

Public Scoping Meeting for Hunter's Run Conservancy District Structures 4 and 9 Fairfield County, Ohio

DECEMBER 2, 2021

Purpose, Protocol and Expectations

Agenda and Scoping Tables on Sponsors' Websites

Q&A Session at End of Presentations

- Raise Hand Icon
- Chat Icon for Typing Questions

Meeting is Being Recorded

PowerPoint will be Posted to the Website

Today's Objectives

- Explain Roles and Responsibilities of Key Parties
 - NRCS
 - Sponsors
 - Dam Safety Agency
 - Contractor and Subcontractors
- Review National Dam Rehabilitation Program
- Provide Information on Structures 4 and 9
- Determine “Scope” of the Project
- Encourage Input and Contributions By Others During Planning Process

History of Watershed Flooding

By

Lindel Jackson, President

Hunter's Run Conservancy District

and

Jonathan Ferbrache, Landscape Architect,

Fairfield Soil and Water Conservation District



Upper Hocking Watershed Work Plan as implemented by local sponsors: Fairfield Soil and Water Conservation District and the Hunter's Run Conservancy District

Spurred by the flood of 1948, the citizens of the watershed petitioned the Courts to create the Hunter's Run Conservancy District to focus on flooding impacts on Hunter's Run and then the petition grew to include the entire Upper Hocking Watershed.



Columbus Sunday Dispatch. 6-29-1952



Penn. RR at Hunter's Run. 7-22-1948



US 22 Bridge over Hunter's Run. 7-27-1948

The Community was literally cut-off following the flood because bridges were destroyed and railroads were unpassable.



This daylight view, looking south on George-st from Wheeling-st, shows four parked automobiles half-submerged. At 3 a. m. the water was over their tops.

Lancaster's westside neighborhoods flooded over their car tops at 3AM and basement walls collapsed.

WEATHER:

Partly cloudy and somewhat warmer this afternoon. Fair tonight. Thursday increasing cloudiness and somewhat warmer.

Lancaster Eagle-Gazette

YOUR NEWSPAPER SINCE 1809

ESTABLISHED 1809—NO. 149

LANCASTER, OHIO, WEDNESDAY, OCTOBER 6, 1948

Price Five Cents

Dams Would End Flash Flood Threat, Investigation Committee

Lancaster could spare itself a repetition of the "flash flood" disaster of last July 22 by building dams on Hocking River and Hunter Run, in the opinion of a citizens' committee named by city council to investigate the causes of the flood and possible preventive measures.

The committee also reported that "we believe the damages were more than double the amount of \$117,470.83 reported and listed by residents and businesses of the flooded area."

The committee, composed of Mrs. Fran Taylor, Ollie Smith, Jr., Homer Clapper, Orlo Lechner, and Tom Taylor, all of whom suffered flood loss to homes or businesses, held a dinner meeting at Hotel Lancaster to give farmers whose properties about Hunter's Run an opportunity to air their opinions and suggestions.

The committee also suggested to the State Department of Highways that the bridges on Route 22 in Rosebank, and in Lincoln-rv, just west of Cedar Hill-rd, be increased in width, also made longer

and higher to prevent recurrence of debris wrecking the spans. The cement bridge in Rosebank was washed out last July by the force of the debris.

Mr. Taylor summarized for the farmers the flood's effects on Lancaster proper and asked their assistance and cooperation in finding a remedy.

Round table discussion produced the following agreement: "The damage caused by Hunter Run was due to a heavy rainfall that was held in abeyance by debris, trees and wheat that lodged against a bridge, causing a natural dam. Lancaster was safe as long as that dam held—proving that if we did have a dam that held and water was gradually released when the danger was past, we would avoid this threat to Lancaster."

The farmers voted full cooperation with any preventive measures devised by Army engineers that would definitely provide protection for their crops and for Lancaster proper. They said they

wanted the advice of experts to avoid bringing flood water into Lancaster but to concentrate on holding it back and getting it out of town by dredging out of town. Army engineers are expected to come here for a survey in several weeks, city council learned at its September 27 meeting.

The townspeople agreed that expert advice was needed—but fast! They worried flood protection a "must" with cost consideration incidental. They declared cost of protection would be more than paid for by saving crops and buildings from just one such flood as last July's and warned that the potential threat to Lancaster's chief industrial sector.

Another point made was the threat to lives. It was stressed that "Lancaster is not a safe place to live until something is done. This last flood was worse than the one in 1935. The next one may be even more disastrous. It can happen in a minute. Let's do something now!"

To substantiate their estimate a survey made by the local Road buildings effected in the flood in houses with one-half to two feet to 12 feet of water; 15 foundations completely off foundations.

The committee arrived at a damage, based on the Board's survey will be worth only 50c on the dollar to move the flood menace, the committee declared that they had accurate figures compiled. They propose the Chamber of Commerce also to "carry the ball from here on and Fairfield County."

