

WESTCHESTER COUNTY STREAMS BYRAM RIVER BASIN, CT & NY FLOOD RISK MANAGEMENT STUDY

PUBLIC MEETING

New York District

July 24, 2018



US Army Corps
of Engineers®
New York District

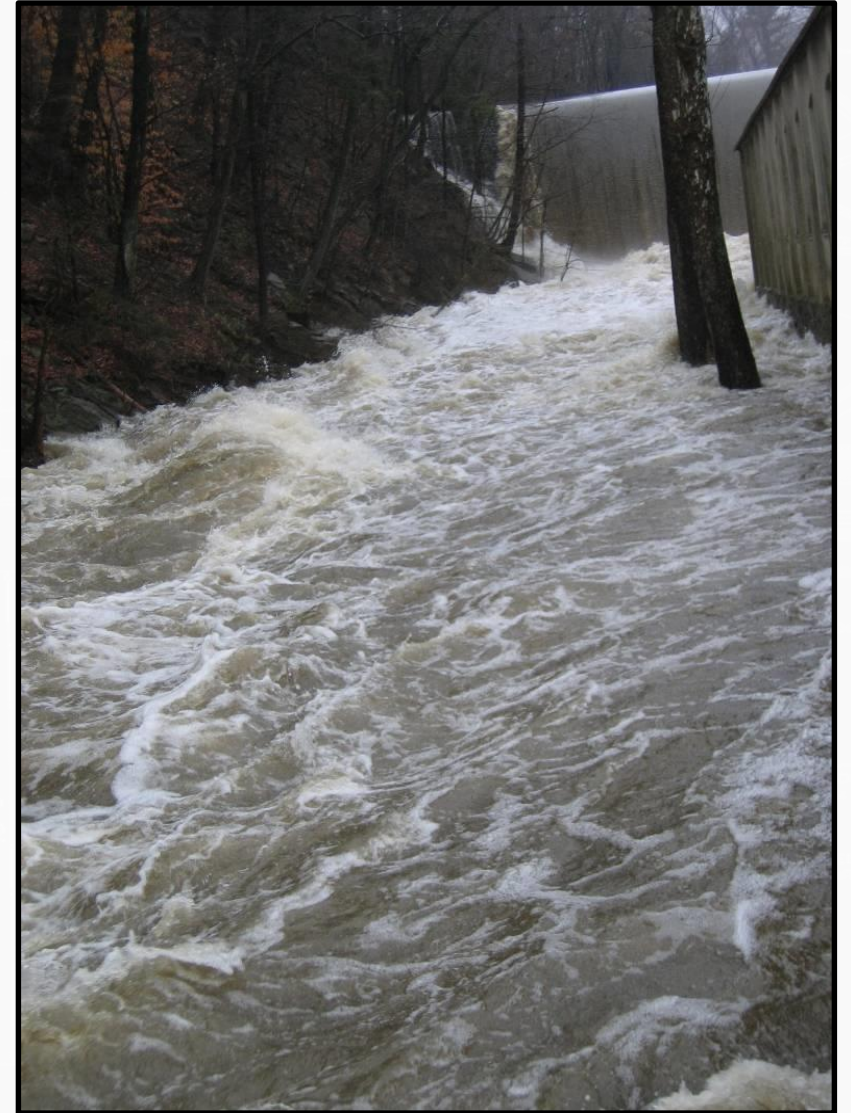


Town of
Greenwich

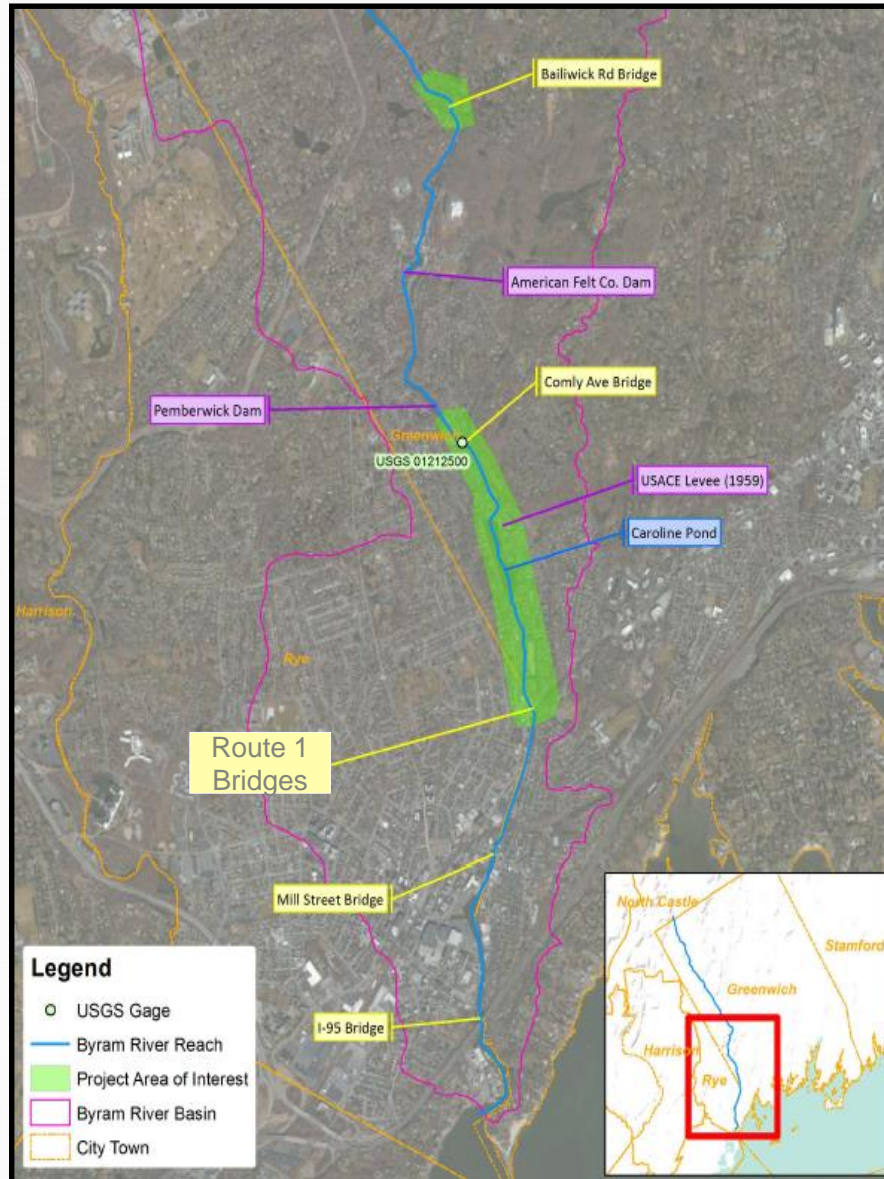


MEETING OUTLINE

- Study Overview and Background
- Alternatives Evaluated
- Recommended Plan / Tentatively Selected Plan
- Study Schedule
- Contact Information



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- **Objective:** Manage the risk of damages from fluvial flooding from the Byram River
- **Authority:** House study resolution adopted 2 May 2007
- **Non-Federal Sponsor:** Town of Greenwich
- **Key Partner:** New York State Department of Environmental Conservation
- **Public Coordination Meetings:** Jan 2013, March 2014, May 2015, November 2017

