Canal Diversion/Brecksville Dam

National Park Service

Cuyahoga Valley National Park's Enabling Legislation:

"For the purpose of preserving and protecting for public use and enjoyment, the **historic, scenic, natural and recreational values** of the Cuyahoga River and the adjacent lands of the Cuyahoga Valley…."

Canal Diversion/Brecksville Dam

Issue: The potential removal and/or modification of the Canal Diversion (Brecksville Dam).

Memorandum of Understanding:

- **Coordinated** approach
  - National Park Service
  - Ohio EPA
  - US Army Corps of Engineers
  - Ohio Department of Natural Resources
- Accomplish **complimentary planning goals and objectives** regarding the dam

Canal Diversion/Brecksville Dam

The National Environmental Policy Act of 1969 (NEPA) provides direction for planning, analysis and public involvement in federal projects which may affect the human environment.

The "human environment" includes natural, cultural, historic, socioeconomic and recreational resources.

Canal Diversion/Brecksville Dam

NEPA requires that we:

- Consider a **range of alternatives** and the **potential environmental consequences** of an action before deciding to proceed; and
- Provide **opportunities for public involvement** which includes participating in scoping, reviewing documents, and attending public hearings.

Canal Diversion/Brecksville Dam

NEPA requires the preparation of an **Environmental Impact Statement (EIS)** when a federal agency proposes an action that may have significant impacts on the human environment – this includes **both beneficial and adverse effects.**

The EIS is the highest level of environmental compliance provided for under NEPA.

Canal Diversion/Brecksville Dam

Estimated 2 Year Timeline

1) EIS scoping preparation
2) Notice of Intent (July 2009) and announcements
3) **Public Meetings & Comment period (ends November 28, 2009):**
4) Prepare Draft EIS
5) Public Review of Draft EIS
6) Respond to Comments
7) Prepare Final EIS
8) Circulate Final EIS
9) 30-Day No Action Period
10) File Record of Decision in Federal Register
11) Implement Action

Canal Diversion/Brecksville Dam

Today's Format: An Informational Meeting

1. Informational Presentation on the Project (Bill Zawiski, OEPA & Meg Plona, NPS)
2. Instructions on How to Comment or Get More Information
3. Questions/Answers

Note: We are *not* actively recording comments today – please submit your comments in writing or online

Canal Diversion/Brecksville Dam

What has been done so far?

Canal Diversion/Brecksville Dam

Canal Diversion/Brecksville Dam

Cuyahoga River: QUICK FACTS

~ 11,000 years old

~100 miles long

~813 square mile drainage

22 miles within National Park

Designated an Area of Concern

Designated an American Heritage River

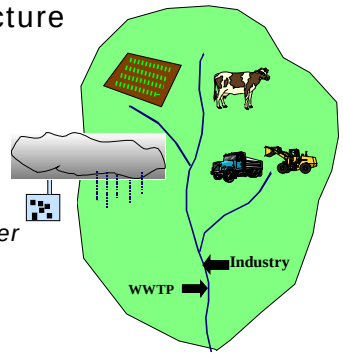
Canal Diversion/Brecksville Dam

Public Law 92-500
(The Clean Water Act)
October 18, 1972

The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

TMDLs: A Picture

- Holistic approach
- Watershed focus
- Pollutant specific
- Account for all sources
- *If waters reach attainment by other means, a TMDL would not be necessary*



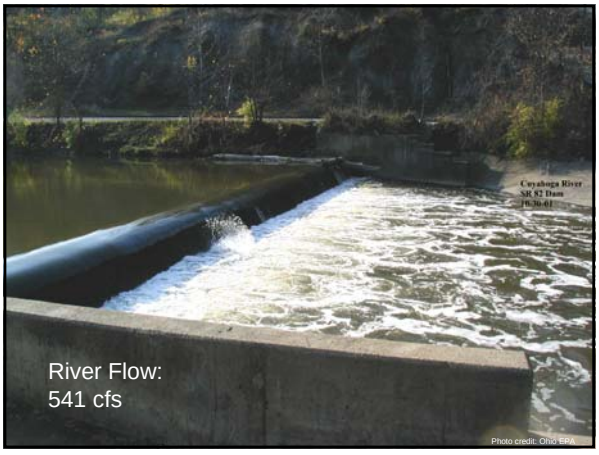
Canal Diversion/Brecksville Dam

The Lower Cuyahoga River TMDL was approved by the U.S. EPA in 2003.

