

**Land Conservation Plan for Deerfield River Floodplain
Town of Deerfield, Massachusetts
June 30, 2020**



**Prepared for The Town of Deerfield
by Conservation Works, LLC
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Town of Deerfield, Massachusetts

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LAND CONSERVATION PLAN FOR DEERFIELD RIVER FLOODPLAIN

Section 1: Introduction

The Town of Deerfield has the most floodplain land of any community in the Deerfield River watershed, and the protection of this natural flood storage area is vital to protecting the town and all downstream communities. Fortunately, most of this floodplain remains as undeveloped farmland today, but it is at risk due to its largely unprotected status.

This plan addresses one of the top priority strategies in Deerfield’s Municipal Vulnerability Preparedness Plan, which is to “Protect Flood Storage Areas.” It also addresses two of Deerfield’s key vulnerabilities in the MVP Plan, which are flooding and loss of flood storage.

Deerfield received an Action Grant from the Executive Office of Energy and Environment Affairs and its Municipal Vulnerability Preparedness program to carry out this work.

In preparing this plan, Deerfield’s MVP consultant worked with town officials to develop a prioritization plan for protecting key land parcels in the Deerfield River floodplain that contribute to the town’s resiliency to flood impacts. This task included:

- Development of a detailed mapping and parcel prioritization system, using criteria such as floodplain and floodway boundaries, flood storage capacity, wildlife habitat, buffering of vulnerable neighborhoods and schools, and others, to determine the most important land parcels to protect in Deerfield;
- Development of land conservation funding strategies to finance acquisition of key parcels, including private fundraising, grants and other strategies;
- Amendments to add the parcel priorities and funding strategies to the Deerfield MVP Plan.



Farmland along Mill Village Road Adjacent to the Deerfield River (June 2020, Conservation Works)

Section 2: Rationale for Land Protection

Deerfield sits at the bottom of the Deerfield River watershed “bowl”, and has the most floodplain area of any watershed community. The Deerfield floodplain plays an extremely important role in reducing flood intensity and flood damages, and in protecting downstream neighborhoods and communities from flood impacts. The loss of this floodplain would have very negative long-term effects on Deerfield and downstream communities, including increased property damages and threats to public health and safety in future floods.

Deerfield has recently completed a new Flood Evacuation Plan, which documents the degree of threat that Historic Deerfield and Connecticut River communities face from another Hurricane Irene-type event or a catastrophic dam failure on the Deerfield River’s extensive dam system. The Deerfield floodplain is a vital resource in protecting the town, providing more time for flood evacuations, and reducing flood damages, fatalities and injuries.

The Town of Deerfield has gone a long way toward protecting its base of highly productive farmland, an important part of the Town’s economy. Nearly 500 acres within the Deerfield River 100-year floodplain are under Agricultural Preservation Restrictions (APRs), the result of many years of Town involvement and support for the program. However, within the floodplain alone there are more than 1,300 acres of farmland that are still vulnerable but eligible for APR protection.

Floodplain farmland south of Old Deerfield was badly damaged by the flood waters of Hurricane Irene in 2011, with many inches of silt and sand deposited on fields near the river. There is every likelihood that future storms will again threaten these fields, and if development takes place within the floodplain, the flood storage area would be reduced, exaggerating the effects of the flood water. Franklin Land Trust, which has been an active partner with the Town in protecting farmland, cites many other reasons for land preservation: protecting water supplies, preventing pollution, conserving the Town’s rural character, providing a stream of fresh food products, ensuring that farmland will be affordable and available to future generations of farmers, protecting the Valley’s immensely valuable farm soils, providing wildlife habitat, and protecting outdoor recreation and scenery.

As noted in Deerfield’s Open Space and Recreation Plan, the Connecticut and Deerfield Rivers play a dual role for the region’s wildlife. Riparian corridors often contain a greater degree of species diversity than any other portion of the landscape. The rivers also serve as important regional migration corridors. In 1996 the Conte Refuge sponsored a survey of migratory birds along the Connecticut River that revealed that 133 species, mostly woodland species, use the riverside habitat as a migratory corridor (Conte Refuge; 1997). Also, the Natural Heritage and Endangered Species Program considers the riparian areas along the Deerfield and Connecticut Rivers as priority habitats for rare species. In addition, there are over thirty rare plant and animal species found within this habitat area (U.S. Fish & Wildlife Service; 1995). Finally the rivers provide clean water habitats for native freshwater fisheries as well as anadromous fish species. American shad, blueback herring, and shortnose sturgeon spawn within the stretch of the Connecticut River, which forms the eastern boundary of Deerfield. The Deerfield River provides spawning habitat for the blueback herring and the American shad and is one of Massachusetts’ premier Atlantic salmon restoration rivers.

Section 3: Managing the Floodplain

As reported in the Town’s Open Space and Recreation Plan (OSRP), areas in Deerfield that were impacted by the floods in the aftermath of Irene included Old Deerfield, Deerfield Academy, the Bement School, Routes 5/10, the Stillwater Bridge on Upper Road, Mill Village Road, the Route 91 bridge over the Stillwater section of the Deerfield River, and multiple farm fields along the Deerfield River. Flooding from the Deerfield River on nearby farm fields “washed away topsoil and deposited nutrient-poor silt that may contain hazardous substances and could impact the productivity and management protocols for those soils for years to come. According to news reports, hundreds of acres of crops were lost and fields inundated. According to the USDA Natural Resources Conservation Service, there was approximately 800 acres of crop loss or damage in the Deerfield Watershed from Irene, of which 500 acres were in Deerfield. The overall damage to the watershed was estimated to be \$5 million including crop loss and land reclamation.”

After Hurricane Irene, artificial earthen dikes were bulldozed to attempt to reduce the future intrusion of floodwaters into the floodplain in some areas. The impact of these dikes on future floods is unknown, but, at a minimum, they could substantially reduce flood storage. At the worst case, they could fail suddenly, causing more damage or injuries.

This is a complex problem that Deerfield has not addressed directly. The town needs a professional hydraulic and environmental assessment with professional guidance on appropriate floodplain management solutions.



