Site Study Ashburnham: Phillips Brook/Residential Area Off Main Street

About this Site: This town-owned site involves a small park on River Street (1) immediately north of Main Street in Ashburnham. Phillips Brook (2) runs through the site. The Brook has multiple dams. The park formerly had a town swimming pool, which was abandoned due to unsafe levels of *E.coli* bacteria. The site has potential for recreational trails, and is highly visible from Main Street which could help to attract visitors. The Conway School of Design has already produced a detailed habitat restoration plan for floodplain restoration, removal of invasive plants, and replanting of floodplain species.

Community Concerns about the Phillips Brook/Residential Area off Main Street

This property has the potential to provide recreational opportunities to residents with trails and a viewshed of Phillips Brook. It currently is becoming a degraded landscape with increasing numbers of invasive plants that are negatively impacting the natural ecosystem of the site. Restoration of the park would be a positive for the community, and the Conway School Plan could be revisited. The community is keen to put this property to good use.

Nature-based Solutions Recommended for Ashburnham: Phillips Brook/Residential Area Off Main Street

River Street Park/Residential Area off Main Street

DataViewer link: https://arcg.is/0OGyu2

Recommended NbS
NbS #s correspond to Project Templates referenced on pages 3, 6, & 7 of Site Study

1. At River Street Park Parcels

DL B RT — #3 Forest / shrubland health management or restoration

D F — #5 New wetland or floodplain construction/expansion

DW — #11 Stormwater treatment wetlands

2. Phillips Brook

DW D F — #13 Upstream BMPs rain-garden, bio-swale, etc.

RT — #14 Shade-habitat/ infiltration Tree Plantings

- #26 Apply indigenous knowledge

DL B — #58 Invasive species management

DW DL — #1 River/pond bank revegetation

3. Intersection of River Street and Main Street

F — #28 Paved pervious trail

F — #17 Pervious parking/walking areas

- #30 Pedestrian safety and bike access

Map Key

Bright blue overlay is the FEMA 100 year floodplain

Pink overlay is FEMA 500 year floodplain

Recommended NbS Key

F Flooding NbS

D Drought NbS

RT Rising temps NbS

DW Degraded water NbS

DL Degraded landscape NbS

B Loss of biodiversity NbS

NbS Narrative/NbS Project Templates for Ashburnham: Phillips Brook/Residential Area Off Main Street

NbS Recommendations

- Revisit the Conway School of Design detailed habitat restoration plan for floodplain restoration, removal of invasive plants and replanting of floodplain species
- Temporary or green roof pavilion options could make the space more inviting for people to use the park for farmers markets, etc.
- Removal of the old pool concrete wall could enable a more natural bank.
- Consideration could be given to allowing the existing breached dam to remain in place to serve as a "leaky dam". In a severe storm, the cement wall of the dam would hold back some volume of water and release it more slowly over a period of time– a "slow the flow" effect. This idea would be worth exploring with a hydrologist and an engineer.
- The soils around this residential area are highly degraded. The interventions described in the Healthy Soils Report would restore soil health.
- There are viewsheds into Phillips Brook that could be improved or expanded for scenic value. There are potential trail connections to the Rail Trail along Phillips Brook.
- Most of the property is in the Riverfront Area, on existing wetlands. Many invasives were removed by NRWA on this property but ongoing maintenance is needed.

NbS Project Templates for Site Specific NbS Recommendations on previous page

Resource 1 - How to Use Templates

Resource 2 - Next Steps in Planning & Permitting

The following template numbers correspond to the NbS recommendations on the page 2 Map.

#1 River/Pond Bank Revegetation

#3 Forest Management Restoration

#5 Wetland/Floodplain Construction- Expansion

#11 Stormwater Treatment Wetlands

#13 Upstream BMP Rain Gardens and Bioswales

#14 Shade Habitat Infiltration Tree Planting

#17 Pervious Parking- Walking Areas

#26 Apply Indigenous Knowledge

#28 Paved Pervious Trail

#30 Pedestrian Safety and Bike Access

#58 Invasive Species Management

View Ashburnham Map Atlas **for maps on land covers, soil function and storage, water resources, ecological priority sites, and more.**

Soils Information for Ashburnham: Phillips Brook/Residential Area Off Main Street

Ashburnham

Large amounts of high functioning soil and its position high in the watershed highlight the importance of protecting soil health in Ashburnham.

