

2022 - 09



## GROTON-DUNSTABLE REGIONAL SCHOOL DISTRICT

344 Main St • Groton, MA 01450-0729 • Tel.: 978.448.5505 • Fax: 978.448.1202

Groton-Dunstable Regional School District  
Town of Groton Community Preservation Committee  
CPA Project Funding Final Submittal  
February 18, 2021

The Groton-Dunstable Regional School District is submitting an application for CPA funding consideration. The proposed project contains renovations of the Groton-Dunstable Regional High School stadium and softball fields. Documentation in this submission include:

- Groton Community Preservation Committee CPA Project Application (2 pages)
- Narrative of the proposed project including description, funding commitments, estimated costs, community support and maintenance plan (3 pages)
- Pine & Swallow Environmental report on stadium field existing conditions and recommendations for field restoration (13 pages)
- Aerial pictures of stadium and softball fields reflecting current conditions (3 pages)
- Diamond Athletic Turf estimate for stadium field restoration (1 page)
- Letter of support from Groton-Dunstable Regional School Committee (1 page)
- Letter of support from Groton-Dunstable Athletic Booster Club (1 page)
- Letter of support and donation confirmation from GD @ Play (1 page)
- Letter of support from Groton-Dunstable SEPAC (1 page)
- Reference: Summary of Changes to Community Preservation Act – July 2012 (3 pages)
- Reference: Groton Community Preservation Fund Distribution History 2012-2020 (1 page)
- GDRSD Capital Plan (2 pages)
- GDRSD Sports Turf Maintenance Plan (5 pages)

Respectfully submitted by:

  
Sherry L. Kersey, Director of Finance and Operations

## 11. CPA PROJECT APPLICATION FORM

[CPC Use Only: Date Received 2/18/2021 By: SAMMIE KUL  
Assigned CPC #2022-09]

If possible, use word processor to fill out form. Please answer all questions, use "N/A" if not applicable.

1. a.) Applicant Name and Organization: Last Kersey First Sherry  
Organization(s) (if appropriate) Groton-Dunstable Regional School District
- b.) Regional Project: Yes ☒ or No? ☐ If Yes, Town/Organization: Towns of Groton and Dunstable
2. Submission Date: February 18, 2021
3. Applicant Address: St. 344 Main Street  
City/ State: Groton, MA ZIP: 01450
4. Ph. # (978) 448-5505 x3803 Email: skersey@gdrsd.org
5. CPA Purpose. Check all that apply:  
Community Housing ☐ (Affordable Housing ☐ Historic Preservation\*: ☐ Open Space: ☐  
Recreation ☒
- \* As per MA General Law Chapter 44B, proposed historic projects that are not on the structures listed on the state's registry of historic places require a determination by the Groton Historic Commission that the proposed project is of historic significance.*
6. Town Committee or boards participating: Groton-Dunstable Regional School Committee
7. Project Location/Address: 703 Chicopee Row, Groton, MA 01450
8. Project Name: Groton-Dunstable Natural Field Restoration Plan
9. Additional Responsible Parties (If applicable):

Role (specify)	Name	Address	Ph. (w) (cell)	Email
Property/Site Owner	GDRSD	703 Chicopee Row Groton, MA 01450	978-448-5505 X 3803	skersey@gdrsd.org
Project Manager	John Robichaud	344 Main Street Groton, MA 01450	978-448-5505 X 3805	jrobichaud@gdrsd.org
Lead Architect				
Project Contractor	TBD			
Project Consultants	Pine & Swallow	867 Boston Road Groton, MA 01450	978-448-9511	rpine@pineandswallow.com
Other:				
Other				

10. As appropriate, indicate if proposal requires P&S agreement N Deed  
Option agreement N Other-describe: \_\_\_\_\_
11. a.) Assessor info. (map/ block/ lot id.(s)): 230/46/0 b.) Tax classification type: R-A
12. Permits required: Zoning: \_\_\_\_\_ Historic Preservation: \_\_\_\_\_ Other: \_\_\_\_\_
13. Historic Commission Approval signoff (when required): \_\_\_\_\_ Date: \_\_\_\_\_
14. Funding: a.) Project Cost: \$ \_\_\_\_\_ Estimate: \$ 323,000 Professional Quote: \$ \_\_\_\_\_  
b.) Requested from CPC: \$ 230,232 c.) Committed from other sources: \$ 92,768  
d.) Annual anticipated total income: \$ \_\_\_\_\_ e.) Annual anticipated total expense: \$ \_\_\_\_\_
- f.) Anticipated net income (loss): \$ \_\_\_\_\_ g.) Estimator name/company: \_\_\_\_\_
15. CCP Objectives - use codes from **Section 5** to indicate all that apply: OSRP 5.3
16. Project Timelines: Proposed Start Date: 07/01/21 Projected Complete Date: 09/01/21
17. Estimated Delivery Date of Completion Report to CPC: 09/01/21