Unprotected farmland between the Deerfield River and Lower Road (June 2020, Conservation Works)

Deerfield's 2014 Open Space and Recreation Plan notes many concerns about floodplain management and farmland preservation, including the following

- Throughout the centuries, the Town has maintained its historic ties to farming, with more than 4,000 acres, or nearly 20% of the Town, devoted to agricultural uses.
- Since 1971, sprawl has materialized in the form of approval-not-required (ANR) development along existing roads. The impacts of sprawl include reducing forests and active farmland, changing the character of the community from rural to suburban and eroding the quality of the natural resources upon which the residents depend, especially the quality of the water in Deerfield's streams, rivers, and aquifers.
- As farm and forest land acreage is converted to residential and commercial uses the landscape becomes fragmented. Fragmentation of the landscape can negatively impact the quality of wildlife habitat, watershed protection, recreation opportunities, farm viability, forest management opportunities, and ultimately the municipal services budget.
- Development pressures threaten the continued viability of Deerfield farms. The more fragmented farmland becomes, the more expensive it is to farm, based on additional time and fuel costs.
- The conversion of forest and agricultural land to building sites for single-family homes is the dominant landscape change in Deerfield.
- The floodplains of Deerfield have historically been prized for their prime soils and, thus, farming has been a dominant activity there. However, as residential development consumes more and more farmland, the use of those prime soils changes.
- A large percentage of the Town is located in the Residential-Agricultural District, which is where further residential development is likely to occur. This district includes most of the farmland and forestland that defines Deerfield's rural agricultural character. Without a concerted effort to protect in perpetuity more of these critical resources, this land may ultimately be consumed by development and the open land in Deerfield will be restricted to only that which is currently protected.
- A 2009 Cost of Community Services study of Deerfield by American Farmland Trust showed that for every \$1 in revenues generated by residential development, the Town spent \$1.14 in services. For every \$1 in revenues from agricultural and open space land, the Town spent 33 cents, resulting in a net positive total for the Town of \$318,842 in the study year, 2008.
- The Town Master Plan identifies the following area as highest priority for farmland protection: farmland north of the Bars and south of Old Deerfield Village, just east of Routes 5/10 and the North Meadows.
- The Town may consider whether revisions to its zoning bylaws could be made to encourage the conservation of forest and farmland and other natural and historical resources.
- The Plan's 7-year Action Plan includes the following recommended steps:
 - Work with willing landowners to protect priority parcels identified on the Farmland and Habitat conservation priorities maps.
 - Work with local and regional land conservation trusts (e.g. FLT and Kestrel Land Trust and state conservation agencies like the Mass Dept of Conservation and Recreation to encourage private conservation efforts and to provide resources for landowners interested in protecting their land.
 - Prioritize lands in the Chapter 61 (61, 61A, 61B) program should they become available for purchase.
 - Continue to invest municipal funds in support of local APR applications and other forms of preserving priority open space.
- As of 2005, there were 24 dwellings located on 41 acres of Deerfield's 2,828 acres of floodplain plus 5 acres of commercial uses and 8 acres of public/institutional uses.

To qualify for state open space and recreation grant funds, towns must update their OSRP plans every seven years. The most recent Deerfield OSRP will need an official update in 2021, a process that involves thorough community involvement and comment.

Section 4 : Mapping Approach for Floodplain Land Features

This plan includes a series of maps created to characterize the floodplain and its resource values, and to prioritize lands for protection. These maps (see following pages) include:

- (1) **100-year Floodplain Map.** A 100-year flood is a flood event that has a 1 in 100 chance (1% probability) of being equaled or exceeded in any given year. The 100-year flood is also referred to as the 1% flood, since its annual exceedance probability is 1%.
- (2) **BioMap2 Core Habitat Map.** BioMap2 Core Habitat identifies specific areas necessary to promote the long-term persistence of Species of Conservation Concern (those listed under the Massachusetts Endangered Species Act as well as additional species identified in the State Wildlife Action Plan), exemplary natural communities, and intact ecosystems.
- (3) **Mass DEP Wetlands Map.** Wetlands shown include land under water and bordering vegetated wetlands, both of which are protected by the Mass Wetlands Protection Act.
- (4) **Map of Land Protection Priorities Within the Floodplain.** The map depicts land within the 100-year floodplain and places them in three categories – high priority for protection, medium priority, and already protected.

Overview: protected land in the 100-year Deerfield floodplain.

With one exception (an 18-acre parcel in Dept of Fish & Game ownership), land permanently protected from development within the Deerfield River 100-year floodplain is under Agricultural Preservation Restriction. The land in APR within the floodplain totals 469 acres consisting of 33 parcels owned by 8 different owners. Fourteen of those parcels are less than 5 acres in size and were lumped together with other parcels to qualify for the APR program's 5-acre minimum.

Some of the APR land is clustered around Pine Hill in the northern part of the floodplain. Another cluster is along the section of Mill Village Road located south of Deerfield Academy and Historic Deerfield. Only one parcel, an 87-acre piece owned by the Melnik family, is west of the river.

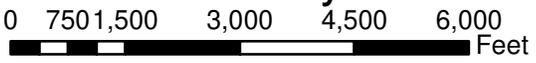
The 100-year Floodplain

According to FEMA (Federal Emergency Management Agency) information, a 100-year flood is a flood event that has a 1 in 100 chance (1% probability) of being equaled or exceeded in any given year. The 100-year flood is also referred to as the 1% flood, since its annual exceedance probability is 1%. For river systems, the 100-year flood is generally expressed as a flow rate. Based on the expected 100-year flood flow rate, the flood water level can be mapped as an area of inundation. The resulting floodplain map is referred to as the 100-year floodplain. Estimates of the 100-year flood flowrate and other streamflow statistics for any stream in the United States are available. Areas near the coast of an ocean or large lake also can be flooded by combinations of tide, storm surge, and waves. Maps of the riverine or coastal 100-year floodplain figure importantly in building permits, environmental regulations, and flood insurance. People are now aware that climate change is increasing flood frequency in many parts of the country, often rendering past FEMA floodplain maps out of date.