Run Conservancy District Receives Court's Approval

The Hunter's Run Conservancy District now exists—in theory and on paper at any rate.

With no dissenters appearing during a public hearing in Common Pleas Court this morning, Judge Harry Killburger approved a petition asking for the creation of the District. Five hundred persons had signed the petition.

About 20 persons attended the hearing today. A number of witnesses were called to give technical information relative to creating the district. Atty. James S. Peterson represented the petitioners.

Purpose of the newly-created district is to harness Hunter's Run waters during flood seasons. In 1948, rampaging waters from the creek wreaked havoc on the city's West Side and in Hocking Township.

J. Walter Oberdorfer and George Kunesch, West Side businessmen, appeared as witnesses during this morning's hearing and gave accounts of damage during the 1948 flood to the West Side Lumber Co. and Gay Fad Studio.

Pearl L. Fogle, U.S. Conservancy Service agent for a number of central Ohio counties, including Fairfield, said the 1948 flash flood resulted in a total of \$557,600 damage.

Fogle outlined steps to be taken in the practical aspect of getting the District established. He said four dams would probably have to be built in the Hunter's Run watershed to control the stream.

Fogle stated that a survey conducted in 1949 revealed that approximately \$338,000 would have to be expended for building the four dams. The figure represents the 1949 costs, however, which probably would be considerably higher today.

Several soil conservation agents from local areas, along with several from other states, testified during the hearing.



spread say Ohio State University Extension specialists. later back of Rock Mill, use."

Fierce Flood Of 1948 Awoke Citizenry To Course Of Action

Storm or no storm, most people around Lancaster and western Fairfield County were getting ready for bed or were already asleep at 11 p.m. on the night of July 21, 1948.

LIGHTNING FLASHED, the thunder rolled menacingly across

the dams and other structures to prevent future disasters.

Big dams were discussed, but this would not work since it would involve countless acres under water, but, a watershed plan would work, the people learned.

When properly applied the farmers out in the watershed would

Upper Hocking. They often worked together as they had on July 21, 1948.

WHILE ALL this was going on, the Soil Conservation Service was not idle. Topographical maps had been lifted from the files and exact watershed boundaries drawn. Around that 49-square mile area they drew a red line. Within the



Persons in the Hunter's Run watershed took Lincoln study to measure step pattern, designed to hold

Fairfield's Flood-Fighting



Another conservation agency was building diversion ditches, such as one which protects Charles E. Edgar's farm. 1930-1935.



Frank Day explains map to Fairfield Soil Conservation District Supervisor D. Lusk, P. Bates, E. McChesney, J. Johnson and J. Peters (l. to r.).

The Fairfield Soil and Water Conservation District Board and Hunter's Run Conservancy Board combined forces with Federal Conservation teams from USDA.

- Reduction of peak run-off
- Conservation and tillage practice changes for 50% of farms
- Silt and sediment control
- Channel improvements
- Construction of sediment retarding structures and "gully stopper" basins
- Major flood retarding structures
- Dams 4 and 9 are just two of the eight major flood retarding structures still in use today.



Upper Hocking Watershed and Hunter's Run Conservancy District

- July 21, 1948 - Flood of record caused extensive damage in Lancaster. Over 200 homes and businesses received >\$1M in damages.
- Original Upper Hocking Watershed Work Plan was developed in 1955 as part of the Pilot Watershed Program. Authorized by the Department of Agriculture Appropriation Act of 1954.
 - The Work Plan was “watershed wide” and comprehensive.
 - Implementation of the plan included:
 - 8 dams - built by 1961 and controlled over 15,600 acres (24.4 square miles) of drainage area and provided 6,245 acre-feet of flood storage capacity
 - 22 sediment control structures
 - 800 feet of channel improvement
 - Conservation measures in upstream watershed

Work Plan (cont.)

- Since 1958 two sediment control structures were removed from the Work Plan
- One major flood retarding structure and one sediment control structure were rehabilitated in the early 2000's
- These revisions reflect the current Work Plan as approved by the Court of Common Pleas
- Since 2019 HRCDD has initiated engineering studies on 13 dams in their inventory of varied hazard class across the District.
- Focus for this rehab. plan is on Structures 4 and 9.
- However, the reality is that these dams are not independent and stand-alone dams but are a part of the comprehensive flood control project for the watershed.
- The 100-year FEMA floodplain maps throughout the area are based on the 8 flood retarding structures being in place.

