Site Study Fitchburg: Green Acres

About this site: Green Acres (1) is the largest public housing project in Fitchburg (city-owned), with several hundred residents, located in an Environmental Justice census block. This is an economically vulnerable population. This site sits immediately uphill and east of Water Street/Rt. 12 (2) and there is a wetland/stream area (3) south of the site.

Community concerns about Green Acres

How can we get residents from Green Acres to engage in these decisions? Resident engagement coordinators are: Ann Dumezil adumezil@fitchburgha.org and Marci Haneisan mhaneisen@fitchburgha.org.

Generating and prioritizing After School program that used to meet in the village could be a useful area to feel for engagement.

There is a field and old community garden that could use some restoration (4).

Opportunities to plant trees in the area, installing rain gardens, rain barrels, creating useful opportunities to provide education for surrounding neighborhoods.

Playing field in the property (5) was not visited as part of MVP site visit.

City officials mentioned that some of the housing needs to be replaced. They mostly are sited on a Drumlin and many of them are likely (due to compact glacial till soils) to have wet basements or crawl spaces, which may result in mold problems inside the buildings if they're not adequately ventilated.

Nature-based Solutions Recommended for Fitchburg: Green Acres

Green Acres

BSC Data Viewer link: https://arcg.is/0P1D4S0

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

1. Green Acres Village
   - #49 Recreational opportunities

RT D F #14 Shade habitat/infiltration tree planting

2. Wanoosnoc Road- former basketball court & community garden

DL B #8 Pollinator hedgerow buffer

DW RT D F #17 Pervious parking walking areas

- #25 Food production and forage
- #24 Outdoor classroom and nature play

DL B #58 Invasive species management

3. Wetland and stream adjacent to Wanoosnoc Road

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

DW D F #11 Stormwater treatment wetlands

DW DL B #3 Forest/shrubland restoration

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 Fitchburg: Green Acres

NbS Recommendations

- A more energy-conscious, environmentally and community friendly design along the lines of Emerson Green in Devens might be adopted for the next generation of buildings, and even for the entire complex if funding can be obtained.
- Invasive Norway Maples are present but these may need to be tolerated since they provide shade.
- Opportunities for pocket forests, a pollinator meadow, excess pavement removal, and a community garden / edible landscaping were identified.

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.

#3 Forest Management Restoration

#8 Pollinator Hedgerow Buffer

#11 Stormwater Treatment Wetlands

#13 Upstream BMP Raingardens and Bioswales

#14 Shade Habitat Infiltration Tree Planting

#17 Pervious Parking- Walking Areas

#24 Outdoor Classroom- Nature Play

#25 Food Production and Forage

#49 Recreational Opportunities

#58 Invasive Species Management

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

Soils Information for Fitchburg: Green Acres

Fitchburg

Significant acreage of degraded soils and soils with high regeneration potential that are spread throughout the city mean that better management practices and efforts to replicate lost soil function are important for increasing resilience in Fitchburg.

Fitchburg, along with neighboring Leominster, contains significant areas of developed and impervious landscapes compared with other communities in the Nashua River Watershed. Much of the most developed and degraded landscapes are found along the North Nashua River that flows through the city center. Pockets of "Highly Degraded" soils that have the potential for restored function with intensive intervention strategies are found throughout this central corridor along the river. The high functioning soils of Fitchburg are found primarily in the forested uplands in the northern half of the city with pockets of "high regeneration potential" soils located on the farmland and residential areas there.

Sites Considered for Nature-based Solutions

Sites of interest for this project are located in the more degraded and low functioning soil areas and subbasins with a focus on green infrastructure to replicate soil water filtration and holding capacity. This is an important strategy; however, paying attention to the areas of high regeneration potential on the farms, lawns, and gardens of the city's upland areas and encouraging management for better soil health there should be a complementary strategy.

Priority Actions for Protecting/Enhancing Soil Health in Fitchburg

Better management of turf, lawns, gardens, and farms.

Example Nature-based Solutions:

- Education and outreach to key landowners and farmers about smart soil practices
- Pocket forests to transform biodiversity
- Planting and earthworks to restore connectivity and hydrology
- Front yard pollinator meadows
- Dual use solar
- Planning and zoning to preserve and enhance ecosystem function