Ashburnham stands out among the five focus communities as having a particularly large acreage of high functioning soils that are storing over 2 million metric tons of soil organic carbon (SOC). The richest deposits of SOC are found in the wetland systems that extend from the town's major lakes. The 21,170 acres of "high function/high carbon" soils represent 80% of the town's land area and is about 3 times as much area of high functioning soil as the average in the other 4 towns. Ashburnham straddles two major watersheds with the lands to the southeast of town ultimately draining to the Nashua River, and this position highlights the town's importance in protecting and managing soil health to prevent unwanted downstream effects like flooding and poor water quality. Compared to the other four focus communities, the town has limited areas of degraded soils with potential for regeneration (just 5.7% of the land area is classified as having high regeneration potential because of the relatively little soil disturbance in Ashburnham).

Sites Considered for Nature-based Solutions

Despite having such large area of high functioning soil, several sites that see seasonal flooding have been identified in this project. The sites selected for potential Nature-based Solutions are largely nearby water bodies or streams in areas where soil function has been degraded. Efforts to increase soil capacity to store or slow stormwater flow in these locations may have a positive impact and be important demonstration sites. These site specific interventions should be complemented by efforts to conserve and protect important healthy soil resources throughout the town's forested uplands and the wetlands extending from the town's large water bodies.

Priority Actions for Protecting/Enhancing Soil Health in Ashburnham

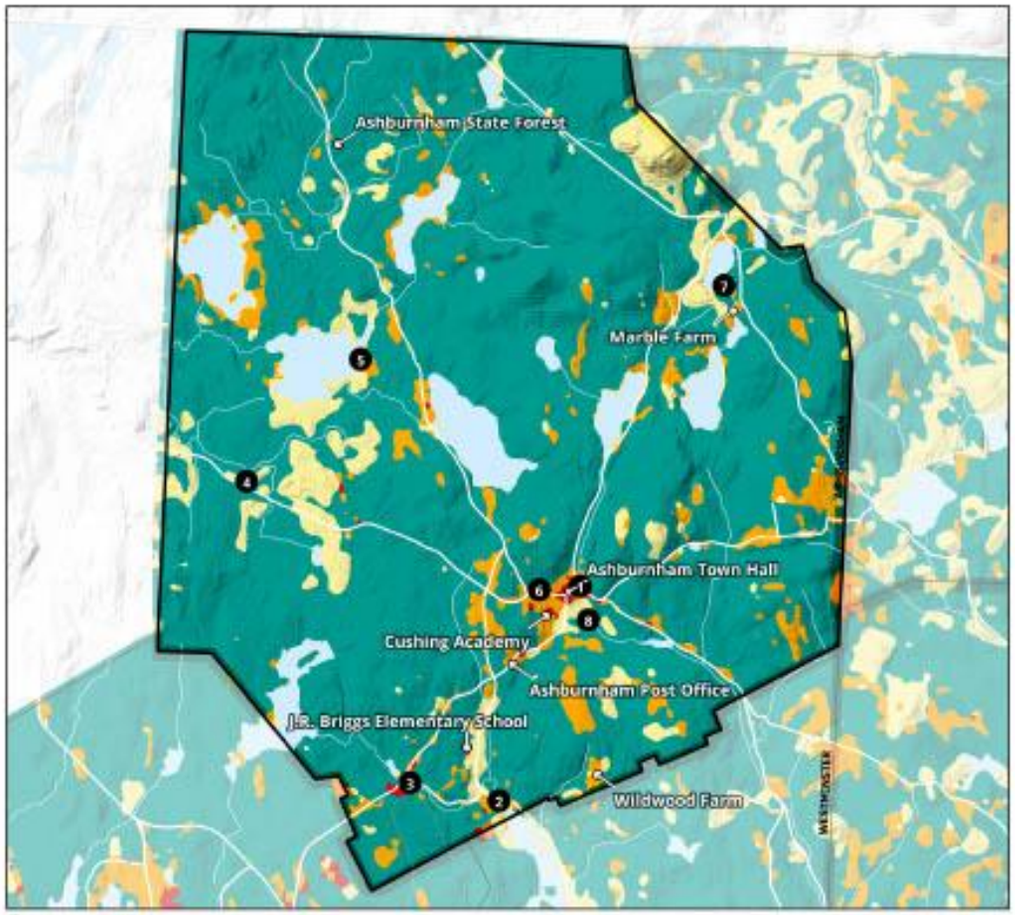
Increased protection and climate forward management of wetlands and forests.