The implementation plan to restore water quality in the Cuyahoga River specifically mentions the modification/elimination of Canal Diversion Dam

Canal Diversion/Brecksville Dam

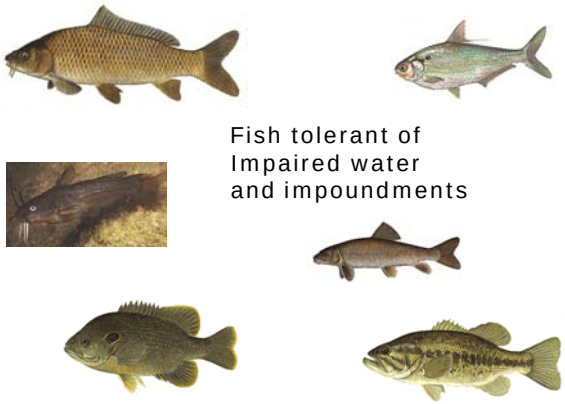
- The Brecksville Dam (Canal Diversion Dam, Station Road Dam, Route 82 Dam, Pinery Feeder Dam) as it exists today was built in 1951.
- Previous dams (Pinery Dam) in the area were constructed as early as 1827 for the purpose of providing water to the Ohio and Erie Canal.
- The dam is currently owned by the Ohio Department of Natural Resources.

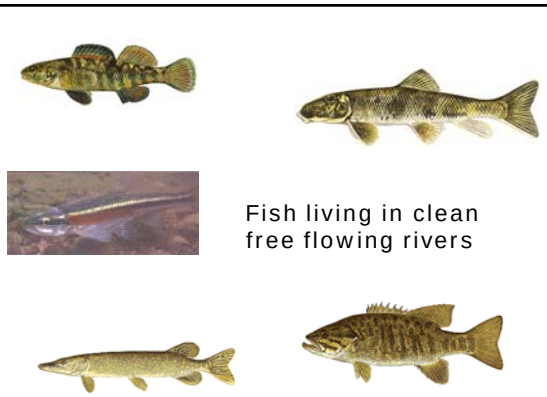


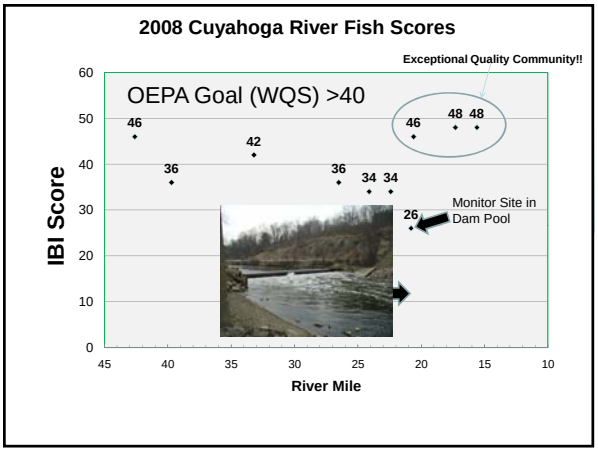
Canal Diversion/Brecksville Dam

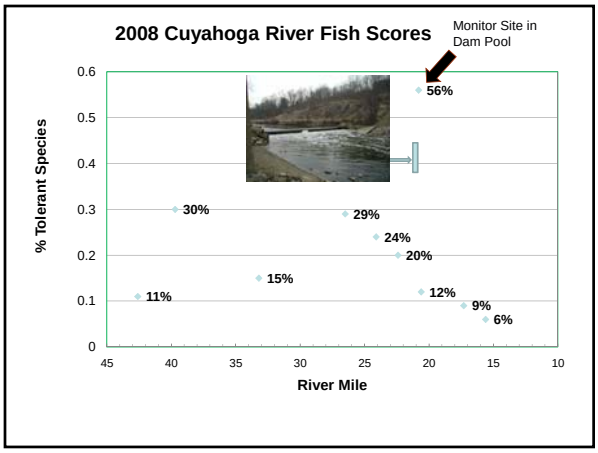
What does a dam do?

