Topics Covered

- Program Staff
- Dam Safety Program Authority
- What is a “dam”? 
- Hazard Classifications
- Inventory Overview
- Inspections & Enforcement
- Emergency Action Plans
- State Owned Dams
Dam Safety Program Authority

- KRS 151 authorizes the dam safety program
  - Regulation of “dams” as defined by KRS (151.100, 151.125, 151.297)
  - Regulation of other hazardous impoundments (151.125, 151.297)
- Majority of dams are state regulated
- Dams owned or operated by USACE are not regulated by the Commonwealth
What is a “dam”?  

• Dams are defined by KRS 151.100 Section 12  
  – Any artificial barrier that can impound or divert water and:  
    • Is or will be 25 feet or more in height  
    OR  
    • Can or will impound 50 acre feet or more at maximum elevation
Hazardous Impoundments

• What if an impoundment doesn’t meet the definition of “dam”?  
  – KRS 151 also authorizes the regulation of hazardous impoundments (151.297)  
  – Any impounding structure that poses a risk to life or property  
    • Detention basins in dense residential areas
Hazard Classification

• Hazard class is based on consequences of failure.
  – Low
  – Significant (Moderate)
  – High
• Not based on the condition of the structure.
• Can change as the consequences of failure change (hazard creep).
Maple Leaf Lake, 2004
Maple Leaf Lake, 2016
KY Dam Inventory

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
<th>Number</th>
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<tr>
<td>Low</td>
<td>57.8%</td>
<td>646</td>
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<tr>
<td>Significant</td>
<td>33.3%</td>
<td>131</td>
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<tr>
<td>High</td>
<td>7.4%</td>
<td>178</td>
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<td></td>
<td>1.5%</td>
<td>14</td>
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</table>

*as of 9/16/2019

57.8% (552) Private
33.3% (318) Local Gov’t
7.4% (71) State Gov’t
1.5% (14) Federal Gov’t
Regulatory Requirements

• Outlined in KRS 151.297

• Promulgated in 401 KAR 4:030
  – Includes design requirements for regulated dams

• Proposed dam construction or modification is permitted under KRS 151.250
  – Must also meet the requirements of 401 KAR 4:060 (Floodplain Management)
Inspections

• KRS 151.295 Requires the Cabinet to conduct a dam inspection program
  – Visual inspection to assess the condition of the structure
  – Records review to determine compliance status

• Inspection Frequency
  – High Hazard: Annually
  – Significant Hazard: Every 3 years
  – Low Hazard: Every 5 years
Inspections

- Inspection areas:
  - Good grass cover – mown
  - Woody growth – trees, bushes
  - Burrowing animal activity
  - Surface erosion, ruts or gullies
  - Signs of stability issues – cracks, sloughs, holes, etc.
  - Spillways and drains clear
  - Seepage, leaks
  - Appurtenances in good condition
• What about dams that are out of compliance?
  – Unpermitted construction
  – Poor Maintenance
  – Design Deficiencies

• The cabinet directs the owner to implement remedial measures. (KRS 151.297)
  – Authorizes emergency action if owner refuses or is unable to comply.
Emergency Action Plans

• DOW advises EAPs for all high hazard dams.
• Provides crucial information to be used by Emergency Managers in the event of a dam incident.
• DOW can provide guidance on the development of EAPs to owners and EMs.
State Owned Dams

• DOW is the head management agency for dams owned by the Commonwealth
  – Dams are owned by various state agencies – KYTC, KDFWR, etc.
• Capital construction and upgrades are managed through the State Owned Dam Repair program.
• DOW serves as EAP coordinator for state dams
State Owned Dam Repair

- Scenic Lake Dam, Henderson
- Bullock Pen Lake Dam, Grant & Boone Co.
- Beech Creek Dam, Manchester
- Willisburg Lake Dam, Washington Co.
- FEMA High Hazard Potential Dam Rehabilitation Grant
  - Marion County Sportsman’s Lake Dam
  - Boltz Lake Dam
  - Guist Creek Lake Dam
Scenic Lake Dam Rehabilitation

- Built in 1930, reconstructed 1953
- Foundation stabilized by Deep Mixing Method (DMM)
- New spillway and downstream buttress
DMM Installation by Raito
Bullock Pen Lake Dam Rehabilitation

- High hazard, hydraulically deficient
- Sole source water supply for a portion of BPWD customers
- Severe erosion of the spillway channel
- New labyrinth spillway to meet hydraulic requirements
Bullock Pen Lake Dam – KY00055
Beech Creek Dam

- Spillway upgrade & blanket drain
- Completed 2018
Questions

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