Site Study Ashburnham: Sweeney Park

About this Site: Sweeney Park (circled in red) on South Main Street in South Ashburnham is located in a floodplain and within an industrial zone. This area historically had mills along the river, many of which burned, and are now gone. The industrial past means area soils are highly degraded and redevelopment has been poor. The Park borders Whitman River (1). The playground is well used by the neighborhood.

Community Concerns at Sweeney Park Site: Along South Pleasant Street on the other side of the river, water main breaks and flood events have been continuously reported (2). The basketball court (3) is cracking. The current playground equipment doesn't meet standards – no trees, minimal grass, excessive pavement (4). With a neighboring oil business in Zone A (5) of the floodplain, verification is needed regarding the effectiveness of their detention basins. The Conservation Commission has received complaints about contamination from this business when washing oil trucks near the river, and an Enforcement Order was issued in 2022.

Nature-based Solutions Recommended for Ashburnham: Sweeney Park

Sweeney Park

DataViewer link: https://arcg.is/04K9Wb

Recommended NbS

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

1. South Main Street
   - #30 Pedestrian Safety and Bike Access

   F — #14 Shade-habitat/infiltration tree planting

   B — #8 Pollinator hedgerow buffer

2. Basketball Court

   B — #8 Pollinator hedgerow buffer

   RT — SRI Heat reducing pavement coating

3. Playground

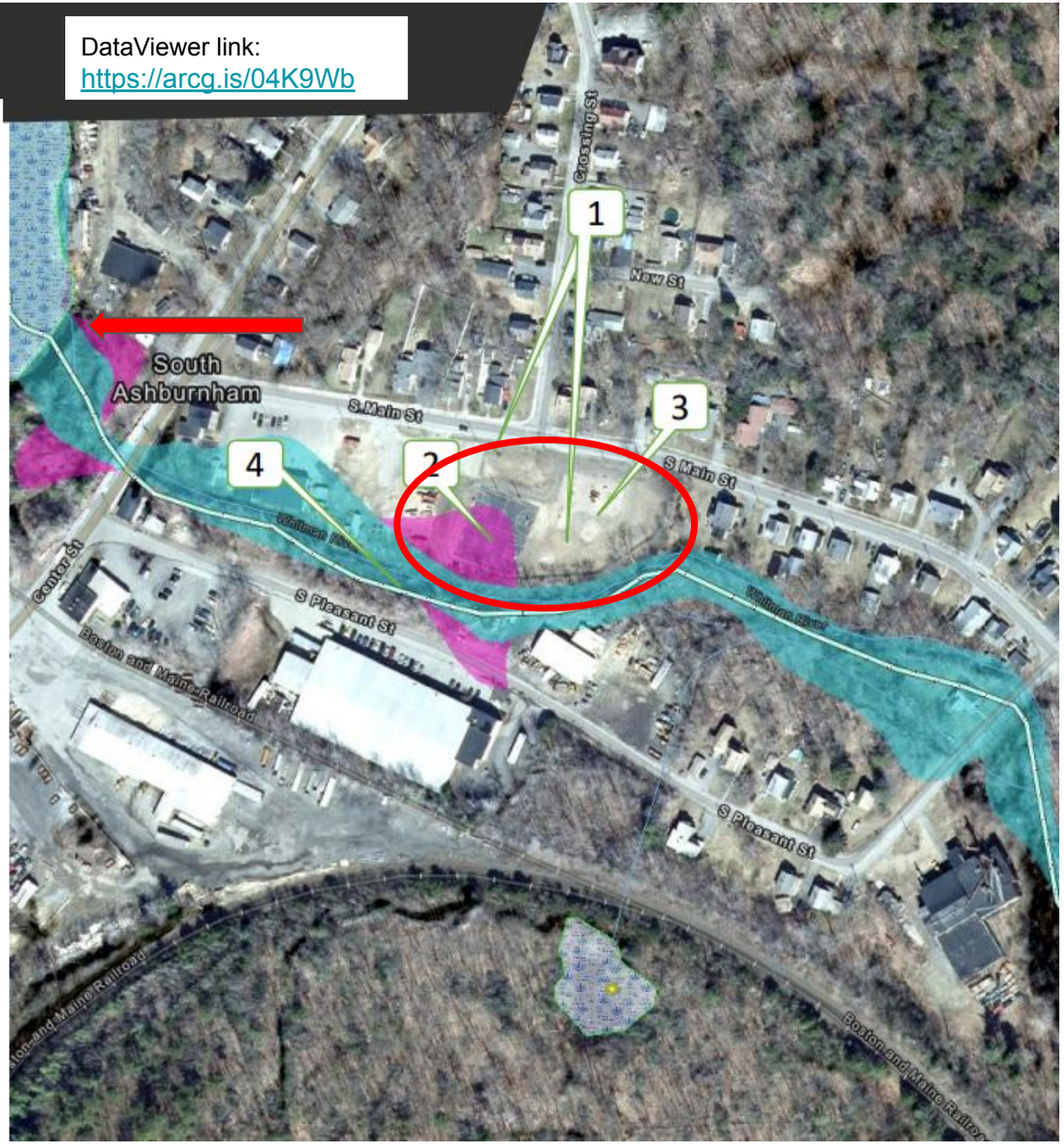
   DW RT F — #17 Pervious/ Hi SRI parking/walking areas
   - #24 Outdoor classroom/nature-play
   - #52 Educational Interpretation