18. Project description and explanation (attach additional sheets as needed):

\*\*\* Please see attached Project Description and Explanation \*\*\*

19. Feasibility: A natural turf field is the most economical solution to restore the GDRHS Stadium. The equipment to be purchased will provide the district with the tools needed to maintain a restored field.
20. List of attachments: Support letters, Pine and Swallow consulting report, GD @ Play donation and support letter, updated language of MGL law change 2012, history of regional projects from CPA database, and GDRSD Field Maintenance Plan.
21. Additional Information: Law change 2012 – Section 5 Adds a requirement that the Preservation Committees should, as part of their Community Preservation Plan, consider CPA projects that are regional in scope. The restoration of GDRSD fields have been identified in the Capital Plan that was approved in 2017 and is updated annually. Due to budget restrictions the restoration of the GDRSD fields had been continually put off, however donation of GD @ Play and this CPC application provides an opportunity to restore GDRSD field to a safe, recreational surface for our students and community usage without furthering the tax burden of our residents in either town.
22. Management Plan: Pine and Swallow provided recommendations f restoration and management of the fields. GDRSD has a maintenance plan for our fields that will incorporate the recommendations from Pine and Swallow. John Robichaud, Director of Buildings and Grounds will oversee the restoration and compliance of the plan. Sherry Kersey, Director of Finance and Operations will be responsible for approval of all invoices related to this project.

23. Applicant Signature: Sherry Kersey Date: 02/18/21  
Co Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Co Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **GROTON COMMUNITY PRESERVATION APPLICATION PROJECT DESCRIPTION AND EXPLANATION**

### Groton-Dunstable Regional High School Stadium Field

On October 28, 2020, our District submitted a CPA Project Summary to restore three of our athletic fields to a safe and usable conditions for both students and the community in general. The Groton-Dunstable Regional School District is now submitting our formal project application.

### History/Background

Since the original Summary was submitted, the Groton-Dunstable Regional School Committee, Groton Select Board, and the Groton-Dunstable Regional School Building Committee have voted to submit a joint application to build a MIAA regulated track on the land behind the GDRMS South as a supplement to our original Summary. Therefore, this application has been updated to only include the GDRHS Stadium Field and GDRHS Softball Field and is a standalone regional project application. An application has been submitted to both the Groton and Dunstable CPC.

The GDRSD Director of Buildings and Grounds, John Robichaud after assessing the conditions of 25 acres of athletic fields in the district, identified three (3) field restoration projects that need to be completed for the fields to be considered safe and usable for our student athletes and community usage. Two of those fields are included in this application. The projects in the GDRSD Natural Field Restoration Plan include total replacement and restoration of the stadium high school natural turf field and resolve tree overgrowth at the high school softball field to address the wet field preventing the use of the field.

GD@Play has been working extremely hard over the last few years to raise money for an artificial turf field to replace the natural turf field at the GDRHS Stadium, unfortunately they were unsuccessful in meeting their goal.

### Funding/Donation

The GDRSD Director of Buildings and Grounds, Mr. Robichaud and the GDRSD Athletics Director, Matt Ricard have been working collaboratively with GD@ Play to explore restoring the natural turf stadium field at the GDRHS. GD@Play has donated \$100,000 towards the cost of restoring and maintaining the district natural turf fields as well as fencing to provide a level of security for the investment. In addition to the financial donation, the engineering for the natural turf project has been donated by Robert Pine of Pine and Swallow Environmental Landscape. Mr. Pine has committed to providing engineering services to complete the natural turf project.

### Support

Support letters from GD @ Play, the Council of Aging, Groton-Dunstable Athletic Booster Club, and the Groton-Dunstable Regional School Committee accompany this application.



## GROTON COMMUNITY PRESERVATION APPLICATION PROJECT DESCRIPTION AND EXPLANATION

### Town of Dunstable-Proportionate Share of Project

The Dunstable Community Preservation Committee met on February 10, 2021 to review the CPA application for the Natural Turf Restoration Projects. They voted to support their proportionate share of up to \$74,268 to be presented at the upcoming Town Meeting.

