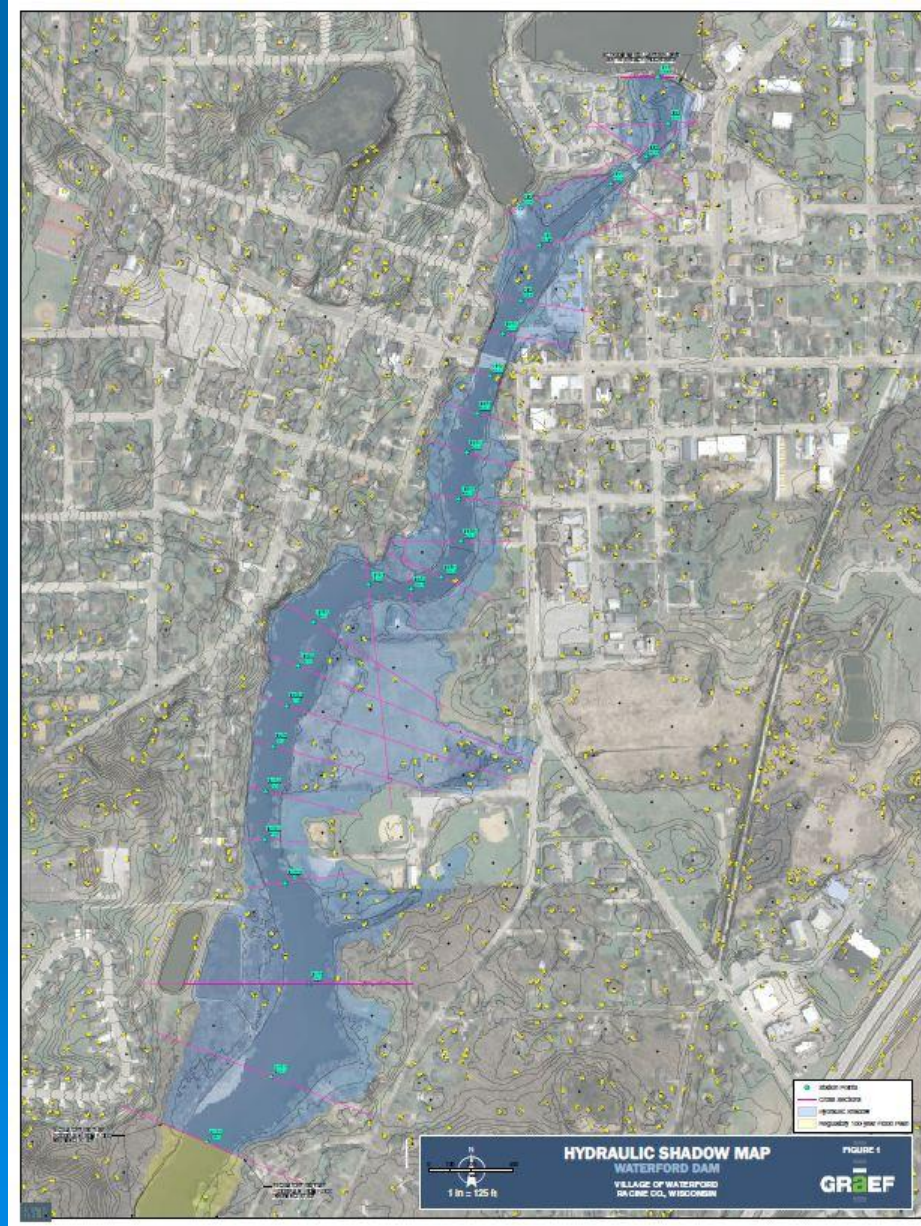




100 YEAR FLOOD -- DAM FAILURE



# EAP Inundation Map



# Dam Hazard Rating

- Hazard potential classifications are:
  - **High hazard** - possible loss of life
  - **Significant hazard** - significant property damage but no loss of life
  - **Low hazard** - no loss of life or significant property damage
- Base hazard rating on existing development and land use controls, not condition of the dam

# Emergency Action Plan (EAP)

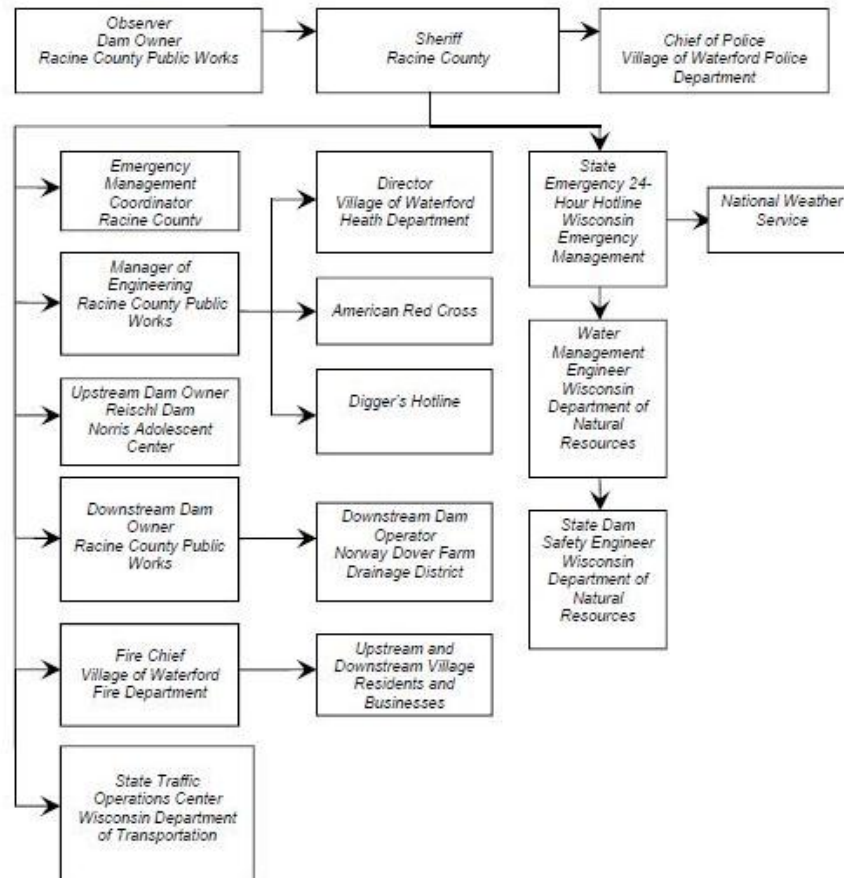
- Formal Document - unique to each dam
- Identifies potential emergency conditions
  - potential failure, actual failure
  - flooding condition, no threat to dam
- Specifies procedures to:
  - mitigate problems at dam
  - notify effected population
- Provides information for local emergency managers