- Create dissolved oxygen depletion in the pool
- Block fish movement
- Alter habitat
- Recreational hazard









Canal Diversion/Brecksville Dam

The Cuyahoga RAP held a meeting on March 19, **1993** to discuss options to mitigate water quality impacts caused by the dam.

September 17, **2002:** Meeting at the Boston Store in the Park to restart discussions on ways to mitigate water quality impacts on the Cuyahoga River caused by the diversion dam. Nineteen people attended the meeting representing nine different organizations.

Canal Diversion/Brecksville Dam

Public Meetings: August 11th & November 30th **2005**
Presentation and a workshop session for brainstorming ideas

Canal Diversion/Brecksville Dam
Issues/Concerns Identified in Earlier Public Meetings

Dam Removal and/or Modification:

- Maintain water in canal
- Notch and/or lower dam to maintain minimum attainment of WQ
- Channel bypass for canoes
- Fish ladder/passage
- Aerate dam pool
- Fill in downstream of dam; make upstream shallower

Natural Resources/Habitat

- Improve water quality/habitat (TMDL)
- Restore free-flowing river
- Improvement of fisheries
- Sediment issues
- Erosion impacts/bank stabilization issues
- Potential effects on wetlands
- Downstream impacts to channel/floodplain
- Non-native species (fish/plants)

Canal Diversion/Brecksville Dam
Issues/Concerns Identified in Earlier Public Meetings

Cultural/Historic Resources:

- Maintain water in canal
- Maintain historic integrity of canal and NHL
- Maintain water at specific flow levels in canal
- Impacts to high level and Station Road Bridge abutments?
- Aesthetic impacts
- Long term plans for canal functions
- CMP Canalway Reservation impacts
- Protect existing structures (RR, towpath, etc.)

Develop Alternate Water Sources for Canal:

- Pumps
- Pipe in water from Brecksville
- Divert/use water upstream (gravity feed)
- Harness tributary/storm water
- Re-water dry canal sections
- Create/use shallow wetlands as reservoir
- Water wells
- Divert Treatment Plant effluent
- Create basin/reservoir upstream to store flow
- Water wheels
- Create new "V" structure in river to divert water

Canal Diversion/Brecksville Dam
Issues/Concerns Identified in Earlier Public Meetings

Recreation

- Recreational benefits for canoe/kayaks
- Create recreational rapids
- Consider impacts to non-aquatic recreation (hike/bike/equestrian)
- Noise impacts
- Aesthetics/Viewshed

Access

- Trail access impeded?
- Fishing access maintained?

Safety

- Potential flooding impacts downstream?
- Remove dam hazard for boaters/park visitors

Other

- Consider green energy (solar/wind)
- Increase in stormwater activity?
- Sustainable technology
- Costs/maintenance of potential structures?
- Monitoring?
- Data gaps?
- Local support from agencies

Canal Diversion/Brecksville Dam

These Public Meetings Generated **Three Preliminary Alternatives:**

A. No Action

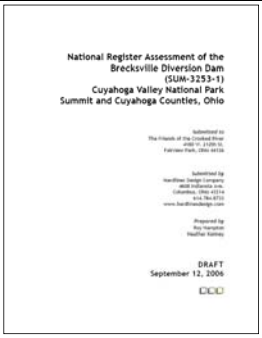
B. Remove dam/provide water to Canal

C. Modify dam/provide water to Canal; include fish and recreational passage.

Canal Diversion/Brecksville Dam
Recent Studies:

National Register Assessment

- Dam structure not eligible
- SHPO involvement

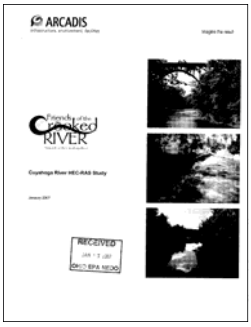

National Register Assessment of the Brecksville Diversion Dam (SUM-3253-1) Cuyahoga Valley National Park Summit and Cuyahoga Counties, Ohio

DRAFT
September 12, 2006

Canal Diversion/Brecksville Dam Recent Studies

A HEC-RAS model was prepared by a consultant. It was determined that dam removal would not significantly alter river flows.

