

# A New Paradigm for the Delaware Canal

Following three consecutive years of devastating Delaware River flooding in the early 2000s, the PA DCNR Bureau of State Parks pursued a partial watering policy for the Delaware Canal based on the assumption that the public would accept such a solution as the unfortunate reality of the limits of State Parks budgets. However, public meetings and surveys showed a strong commitment to maintaining a fully watered Canal.

In response, three citizen-based planning projects were conducted by regional non-profit partners, all in partnership with PA DCNR. The studies solicited public opinions, collected data, and assessed potential structural and operational alternatives to the status quo State Parks-only management model for the management of the Delaware Canal.

Delaware Canal 21, with financial and in-kind support from the PA DCNR, PA DCED, Bucks and Northampton Counties, commissioned a feasibility assessment for a new collaborative funding model that could help to achieve the consensus goal of a fully watered canal. Delaware Canal 21 engaged Econsult Solutions, Inc. to manage this project, with support from the planning firm Simone Collins and engineering firm eDesign Dynamics. This feasibility analysis is the fourth effort and builds on the previous three studies.

Funding for the Delaware Canal Waterway Authority Feasibility Study was made possible by major restricted grants and donations from the following:

- ▶ PA Department of Conservation and Natural Resources
- ▶ PA Department of Community and Economic Development
- ▶ Pheasant Hill Foundation
- ▶ Appgar-Black Foundation
- ▶ The Hall Family Donor Advised Fund
- ▶ Additional support from the many friends and supporters of Delaware Canal 21.

## Learn more about Delaware Canal 21

[delawarecanal21.org](http://delawarecanal21.org)

## A Vision for a 21st Century Delaware Canal

- ▶ The Delaware Canal supports millions of dollars of economic value and activity for the residents and businesses of the communities adjacent and near it, as well as Bucks and Northampton Counties, and the Commonwealth of Pennsylvania.
- ▶ The Delaware Canal is a vital component of green infrastructure, providing the environmental benefits of stormwater management, and public safety benefits by reducing property damage due to flooding, and being a source of water for fire protection.
- ▶ The economic, environmental, and public safety benefits are threatened by the challenges of maintaining adequate water throughout the entire 60-mile Canal. State budget limitations, aging canal infrastructure, damage from storms, and impacts of development have resulted in inconsistent water levels and compounded long-term damage, reducing the overall community benefits provided by the Delaware Canal.
- ▶ An engineering analysis conducted for this assessment identifies a strategy for repairing the Delaware Canal to support a consistently watered and functional canal.
- ▶ Rethinking, restructuring, and expanding the current funding model to include community partners can position managers of the Delaware Canal to raise capital and utilize financial resources more effectively.
- ▶ Creation of a Delaware Canal Improvement District (to serve as a funding, planning, and management partner for maintenance of the Canal) could supplement PA DCNR funding and ensure the long-term sustainability of a fully watered Canal, enabling the array of environmental, economic, and public benefits to the community.
- ▶ A Delaware Canal Improvement District can raise funds in a variety of ways, such as pursuing government grants, creating a dedicated canal benefit fee, and engaging philanthropic and private funding partners.

## Delaware Canal Challenges

HISTORICALLY UNDERFUNDED PARK	60 MILE 190 YEAR OLD CANAL	EXTREME WEATHER & CLIMATE CHANGE
DIVERSE GEOGRAPHY WITH RURAL AND URBAN LANDSCAPES	MULTIPLE JURISDICTIONS	MULTIPLE GOVERNMENTAL STAKEHOLDERS

DELAWARE CANAL 21  
LANDMARK FUTURE

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**ESI** ECONSULT SOLUTIONS INC.  
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LANDSCAPE ARCHITECTURE

# The Range of Values to the Delaware Canal Community

## Economic, Environmental, and Public Safety Benefits

### RECREATION

Continue to be a destination for activities that contributes to health and well being.

### HISTORICAL/CULTURAL

Help preserve the historical and cultural destinations along the Canal.

### ENVIRONMENTAL

Improve storm water management infrastructure and contribute to the ecological system.

### SAFETY & MITIGATION

Mitigate flooding, ensure structures are safe for use and reduce cost to governments and insurance agencies for related damages.



### QUALITY OF LIFE

Improve property values and promote activity in communities in proximity to the Canal.

### ECONOMIC DEVELOPMENT

Provide opportunities for economic development activities along the Canal.

### SUSTAINABILITY

Implement a stewardship model that enables the Canal to generate supplemental revenue for high quality planning and maintenance.