### Equipment

Equipment to maintain GDRSD natural turf fields will be funded with a portion of the GD@Play donation and the remainder will be utilized towards project restoration cost of the GDRHS Stadium Field. Quotes for the equipment were obtained by 3 separate vendors to obtain the best price. All vendors are prequalified through the FAC88 State Contract (pre-bid and vetted).

Equipment to be procured include:

Utility Tractor w/ Loader:	\$46,900
Core Aerator Attachment	\$ 3,700
Linear Aerator:	\$20,100
Top Dresser:	<u>\$10,800</u>
Total	\$81,500

GD @ Play has donated \$100,000 toward the field restoration and maintenance. Dedicating \$81,500 to cover the cost of equipment leaves \$18,500 to be applied toward the cost of the field restoration.

### Natural Field Restoration Contractor Selection

An Invitation for Bids for the Natural Turf Field Restoration Project was made available on February 1, 2021. To date, there have been 13 vendors who have requested bid packages. Eight (8) of those vendors attended a pre-bid Zoom meeting on February 9, 2021 to ask clarification questions. An Addenda was issued with additional information on February 12, 2021. Bids are due on Friday, February 26, 2021. Vendors are aware this project is potentially being funded with CPC funds and indicated our estimated project cost is reasonable.

Diamond Turf provided the estimate and is included in the application package. The estimate for the Stadium Field restoration is:

Natural Turf Field Restoration	\$275,000
Fencing	<u>\$ 10,000</u>
Total Stadium Field	\$385,000

**GROTON COMMUNITY PRESERVATION APPLICATION  
PROJECT DESCRIPTION AND EXPLANATION**

Softball Field

The softball field at the high school has been unusable or cost of the Spring sports season for the past few years. The tree overgrowth does not permit enough sunlight to melt snow and dry the field in one corner of the outfield. Contracting with a tree service will expose the field to more sunlight and render the field safe for play.

Tree Contractor	\$10,000
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Total estimated cost of the GDRSD Natural Fields Restoration Plan is \$323,000

Natural Field Restoration Contractor:	\$275,000
Fencing:	\$ 10,000
Softball Field Tree Pruning:	\$ 10,000
Contingency:	<u>\$ 28,000</u>
<b>Total Proposed Project:</b>	<b>\$323,000</b>

Funding:	
Groton CPC	\$230,232
Dunstable CPC	\$ 74,268
GD@Play Donation	<u>\$ 18,500</u>
<b>Total Proposed Funding:</b>	<b>\$323,000</b>





July 20, 2020

Jack Petropolous  
GD at Play

Matthew Ricard  
Director of Athletics  
Groton-Dunstable Regional School District

Re: Restoration and Upgrade of Groton Dunstable Regional High School Football Field Area

The purpose of this letter is to provide an analysis of the existing physical condition of the Groton Dunstable Regional High School (GDRHS) football field and recommendations for restoring, upgrading and maintaining the field in a high quality condition. It is understood that the non-profit citizens group, GDatPlay, has been attempting to raise adequate funding to construct a new synthetic field to replace the football field but that fundraising has not met the required goals and therefore that effort has stopped. It is further understood that some members of GDatPlay may be interested in helping to fund rehabilitation of the football field as a high quality, natural turf field. I volunteered to investigate the current condition of the football field and to provide an analysis of the feasibility and requirements of establishing a natural turf field that can provide a high level of performance into the indefinite future.

## BACKGROUND

**Initial Construction:** The sports fields at the GDRHS were constructed in 2003. During construction, Pine & Swallow Environmental (PSE) was asked to review and comment on the construction plans and specifications and the construction work that had already taken place. Planting soils had been placed in the upper field area but not in the football field area. Although the planting soils that had been placed were not appropriate for high use sports fields, replacement of those soils would have caused a significant cost increase. PSE recommended procedures to reduce an excessive amount of stone in the placed soil and to amend the uppermost soils with sand and compost to provide an improved wear surface. The contractor carried out some of this work.

The contractor did agree to a change in the specification for the planting soil for the football field area. More suitable soils were therefore placed in that area. However, it is understood that the contractor may not have rigorously followed all of the plans and specifications for construction of that field.

**Recent Observations:** In July 2016, I examined the football field during what happened to be a dry period. The turf at that time was sparse and brown and only the top one-half inch of soil was damp. The lower soils were excessively dry. The observed soils appeared to be generally consistent with the soils that had been specified.

