FROM GREY TO GREEN: THE KINGS HIGHWAY DRAINAGE INFRASTRUCTURE IMPROVEMENTS

FYI - This is Grey

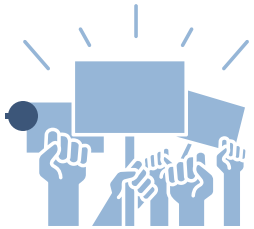
Presented by:
Jennifer Hale, PE
Hampton Director of Public Works

Image: Becca Bassett

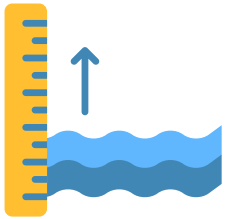
THE PATH TO SUCCESS

Call for Help

Rally for Support of Warrant Article and Funding For Study



Flood Studies



Conceptual Design

Funding for Implementation

Needed More Funding & RECEIVED IT!

Final Design & Construction

Success

Timeline: 1990-2026

CALL FOR HELP

The neighborhood and surrounding areas had significant and frequent flooding

October 15, 1990

Town of Hampton
Highway Department
136 Winnacunnet Road
Hampton, NH

Dear Sir:

I am writing to you regarding a drainage problem on Gentian Road. I have spoken with someone from your office in the past and they have informed me that the drainage on the street is adequate. Over this past weekend that theory was abolished. The street was impassable. There was a foot of standing water in the street from the intersection of the cross street down past my home. I am quite concerned about this problem and consider it a very serious matter. It would be appreciated if the town could review the situation and do what ever is necessary to correct this drainage situation.

June 27, 2017

Board of Selectman
Town of Hampton
100 Winnacunnet Road
Hampton NH 03842

Dear Board of Selectman:

We are writing to request a special meeting of the Board of Selectman devoted to a discussion of the ongoing flooding of the Green Street, Meadow Pond, and Gentian Road neighborhood. As you can see from the attached photographs, our streets and yards are often underwater in the summer and covered with thick ice during the winter. Our inundated streets and property pose tremendous challenges for moving about. To get to the beach in the summer, we have to wade through water that is shin high. During the winter, we are afraid that our cars will skid off the road. The mobility of our elderly neighbors is especially affected by the flooding.

Flooding occurs during above average tides when water flows into the streets through the four storm drains located at the intersection of Green Street and Gentian Rd. It also occurs during rainstorms when the water is unable to drain into Meadow Pond. This flooding has become more frequent.

The origins of the flooding are complex and require expert study to fully understand. The system pivots around the flow of brackish water into Meadow Pond from the Hampton Marsh through the culvert under Winnacunnet Road; from fresh water originating in Mill Pond that enters the pond through a culvert under High Street; and from runoff from the paved streets surrounding the pond.

Meadow Pond Neighborhood Drainage (or lack thereof)

- Closed drainage system insufficent and not functioning properly
- Outlet submerged underwater
- Water entering from behind neighborhood when Meadow Pond elevations increase

No where for the water to go!