### TOURISM

Attract visitors and enhance tourism in the areas along the Canal route.

**18% premium** for single family home values within ¼ mile of the Delaware Canal

**\$10.8M** in County tourism-related economic impact.

**\$6M annually** in local benefits due to recreation

**\$63M** in decreased local employer and health care costs

**\$11M** in increased economic activity due to park maintenance

A fully watered Canal would protect these benefits, increase property values, and likely result in increased tourism and health and recreation benefits.

## The Delaware Canal is a 190-year-old, complicated plumbing system...

The Delaware Canal is an aging system of infrastructure that has parts and structures that need to be replaced or updated to keep the “plumbing” in working order—and to provide community benefits over the 60-mile path of the Canal. What needs to be fixed?

**Faucets:** The Canal has 2 “faucets” or *intakes* that provide water to the Canal at the Lehigh Dam in Easton and the Delaware River Dam in New Hope.

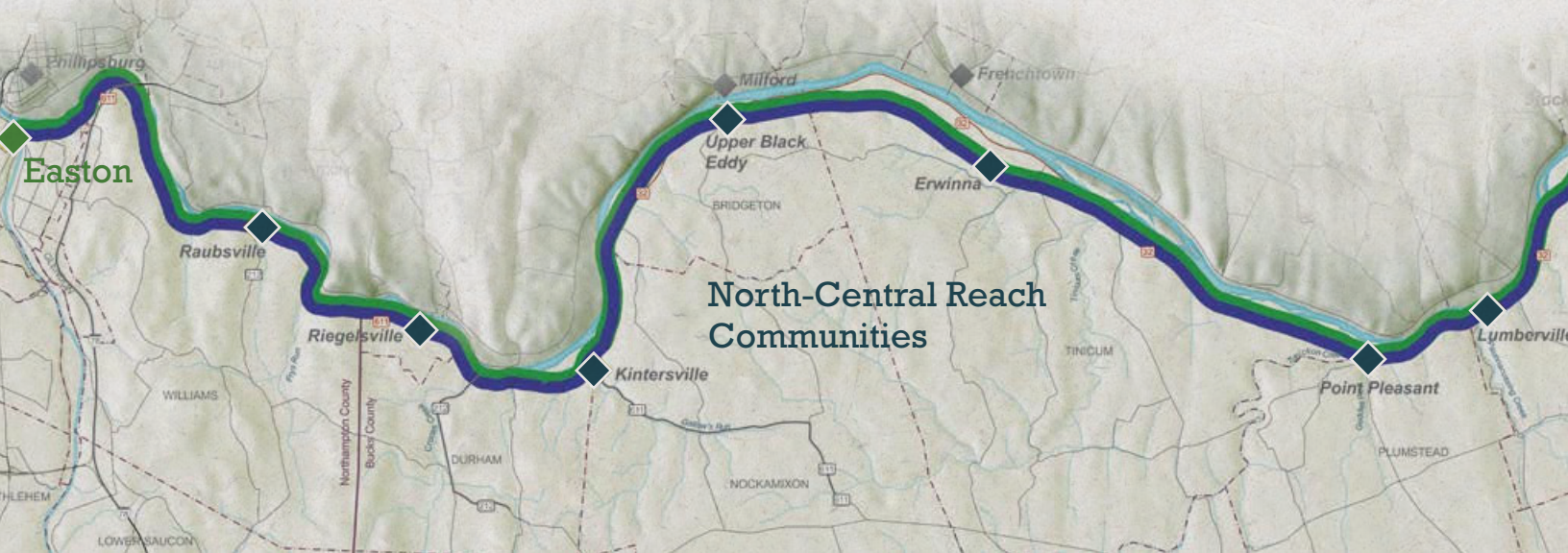
**Pipes:** It has “pipes” \*(the *canal prism* or channel) that carry the water the length of the Canal. The prism is supported by walls, aqueducts, and overflow spillways, that need to be maintained, repaired, and dredged to hold the Canal’s water and support the towpath trail.

**Valves:** The flow and level of water in the canal prism is controlled by “valves” in the form of the hydraulic system of *locks and waste gates* all along the Canal.

**Obstructions:** Over time, new development on and around the Canal have created *obstructions* or restrictions that limit the water that flows through the canal.

**Drain:** Ultimately, the water is released back into the Delaware River through an *outlet* pipe at the end of the Canal.

This system has been impacted, altered, and damaged over time by erosion, storms, and development. Restoring the Canal today requires repairs and/or replacement of hydraulic structures and the canal prism structure, removal of obstructions and ongoing maintenance.