Key Players in Planning Process

Two Local Sponsors

- Hunter's Run Conservancy District
- Fairfield Soil and Water Conservation District

Technical Support > USDA, NRCS

Regulatory > Ohio DNR – Division of Water Resources

Contractors

- Aterra - Schnabel Joint Venture
- EA Engineering, Science and Technology
- George Oamek (Economist)

NRCS – Federal Agency Roles

by

Justin Glier, PhD

USDA, Natural Resources Conservation Service

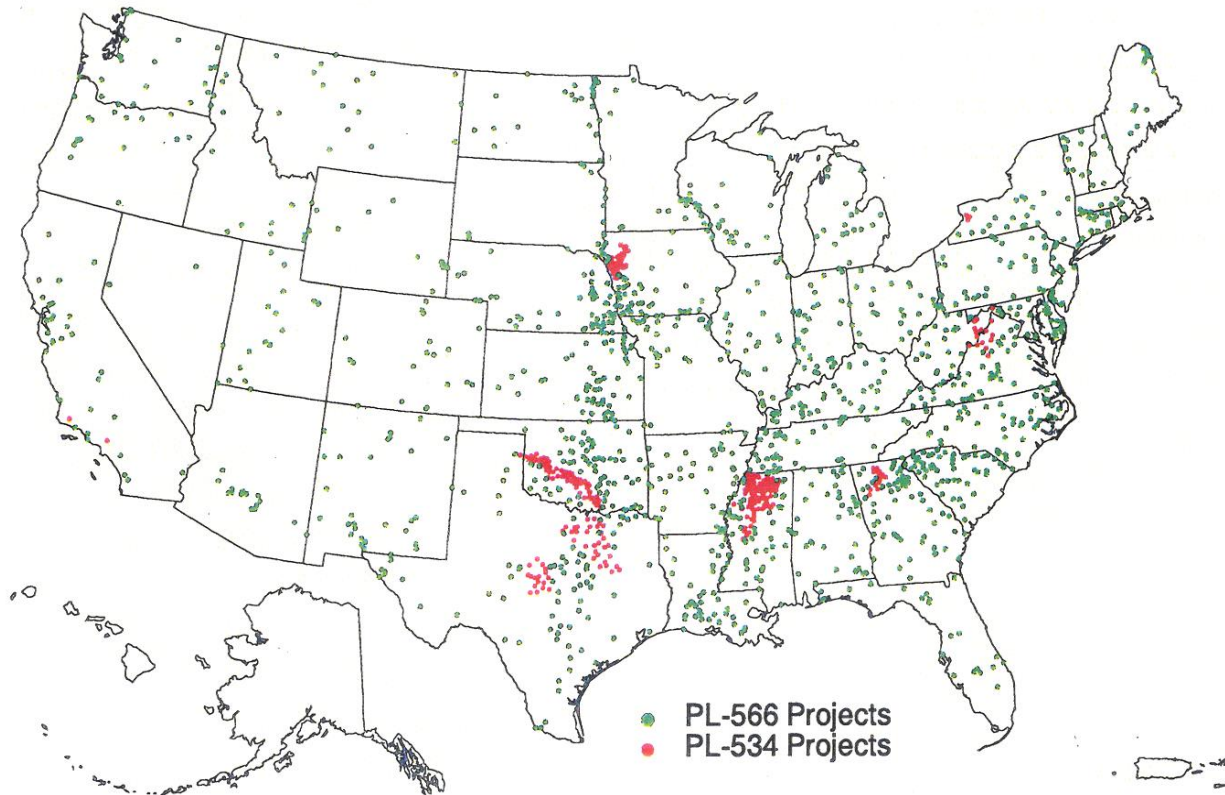
Local Sponsors' Roles

By

Lindel Jackson

Small Watershed Program

Watershed Project Locations



NRCS has assisted communities build almost 12,000 dams since 1948

Eligibility Criteria

The only dams eligible for rehabilitation under this program are those originally built with SCS/NRCS assistance

Limitations

No Operation and Maintenance Work

Sediment Storage life between 50 and 100 years must be achieved

Rehabilitation Actions

Protect the integrity of the dam, extend service life, and meet applicable safety and performance standards

Replace deteriorating components

Repair after catastrophic events

Upgrade to meet dam safety laws

Decommission (removal)

Dam Rehabilitation Program Assistance Steps

1. Sponsor application
2. Site assessment and risk analysis
3. Ranking of applications
4. Project Planning
5. Design
6. Construction

Initial Planning Activities

- Develop a Draft Purpose and Need Statement
- Develop a Plan of Work and Schedule
- Develop a Public Participation Plan
- Inspections of Both Dams
- Sediment Surveys of Both Dams

Purpose and Need for Dams 4 & 9

Purpose: Maintain the current level of flood damage reduction and recreation benefits provided by Hunter's Run Conservancy District Structures 4 and 9 for the next 50-100 years while minimizing environmental, economic, and social impacts.

Need: The current structures do not meet current NRCS and OH State Dam Safety performance and safety standards for a high hazard potential dam. Action is necessary to reduce the risk of flood damage to homes, commercial facilities, and an expanded infrastructure as well as to reduce the risk of loss of life and property damage due to a flood event.