**Mark Caliri Observations:** On June 3rd of this year, I met with Mark Caliri of the GDRHS Maintenance Department to discuss past and current maintenance of the sports fields. His comments included the following:

- Maintenance strategies for all of the fields are limited because they are located within protection zones for the school's well.
- Irrigation water has generally been adequate to meet needs except during one recent, particularly dry summer when irrigation had to be significantly curtailed.
- In the recent past, new topsoil was imported and spread, typically one to two inches thick, on a number of sports fields, including the football field. In addition, the soils in portions of the site were modified to address wear issues that had developed.
- The northwest portion of the football field tends to remain wet after periods of rain or irrigation.
- Since virtually no chemicals can be used, the primary defense against weeds that has been used is to prevent bare spots where weeds would have an increased opportunity to germinate and grow. The fields are therefore slice seeded whenever possible. However, the budget for seed and opportunities to apply new seed have sometimes been limited.

## **SITE AND LABORATORY INVESTIGATION**

**Site Observations:** On June 3rd, in addition to meeting with Mark Caliri, I excavated shallow test holes within the football field area to collect representative samples of existing soils. I also ran limited percolation tests to evaluate the infiltration rates of the soils. On July 18th, I made a second site visit to observe soil conditions within the football field area. During the June 3rd site visit, I was only able to observe soils in a limited number of locations. The additional observations on July 18th established that soil conditions vary significantly in some portions of the field

In some locations a one to two inch layer of silty topsoil was observed in all of the holes excavated within the field. Beneath this layer there was uniformly graded, sandy soil that was generally consistent with the specified planting soil for that field. At some other locations silty topsoil was present to a depth of several inches. In some locations the uniformly graded, sandy soil was not observed.



**Laboratory Test Results:** Composite samples of the upper silty topsoil and the lower sandy planting soil were collected and brought to the PSE laboratory for testing. Test results are attached. The results of the laboratory tests indicate that the upper soil is much finer-grained than recommended for high use turf areas. This soil is vulnerable to become excessively compact, is poorly drained and will stay wet after periods of rain or irrigation, resulting in rapid wear of the turf. The tests on the lower soil indicate that its gradation is appropriate for a high use sports field, except that the organic content is low.

**Site Infiltration Test Results:** Since the upper silty topsoil layer is thinner than the soil thickness required for a standard percolation test, shallow holes were carved into this soil and filled with water to obtain an estimate of the infiltration rate of the soil. Observed rates were approximately one inch or less per hour for all of these tests. These rates are very low for a sports field. Percolation holes a few inches deep were excavated into the lower sandy planting soil and filled with water. The infiltration rates of these holes ranged from six to ten inches per hour. These rates are appropriate for a sports field.

## **STRATEGIES FOR SUCCESSFUL NATURAL TURF SPORTS**

**Soils for Sports Fields:** The design of soils to support turf grass that will be subjected to heavy use must consider the amount and timing of equipment and foot traffic expected. Mechanical soil compaction is one of the most damaging aspects of heavily used turf. Compaction sets in motion a cascade of adverse conditions: reduced deep water infiltration, saturated surface soils, surficial mud, reduced air infiltration, oxygen deficient conditions, anaerobic soils, hydrogen sulfide generation, very shallow roots, turf diseases, and rapid and frequent drought damage.

Any one of the above factors can lead to poor turf conditions. To a limited degree one factor can compensate for another. Strong surface grading can reduce the effects of poor internal soil drainage and good internal soil drainage can reduce the effects of inadequate surface gradients. However, all of the factors must be appropriately addressed in order to create successful turf plantings.

Successful turf depends on a number of soil-related factors; compaction levels, drainage conditions, planting media, nutrient status and maintenance. Excessive soil wetness can be caused by ground water conditions, internal soil drainage, surface grading, compaction, excessive organic matter content and inappropriate gradation of the planting medium. By being attentive to soil particle grain size distribution and organic matter content, compaction resistance is maximized.

High-use turf soils must contain adequate silt and clay-sized particles and adequate organic material to provide moisture retention and nutrients for turf. However, the amount of silt and clay must be limited. A planting medium that is too fine-grained affects conditions in four ways. First, water moves slowly through the soil to the subgrade. Second, the soil retains excess moisture, resulting in damp conditions for longer periods of time. Third, the soil is relatively compactable, and this further reduces

porosity and water movement. And fourth, the strength of the soil and turf to support maintenance vehicles and/or foot traffic is reduced.

For high use turf areas, the soil profile should promote rapid drainage and limit over-compaction. The uniformity of the soil particles is essential to the performance of the profile. Providing an adequate thickness of growing medium is also essential. Roots tend to grow deeply into typical High Use Turf Soils, due in part to the good soil aeration that is provided and to good infiltration that provides water deep into the soil profile.