# Repairing the Water Elements of the Delaware Canal

eDesign Dynamics, the engineering firm for the feasibility analysis, developed an estimated cost to achieve a corridor-long, rehabilitation for all water elements that serves as a baseline budgeting metric. \$90M in construction investments over 5 years would yield \$141M in economic activity and would support approximately 700 jobs in Bucks and Northampton Counties. For the first 5 years after completion of the initial improvements, \$1M annually in maintenance costs is expected, in coordination with DCNR operations and maintenance costs.

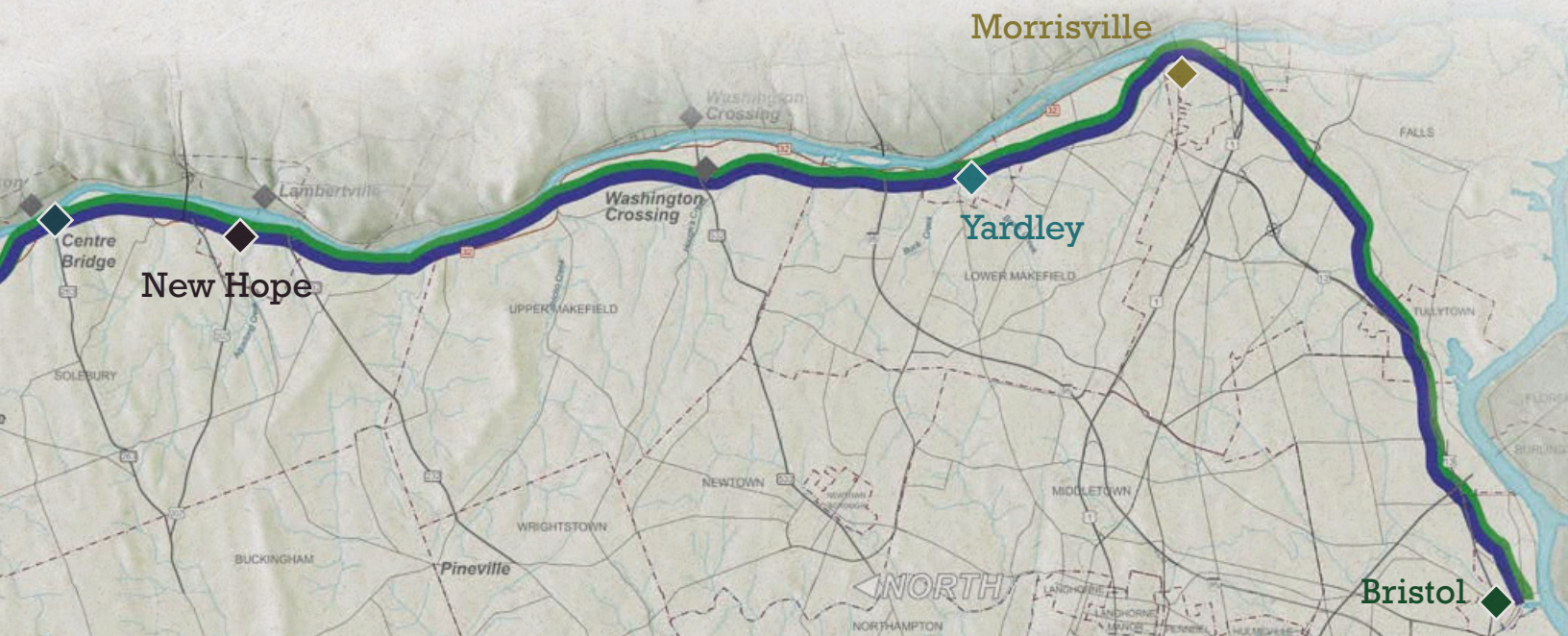
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## Essential Repairs Needed to Achieve This Goal