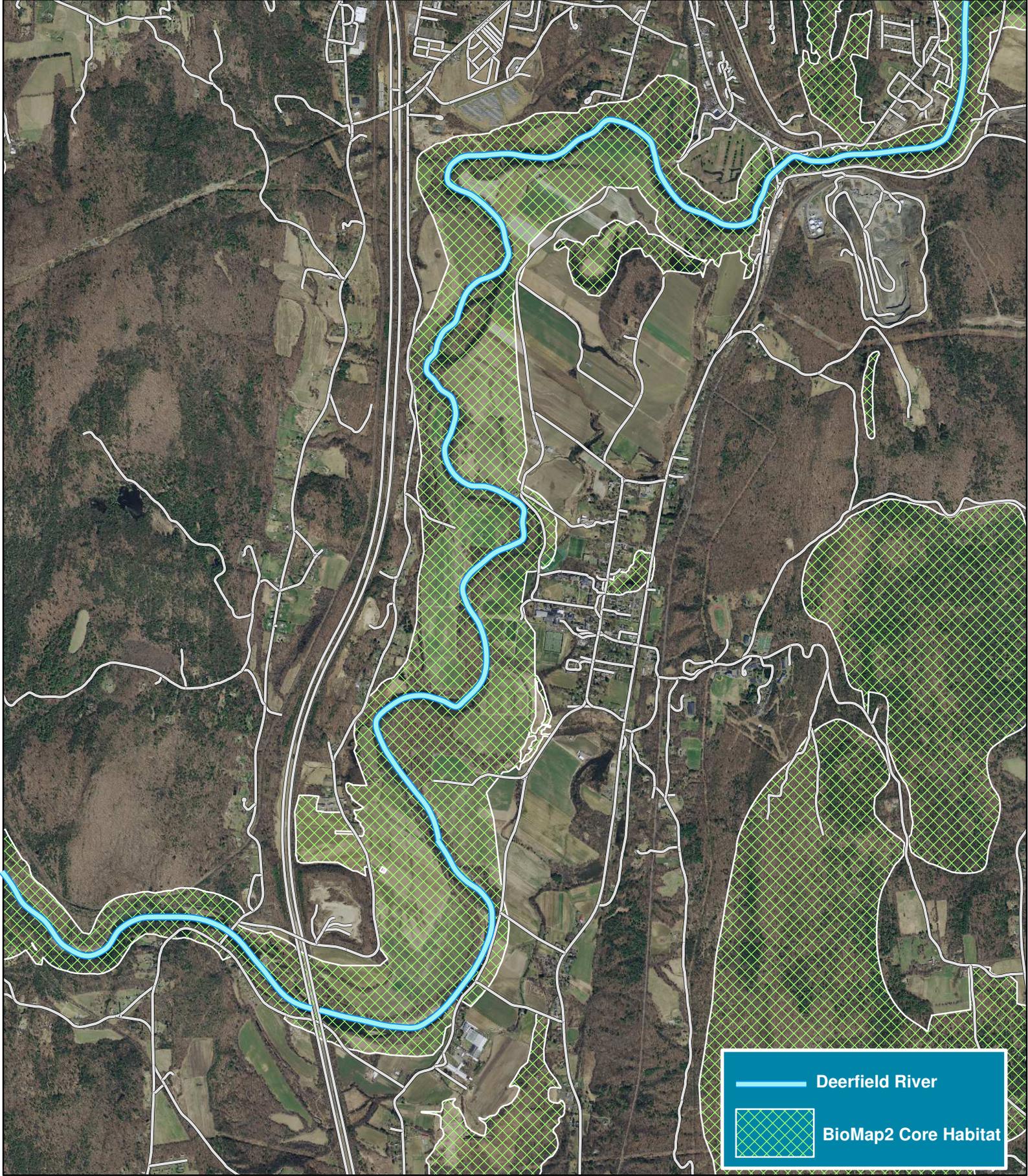


Deerfield River 100-year Floodplain

Aerial Photo base from
MassGIS 2014



Conservation Works - June 2020



Deerfield BioMap2 Core Habitat

0 750 1,500 3,000 4,500 6,000 Feet

Conservation Works - June 2020

Aerial Photo base from
MassGIS 2014



— Deerfield River

Mass DEP Wetlands

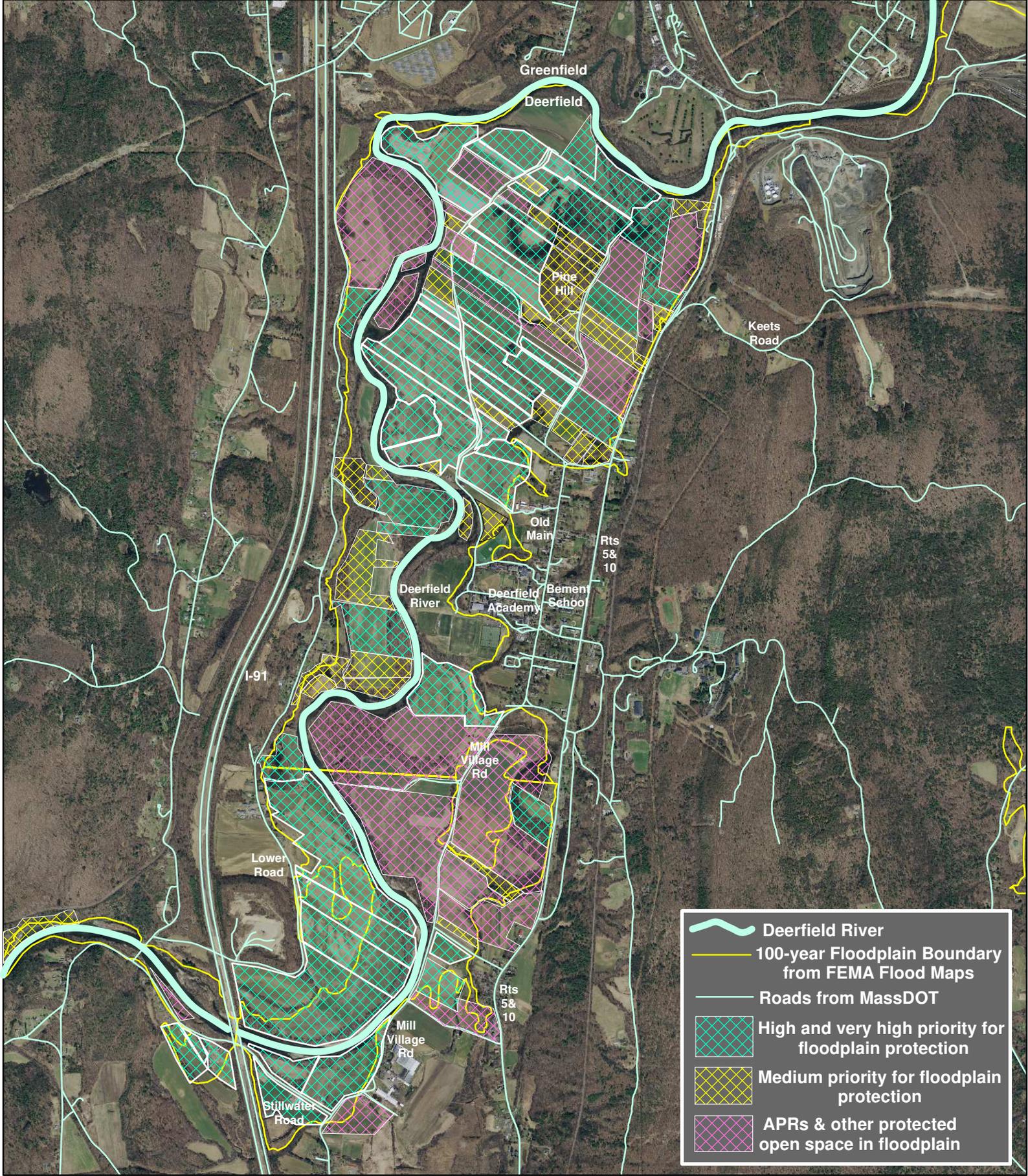


Deerfield Floodplain DEP Wetlands

Aerial Photo base from
MassGIS 2014

0 750 1,500 3,000 4,500 6,000
Feet

Conservation Works - June 2020

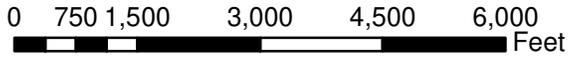


	Deerfield River
	100-year Floodplain Boundary from FEMA Flood Maps
	Roads from MassDOT
	High and very high priority for floodplain protection
	Medium priority for floodplain protection
	APRs & other protected open space in floodplain



Deerfield Floodplain Protection Priority Map

Aerial Photo from MassGIS 2104



Conservation Works - June 2020

The Regulatory Floodway.

