

ZOAR LEVEE & DIVERSION DAM

Muskingum River Basin, Tuscarawas River, OH

**PUBLIC SCOPING
MEETING**

Huntington District

24 MAY 2011



US Army Corps of Engineers
BUILDING STRONG®



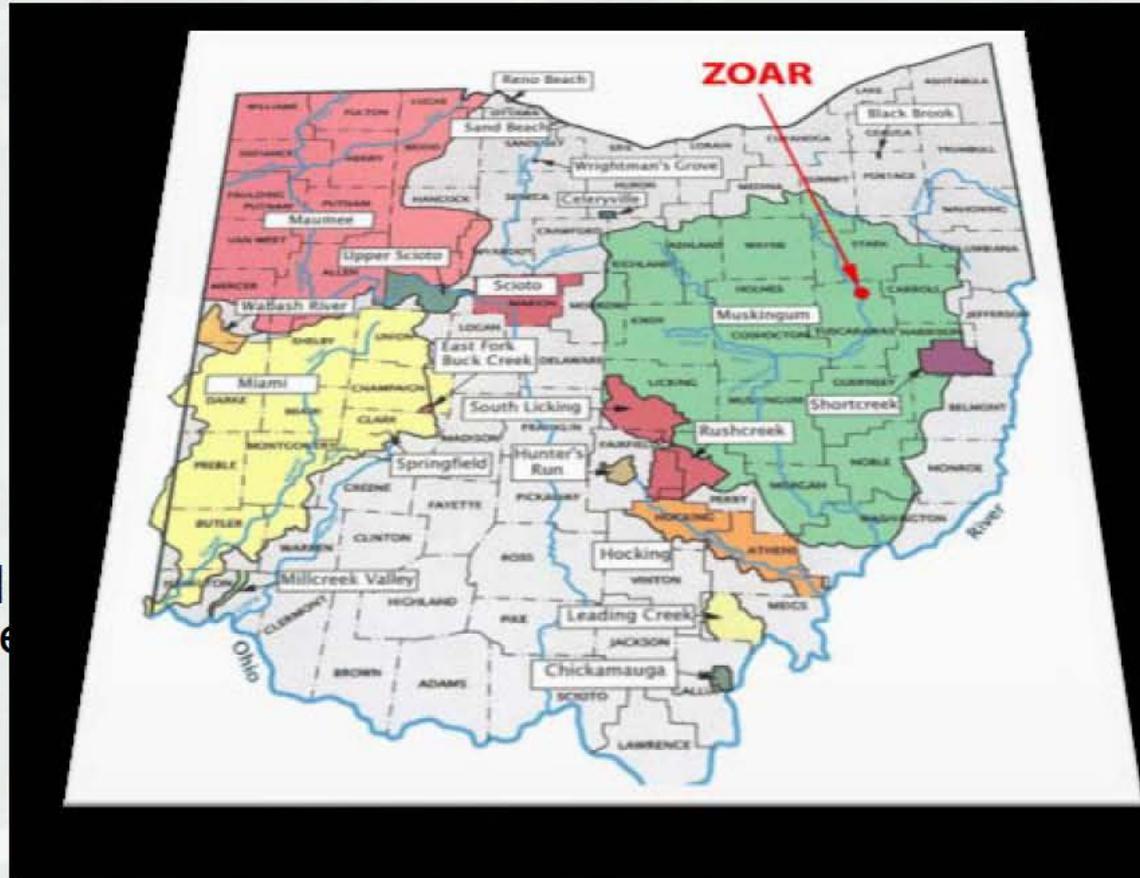
Purpose

► Presentation:

- Overview of Study Process

► Workshop:

- Invite and promote open communication concerning issues and impacts that need to be addressed
- Help identify alternatives that should be analyzed