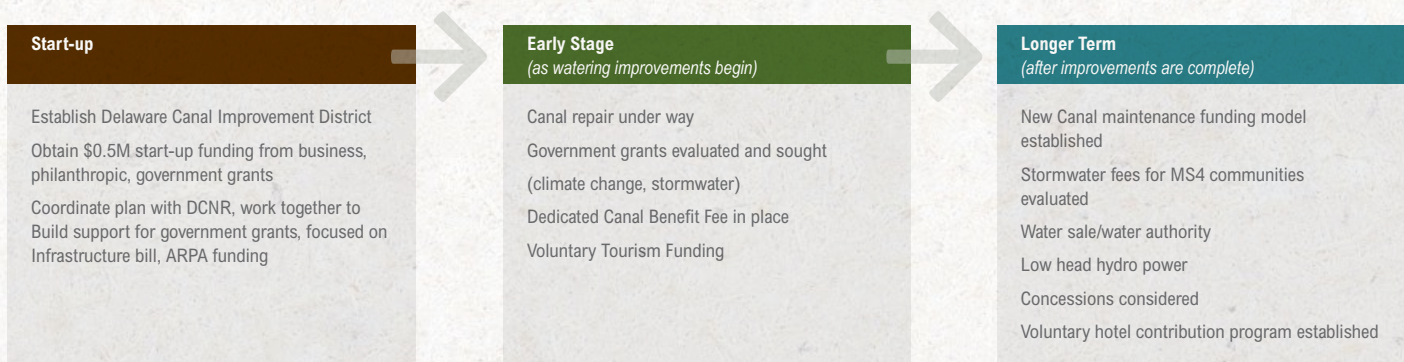
Section	Capital Cost Estimate
<b>Along Entire Canal:</b> Replacement of hydraulic structures	\$3.9M
<b>Along Entire Canal:</b> Dredging, restoring clay liner and stabilizing banks	\$58.4M
<b>North-Central Communities:</b> Install new retaining walls	\$10.1M
<b>Obstruction removal:</b> Replace undersized culverts and install full capacity culverts that remove obstructions	\$20.1M
<b>Canal Terminus in Bristol Borough:</b> Install 5-foot diameter pipe and retaining wall to prevent flooding	\$3.2M
<b>Morrisville:</b> Remove downstream obstructions and install new outlet structure	\$0.1M
<b>Total</b>	<b>\$95.8M</b>

and a community asset in need of repair.

Community	Intake	Canal Prism	Locks & Waste Gates	Obstructions	Outlets
Easton	✓	✓			
North Central Reach Communities		✓	✓		
New Hope	✓	✓	✓		
Yardley		✓	✓	✓	
Morrisville		✓	✓	✓	✓
Bristol		✓	✓	✓	✓



# Create a Delaware Canal Improvement District as a Funding and Management Partner for Canal Maintenance



## The Operations & Roles of a Delaware Canal Improvement District

<b>Structure/Function</b>	Led by board of directors and professional staff.	Fundraising, convening stakeholder, project management, and conduct long term planning, and establish measurable goals for canal operations.
<b>Key Considerations</b>	Examine relationship with existing organizations, how they would be impacted, and decide what forms of future collaboration will take place.	Determine collaboration parameters with DCNR, counties, and other agencies to ensure funding stays local and decide project management controls.
<b>Benefits</b>	<ul style="list-style-type: none"> <li>Ability to receive tax deductible donations and secure foundation funding.</li> <li>With local approval, can collect Canal Benefit Fee based on dedicated property tax assessment.</li> <li>Work closely with government partners, including potential for project management role on water-based projects.</li> </ul>	<ul style="list-style-type: none"> <li>Can play roles of neutral convener that brings all stakeholders together for better collaboration—allowing DCNR to focus on park management.</li> <li>Fundraising for Canal improvements can supplement typical park budget limitations.</li> </ul>

## A New Paradigm for Funding and Appreciation for this Essential Community Resource

Current and proposed federal and state initiatives present an unprecedented opportunity for funding capital improvements for the Delaware Canal.

**Federal:** Largest opportunities could come from the federal infrastructure bill, which prioritizes storm water and climate resilience, and from additional climate resilience funding.

**State:** Opportunities could arise from new state parks and clean water funding in the 2022-2023 budget.

**County and Municipal:** Funding opportunities include American Rescue Plan Act funds from county and municipal governments, MS4 funds for stormwater management.

**Private:** National, regional and local foundation grants focused on watersheds and trails; private support from individuals, as well as civic and environmentally-minded partners.

The pandemic has increased public awareness of the value of open space, trails and canal as crucial to quality of life and economic vitality of the area. In addition, after Hurricane Ida and other recent storm events, local residents and officials have an increased recognition of the impact of extreme weather on the canal, and the need for mitigation efforts to ensure canal integrity and increase the canal's ability to help protect local communities and properties.

Post-pandemic efforts promoting the benefits of a fully watered canal must continue to show the importance of the canal to quality of life, economic value, and public safety. This can result in long term support for canal repairs and maintenances, as well as to better position a new stewardship effort to secure funding.

*The time is right for a  
21st Century Delaware Canal*