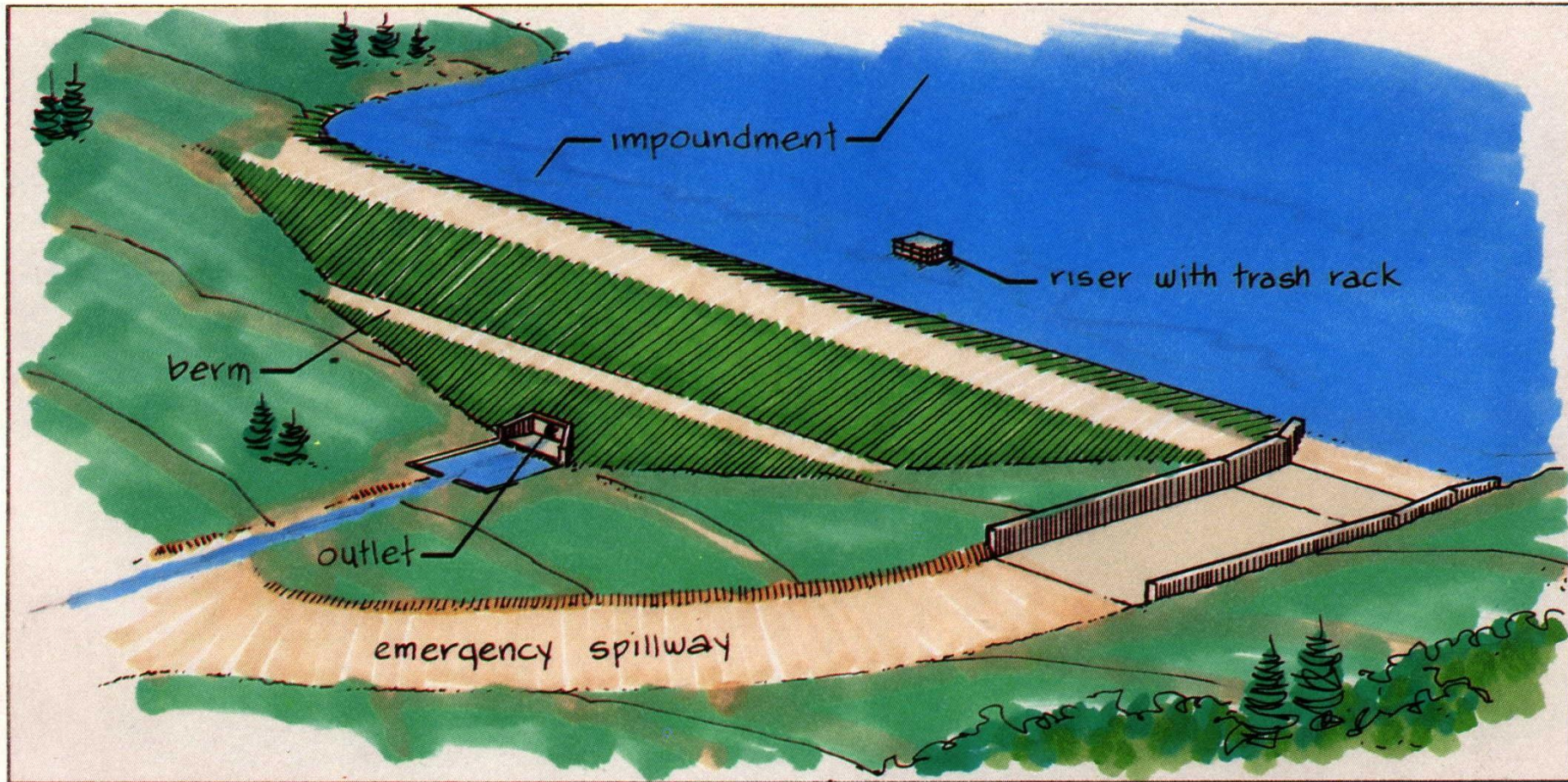
Overall Planning Schedule

- Identify Problems and Determine Objectives by March 2022
- Inventory Resources and Analyze Resource Data by May 2022
- Formulation/Evaluation of Alternatives by September 2022
 - Includes a 2nd Public Meeting in August 2022
- Prepare Watershed Plan by March 2023
 - Includes NRCS technical review, NRCS Programmatic Review, and Interagency and Public Review of Draft Plan
- Steps by NRCS & Sponsors to Proceed to Design/Construction
 - Request Authorization of Plan by Chief of NRCS
 - Request Funding for Design and/or Construction