This was been forwarded to ODOT. They concluded that model showed minimal changes and that a scour analysis would not be needed.



Canal Diversion/Brecksville Dam Recent Studies

Cuyahoga River- Canal Diversion Dam Alternative Flow Options Study

A preliminary estimate of pump operation costs was prepared by the University of Akron.

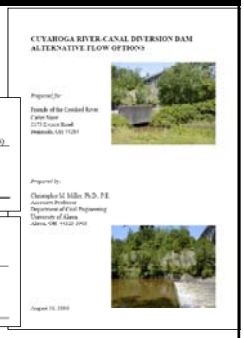
Table 3. Rank of Pump Options for Providing Alternative Flow.

Option Rank	Pump Manufacturer	Pump Type	Pump Model	Energy Daily Cost ($)
1	Lakeside Equipment	Screw	60"-3 Flight	$51
2	Hayward Gordon	Screw	XCS16C	$73
3	Goulds	Centrifugal	20x20 3VSL-14 2.5°	$78
4	Goulds	Centrifugal	18x18-22HL-16.5°	$84
5	Goulds	Centrifugal	20x18S-19.375	$124

Note: Rank of 1 indicates the most favorable option.

Table 4. Cost Breakdown and Requirements for Recommended Pump Alternative from Lakeside Equipment.

Item	Unit Cost	Cost	Note
Two Pumps	$65,900 per pump	$131,800 (one time)	--
50 ft Iron Pipe	$65 per LF	$3,900 (one time	--
Energy	$0.075 $/Kh	$18,615 per year	--
Maintenance	$1,500 per month	$18,000 per year	Low Maintenance
Pump Area	--	--	50 ft x 50 ft

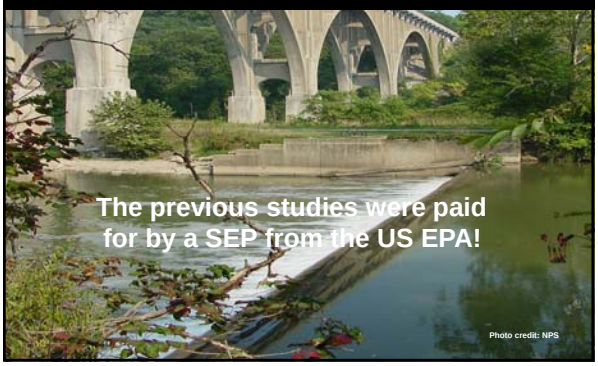


Canal Diversion/Brecksville Dam Recent Studies

- **2009 Field work completed – reports pending:**
- **Wetland delineation dam pool area**
- **Sediment analysis in dam pool**

Photo credit: NPS

Canal Diversion/Brecksville Dam Recent Studies

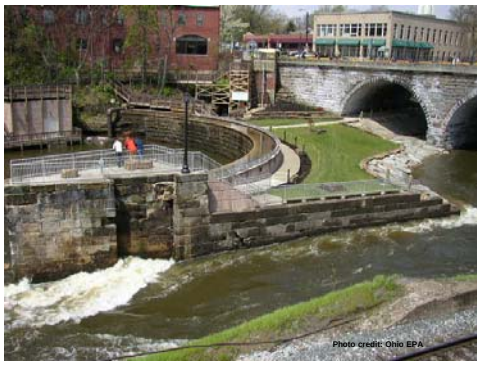


The previous studies were paid for by a SEP from the US EPA!