FEMA defines a Regulatory Floodway as the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. It is highly important that the floodway is protected from development or encroachments.

Section 5: Prioritizing Land Parcels for Protection

How MVP priorities were established.

To help recommend priorities for land protection, we examined the 134 unprotected parcels of land within the floodplain and assigned numerical values to their various characteristics. A few of the parcels are already partly built, with non-farm residential or commercial buildings in addition to their open farmland or woodland. Some of the parcels are for all intents and purposes currently undevelopable, with no road frontage or significant regulatory wetlands that would prevent development. In some cases, however, those parcels could be rendered developable by joining them to adjacent, developable land that does have road frontage.

The priority system we established includes the following measurements:

Floodway encroachment: properties entirely or partly within the floodway received 25 points.

Flood storage capacity: the number of acres within the 100-year floodplain were multiplied by an arbitrary factor of 5 to generate a flood-storage capacity figure.

Wildlife habitat: the number assigned equals the number of acres of the parcel that are within BioMap2 Core Habitat.

Viable farmland: the value assigned equals the number of acres currently in active farm use as shown by aerial photographs.

Threat of development: parcels were assigned numbers from 0 to 10 reflecting degrees of developability.

Wetlands: the value assigned equals the approximate number of acres of wetlands as defined and mapped by the Mass Department of Environmental Protection, DEP.

The cumulative values – the total of the numerical values in each of the above categories – ranged from a low of 2 to a high of 585. Large parcels generally rated higher than small parcels and land with road frontage rated higher than land without frontage. Higher numbers were given to large parcels with APR potential, land at least partly within the floodway, low elevation land (land on Pine Hill is thus given low numbers), and parcels adjacent to other high priority parcels.

We assigned a priority-for-protection category for each parcel as follows:

- 100 and above: very high priority (shown as a blue cross-hatch on the priority map)
- 50-99: high priority (also shown as a blue cross-hatch)
- 25-49: medium priority (shown as a yellow cross-hatch)

- 5-24: low priority (not given a color on the priority map)

Note that we consider the numbers to be approximate rather than exact indicators of the degree of attention the Town and its partners (the Commonwealth of Mass, Franklin Land Trust, and others) should give each parcel as it continues its land preservation efforts.

Section 6: Findings

Acreages for Priority Floodplain Land Parcels

The mapping and parcel ranking process used in this plan identified and prioritized floodplain land parcels in several categories. The total acres in high priority, medium priority, “other,” and already protected land are as follows:

- Very high priority for protection: 26 parcels totaling 755 acres.
- High priority: 36 parcels totaling 308 acres.
- Medium priority: 43 parcels totaling 272 acres.
- Low priority: 29 parcels totaling 96 acres.
- Already protected by APR: 33 parcels totaling 469 acres
- Already protected by other means: 1 parcel, 18 acres.

CHART – PARCELS WITHIN THE FLOODPLAIN BY CATEGORY

Protected Land

	NO. OF PARCELS	ACRES
APRs	33	469
Dept of Fish & Game	1	18
Total	34	487

Unprotected Land

Very High Priority	26	755
High Priority	36	308
Medium Priority	43	272
Other	29	96
Total	134	1,431

Institutional Land (included in unprotected category above)

Historic Deerfield	8	49
Deerfield Academy	6	182
The Bement School	6	37
Total	20	268

DEERFIELD LAND PRESERVATION STRATEGY

Mapping and Scoring Process:

CRITERIA FOR PRIORIZATION	Mapping Process	Scoring Process
Flood Storage Capacity	Acres of land within 100-year floodplain	1 acre = 5 points
Floodway	Land within regulatory floodway	If fully or partially within regulatory floodway 0 to 25 points
Wildlife Habitat	Acres of BioMap 2 Core Habitat	1 acre = 1 point
Working Farmland	Acres of current cropland	1 acre = 1 point
Wetlands	Acres of land within wetlands, including 100-foot buffer around wetlands	1 acre = 1 point
Threat of Development	Land has existing road frontage Land is developable given wetland layout	= 5 points = 0-5 points

PRIORITIZATION OF PARCELS

Parcel Number	Acres	Current Use (see chart at end)	Assessed Value	Floodway 0 or 25	Flood storage capacity 5x-ac	Wildlife habitat 1x	Viable farmland 1x	Threat of Development 0 to 10	Wetlands 1x	Total Score: 100+ Very High Priority 50-99 High Priority 25-49 Medium Priority 0-24 Low Priority	Notes (* = very high, high, or medium priority rating but not currently developable because of wetlands or lack of road frontage)
10-1	7.1	720	\$348	25	35	7	4	0	2	73 - High	*
10-2	24.0	712	\$24,885	25	121	24	18	10	5	203 – Very High	
10-3	9.9	713	\$2,327	15	49-9.9	7	9	0	1	81 – High	*
18-6	2.1	393	\$3,900	25	10-2.1	2	2	5	0	44 – Medium	
18-9	2	713	\$470	25	10-2	2	2	5	0	44 – Medium	
18-11	38	393	\$57,500	15	190-38	38	35	10	3	291 – Very High	
18-12	21	713	\$4,005	8	90-18	10	10	9	10	137 – Very High	
18-13	9.6	712	\$11,209	0	48-9.6	0	9	10	1	68 – High	
19-5	6	393	\$10,700	0	30-6	5	6	10	0	51 – High	
19-6	15	712	\$17,670	0	75-15	13	15	10	0	113 – Very High	
19-7	24	393	\$25,300	15	120	17	12	5	12	181 – Very High	