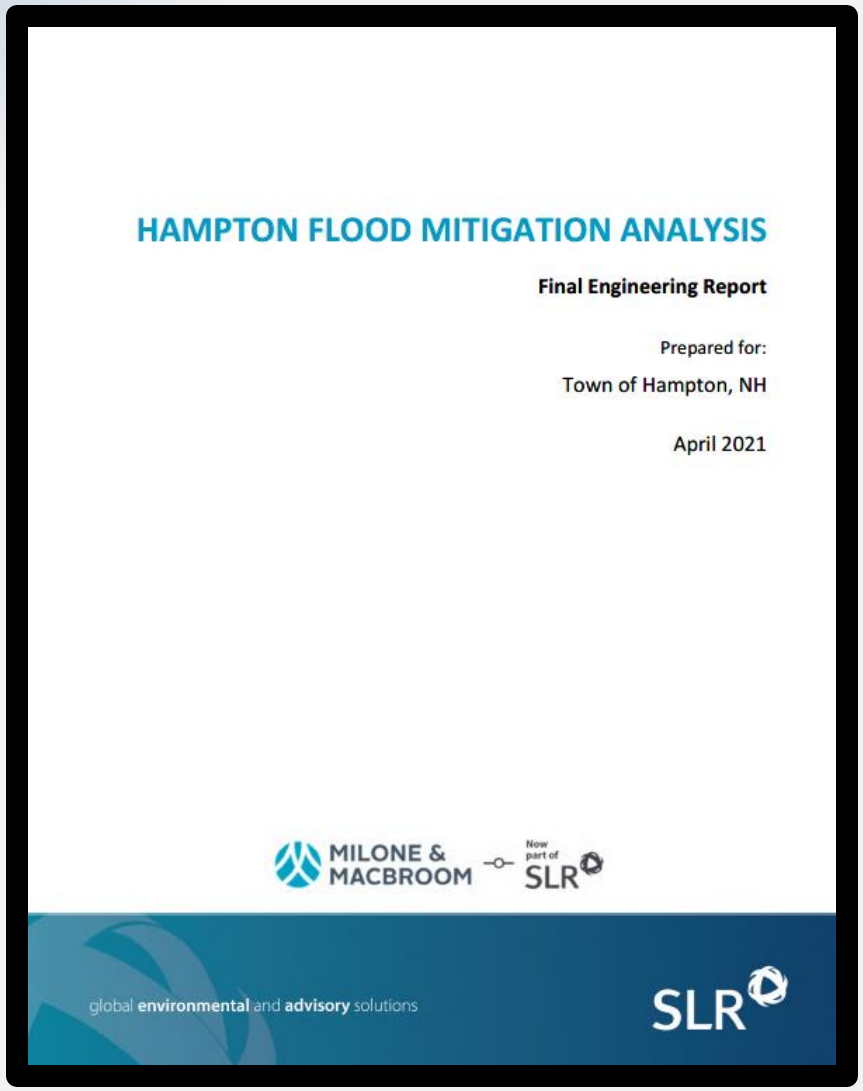
RALLY FOR SUPPORT AND FUNDING

March 2018 Town Meeting - Article 20: Authorized a Study and Report on Flooding ($100,000)

The neighborhood and surrounding areas still had significant and frequent flooding

June 2019 Grant Award from the National Fish and Wildlife Foundation - Site Assessment and Preliminary Designs to Mitigate Flooding in Hampton , NH ($185,799)