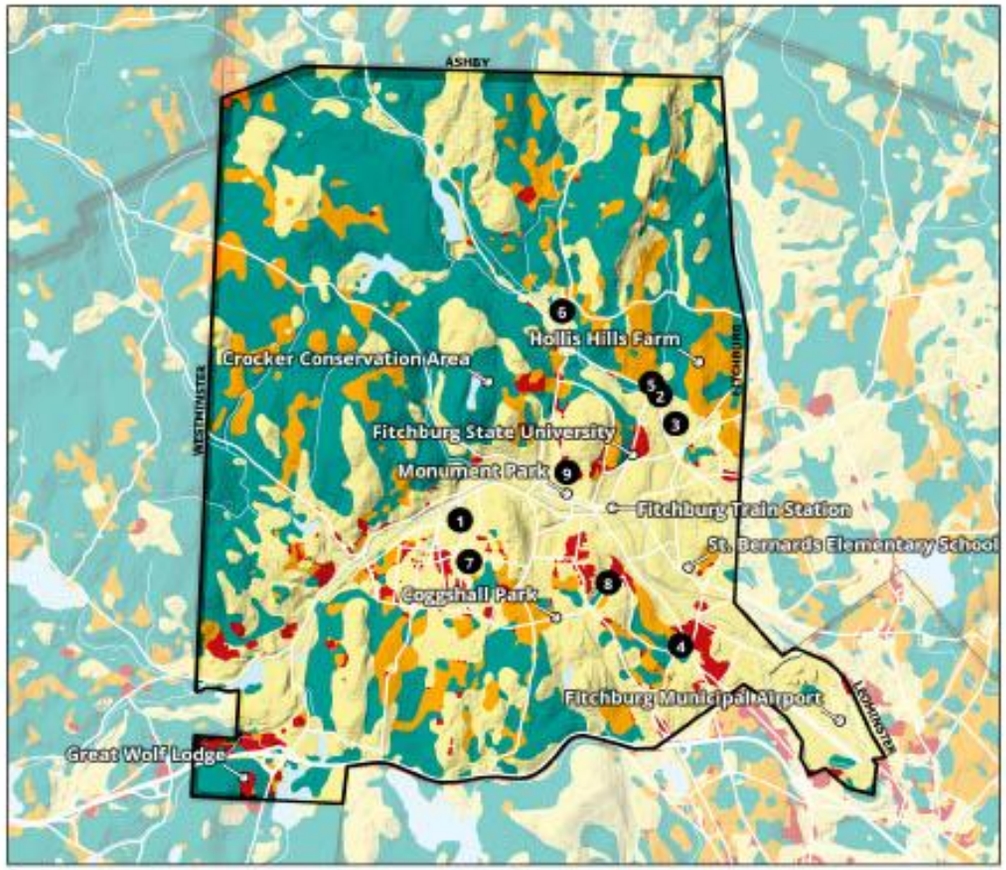
Regenerate or replicate lost soil function in highly degraded urbanized landscapes.

Example Nature-based Solutions:

- Green infrastructure (high performance tree pits, bio-swales, rain gardens)
- Parking lot renovations
- Stream daylighting

#	SITE	PREDOMINANT SOIL FUNCTIONS FOR RESILIENCE			
		Highly Degraded	High Regeneration Potential	Moderate-Low Function	High Function
1	Cleghorn St.			◆	
2	Civic Center/Falulah Brook			◆	
3	Coolidge Park			◆	
4	Green Acres		◆		
5	Putt's Pond			◆	◆
6	Greene's Pond			◆	◆
7	Parkhill Park/Sand Brook			◆	
8	Beekman St. and Hobson St. Culverts	◆		◆	
9	Longsjo School			◆	

Soil Functions for Resilience



	Fitchburg
High Performance Soils & High Carbon Soils	7,369 ac (41%)
Average Function Soils	7,952 ac (44.2%)
Degraded Soils with High Regeneration Potential	2,064 ac (11.5%)
Highly Degraded Soils	609 ac (3.4%)

○ Landmarks

❶ Sites Considered for Nature-based Solutions

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

Nature-based Solutions Opportunity Table Fitchburg: Green Acres

Value	BEST	BETTER	GOOD
Feasibility	high	mid	low
Ownership	Municipal		
	** see Healthy Soils Report		

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	Green Acres		NbS Template #	Nature-based Solution Description	Green Acres
	Natural Environment Restructuring				**Built Environment Restructuring**	
1	River / pond bank revegetation			11	Stormwater treatment wetlands	**mid**
2	Grassland meadow management restoration	**mid**		13	Upstream BMPs rain-garden, bio-swale, etc.	**high**
3	Forest / shrubland heath management or restoration	**mid**		14	Shade-habitat/ Infiltration tree plantings	**high**
3A	Cliff stabilization shrubland			15	MSCS culvert improvement	
4	Wetland management restoration			16	Dam modification / controls	
5	New wetland or floodplain construction / expansion			17	Pervious parking walking areas	**mid**
6	Pond creation/ elimination / alteration			18	Aquatic algae / invasive treatment	
7	Stream flow alteration			19	Lighting modifications / upgrades	**low**
8	Pollinator hedgerow buffer	**mid**		20	Species crossing protections	
9	Pocket forest			22	High-performance soil specifications	

Nature-based Solutions Opportunity Table Fitchburg: Green Acres, 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

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Feasibility is based on property ownership or technical access

NbS Template#	Nature-based Solution Description	Green Acres
	Ecological Awareness & Access Projects	
24	Outdoor classroom/ Nature-play	**mid**
25	Food production and forage	**mid**
27	Soft trail	
28	Paved pervious trail	
29	Soil protection-puncheon-boardwalk	
30	Pedestrian safety and bike access	**high**
	Architectural Projects to Consider	
49	Nature-based recreational opportunities	**mid**

NbS Template#	Nature-based Solution Description	Green Acres
	Value Added Features on Projects	
50	Analysis and study projects	
52	Educational interpretation	**high**
53	Furnishings / gathering space	**high**
56	Volunteer opportunities	**high**
58	Invasive species management	**mid**
59	Species monitoring protocol	
60	Habitat enhancements	**mid**

Green Acres MVP site visit at location 2 from page 2.

Photo by Ralph Baker

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