

# WATER AND SCIENCE ADMINISTRATION Climate Adaptation Goals

## DAM SAFETY AND RESILIENCE

Ensure dams are safe and resilient for all Maryland citizens

## EMERGENCY RESPONSE AND PREPAREDNESS

Ensure water programs are prepared and responsive, protect public health, vulnerable populations, and the environment from extreme events

## FLOOD PROTECTION AND POLLUTION PREVENTION

Increase flood resilience, prevent pollution, and reduce vulnerabilities from larger, more frequent and more intense storms



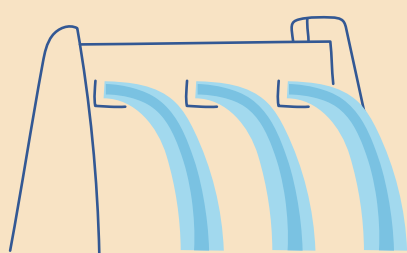




# DAM SAFETY

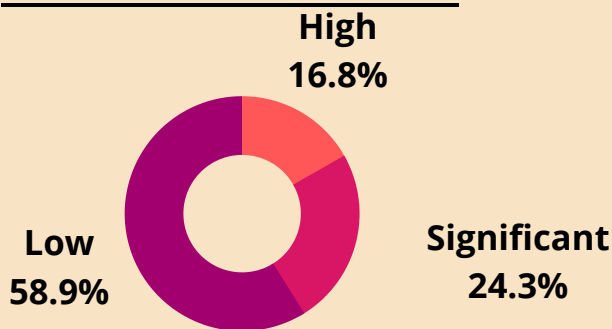
## Facts & Key Strategies

### Facts to Know



**627 Dams**  
(>15,000 small ponds)

#### Dam Hazard Classification



#### High Hazard Dams Inspected



#### Emergency Action Plan Compliance



### Science & Engineering Design Gaps



- Reevaluate Maryland's Probable Maximum Precipitation
- Perform small pond integrity studies from short high-intensity storms
- Reassess spillway criteria and earthen spillways
- Establish methods for evaluating dam removal impacts

### Dam Inspections and Inventory



- Ensure dams are inspected routinely
- Ensure dam owners update and exercise emergency action plans
- Identify unsafe and dams of concern to perform pre-disaster inspections
- Improve dam owner outreach and education on maintenance and preparedness
- Complete small ponds inventory and mapping to fill data gaps
- Reassess each dam's hazard classification to include new risks
- Develop field inspection app that can inform emergency response

### Emergency Dam Repair and Removal



- Continue to improve Maryland's Comprehensive Flood Management Grant Program
- Build intergovernmental partnerships
- Pursue other funding opportunities, (e.g., FEMA *Building Resilient Infrastructure and Communities* and *High Hazard Potential Dam* grants)



# EMERGENCY RESPONSE & PREPAREDNESS

## Key Strategies

### Emergency Response Planning



- Inventory and keep updated all MDE emergency action plans, guidance and procedures (e.g., flood, drought, pollution response)
- Exercise emergency plans and procedures regularly

### Adaptive Management & Continuous Improvement



- Conduct post-mortems of emergency response events to identify lessons learned
- Develop and implement strategic measures to address identified deficiencies
- Collaborate across MDE Administrations

### Drought-Vulnerable Public Water Systems



- Identify drought-vulnerable systems
- Develop and implement timely corrective action plans for vulnerable systems
- Expand the types and volume of water reuse in Maryland

### Leverage New Technologies



- Adopt new technologies across programs to support response activities



# FLOOD PROTECTION & POLLUTION PREVENTION

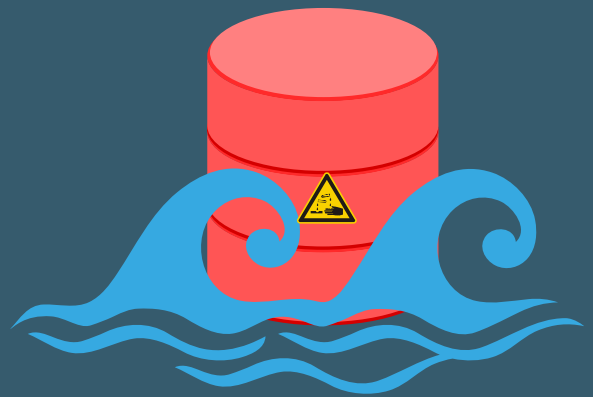
## Key Strategies

### Science & Engineering Design Gaps



- Use the most current science to update storm precipitation values
- Develop and implement best practices to protect coldwater streams from thermal pollution.
- Factor climate science into water quality and hydrologic modeling

### Vulnerable Legacy Industrial Activities in the Floodplain



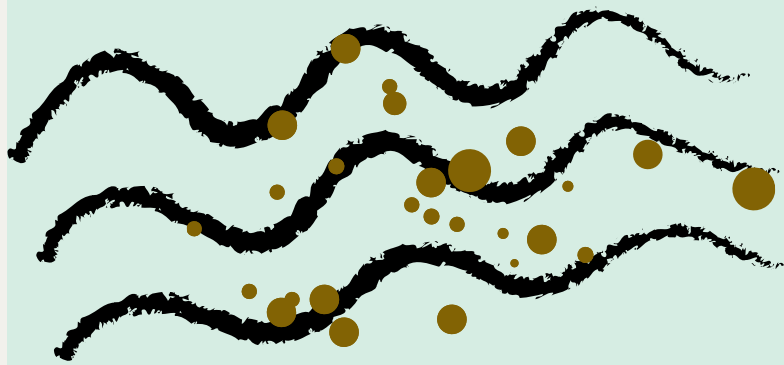
- Inventory activities and identify vulnerabilities
- Target industrial stormwater compliance to floodplain industries
- Develop general permits for certain industrial activities in a floodplain
- Partner with Land and Materials Administration on solutions

### Water Resources Resilience



- Incorporate climate change risks into field investigations
- Enhance protection of wetland and stream buffers
- Increase the use of living shorelines to improve coastal resiliency
- Screen permit applications for flood vulnerability
- Offset climate-driven pollution loads to Chesapeake Bay
- Work with local governments to ensure land use plans consider climate impacts to water resources.

### Erosion Control and Stormwater Management



- Modernize stormwater permits and erosion control requirements to incorporate updated precipitation and flooding hazards
- Work with local governments to align stormwater restoration with flood mitigation, local hazard management planning and funding programs
- Promote enhanced erosion controls through compliance assistance and training.