NEIGHBORHOOD FLOOD STUDIES



2018-2021

MEADOW POND

&

HAMPTON HARBOR

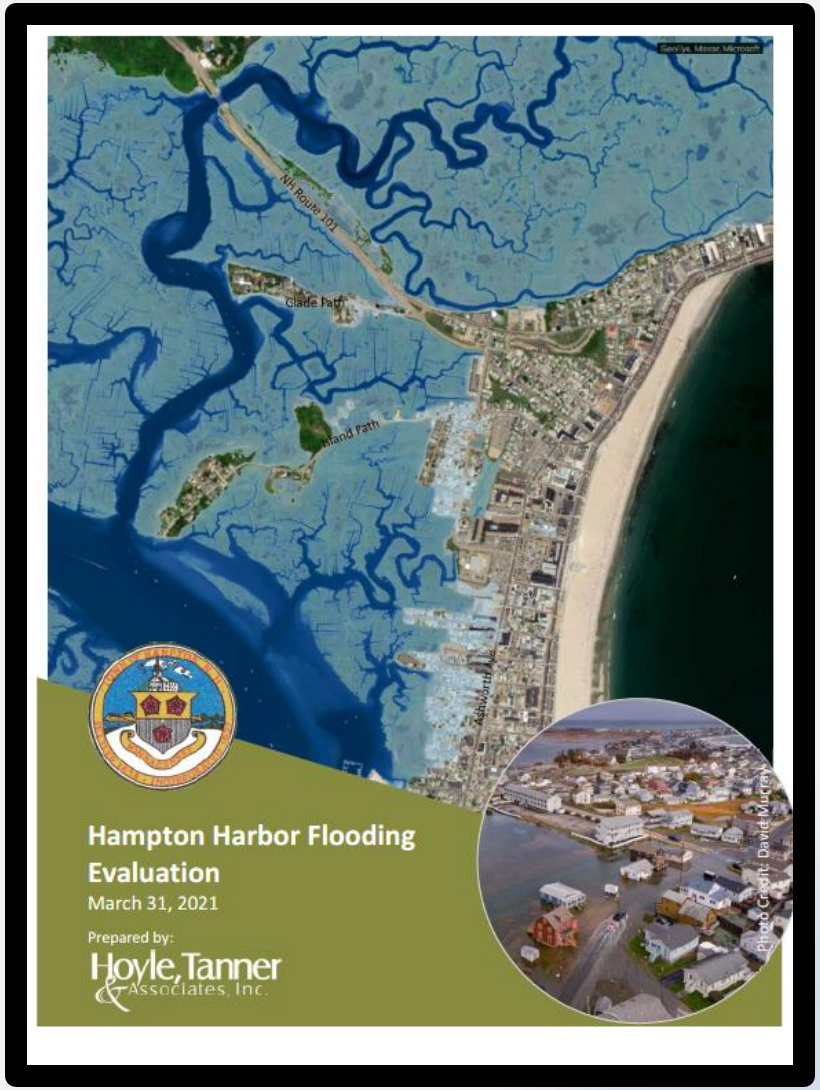
Evaluate

Current & Future

Flood Patterns

Mitigation Alternatives

<u>Recommendations</u>



RECOMMENDATIONS

Expanded List of Flood Mitigation Alternatives for the Meadow Pond Area
Hampton, New Hampshire
3/23/2021/2021

			Objectives				Feasibility			
Category	**ID**	**Description**	**Reduce Flooding**	**Reduce Erosion**	**Increase Public Safety**	**Minimize Environmental Impacts**	**Permittability**	**Comparative Implementation Cost**	**Comparative Maintenance Cost**	**Recommend**
Accommodate with Infrastructure	1	Increase culvert size at Winnacunnet Road	Poor	Fair	Poor	Fair	Fair	Fair	Fair	
	2	Increase culvert size at Winnacunnet Road and remove fill in narrow channel	Poor	Fair	Poor	Good	Good	Fair	Fair	
	0	Install berm behind Gentian Road along back edge of lawns	Good	Poor	Good	Fair	Fair	Fair	Fair	√
		Improve drainage on Green Street, Gentian Road, Meadow Pond Road, and Kings Highway.	Good	Fair	Good	Good	Good	Poor	Fair	√
	9	Tide gate improvements on stormwater outfalls	Poor	None	Fair	Poor	Good	Good	Fair	
Accommodate with Marsh Alterations	3	Phragmites removal, soil removal, and dredging at Meadow Pond	Good	Fair	Good	Poor	Poor	Poor	Poor	
	11	Phragmites and soil removal around Meadow Pond	Fair	Fair	Fair	Fair	Fair	Poor	Poor	
	4	Ditch / marsh remediation	None	Fair	Fair	Good	Good	Fair	Fair	√
Avoid with Building, Infrastructure, and Zoning Changes	5	Elevate floodprone roads such as Greene Street, Gentian Road, and Meadow Pond Road	Fair	Poor	Fair	Good	Good	Poor	Fair	
	7	Elevate floodprone houses	Good	Fair	Good	Good	Good	Fair	Good	√
	8	Voluntary and assisted retreat/relocation, removal of development and fill, floodplain restoration	Good	Good	Good	Good	Good	Good	Good	√

CONCEPTUAL DESIGN

New Force Main – Greene St to 12th St

CONCEPTUAL DESIGN

New Force Main – 6th St to Winnacunnet Rd

global environmental and advisory solutions

SLR

RALLY FOR SUPPORT AND MORE FUNDING

March 2020 Town Meeting - Article 24: Flood Control Design ($200,000)

The neighborhood and surrounding areas still had significant and frequent flooding

March 2023 Town Meeting - Article 12: Improvements to Alleviate Flooding on Kings Highway, and the Greene Street, Gentian Road and Meadow Pond Road neighborhood area.(**Grant** plus $800,000)

The neighborhood and surrounding areas still had significant and frequent flooding

August 2023 G&C authorized NHDES to enter into a grant agreement to address chronic flooding issues. There were 33 eligible proposed and the Town was ranked 6th and received **$2,000,000** in grant funding.

RALLY FOR SUPPORT AND FUNDING

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

SEABROOK-HAMPTONS ESTUARY ALLIANCE

FLOOD READY NEIGHBORHOODS PROJECT

GOAL: Understand how a neighborhood-scale technical assistance approach to coastal flood risk influences knowledge, engagement, and action for coastal New Hampshire residents at risk of flooding

What is it?