FLOOD RISK MANAGEMENT

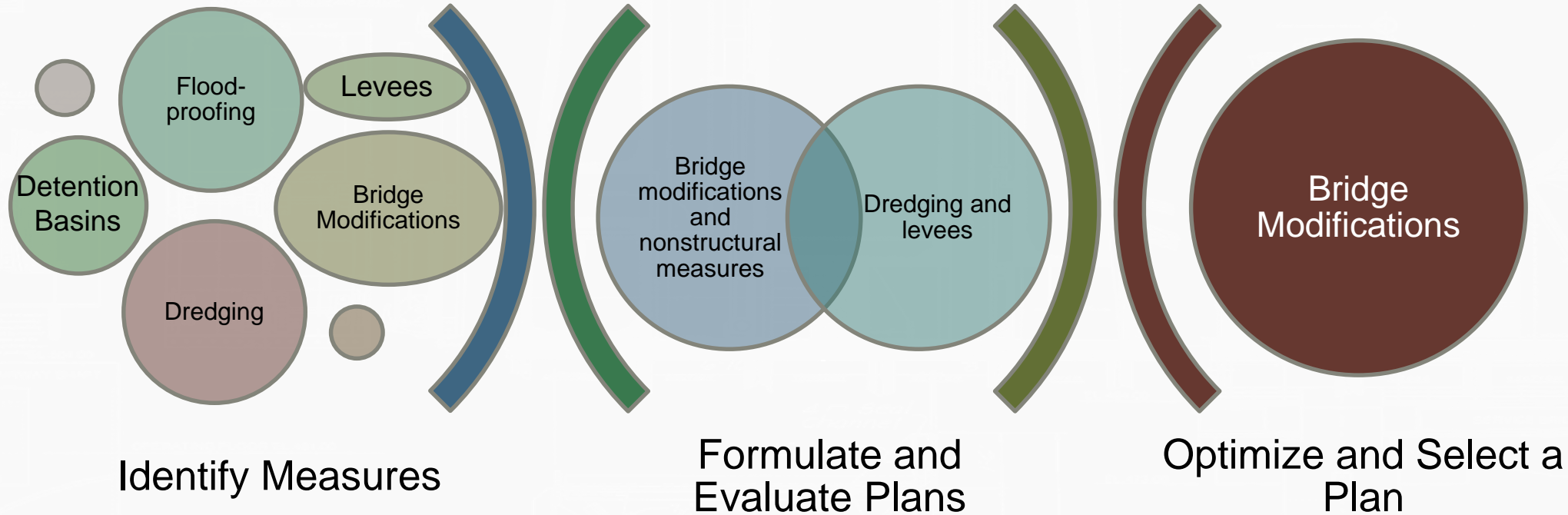
- No flood risk management project can eliminate the risk of flooding.
- Flood risk management reduces the frequency and/or severity of flooding and provides additional time to respond.
- Communication of accurate and timely information about the risk of living in a flood prone area is critical and best implemented at the local level.
- **Flood risk reduction is a shared responsibility and a collaborative approach is required** to effectively manage the risk of flooding and save lives (USACE, FEMA, State, County, Local Gov., Emergency Personnel, Residents).
 - Physical features
 - Insurance
 - Zoning
 - Emergency Action Plan (EAP)
 - Communication



Source: <http://beyondplm.com/2017/03/01/cost-vs-benefits-plm-collaboration/>

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USACE FORMULATION PROCESS



- Management measures are the building blocks of plans.
- Measures were screened for:
 - Ability to meet objectives
 - Ability to avoid constraints
 - Engineering feasibility
 - Economic feasibility

Plans are screened for:

- Completeness, effectiveness, efficiency, and acceptability.
- Benefits
- Costs
- Environmental impacts

$$\left. \begin{array}{l} \text{Benefits} \\ \text{Costs} \end{array} \right\} \text{Benefits} \div \text{Costs} = \text{Benefit Cost Ratio}$$

- Tentatively Selected Plan (TSP): Recommended by Study Team to move forward
- National Economic Development Plan (NED Plan): Reasonably maximizes net benefits
- Usually the TSP and the NED are the same plan.

STUDY BACKGROUND

1977

Streams in Westchester County, Mamaroneck and Sheldrake Rivers Basin and Byram River Basin report recommended levees, floodwalls, and channel work.

2012

Feasibility Cost Share Agreement executed between USACE and Town of Greenwich, CT as the non-federal sponsor.

2015

Presented the nonstructural alternatives to the public as the plan most likely to move forward.

2008

Completion of a Reconnaissance Report recommending a feasibility study to develop flood risk management alternatives.