Example Nature-based Solutions:

- Land acquisition and conservation easements
- Forested upland protection district (see Deerfield example, appendix 1)
- Transfer of development from rural to infill locations, including across town borders (See Deerfield example, appendix 1)
- Forest tree planting to increase climate-adapted species abundance and total stock and to preserve forest structure
- Improving local bylaws for wetland protections

#	SITE	PREDOMINANT SOIL FUNCTIONS FOR RESILIENCE			
		Highly Degraded	High Regeneration Potential	Moderate-Low Function	High Function
1	Phillips Brook/Residential Area on Main St.	◆	◆		◆
2	Pump Station			◆	
3	Sweeney Park	◆	◆		
4	Dump/Transfer Station			◆	
5	Page Ave		◆		
6	High St./Cushing St.	◆	◆		
7	S. Branch Souhegan River		◆		◆
8	Brickford Field			◆	◆

Soil Functions for Resilience



	ASHBURNHAM
High Performance Soils & High Carbon Soils	21,170 ac (80.8%)
Moderate-Low Function Soils	3,450 ac (13.2%)
Degraded Soils with High Regeneration Potential	1,507 ac (5.7%)
Highly Degraded Soils	83 ac (0.3%)

○ Landmarks

❶ Sites Considered for Nature-based Solutions

[Read full Nashua River Watershed-wide Healthy Soils Report](#) (PDF 25MB)

Nature-based Solutions Opportunity Table Ashburnham: Phillips Brook/Residential Area Off Main Street

Value	BEST	BETTER	GOOD
Feasibility	high	mid	low
Ownership	Municipal		

Best Value = An improvement to a resource that provides significant lasting resiliency and strengthens or serves related resources

Better Value = Makes significant improvements to resiliency with long lasting effect

Good Value= Improves the habitat value, or resiliency of a site or feature

Feasibility is based on property ownership or technical access

NbS Template #	Nature-based Solution Description	Phillips Brook/Residential Area off Main St.
	Natural Environment Restructuring	
1	River / pond bank revegetation	**high**
2	Grassland meadow management restoration	
4	Wetland management restoration	
5	New wetland or floodplain construction / expansion	**high**
7	Stream flow alteration	
8	Pollinator hedgerow buffer	
10	Soil management or restoration**	**high***

** see Healthy Soils Report

NbS Template #	Nature-based Solution Description	Phillips Brook/Residential Area off Main St
	Built Environment Restructuring	
11	Stormwater treatment wetlands	
13	Upstream BMPs rain-garden, bio-swale	
14	Shade-habitat/ Infiltration tree plantings	
15	MSCS culvert improvement	
16	Dam modification / controls	**mid**
17	Pervious/ hi-SRI parking/walking areas	**mid**
19	Lighting modifications / upgrades	
20	Species crossing protections	
21	Beaver deceiver / promoter	
22	High-performance soil specifications**	**mid***
23	PV Parking Awnings + Rooftops	**low**

Nature-based Solutions Opportunity Table Ashburnham: Phillips Brook/Residential Area Off Main St. , cont'd.

Value	BEST	BETTER	GOOD
Feasibility	high	mid	low
Ownership	Municipal		

Best Value = An improvement to a resource that provides significant lasting resiliency and strengthens or serves related resources

Better Value = Makes significant improvements to resiliency with long lasting effect

Good Value= Improves the habitat value, or resiliency of a site or feature

Feasibility is based on property ownership or technical access

NbS Template #	Nature-based Solution Description	Phillips Brook/Residential Area off Main St
	Ecological Awareness & Access Projects	
24	Outdoor classroom/ Nature-play	**mid**
25	Food production and forage	**mid**
26	Apply Indigenous knowledge	
27	Soft trail	
30	Pedestrian safety and bike access	**mid**
	Architectural Projects to Consider	
49	Nature-based recreational opportunities	**mid**

NbS Template #	Nature-based Solution Description	Phillips Brook/Residential Area off Main St
	Value Added Features on Projects	
50	Analysis and study projects	
52	Educational Interpretation	**high**
53	Furnishings / gathering space	**high**
56	Volunteer opportunities	
58	Invasive species management	**high**
60	Habitat enhancements	

Breached dam that held the former town pool.
Photo by Chris Picone

Breached dam, from downstream side.
Photo by Chris Picone

Photo left: Phillips Brook running through the site today. Notice the high density of invasive plants.

Photo below: Phillips Brook running through the former site of the town pool.

Photos by Chris Picone

Photo left: View from former beach edge, with steps down to former town pool with Phillips Brook in distance.

Photo by Chris Picone

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To view the interactive online Plan, please visit nashuariverwatershed.org/Climate Resilience