Appurtenant To Dover



Project Components

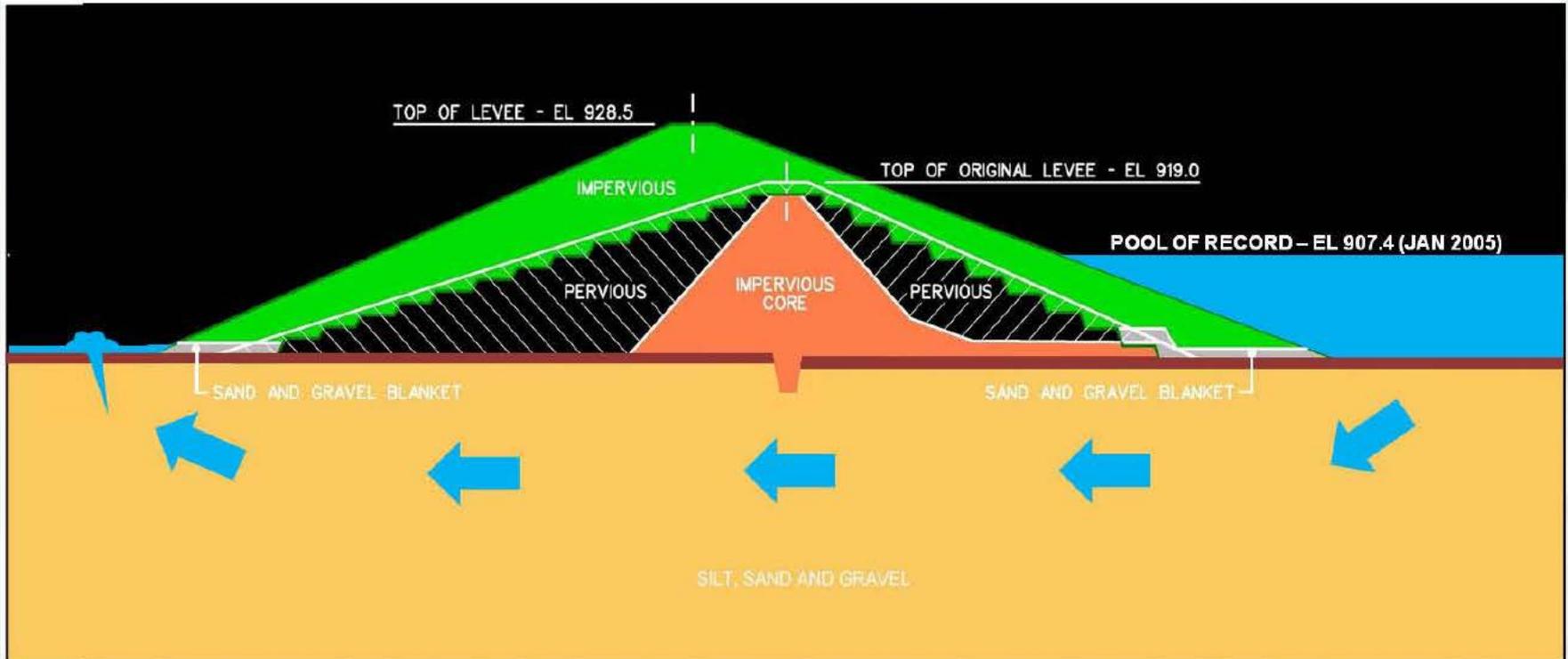


Built To Surround The Village Of Zoar

- Keeps Village out of Dover's flowage easement
- Elevation 916 (spillway crest at Dover)



What Is The Problem?



Dam Safety Action Classification (DSAC)

- As a result of 2008 storm event Zoar Levee and Diversion Dam is a DSAC I (Urgent and Compelling)



Process for a DSAC 1 Project

IRRM Plan - Done - Can be updated



Implement IRRMs - In Progress



THE PROJECT IS NOW SAFER THAN IN 2008

Conduct DSM Study - Started this Year



Recommend Risk Management Plan - Goal of the Study



Approve - Requires Approval from Corps HQ in Washington D.C.



Implement - Requires additional funding



Now Conducting A Dam Safety Modification Study

- Goal: To find the best risk management plan for the long-term
- Why: Cannot address dam safety issues without conducting this study
 - ▶ Unless taking remedial actions with O&M funds
 - ▶ Or taking emergency action



6 Step Dam Safety Modification Study Process

1. Determine the Scope of Study;
2. Defining the Problems & Potential Consequences;
3. Formulate Potential Alternatives;
4. Evaluate Potential Alternatives;
5. Compare Potential Alternatives;
6. Identify the Recommended Plan.



Step 1

Determine the Scope of this Study

- What opportunities exist to reduce risk to life and property?
 - How can we keep people out of harm's way?
 - Public Safety is our Number 1 Concern.
- What are the study objectives?
- What are the study constraints?



Step 2

Defining The Problems & Potential Consequences

- What are the potential ways that the Levee or Diversion Dam could fail?
- What's the chance it will fail in a given year?
- What will be harmed if a failure occurs?
 - We need your help determining what is at risk.
- What happens if we do nothing?