2014

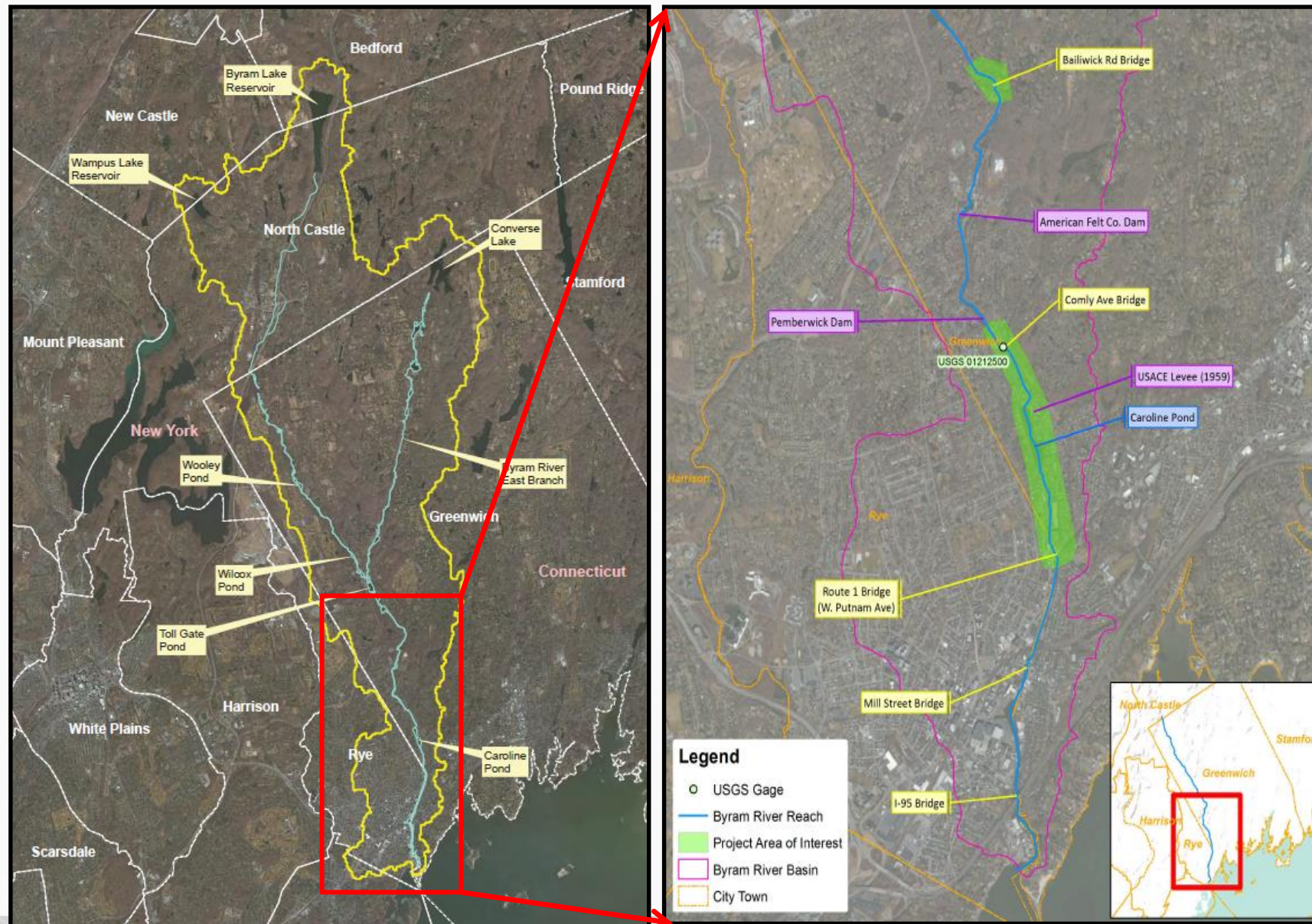
Screened alternatives and developed preliminary costs. Alternatives Milestones meeting with USACE HQ.