Photo credit: NPS

Photo credit: Ohio EPA

Photo credit: Ohio EPA



National Park Service

Historic/Cultural Resources

National Park Service

Ohio & Erie Canal

- Completed in 1832 (1827 – 1st section Cleve to Akron opened)
- United Cleveland and Portsmouth, - connected Lake Erie to the Ohio River and gave access to New York, Pennsylvania, and Indiana canals.
- Brought rapid growth in population, industry, and commerce to Ohio.
- The National Historic Landmark section includes locks, an aqueduct, mills, and houses – 1983.
- O&E canal is the major historic resource of the Cuyahoga Valley.
- Ohio & Erie National Heritage Canalway (1996).

National Park Service

National Historic Landmarks

Nationally significant historic places designated by the Secretary of the Interior that possess exceptional value or quality in illustrating or interpreting the heritage of the US.

•Only NHL within Cuyahoga Valley National Park

National Park Service

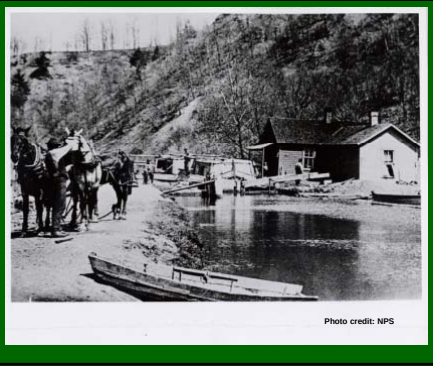
Brecksville head gates

National Park Service

Head gates/Pinery feeder

National Park Service

Pinery Lock - Brecksville



National Park Service

O&E Canal Highlights:

- 1827 Pinery Dam and feeder operational
- 1832-1857 – Canal era flourishes (until railroads in 1861)
- 1913 – Flood damage to entire canal system
- 1930-31- Cuy. Co. builds Brecksville-Northfield High Level Bridge
- 1943 – Am. Steel &Wire acquire water rights
- 1949 – ASW replaced the dam head gates
- 1951 – Ohio Dept. of Works construct new Brecksville Dam – concrete dam
- 1952-1980's- ASW maintained dam/head gates
- 1988 – ODNR transferred O&E canal lands to National Park (but not dam structure)

Canal Diversion/Brecksville Dam

EIS Process

- **Analyze potential impacts of alternatives on environmental, cultural and recreational resources**
- **Public review process**
- **Recommend an alternative**

Canal Diversion/Brecksville Dam

Use the National Park Services NEPA guidance to help us through the alternatives analysis.

The DO-12 Handbook

How to use this handbook

This handbook contains the basic information you need for meeting the legal requirements of NEPA and for practicing excellent impact assessment and resource conservation. Also, NPS employees who deal with NEPA on a regular basis should receive training that is periodically updated, so that the goals of NEPA are met throughout all levels of NPS. NPS also has guidance on related topics, such as planning, cultural resource protection, and natural resource management.

Canal Diversion/Brecksville Dam

We will follow a process of evaluation similar to that used on the Kent Dam and Munroe Falls Dam projects.

	Fish Passage	Recreation	Habitat	Historical Preservation
Alternative A				
Alternative B				
Alternative C				

Canal Diversion/Brecksville Dam

How to Provide Comments or Input?

1. Preferred – Online in PEPC
2. In Writing – Forms Available in Back

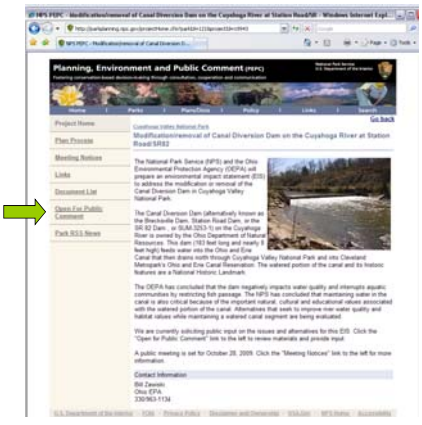
PEPC Web Site: **parkplanning.nps.gov/cuva**

Planning,

Environment and

Public **C**omment

System




PEPC - Documents Open For Review - Windows Internet Explorer
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Questions?
Submit comments to
http://parkplanning.nps.gov/cuva
Photo credit: NPS