Step 3

Formulate Potential Alternatives

- Alternatives must:
 - be in compliance with all statutes, regulations and common law
 - address all potential problems (failure modes) identified, as well as meet study objectives
 - address study objectives, with consideration of constraints
 - not be limited to solutions that only the Corps can implement



Step 3 (continued)

Types Of Possible Measures

Including but not limited to...

- **Structural Measures:** Modify The Structure To Reduce Risk
 - ▶ Cut-off walls
 - ▶ Seepage blankets / berms
 - ▶ Relief wells
 - ▶ Replace pumps
 - ▶ Relocate levee and/or diversion dam
 - ▶ Abutment grouting
 - ▶ Replacement of levee and/or diversion dam
- **Non-Structural Measures:** Modify the environment to reduce risk
 - ▶ Flood Warning Early Evacuation Plan
 - ▶ Flood-proofing
 - ▶ Breaching & abandonment of the Levee and/or Diversion Dam
 - ▶ Acquisition



Step 4

Evaluating Potential Alternatives

Each alternative plan should be independently evaluated as to its:

- **Completeness:** does the alternative meet the study objectives?
- **Efficiency:** is the alternative the most cost effective means of achieving the objective?
- **Effectiveness:** the degree to which the alternatives meets the study objectives.
- **Acceptability:** is the alternative acceptable in terms of applicable laws, regulations and public policies.



Step 4 Evaluation Guidance

DSM Guidance ER 1110-2-1156

- Primary Evaluation Factors
 - ▶ Life Safety Is Paramount
 - ▶ Evaluate How Well Alternatives Address The Different Ways Failure Can Occur
 - ▶ Try To Leave As Little Residual Risk As Possible And Communicate The Residual Risk Left Behind By Any Alternative
 - ▶ All Alternatives Must Meet All Relevant Engineering Guidelines – Be Technically Sound
 - ▶ Evaluate And Understand Impacts To Social, Cultural, And Environmental Resources



Step 4 Evaluation Guidance: Principle & Guidelines For Water Resources Planning

▶ National Economic Development (NED)

- Identification of the NED plan - plan that reasonably maximizes net economic benefits consistent with protecting the Nation's environment.
 - ▷ Identification of the NED plan is required

NEPA -
EIS

▶ Environmental Quality – RESOURCE LAWS

- Non-monetary effects on cultural, aesthetic ecological resources

▶ Other Social Effects (OSE) – NEPA

- Community Impacts, health & safety, displacement



Step 5

Comparing Potential Alternatives

The goal of this step is to rank the potential alternatives in terms of the Evaluation Factors and Selection Criteria

The potential solutions are compared:

- to the No Action Alternative; and
- with each other to determine the difference in the benefits and effects between the alternatives



Step 6

Identify The Recommended Plan

At this time the Draft Dam Safety Modification Study Report will be provided to the public for review and comment.

Notice of Availability and Public Hearing

All comments received will be addressed and/or incorporated into the report.



Goals Of Scoping Workshop

1. Invite and promote open communication concerning issues and impacts that need to be addressed during the study
2. Help identify alternatives that should be analyzed



Workshop Format

Station 1: Dam Safety Issues

Station 2: Study Process

Station 3: Economics

Station 4: Engineering

Station 5: Community Impacts

Station 6: Historic Properties

Station 7: Environmental

Station 8: HTRW

Station 9: Real Estate

Station 10: Muskingum Projects



How To Comment

*Scoping will proceed for 60 days
or until July 24, 2011*

Go to talk with Corps person tonight.

Visit: <http://www.lrh.usace.army.mil/projects/review/>

Scroll to the bottom and fill out the Public Comment Form. Be sure to identify the project with the word Zoar. When completed press the "Submit Form" Button.

Fill-out a comment card and mail to:

Attention to Aaron Smith (Zoar) OR
U.S. Army Corps of Engineers
CELRH-PM-PD-R
502 Eighth Street
Huntington, West Virginia 25701-2070

Email Comments to:
zoarlevee@usace.army.mil
Please put the words Zoar Comments
in the subject line

Call Aaron Smith at (304) 399-5720 OR

Call Public Affairs at (304) 399-5353



Public Participation Does Not End With Scoping

Sign-up to be on the mailing and email distribution lists for updates on the study.

You can do this on the sign-up sheets at the door or by filling out a comment sheet.

You can join at any time.



Public Participation Does Not End With Scoping

Join the Community Advisory
Committee

You can do this on the sign-up
sheets at the door or by filling out
a comment sheet.

Please join by June 3, 2011.



THANK YOU