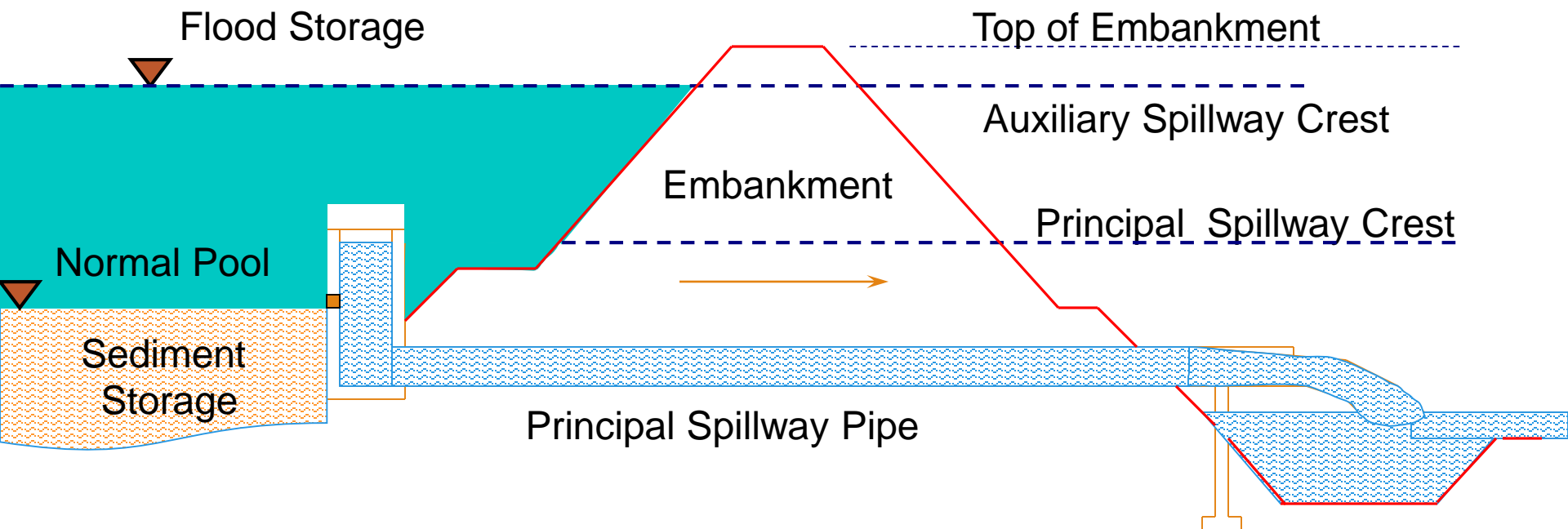
Cost-Share With Dam Rehab.

- NRCS Funds
 - 100% of Planning Costs
 - 100% of Design Costs
 - 65% of Total Project Costs (NTE 100% of Construction costs)
 - NRCS Staff Costs are paid 100% by NRCS
- Local Sponsors Fund
 - 35% of Total Project Costs (Cash or In-Kind Credit)
 - 100% of Permit Costs