2016

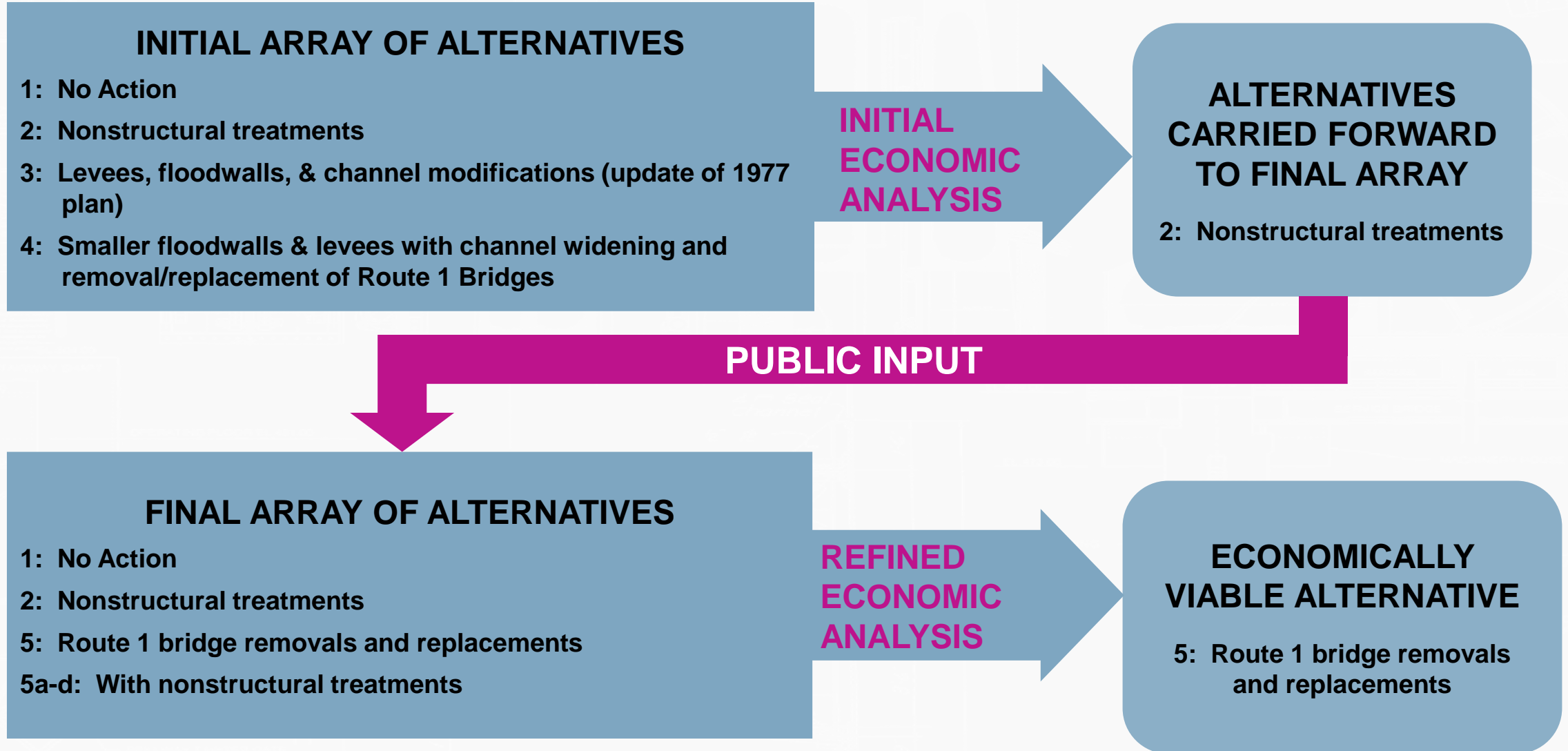
Based on public feedback, Route 1 Bridges alternatives (standalone and with nonstructural) were added as potential alternatives.

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STUDY AREA



THE ECONOMIC ANALYSIS OF THE FINAL ARRAY OF ALTERNATIVES REVEALED THAT **ALTERNATIVE 5 IS THE TENTATIVELY SELECTED PLAN.**



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U.S. Route 1 (eastbound)