Parcel	Acres	Use	Value	Floodway	Storage	Habitat	Farmland	Threat	Wetlands	Total Score & Priority	Notes
19-8	35	713	\$8,848	8	170	24	0	0	21	223 – Very High	*
19-9	2.6	393	\$4,700	0	13-2.6	0	2	10	0	25 – Medium	
19-12	5.3	393	\$17,100	16	26-5.3	5	3	2	3	55 – High	
19-13	3.3	393	\$6,000	2	16-3	3	2	0	2	25 – Medium	*
19-15	5	393	\$17,900	0	25-5	1	0	10	1	37 – Medium	
20-2	0.521	104	\$252,400	2	1	0.1	0	0	0	3.1 – Low	Already built.
20-3	1.04	316	\$216,400	2	4-0.8	0.3	0	0	0	6.3 – Low	Already built.
20-5	0.847	325	\$324,200	2	4-0.8	0	0	0	0	6 – Low	Already built.
20-6	N.L.			10	25-?	5	0	0	4	44 – Medium	*
20-7	4.64	325	\$275,000	12	23-4.6	4	0	3	3	45 – Medium	
20-8	0.45	392	\$25,400	10	2-.45	0.3	0	0	0.2	12.5 – Low	
20-9	1.5	326	\$279,000	2	7-1.5	1	0	0	1	11 – Low	Already built.
20-11	1.2	101	\$255,800	2	6-1.2	1	0	0	1	10 – Low	Already built.
27-1	2.1	392	\$38,300	0	10-2.1	0	0	0	2	12 – Low	
27-2	0.65	325	\$172,600	0	3-0.65	0	0	3	0	6 – Low	Already built
27-3	3.3	101	\$184,600	0	16-3.3	0	3	10	1	30 – Medium	
27-4	10.4	393	\$47,300	0	52-10	0	5	5	6	68 – High	
28-1	6.7	317	\$21,500	0	33-6.7	0	6	10	0	49 – Medium	
28-3	6.7	132	\$23,800	0	33-6.7	0	2	5	3	43 – Medium	
28-4	13.3	713	\$3,070	10	66-13	0	12	10	1	99 – High	
28-7	2.6	941	\$21,100	0	18-2.6	0	1	10	0	29 – Medium	Deerfield Academy
28-8	12.68	940	\$521,900	0	63-12	0	0	10	1	74 – High	Bement School
28-10	8.9	720	\$436	0	44-8.9	1	0	10	1	56 – High	
28-12	3.9	393	\$14,000	0	19-3.9	0	0	10	1	30 – Medium	
28-16	12.4	940	\$5,600	0	62-12.4	0	12	10	0	82 – High	Bement School
28-17	6.7	132	\$52,800	0	32-6.7	0	6	10	1	49 – Medium	
28-18	8.9	950	\$79,300	0	44-8.9	0	8	10	1	43 – Medium	Historic Deerfield
29-2	9.4	132	\$32,900	0	47-9.4	8	6	8	0	69 – High	
29-3	3.5	132	\$8,400	0	10-2	3	0	5	0	18 – Low	
29-4	1.9	101	\$382,200	10	5-1	2	0	5	1	23 – Low	
29-6	7.4	712	\$8,717	25	37-7.4	7	10	10	0	52 – High	
29-7	4.2	393	\$7,500	25	21-4.2	4	4	10	0	64 – High	

Parcel	Acres	Use	Value	Floodway	Storage	Habitat	Farmland	Threat	Wetlands	Total Score & Priority	Notes
29-8	2.1	393	\$3,900	25	11-2.2	2	2	5	0	45 – Medium	
29-9	1.7	393	\$3,200	25	8-1.7	1	1	0	0	35 – Medium	*
29-10	2	393	\$3,700	25	10-2	2	0	5	0	42 – Medium	
29-11	2	393	\$3,700	25	10-2	2	0	5	0	42 – Medium	
29-13	9.7	393	\$17,200	5	48-9.7	9	5	0	3	70 – High	*
29-15	4.1	393	\$7,400	22	20-4.1	0	4	10	0	56 – High	
29-16	4.5	393	\$8,100	17	22-4.5	0	4	10	0	53 – High	
29-17	3	393	\$5,400	25	15-3	0	3	10	0	43 – Medium	
29-18	3.4	393	\$6,100	13	17-3.4	0	3	10	0	43 – Medium	
29-19	4.7	712	\$5,537	12	23-4.7	0	4	10	0	49 – Medium	
29-20	5.7	393	\$10,200	3	29-5.7	0	5	8	0	45 – Medium	
29-21	5.8	713	\$1,214	3	29-5.8	0	5	10	0	47 – Medium	
29-22	8.7	713	\$1,914	3	43-8.7	0	8	10	1	65 – High	
39-7	2.2	101	\$429,900	10	5-1	2	0	0	1	18 – Low	
39-9	5	132	\$17,500	25	25-5	5	2	0	1	58 – High	*
39-11	2.9	132	\$8,700	25	14-2.9	3	2	0	1	45 – Medium	*
39-12	3.1	101	\$316,200	0	8-1.5	3	0	8	1	20 – Low	Already built
39-13	1.7	101	\$217,300	25	8-1.7	1	0	0	1	34 – Medium	Already built
39-14	3.6	132	\$8,800	20	18-3.6	3	3	0	1	45 – Medium	*
39-16	2.4	132	\$8,400	20	12-2.4	2	2	0	1	37 – Medium	*
39-17	1.6	713	\$376	25	8-1.6	1	1	0	1	28 – Medium	*
39-18	17	713	\$3,995	25	85-17	17	10	0	1	138 – Very High	*
39-19	38	73	\$12,908	18	190-38	35	32	10	1	286 – Very High	
39-20	11.3	713	\$2,656	18	55-11	11	11	10	1	106 – Very High	
39-21	27	712	\$25,205	22	135-27	24	10	10	0	201 – Very High	
39-22	5.1	713	\$1,106	0	25-5.1	0	3	10	1	38 – Medium	
39-23	7.8	713	\$1,275	0	39-7.8	0	10	10	2	59 – High	
39-24	24	713	\$4,524	2	120-24	5	10	10	4	151 – Very High	
40-8	4.7	713	\$974	0	23-4.7	0	4	10	1	38 – Medium	
40-9	8	712	\$8,634	0	40-8	0	8	10	1	59 – High	
40-10	1.9	945	\$505,300	0	9-1.9	0	0	3	1	12 – Low	Bement School
40-11	5.7	393	\$20,300	0	28-5.7	0	3	8	2	41 – Medium	Historic Deerfield