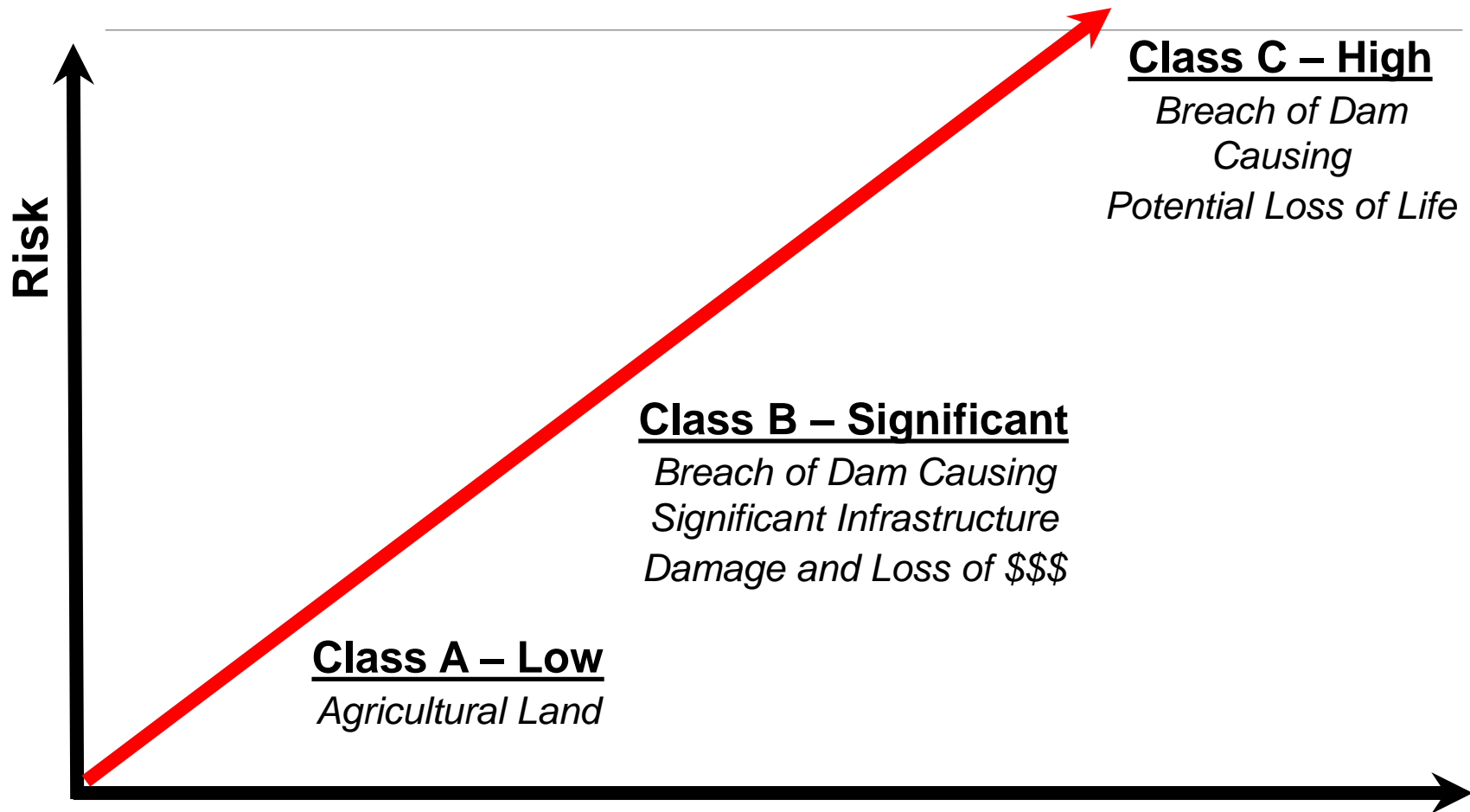
Typical Earth Dam



Cross-Section of a Typical Floodwater Retarding Structure



Hazard Classes of Dams



Statistics for Structure No. 4

- Located on Stonewall Creek
- O&M by the Hunter's Run Conservancy District
- Built in 1959/1960
- Drainage area = 1,112 acres (1.74 square miles)
- Normal Pool Area = 9.5 acres
- Height = 44.5 feet
- Length = 587 feet
- Spillway Width = 30 feet
- Total Storage = 762 acre-feet
- Classified as a "High" hazard potential dam

















Statistics for Structure No. 9

- Located on Upper Hocking River above Hooker
- O&M by the Hunter's Run Conservancy District
- Built in 1959
- Drainage area = 5,101 acres (7.97 square miles)
- Normal Pool Area = 19.8 acres
- Height = 76 feet
- Length = 1,010 feet
- Spillway Width = 300 feet
- Total Storage = 2,660 acre-feet
- Classified as a "High" hazard potential dam



















Greenfield Township Road 183



Greenfield Township Bridge Number 27







General Condition of the Dams

- Inspected annually.
- Regularly mowed and maintained.
- Some areas of sparse vegetation.
- Upstream slopes are 3.0H:1V
- Downstream slopes are 2.5H:1V.
- **Overall good condition - No imminent threat of failure.**

Structure No. 4 Dam Safety and Performance Deficiencies

- 2010 URS study and the 2012 and 2017 Dam Safety Inspection Reports.
- The auxiliary spillway has inadequate hydraulic capacity. The dam would have to be raised by 1.7 feet to pass the PMF. Does not meet the ODNR criteria either (PMF).
- The auxiliary spillway would breach during the FBH event.
- The analyses were performed prior to the release of Ohio state-wide PMP study.



Structure No. 4 Dam Safety and Performance Deficiencies (cont.)

- 2017 Inspection Report
 - Small slide observed on the upstream slope.
 - Toe drain pipe reportedly collapsed in 1990. Report does not indicate if the toe drain has been repaired.
 - Deteriorating and spalling concrete on the principal spillway riser and outlet stilling basin.
 - Lake drain stem is reportedly non-functional.

- Wet area at the right downstream toe of the dam.

Structure No. 9 Dam Safety and Performance Deficiencies

- NRCS 2011 planning study, the 2017 Dam Safety Inspection Report, and the 2015 Geological Site Assessment Report.
- The auxiliary spillway has inadequate hydraulic capacity. The dam would have to be raised by 1.2 feet to pass the PMF. Does not meet the ODNR criteria either (PMF).
- The auxiliary spillway would breach during the FBH event.
- The analyses were performed prior to the release of Ohio state-wide PMP study (2013).



Structure No. 9 Dam Safety and Performance Deficiencies (cont.)

- 2017 Inspection Report
 - Shoreline erosion along the upstream slope and stilling basin sidewalls.
 - ← Wet areas along the downstream areas of the dam
 - ← Seepage along the right downstream abutment
 - ← Deteriorating and spalling concrete on the principal spillway riser and outlet stilling basin
- ← Historical slump on downstream slope (1979 COE Report)
- ← Moderately to highly dispersive soils in auxiliary spillway with similar potential for soils in embankment and foundation.

Auxiliary Spillway Flow in Pennsylvania in 2006



Damage to ASW Exit Slope (Pennsylvania Dam)



White Oak Dam in Virginia in 1996



White Oak ASW Damage (Virginia)



White Oak ASW Damage (Virginia)



Auxiliary Spillway Breach in Massachusetts (initiation)



Final ASW Breach (Massachusetts)



Required Alternatives to be Considered

- Future Without Federal Investment (No Action)
- Decommissioning (removal)
- Nonstructural Alternatives (elevation, relocation, zoning, etc.)
- Rehabilitate to current dam safety and performance criteria

Photos/Examples of Possible Structural and Nonstructural Alts.