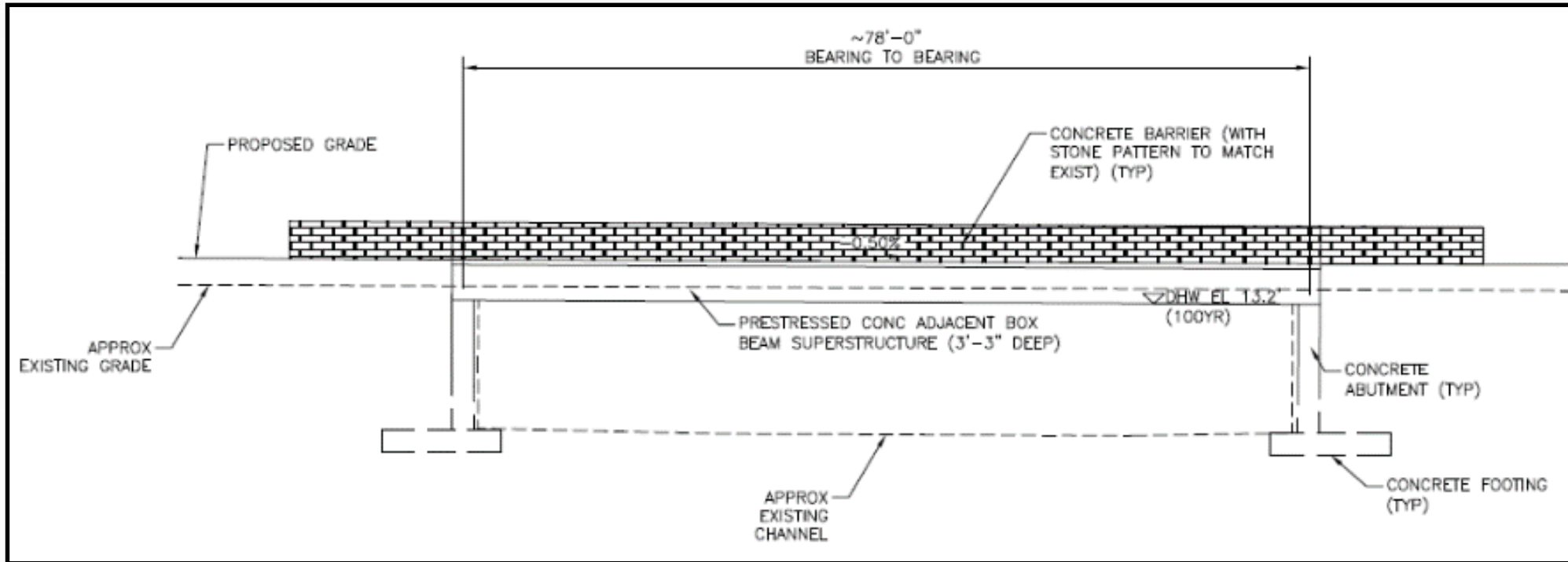
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Route 1 (westbound)



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ALTERNATIVE 5 – REMOVAL AND REPLACEMENT U.S. ROUTE 1 BRIDGES



Features

- Removal and replacement of Route 1 bridges lowers the water surface elevation
- Minor channel improvement