The Flood Ready Neighborhoods Project (Flood Ready) seeks to bring residents together to increase their neighborhood's ability to prepare for and respond to worsening coastal and stormwater flooding and erosion. Flood Ready staff will support and collaborate with New Hampshire Seacoast neighborhoods to identify strategies for increasing flood resilience while protecting the natural resources that support and safeguard both human and natural systems. This pilot program is flexible – it is highly adjustable to meet individual neighborhood needs and priorities.

Photo by Becca Bassett, 23 Dec. 2022. Greene St. looking at Meadow Pond Rd.

HAMPTON COASTAL HAZARDS ADAPTATION TEAM (CHAT)

TOWN OF HAMPTON, N.H. SETTLED 1638 • INCORPORATED 1639 WINNACUNNET

CAW New Hampshire Coastal Adaptation Workgroup

RESOURCEFUL • READY • RESILIENT

It truly does take a village (or a town or a state or a really great group)!

WHAT HAPPENED NEXT...

- The project went out to Bid

The neighborhood and surrounding areas still had significant and frequent flooding

- Bids came in higher than funding available ($4,857,790.75 vs +/- $2,800,000)

The neighborhood and surrounding areas still had significant and frequent flooding

- Numerous discussions with Engineers, Management, the Hampton Select Board, NHDES and Contractor on options to move foward.

The neighborhood and surrounding areas still had significant and frequent flooding

... AND WHAT HAPPENED NEXT

FUNDING RECEIVED

Through the persistence and support of Executive Councilor Stevens and her understanding of the importance of this project AND along with the continued efforts of our resident and community officals:

In October 2024 G&C authorized NHDES to amend the Town's Grant Agreement by increasing the grant amount by $1,300,000 to a total of $3,300,000.

- The project was "value engineered" with a total funding of +/- $4,100,000
- Construction began the first week in January 2025

CONSTRUCTION

January 2025

February 2025

March 2025

CONSTRUCTION

April 2025

The neighborhood and surrounding areas still had significant and frequent flooding

April 2025

MAY 2025

CONSTRUCTION

Pump Station

Pump Station Controls

Water Level Sensor

CONSTRUCTION

Structures

Grade and Pavement

SUCCESS

Before pumps were activated

After pumps were activated

Images: Tom Bassett

SUCCESS

Rainfall with high tides but no flooding!

Image: Tom Bassett

SUCCESS

Predicted and observed high tides (above 9.5 ft), rainfall, and flooding, April 16-22, 2026

Date	Predicted High Tide (MLLW) (1)	Observed High Tide (MLLW) (2)	Rainfall (3, 4)	Flooding (5)
April 16	9.7 ft	10.27 ft	0.05 in	No
April 17	--	10.61 ft	0.09 in	No
April 18	10.1 ft	10.16 ft	0	No
April 19	10.3 ft	11.16 ft	0.42	No
April 20	10.1 ft	10.5 ft	0	No
April 21	10.3 ft	10.43 ft	0	No
April 22	9.7 ft	10.09	0.01	No

Sources: (1) US Harbors.com; (2) NERACOOS.org; (3) Weather Underground (April 16-18); (4) Localconditions.com; (5) Neighborhood observations

SUCCESS

Predicted and observed high tides (above 9.5 ft), rainfall, and flooding, May 14-19, 2026

Date	Predicted High Tide (MLLW) (1)	Observed High Tide (MLLW) (2)	Rainfall (3)	Flooding (4)
May 14	9.6 ft	10.37 ft	0.5 in	No
May 15	10.1 ft	10.35 ft	0.19 in	No
May 16	10.4 ft	10.63 ft	0	No
May 17	--	10.81 ft	0.02 in	No
May 18	10.6 ft	10.76 ft	0	No
May 19	10.5 ft	10.74 ft		No

Sources: (1) US Harbors.com; (2) NERACOOS.org; (3) Localconditions.com; (4) Neighborhood observations

SUCCESS

- High tides have been observed at 11.6 ft

  Within the neighborhood and surrounding areas flooding has been alleviated

- When water overflows from Meadow Pond it flows into the new storm drain system

  Within the neighborhood and surrounding areas flooding has been alleviated

- So far flood events have dropped from an average of 31 flood in 2024-2025 to 6 in 2026

  Within the neighborhood and surrounding areas flooding has been alleviated

Image: Tom Bassett