ANNUAL DAM INSPECTION TECHNIQUES

FOR OPERATORS



AVOIDING "OPERATIONAL EXCITEMENT" THROUGH PROACTIVE OBSERVATION

Goal:
Proactive Dam Maintenance, Operations, and Capital Planning

Part 1:
Practical Tips and Tools for Dam Safety Observation

Part 2 (In the Field Today):
Five Areas Of Observation



→ OPERATOR TIP
ALWAYS WORK WITH A PARTNER

- Operational Comfort = Diminished Objectivity
- A Second Pair of Eyes Restores Accountability & Improves Continuity
- Take a Different Staff/Board Member Each Time
- Obvious Safety Reasons





Routinely 'seen' conditions become 'normal' with time

→ OPERATOR TIP
INSPECT WITH YOUR FOREMAN / CONTRACTOR

- Fresh Technical Eyes - New Perspective
- What to Address AND How
- Collaborate to Field Engineer & Schedule a Realistic Repair
- Builds Trust - Improves Implementation
- Shared Ownership



Make your observations more actionable

→ OPERATOR TIP
INSPECT WITH YOUR FOREMAN

- Access & Staging Considerations
- Effectiveness of Equipment
- Availability of Materials







Make your observations more actionable

→ OPERATOR TIP
REVIEW THE LAST 'TO-DO' LIST





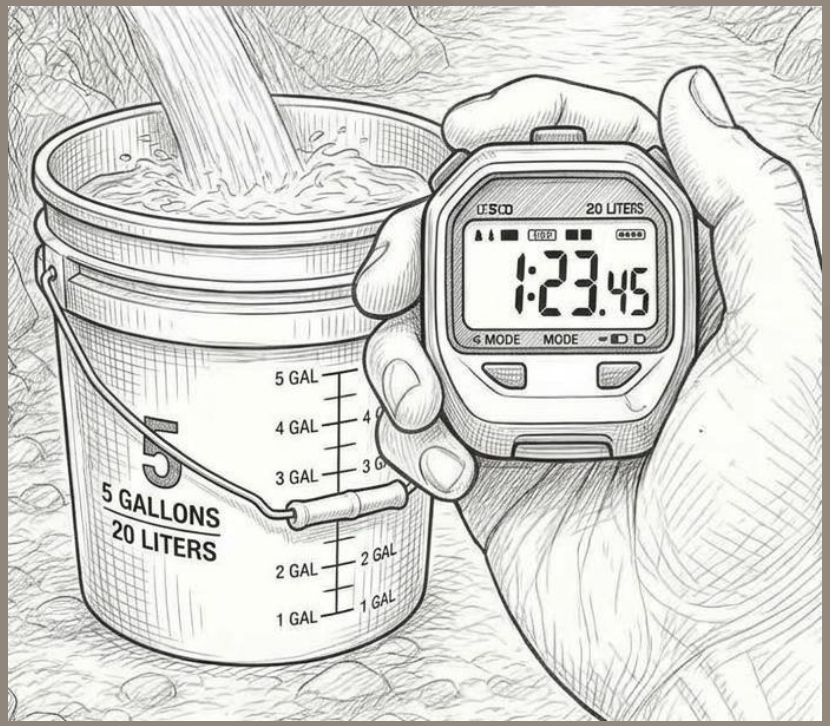
- Has An Action Item Gone Uncorrected Several Times?
  - Why?
  - Is it Important?
- Baseline: Has a Critical Observation Point Changed?
- What Tools Do You Need to Remember to Bring?

Consider the relevance of action recommendations or observations

→ OPERATOR TIP

USE SIMPLE, READILY AVAILABLE TOOLS







Simple is best. Simple is repeatable by anyone.

→ OPERATOR TIP

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→ OPERATOR TIP
TAKE A MILLION PHOTOS