4. Whitman River

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

   B — #20 Species crossing protections

   F — #7 Stream Flow Alteration



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

Red arrow is site of Whitney Pond Dam Removal and Whitman River Restoration Project in which NRWA is a partner. Learn more.

NbS Narrative/NbS Project Templates for Ashburnham: Sweeney Park

NbS Recommendations

- The infiltration basins upstream of this location need to be mapped to identify areas where filtration can be improved.
- Installation of rain gardens or bioswales upstream could help to infiltrate stormwater and slow flow of runoff.
- The creation of an unmowed buffer area between the road and the park could prevent the buildup of auto exhaust in the park.
- Where the flagpole is located, a pollinator garden would add wildlife habitat and reduce the need for mowing.
- Removing the chain link fence along the river would create more accessible space; this fence could be replaced with safety signage or a different type of barrier.
- We recommend planting shade trees along the walking path, and around the basketball court to reduce heat island effect.
- When the basketball court is due to be resurfaced, we recommend exploring porous pavement options which would improve drainage.
- The current playground equipment is highly used but doesn't meet standards (no trees, minimal grass, excessive pavement); it should be replaced with more inviting and nature-based play elements.
- The area presents an opportunity for education programs connected to the nearby brook, on topics such as water quality, aquatic life, et.
- The soils around Sweeney Park are highly degraded; the interventions described in the Nashua River Watershed-wide Healthy Soils Report would restore soil health.

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.