Articulated Concrete Blocks to Armor ASW (Virginia)





Roller Compacted Concrete Protection (before)



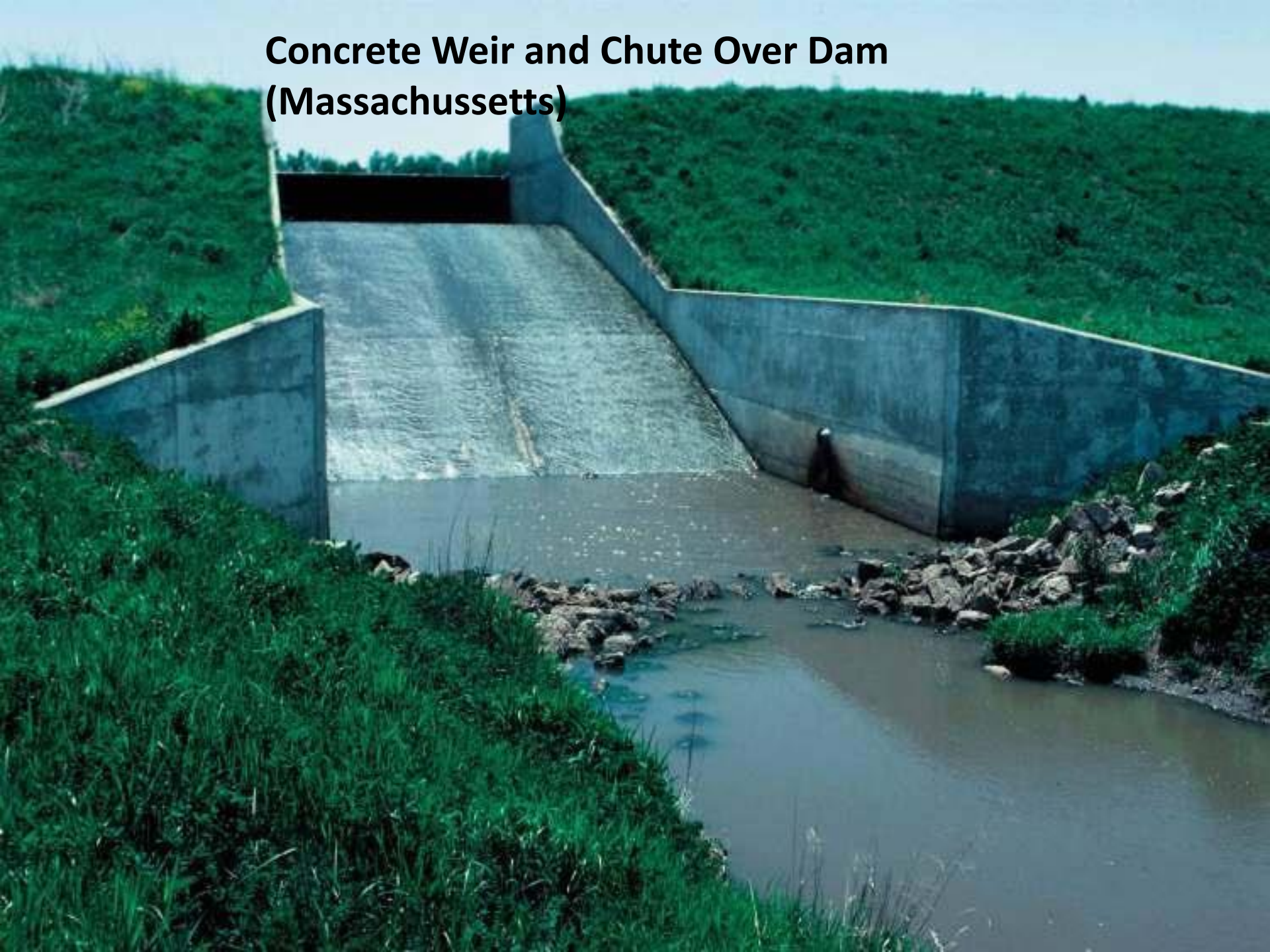
Roller Compacted Concrete Protection (after)



Labyrinth Weir in Virginia



Concrete Weir and Chute Over Dam (Massachussetts)



Nonstructural Alternatives

House Acquisitions



Acquisition and Site Restoration



4/23/2003

House Elevations



Photo by Pennoni Associates, Inc.