Parcel	Acres	Use	Value	Floodway	Storage	Habitat	Farmland	Threat	Wetlands	Total Score & Priority	Notes
40-12	13.6	713	\$3,196	0	68-13	0	13	10	0	91 – High	
40-13	7.5	393	\$13,300	0	38-7.5	0	7	10	0	55 – High	
40-14	15.99	132	\$56,000	0	80-16	0	12	10	3	105 – Very High	Historic Deerfield
40-15	4.4	944	\$13,300	0	22-4.4	0	0	10	0	32 – Medium	Bement School
40-16	1.5	940	\$5,600	0	7-1.5	0	0	10	0	17 – Low	Bement School
40-17	1.5	132	\$52,800	0	7-1.5	0	0	0	1	7 – Low	
40-18	4.6	950	\$79,300	0	23-4.6	0	0	10	3	46 – Medium	Historic Deerfield
40-21	4.1	132	\$80,100	0	20-4.1	0	0	0	4	24 – Low	Bement School
49-4	2.684	302	\$2,932,600	0	4-0.8	1	0	0	1	6 – Low	Too wet, Hist.Drflld.
49-8	3.099	941	\$10,800	0	5-1	0	0	0	0	5 – Low	Deerfield Academy
50-1	10	132	\$35,000	0	25-5	4	0	10	3	42 – Medium	
50-2	24	712	\$21,498	25	120	24	24	10	3	206 – Very High	
50-3	4.1	712	\$3,588	25	20-4.1	4	10	10	0	69 – High	
50-4	3.1	720	\$152	25	15-3.1	3	0	0	0	43 – Medium	*
50-5	4	712	\$3,019	25	20-4	4	3	0	0	52 – High	*
50-6	22	712	\$19,255	22	110-22	22	20	0	0	174 – Very High	*
50-7	4.4	712	\$4,280	25	22-4.4	4	4	0	0	55 – High	*
50-9	1.378	101	\$266,900	0	2-0.5	0	0	0	0	2 – Low	Already built
50-11	4.13	130	\$111,200	2	15-3	3	0	0	0	20 – Low	Historic Deerfield
50-18	3.34	909	\$12,300	25	16-3.4	3	0	0	3	44 – Medium	*
50-20	5.2	393	\$18,600	0	26-5.2	4	0	10	1	40 – Medium	Historic Deerfield
59-33	8	101	\$648,000	0	10-2	8	2	5	2	27 – Medium	
59-34	4	132	\$14,000	25	20-4	4	3	0	2	54 – High	*
60-2	8.4	132	\$29,400	25	42-8.4	8	3	0	5	41 – Medium	*
60-3	12.3	712	\$10,199	22	60-12	12	8	0	7	109 – Very High	*
60-4	25	712	\$17,780	25	125-25	25	18	2	10	205 – Very High	
61-12	85	941	\$64,895,500	22	425-85	60	58	10	10	585 – Very High	Deerfield Academy
61-13	26	941	\$30,187,300	0	130-26	1	0	5	3	138 – Very High	Deerfield Academy
70-6	28.9	941	\$101,500	25	145-29	27	22	6	6	231 – Very High	Deerfield Academy
71-14	1.2	132	\$3,200	0	6-1.2	1	1	0	1	9 – Low	
71-15	2.7	132	\$16,200	0	13-2.7	2	0	5	2	20 – Low	
71-17	1.2	132	\$2,100	0	6-1.2	1	1	10	0.5	18.5 – Low	

Parcel	Acres	Use	Value	Floodway	Storage	Habitat	Farmland	Threat	Wetlands	Total Score & Priority	Notes
71-18	13	712	\$8,653	0	60-12	9	6	1	7	83 – High	
77-8	66.0	017	\$235,765	25	260-52	66	62	6	5	164 – Very High	Building on property
77-11	29.0	037	\$69,974	25	250-50	29	28	10	2	344 – Very High	
78-5	6.9	720	\$338	0	34-6.9	0	5	0	5	44 – Medium	*
79-2	12.9	713	\$2,102	0	60-12	0	5	67	9	80 – High	
87-1.1	6.143	712	\$7,237	0	30-6	3	10	10	0	53 – High	
87-3	12.0	719	\$12,250	0	30-6	4	10	10	0	54 – High	
87-12	3.5	719	\$4,123	0	17-3.5	0	10	10	0	37 – Medium	
88-5	10.7	711	\$11,589	25	20-4	10	10	5	2	52 – High	
88-6	16.0	711	\$17,381	25	35-7	16	15	10	2	78 – High	
88-7	5.2	711	\$5,787	0	10-2	5	5	0	1	21 – Low	
88-8	82	712	\$66,113	25	250-50	75	80	10	5	445 – Very High	
89-10	12.0	132	\$45,100	0	5-1	10	2	5	1	23 – Low	
89-11	5.1	132	\$21,800	0	25-5	5	0	0	2	32 – Medium	*
89-12	34	132	\$119,000	0	15–3 ac	30	0	0	2	47 – Medium	*
89-13	12.3	132	\$34,500	0	5-1	9	0	5	1	20 – Low	
89-16	10.8	132	\$42,700	0	10-2	11	2	5	1	29 – Medium	
90-2	28	132	\$98,000	0	10-2	21	0	0	1	32 – Medium	*
93-1	14.9	073	\$6,278	25	75-15	0	12	10	0	97 - High	
93-10	9.7	713	\$1,424	25	50-10	8	8	9	3	78 – High	
94-22	29.0	073	\$25,516	25	145-29	12	29	10	5	201 – Very High	

Land Use Codes

017 – (will call Deerfield assessors for this one – open on M,W,F only)

037 – Multi-use commercial and Ch. 61A

073 – (will call...)

101 – Single-family

104 – Two-family

130 – Developable land
132 – Undevelopable land
302 – Inns, resorts
316 – Storage, warehouse
325 – Retail & service stores
392 – Undevelopable land
393 – Agricultural land not in 61A
712 – Truck crops, vegetables
713 – Field crops, hay, forage
719 – Nurseries
720 – Wetland, scrubland, rock land
909 – Commonwealth of Mass
914 – Dept of Mental Health
940 – Elementary education
941 – Secondary education
944 – Auxiliary athletic
945 – Affiliated housing
950 – Vacant, conservation organizations

Section 7. Land Protection Mechanisms: How Floodplain Land Be Protected and at What Cost

Over the past several decades, the Commonwealth, towns, and land trusts have used several principal mechanisms to provide permanent protection from development for critical resources like productive farmland, floodplain, and ecologically diverse habitats. These include the Agricultural Preservation Restriction program, the purchase or donation of Conservation Restrictions, and outright fee purchase of critical lands. Current-use taxation – the state’s Chapters 61, 61A, and 61B – provide a lesser degree of protection but give towns and cities a right of first refusal when land is withdrawn from those programs. State programs like the Landscape Partnership Program and the Conservation Partnership Program provide partial funding for larger projects that assemble multiple properties.



Farmland North of Deerfield Academy (Conservation Works, June 2020)

- **Agricultural Preservation Restriction (APR) program.** The APR Program helps to preserve agricultural land to keep valuable farmland soil from being built on by development companies for non-agricultural purposes that could be detrimental to the environment. The program offers to pay farmland owners the difference between the "fair market value" and the "agricultural value" of their farms in exchange for a permanent deed restriction which prevents any use of the property that will negatively impact its future agricultural viability. It is a voluntary program for farmers who are faced with a decision regarding the future use of their farms. If the agricultural soils qualify, it is typically augmented by the federal ALE program, described below.

To qualify for the program, a minimum of 5 acres that have been in agricultural use within the previous two years are required. Smaller contiguous parcels can be assembled to make up the required 5 acres. The Town of Deerfield is required to provide a 5% local match. (In general, towns are responsible for a 20% match that is reduced by 5% if the town has established an Agricultural Commission, another 5% if the town has voted to approve a Right-to-Farm Bylaw, and a third 5% if

the town has established an APR tracking system to ensure that non-agricultural building permits are not issued for APR land.)

The main objective of the APR program is to protect productive farmland and support or revitalize the agricultural industry by making land more affordable to farmers and their operations more financially secure. The program accepts applications on a rolling basis. To be considered a priority for the next funding cycle, applications should be submitted by June 30, 2021.

The APR application and purchase process normally takes from two to three years to complete. Once the state Agricultural Lands Preservation Committee (ALPC) votes to proceed with a project, an appraisal is conducted to determine the price that the program will offer the landowner. For more information about the program, Ron Hall (ronald.hall@state.ma.us) is the state APR program director.