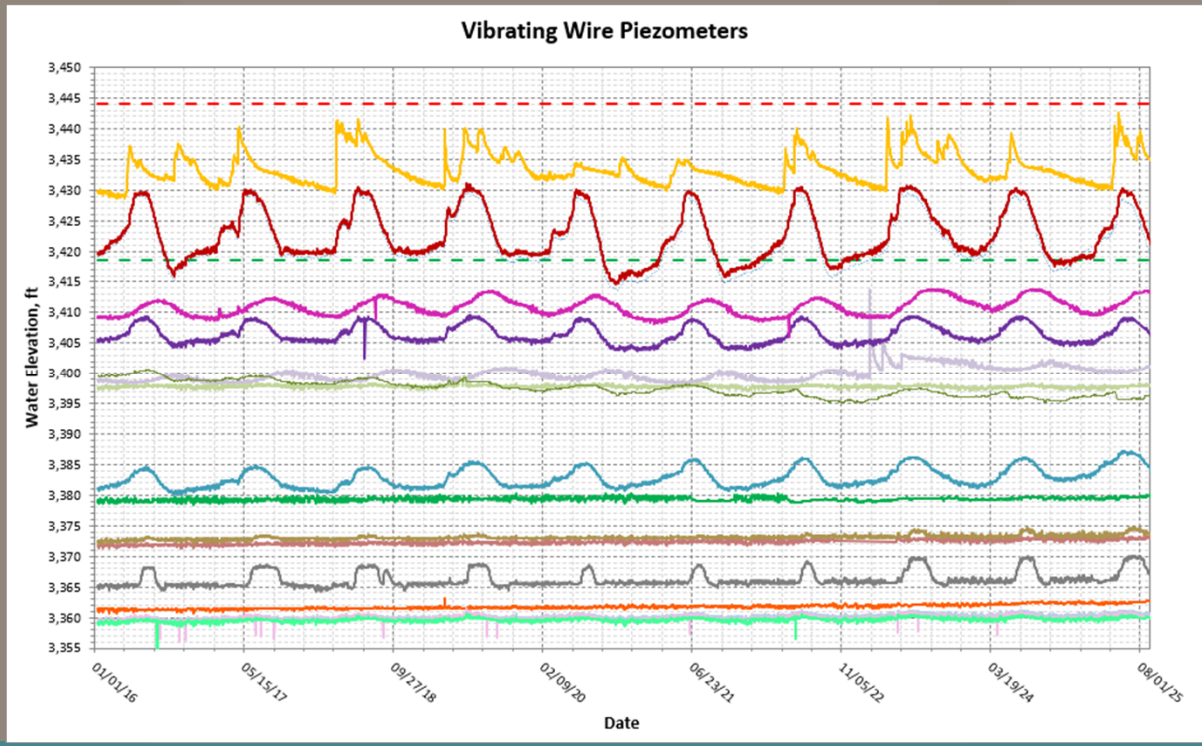
- Photos are Easy and Speak Volumes
- You Can Never Take Too Many
- You'll Never Have the Shot You Want
- Videos are Even Better – Water Moves



The best notes you've ever taken

→ OPERATOR TIP
REGULARLY MEASURE/MONITOR INSTRUMENTATION

- Instrumentation is So Critical Yet Repeatedly Neglected
- Baseline: Without Reliable Data, No Baseline Exists
- Point of Discussion: FEMA Dam Seepage Database – Active?



Know your 'normal'

→ OPERATOR TIP

PERFORM VISUAL & MONITORING CHECKS FOLLOWING:

- Prolonged Rain
- High Winds at Full Pool
- Seismic Activity
- Heavy Wet Snows

→ Improved Accountability / Response



→ OPERATOR TIP
COLLABORATE WITH DSP STAFF

- Identify Problems Before They Become Threats
- Draw on Their Experience and Stewardship
- Ask for Help on Your Next Inspection
  - Tools
  - Manpower
  - Expertise

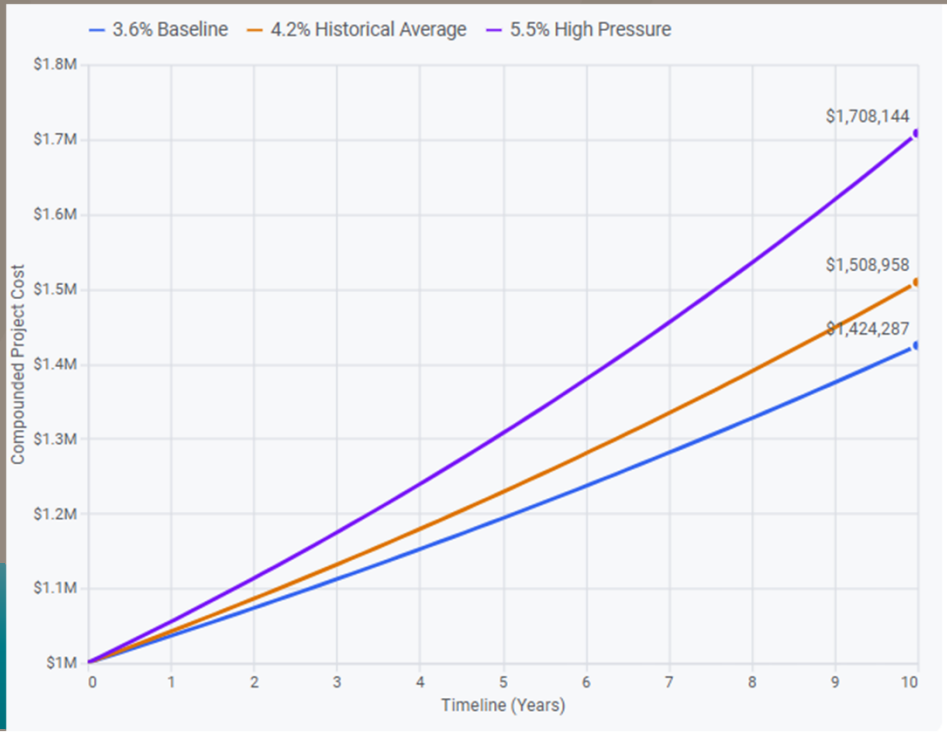


Not just regulatory: The staff at the Dam Safety Program want to help you make meaningful dam improvements