Elevation Underway

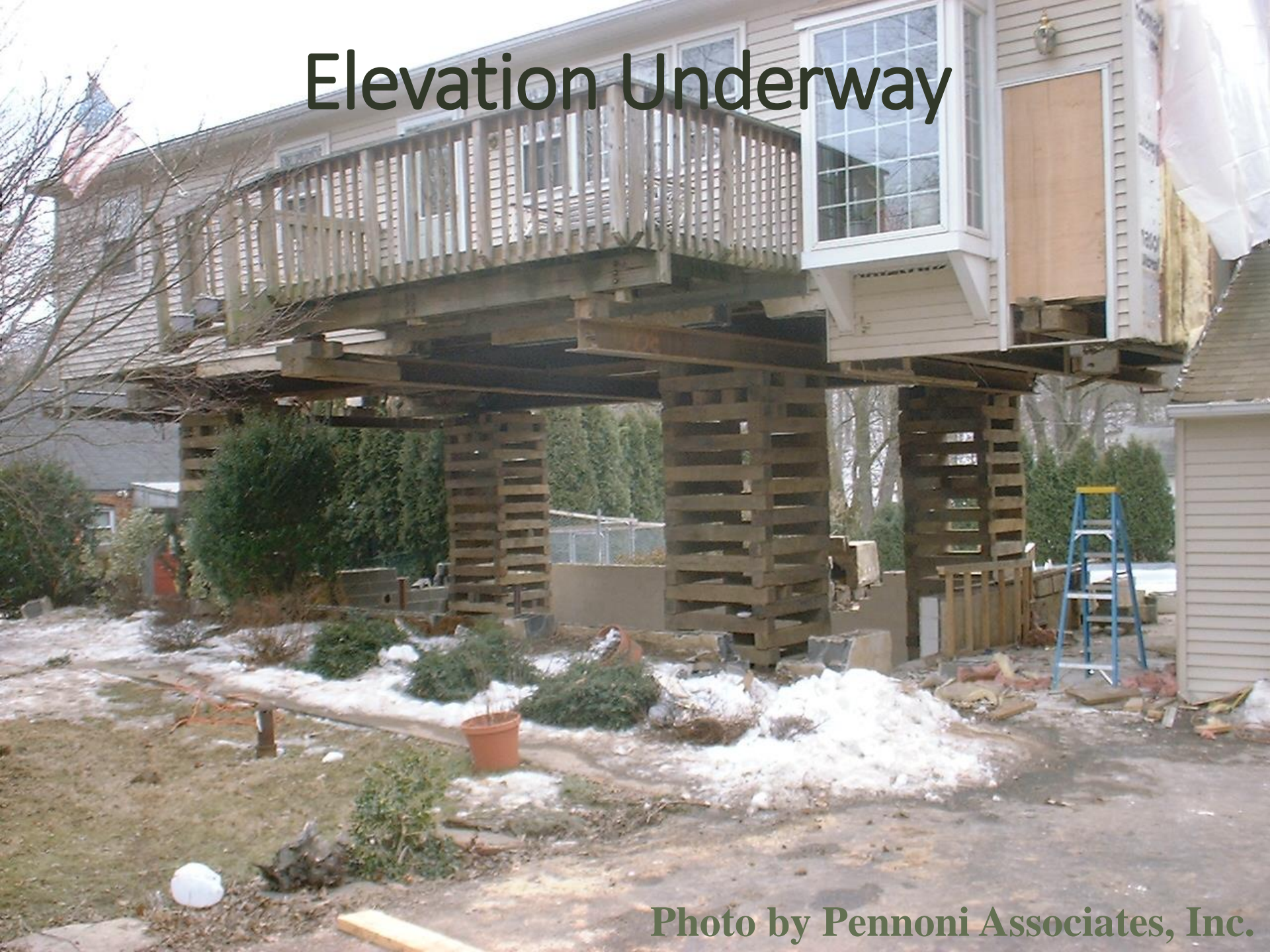


Photo by Pennoni Associates, Inc.

Elevation Completed



4/23/2003

Other Nonstructural Options

- Flood Warning System
- Floodproofing, such as ring levees or dikes around individual houses / properties

Scoping

- Council on Environmental Quality (CEQ) defines “Scope” as the range of actions, alternatives, and impacts considered (40 CFR 1501.7).
- Scoping is used to:
 - **Identify the significant issues to be analyzed in detail**
 - **Eliminate from detailed study the issues that are not significant**

Scoping Tables

As we work through the potential resource issues for the project,

Keep in Mind These Key Items:

- The existing condition already has the dams onsite. We are modifying the original footprint of the dams. The rehab. impacts are changes with the dams in place; not for new dams.
- Project Purpose and Need
 - Maintain current flood protection
 - Reduce risk to loss of life and property damage
 - Minimize social, cultural and environmental effects
- Consider Reasonable Rehabilitation Alternatives

We Need Your Input

If you have any specific information on the overall watershed or these dams, upstream or downstream, adjacent properties, or the embankments, reservoirs, etc., please **let us know by January 7, 2022.**

Points of Contact

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Websites for NRCS and Hunter's Run Conservancy District

NRCS Website: www.oh.nrcs.usda.gov

HRCD Website: www.huntersruncd.org

Information on the dams and planning process will be posted here (including this PowerPoint and a recording of the meeting).

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