# EAP Flow Chart

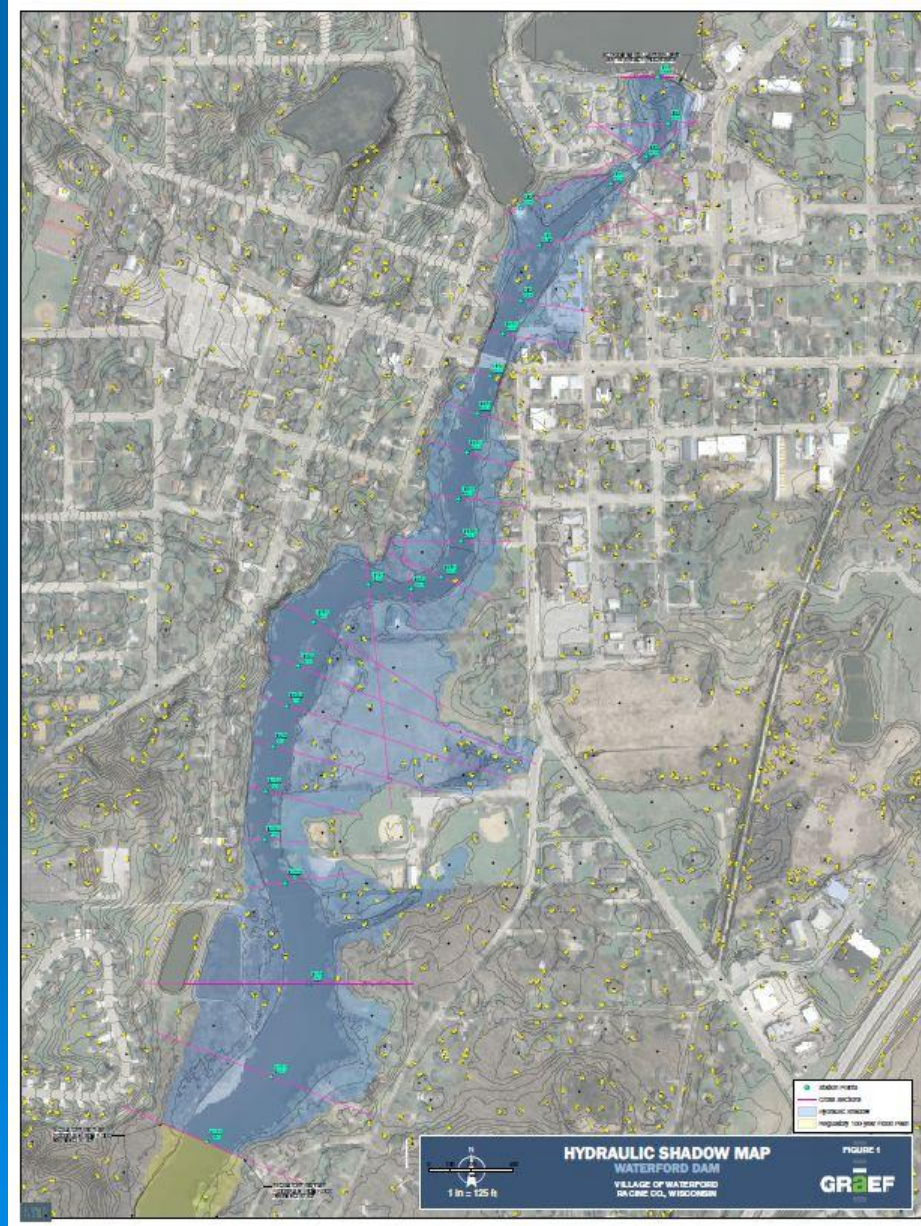
## Emergency Notification Flow Chart

### Emergency Level:

### WARNING



# EAP Inundation Map



# Floodplain Zoning

- Areas downstream of a dam are required to be zoned and regulated by the use of floodplain zoning
- Properties in the hydraulic shadow that are outside the floodway will have to be constructed and modified in accordance with floodfringe development standards in the Waterford Floodplain Zoning Ordinance

# Resources

- DNR Dam Safety Program Website

<http://dnr.wi.gov/topic/dams/>

- Tanya Lourigan

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