- **Conservation Restrictions.** Conservation Restrictions, or CRs, are similar to APRs in providing permanent protection for properties of conservation value. They allow agricultural use and can be tailored to meet the landowner's future plans. They are typically donated to towns or land trusts but can also be purchased. An owner who is interested in donating a CR may want to apply to the state Conservation Land Tax Credit (CLTC) program, which will provide a payment of 50% of the value of the donated Restriction up to a maximum of \$75,000 provided that the land to be restricted is of sufficient public natural resource importance. The CLTC process normally takes about two years to complete.
- **Chapter 61A and Accompanying First Refusal Right.** As of 2014, 3,811 acres of farmland in Deerfield were under Chapter 61A, the agricultural and horticultural land classification program designed to encourage the preservation of the Commonwealth's valuable farmland and promote active agricultural and horticultural land use. The chapter is analogous to the current-use taxation programs of other New England states. Section 3 of Chapter 61A reads as follows: "Land not less than five acres in area shall be deemed to be actively devoted to agricultural or horticultural uses when the gross sales of agricultural, horticultural or agricultural and horticultural products resulting from such uses together with the amount, if any, payable under a soil conservation or pollution abatement program of the federal government or the commonwealth total not less than five hundred dollars per year or when the use of such land is clearly proven to be for the purpose of achieving an annual total of not less than five hundred dollars from such gross sales and program payments within the normal product development period as determined by the farmland valuation advisory commission established pursuant to section eleven of this chapter. In cases where the land is more than five acres in area, the gross sales and program payment standard above set forth shall be increased at the rate of five dollars per acre except in the case of woodland or wetland for which such increase shall be at the rate of fifty cents per acre."

Land under any of the chapters – 61A, 61 (the Forest Tax Program), 61B (the Recreational Tax Program) – is subject to a town right of first refusal that kicks in if the landowner sells or converts the classified land to another use. Landowners are required to notify certain Town boards by certified mail if they intend to sell these lands or discontinue the agricultural or forested use. The Trustees of Reservations (The Trustees) has issued the following advisory information about exercising the right of first refusal:

Within 120 of receiving notice to withdraw from Ch 61, 61A or 61B, the Select Board may: 1. Act to exercise its option to purchase the property by meeting a bona fide purchase offer or at full and fair market value; 2. Assign its right to a non-profit conservation organization or the Commonwealth or any of its political subdivisions; or 3. Notify the property owner that it does not intend to exercise its right of first refusal. 4. Default option: Failure to act within 120 days of the notice constitutes a de facto decision not to exercise the right of first refusal.

Procedure for handling MGL. Chapter 61, 61A, or 61B Right of First Refusal Requests

When the Select Board receives a notice to withdraw from Ch 61, 61A, or 61B, it should:

- 1. Check to make sure the notice is proper and complete;*
- 2. Acknowledge to landowner (or attorney) receipt of notice, marking the start of the 120-day period for the town to exercise its Right of First Refusal or transfer it to a conservation organization;*
- 3. Forward notice to the Planning Board, Conservation Commission, Board of Assessors, Open Space Committee and the Historic Commission.*
- 4. Set an agenda item at a specific meeting date to receive comments from the above boards on the right of first refusal opportunity. If towns boards do not provide feedback by or at the meeting date, it will be assumed that they do not wish to move forward with the Right of First Refusal.*
- 5. Based on responses of boards, committees, and other interested parties, determine need for a public meeting to discuss right of first refusal option and to seek further input. If the Select Board is considering assigning the Right of First Refusal to a land trust, the Select Board must schedule a public hearing with proper notice before making that decision.*
- 6. Select Board ultimately makes decision to exercise the right of first refusal, assign the right to a qualified land trust or decline to exercise the right and notifies the landowner accordingly.*

REQUIREMENTS FOR NOTICE BY PROPERTY OWNER

The 120-day right of first refusal time period begins with a notice of the landowner's intent to sell or convert a parcel for commercial, industrial, or residential use. This notice must be sent by certified mail or hand delivered to the Select Board, in addition to the Planning Board, Board of Assessors, and Conservation Commission, and to the State Forester. The notice must include the following: 1. A statement of intent to sell or convert, 2. A statement of proposed use of the land, 3. The location and acreage of the land as shown on the assessors' map, 4. The name, address, and telephone of the landowner, 5. In the case of an intent to sell, a certified copy of an executed purchase and sale agreement specifying the purchase price and all terms and conditions of the proposed sale, which is limited only to the property classified under the Chapter, and must be a bona fide offer. A bona fide offer is defined as a good faith offer not dependent upon potential changes to current zoning or conditions or contingencies relating to the potential for, or the potential extent of, subdivision of the property for residential use or the potential for, or the potential extent of, development of the property for industrial or commercial use. 6. Any additional agreements or a statement of any additional consideration for any contiguous land under the same ownership, and not classified under the Chapter, but sold or to be sold contemporaneously with the proposed sale, 7. In the case of an intent to convert the land to another use, the landowner must also notify the town of the landowner's attorney, if any.

- **Outright purchase by the Town or by a conservation land trust.** For many years, towns in the Commonwealth have purchased land for conservation purposes. Many towns have bought farmland in order to keep it in farming by renting or licensing it to local farmers. The state Local Acquisitions for Natural Diversity (LAND) program reimburses towns for the acquisition of land in fee or for the

purchase of a conservation restriction. The maximum grant award is \$400,000 and the next application deadline is July 15, 2020. Eligible applicants are municipal conservation and agricultural commissions from communities with an up-to-date Open Space and Recreation Plan.



Deerfield Academy and Historic Deerfield (June 2020, Conservation Works)

- **Using Community Preservation Act funds for land protection.** The Community Preservation Act (CPA), which has been used for years by the Town for allowed purposes, has been employed by municipalities statewide to protect farmland and other open space. The Act defines open space as land that “protects existing and future well fields, aquifers and recharge areas, watershed land, agricultural land, grasslands, fields, forest land...” Many towns have used CPA funds to provide the local match for APR purchases. The Act provides funding to address three core community concerns:
 - Acquisition and preservation of open space including farmland
 - Creation and support of affordable housing
 - Acquisition and preservation of historic buildings and landscapesThe process leading to successful CPA expenditures includes public hearings and a vote by the town CPA committee to recommend expenditures, and a subsequent vote of Town Meeting to proceed with the financial commitment. Agricultural Commission support for APR local match expenditures can be quite helpful.

- **The Conservation Partnership Program.** The Conservation Partnership Program, administered by the Division of Conservation Services of the Executive Office of Energy and Environmental Affairs, is designed to help land trusts and other non-profit conservation organizations receive a 50% reimbursement for fee open space purchases or Conservation Restrictions. However, the Town must

supply the other 50%. You can apply if you are a not-for-profit group whose mission is to protect land in perpetuity and want to buy land for conservation or recreation.