#7 Streamflow Alterations

#8 Pollinator Hedgerow Buffer

#13 Upstream BMP Rain Gardens and Bioswales

#14 Shade Habitat Infiltration Tree Planting

#17 Pervious Parking- Walking Areas

#20 Species Crossing Protections

#24 Outdoor Classroom- Nature Play

#30 Pedestrian Safety and Bike Access

#52 Educational Interpretation

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

Soils Information for Ashburnham: Sweeney Park

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

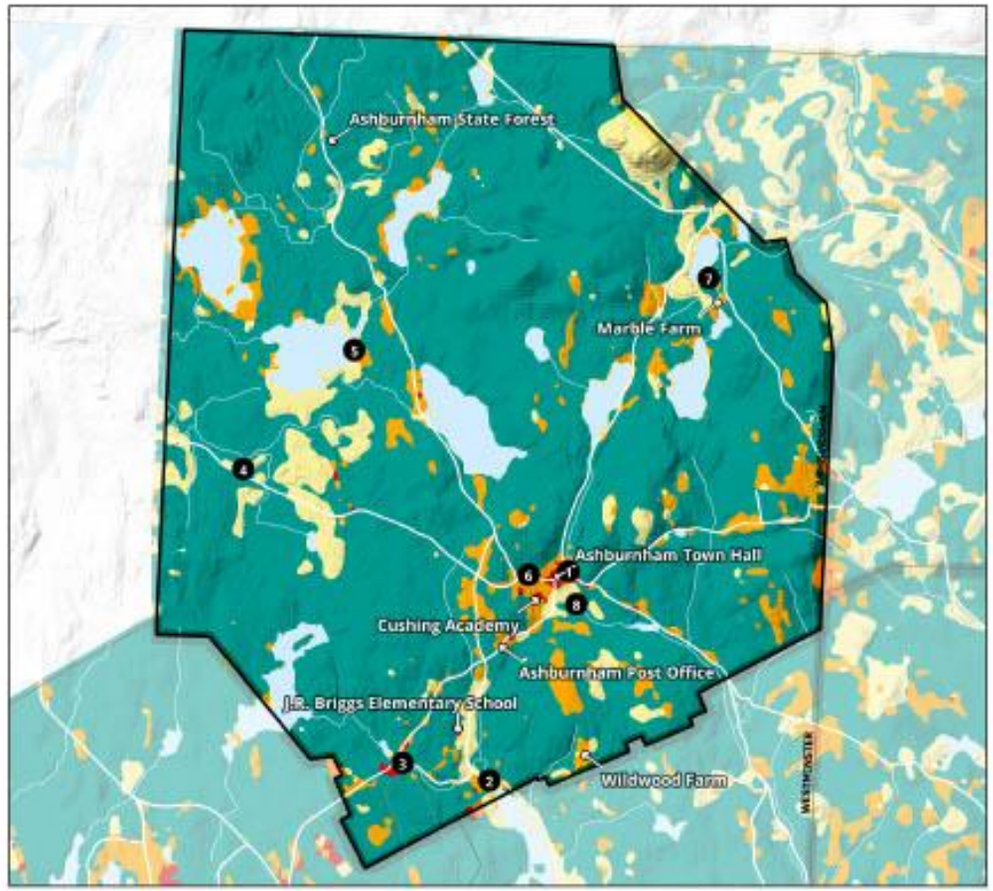
Increased protection and climate forward management of wetlands and forests.

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

1 Sites Considered for Nature-based Solutions

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

Nature-based Solutions Opportunity Table Ashburnham: Sweeney Park

Value	BEST	BETTER	GOOD
Feasibility	high	mid	low
Ownership	Municipal/Commercial		

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	Sweeney Park
	Natural Environment Restructuring	
1	River / pond bank revegetation	
2	Grassland meadow management restoration	
4	Wetland management restoration	
5	New wetland or floodplain construction expansion	
7	Stream flow alteration	**low**
8	Pollinator hedgerow buffer	**high**
10	Soil management or restoration*	**mid**

* see Healthy Soils Report

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

Nature-based Solutions Opportunity Table Ashburnham: Sweeney Park, cont'd.

Value	BEST	BETTER	GOOD
Feasibility	high	mid	low
Ownership	Municipal/Commercial		

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

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Feasibility is based on property ownership or technical access

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

NbS Template #	Nature-based Solution Description	Sweeney Park
	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	
60	Habitat enhancements	

Basketball court at Sweeney Park
Photo by Ralph Baker

Fence between Sweeney Park and the Whitman River
Photo by Ralph Baker

This "Building Community Climate Resilience: Nashua River Watershed-wide Nature-based Solutions Plan" is funded by a Municipal Vulnerability Preparedness grant awarded to the City of Fitchburg by the Healey-Driscoll Administration's Municipal Vulnerability Preparedness (MVP) program, which is administered by the Executive Office of Energy and Environmental Affairs (EEA). NRWA was the lead coordinator for this project.

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