→ OPERATOR TIP

INCREASE YOUR OPERATING BUDGET…EVERY SINGLE YEAR

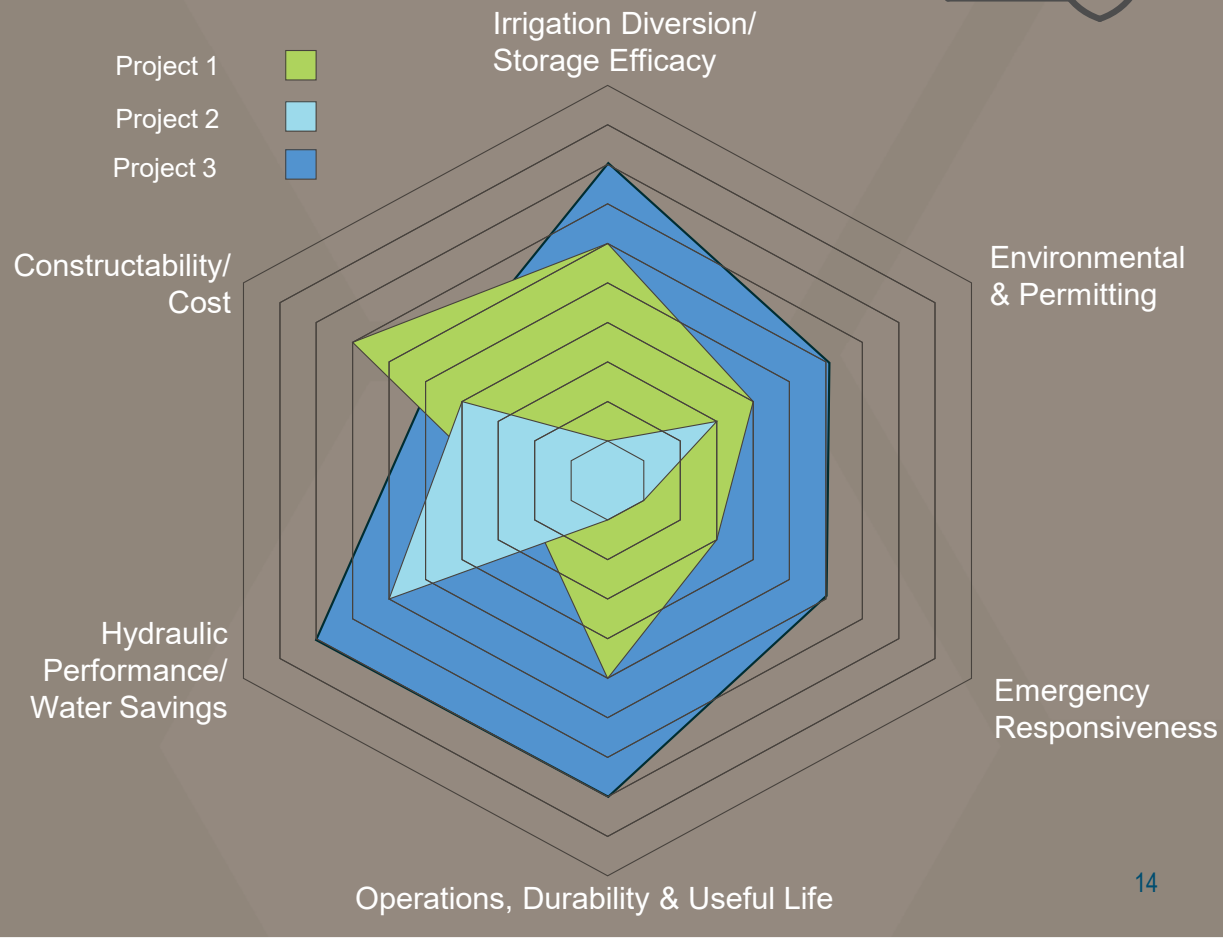
- Budgetary Constraints do Not Lessen The Standard of Care for Dam Safety
- Your Inspections and Performance Of Maintenance are Your ‘Insurance’
- Repairs Do Not Cheapen with Time
- What is the Cost to Wait? (1.5x)



Proactive budgeting is Dam Safety

→ OPERATOR TIP
PLAN, PREPARE AND ADAPT

- Perform Capital Planning
- Budget Accordingly
- Budget Conservatively
- Be Flexible. Things Will Not Fail Accordingly



Change is the only constant

KEY INDICATORS FOR A SUCCESSFUL DAM EVALUATION (USING COONEY DAM AS A TRAINING GUIDE)

- Seepage: A Visual Indicator
- Structural Integrity: Evaluating and Documenting Cracks and Movement
- The Living Dam: Embankment Slopes and Vegetation
- Emergency Readiness: Mechanical and Spillway
- Instrumentation and Data as a Baseline



Montana Association of Dam and Canal Systems

MADCS

Minimizing Operational Surprises Through Proactive Observation & Documentation

THANK YOU!

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