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EXAMPLES OF RECENTLY RECONSTRUCTED BRIDGES IN GREENWICH, CT

John Street, between Riversville Road and Round Hill Road

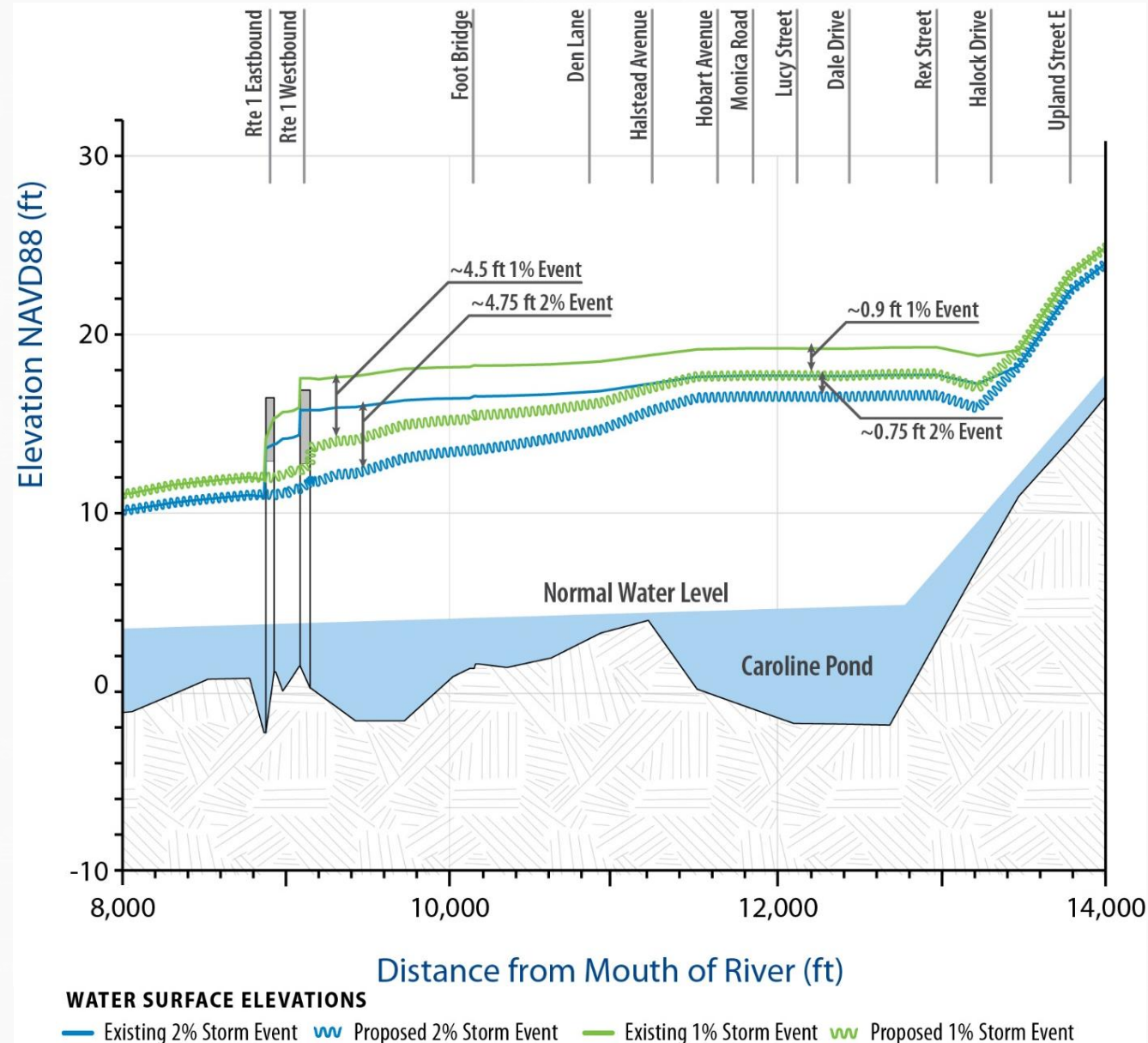


Riversville Road, south of Merritt Parkway



THE PROPOSED PROJECT REDUCES FLOODING FOR ABOUT 0.9 MILE UPSTREAM OF THE ROUTE 1 BRIDGES BY 1 - 4 FEET DURING A 1-PERCENT FLOOD EVENT.

EXISTING VS PROPOSED WATER SURFACE ELEVATIONS



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**THE TENTATIVELY SELECTED PLAN
WOULD REDUCE THE ECONOMIC RISK IN
THE STUDY AREA BY 50%.**

Average Annual Damages	
Damages Without Project	\$2,143,000
Damages With Project	\$1,375,000

BLUE = INUNDATION WITHOUT PROJECT

YELLOW HATCHED = INUNDATION WITH PROJECT



**TENTATIVELY SELECTED PLAN:
U.S. ROUTE 1 BRIDGES REMOVAL REPLACEMENT**

Project First Cost	\$24,302,000
Total Average Annual Cost	\$949,000
Annualized Benefits	\$1,071,000
Benefit Cost Ratio	1.1
Annual Net Benefits	\$122,000

NON-FEDERAL SPONSOR'S POSITION

- Town of Greenwich fully supports the Tentatively Selected Plan as described in this presentation.
- Further Town of Greenwich, local stakeholder, and public feedback will be provided with review of the draft report.
- The bridges are located within New York State.
 - Coordination with NYSDEC and NYSDOT is ongoing.

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KEY ENVIRONMENTAL EFFECTS

- Route 1 Bridges determined eligible for the National Register of Historic Places.
 - Removal and replacement determined to have an adverse effect to historic properties.
 - Ongoing coordination with New York and Connecticut State Historic Preservation Office and other stakeholders.
- Partial closure of both bridges during construction (2 yrs) is proposed.
 - Traffic delays through the Byram Circle will occur during construction due to one lane restrictions.
- New bridges will support the same traffic volume and maintain the same flow pattern as existing bridges.

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STUDY SCHEDULE

MILESTONE	DATE
Draft Report Released	28 June 2018
Public Comment Period Ends	20 August 2018
Final Report	Summer 2019
Chief's Report	Spring 2020

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STUDY CONTACT AND COMMENT

Study Contacts

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Draft Integrated Report Comments

Send any questions and/or comments to
byram.river@usace.army.mil

45 Day Comment Period:
06 July – 20 August

Project Webpage

www.nan.usace.army.mil/Byram