- **The Landscape Partnership Program.** The Landscape Partnership Program offers competitive grants to Municipalities, non-profit organizations, and Mass EOEAA agencies to help fund projects that permanently protect a minimum of 500 acres. It seeks to preserve large, unfragmented, high value conservation landscapes including working forests and farms, expand state-municipal-private partnerships, increasing leveraging of state dollars, enhance stewardship of conservation land, and provide public access opportunities. The program provides 50% reimbursement for eligible projects including acquisition, title research, recording fees, surveys, baseline documentation reports, and technical assistance to municipalities. Franklin Land Trust and Kestrel Land Trust have both coordinated projects under this program, assembling multiple eligible properties. The maximum grant award is \$1,250,000.
- **The Agricultural Conservation Easement Program (ACEP)– Agricultural Land Easements (ALE) & Wetland Reserve Easements (WRE).** The Agricultural Conservation Easement Program is a voluntary program of the Natural Resources Conservation Service (NRCS) whose purpose is to protect agricultural lands by limiting non-agricultural uses. The program was established by the Agricultural Act of 2014, commonly known as the 2014 Farm Bill.

ALE Program. As described by the Natural Resources Conservation Service (NRCS) website, the Agricultural Land Easements program “provides financial assistance to eligible partners for purchasing Agricultural Land Easements that protect the agricultural use and conservation values of eligible land. In the case of working farms, the program helps farmers and ranchers keep their land in agriculture. The program also protects grazing uses and related conservation values by conserving grassland, including rangeland, pastureland and shrubland. Eligible partners include American Indian tribes, state and local governments and non-governmental organizations that have farmland, rangeland or grassland protection programs. Under the Agricultural Land Easement component, NRCS may contribute up to 50 percent of the fair market value of the agricultural land easement. Where NRCS determines that grasslands of special environmental significance will be protected, NRCS may contribute up to 75 percent of the fair market value of the agricultural land easement.”

WRE Program. The Wetland Reserve Easement (WRE) program protects land that formerly was wetland but is not in agricultural use. This program returns ag lands that were previously wetlands back to wetlands and otherwise provides funds to protect and rehabilitate portions of properties that would not qualify for the APR program. The Wetlands Reserve Easements program can be used in conjunction with the state APR program to protect (through permanent easements) and rehabilitate wetlands on potential APR properties or on other farmland. Under the program, NRCS pays 100 percent of the easement value for the purchase of the easement. Additionally, NRCS pays between 75 to 100 percent of the restoration costs.

Section 8: Funding Options for Land Conservation

Potential timing of protection transactions – they will probably need to be staged over several years to work them through the state and the town. (case studies for partnering funds)

- a. Land Trust Assistance: Deerfield is within Franklin Land Trust’s target area and has partnered on land protection projects in the past. Franklin’s fundraising has also been active in Deerfield, particularly the summer D2R2 bicycle event (cancelled in 2020 for virus reasons), which brings in thousands of dollars that FLT uses to assist with land and restriction purchases. FLT posts the following on its website:

“Most of FLT’s work, is realized through either Agricultural Preservation Restriction (APR) or Conservation Restriction (CR). FLT helps farmers and other landowners identify different options available to them, decide which strategy is best for their situation, and navigate the process of conserving their land. In many cases, we also assist with financing acquisition and stewardship of conserved properties. FLT’s experienced Land Conservation staff can familiarize you, your family, and your advisors with the conservation options available to help you meet your goals. The Franklin Land Trust has helped hundreds of families realize their dream of leaving a legacy for their families; dozens of farmers reach their potential and grow their family farms; and conserved thousands of acres of scenic and productive land, water resources and critical wildlife habitat.”

Franklin Land Trust actively works to seek fund donations from private sources to help match state and federal grant resources for land protection in Deerfield.

- b. Other organizations that have traditionally worked with the Town to protect land and water resources are Mt Grace Land Conservation Trust, Kestrel Land Trust, the Connecticut River Conservancy, the Deerfield River Watershed Association, the Mass Department of Conservation & Recreation, and the Mass Department of Fish & Game. The Friends of the Silvio O. Conte National Fish & Wildlife Refuge has become a thriving network of more than 70 public and private organizations and individuals whose collective efforts forge mutually beneficial partnerships. The Friends organization is made up of dozens of groups, representing land trusts, environmental advocacy groups, watershed organizations, nature centers and outdoor recreation interests of the Connecticut River Watershed.

- c. USDA Natural Resource Conservation Service Programs:

Conservation Stewardship Program: The Conservation Stewardship Program (CSP) provides a 5-year contract under which annual payments are made based on the farmer’s base level of stewardship plus one or more additional practices that they agree to adopt. It is a program that rewards good stewards of the land, though it is not permanent. Farmers can renew for additional 5-year periods. The minimum payment is \$1,500/year but the payments are higher for larger farms and farms that have multiple land uses (crop, pasture, associated ag land). This program applies to forest land and agricultural land.

Regional Conservation Partnership Program: The Regional Conservation Partnership Program promotes coordination of NRCS conservation activities with partners that offer value-added

contributions to expand our collective ability to address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address.

Rita Thibodeau (413-253-4380) oversees NRCS programs in our region and she and her staff can answer questions about those programs.



Farmland Across the Deerfield from the Sewage Treatment Plan (June 2020, Conservation Works)

Section 9: Recommendations for Action - Potential Land Protection Strategy. Town boards have successfully planned for previous land protection endeavors in the past and will want to continue to strategize to be ready to recommend town financial support for new purchases or APR applications.

Recommended Next Steps:

- d. Hold a town-wide land protection workshop for landowners.
- e. Reach out to landowners of high-priority parcels to determine their willingness to engage with a land protection program.
- f. Seek MVP funds to enable a package of land protection steps.
- g. Assist landowners with required application work.
- h. Work in partnership with Franklin Land Trust and others to create a large matching-fund pool.
- i. Pursue regular communication with Franklin Land Trust, Connecticut River Conservancy, NRCS, and state agencies to coordinate efforts to protect additional land within the floodplain.
- j. Landowner specifics:
 - a. Special landowners: Deerfield Academy, Historic Deerfield, Bement School. In several cases, those institutions own farm parcels that are in the floodplain but not integral to the main campus centers. A commitment to preserve selected parcels through APRs or

CRs could set a good example for other landowners and help begin the next phase of expanding floodplain protection.

- b. Agricultural landowners: large or small farm landowners may be interested in assembling parcels in new APR applications. Many landowners already have land in APRs and are familiar with the application process. The next APR application deadline is June 30, 2021. To be ready for upcoming APR applications, the Town should be prepared to commit CPA and possibly other funds toward the local match.
- c. Other landowners: may be interested in the Conservation Land Tax Credit Program, through which, as noted above, up to \$75,000 is available for an approved Conservation Restriction donation. Certain tax deductions are available for donations not under the CLTC program.