**Soil Sustainability:** The USDA Department of Natural Resources defines healthy soils as the "capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans .... Soil is not an inert growing medium, but rather is teeming with billions of bacteria, fungi, and other microbes that are the foundation of an elegant symbiotic ecosystem. Soil is an ecosystem that can be managed to provide nutrients for plant growth, absorb and hold rainwater for use during dryer periods, filter and buffer potential pollutants from leaving our fields, serve as a firm foundation for agricultural activities, and provide habitat for soil microbes to flourish and diversify to keep the ecosystem running smoothly."

Soil biology is a fundamental characteristic of healthy sustainable soils. Good soil biology helps create ongoing supplies of nutrients as organic matter is broken down and recreated in the soil. A central strategy of modern soil design and soil restoration is the creation of good 'habitat' in horticultural soils to support and sustain appropriate levels of soil biology.

Research has shown that amount of beneficial soil microbes present in a given soil depends on the "habitat" conditions of the soil. This principle is the same as for any ecosystem, above or below the ground. Where there is good habitat, biology thrives. If soil biology levels are raised, for example by the application of compost tea, those levels will improve short term health but will tend to decline over time to equilibrium levels that the soil habitat can support. A primary goal of good soil design is therefore to create habitat within soil that supports beneficial soil biology. The primary basic conditions required are the presence of adequate organic matter, good aeration to provide oxygen, and moisture.

**Water Holding Capacity:** Organic matter has the ability to retain water that is passing through soil from rainfall or irrigation. Organic matter also holds far more water than the mineral components of topsoil. Increasing the amount of compost in a soil blend is the most effective method of increasing plant available water and reducing irrigation requirements.

**Aeration:** The movement of air through planting soils is essential to provide oxygen both for plant roots and soil microbes as well as to vent carbon dioxide to the atmosphere. The uniformly-graded sand component of soil blends increases macropore space that, in turn, increases aeration.



***Infiltration / Internal Soil Drainage:*** The increase in macropore space due to the sand component in soil blends also increases the rate of infiltration. Infiltration of storm water is particularly important from a sustainability perspective. Infiltration reduces storm water runoff and increases the amount of rainwater available to be absorbed by the soil, thereby reducing the amount of water needed for irrigation. For soils in high use turf areas, the minimum infiltration rate should be four inches per hour.

***Compaction Resistance:*** Uniformity of an earth material refers to the distribution of particle sizes - its gradation. A uniformly-graded soil or sand processes fewer particle sizes when compared to a nonuniformly-graded material. The uniformly-graded sand component in well-designed soils increases the ability of soils to resist compaction forces. Compaction reduces macro void space and therefore aeration, infiltration and the ability of roots to penetrate soil. The uniformity of gradation is particularly important in creating this resistance. The presence of compost in soil blends also contributes to compaction resistance.

***Soil Biology / Soil Health:*** Blended soils are, by design, ideal habitat to support biological activity in the soil. Soils should be designed to have relatively high, but not excessive, percentages of organic matter that is a source of food for soil microbes. Compost also absorbs water, providing moisture for biological activity. Combined with the high aeration capacities of blended soil, biological activity can utilize the compost and other organic matter in the soil to create an ongoing source of nutrients, reducing fertilization requirements.

***Blended Soil Design:*** Blended soils are typically combinations of A-horizon topsoil, mature and stable compost and medium to coarse uniformly-graded sand. Natural topsoil provides silt and clay particles for nutrient holding capacity, baseline soil biology, and diverse types of organic matter, including very stable humus. Compost adds water holding capacity, robust soil biology, and is a source of slow-release nutrients. Uniformly-graded sand provides physical structure that can resist compaction and increase aeration, infiltration and internal drainage. Proper design of blended soils produces fundamentally healthy soils that increase overall sustainability in numerous ways. By varying the percentages of each component in a soil blend, the optimal performance for various planting conditions can be met. Soils that will be subjected to compactive forces, such as high use sports fields, should be designed with increased percentages of sand and prescriptive amounts of compost.

## **IRRIGATION**

Since the GDRHS relies on its own well and distribution system for all of its water needs, the protection of ground water supplies, especially during periods of drought is critically important. With respect to irrigation, keys to limiting water use while maintaining adequate soil moisture include:

1. Good infiltration rates for soils so that storm water infiltrates the ground and wets the soils rather than running off.
2. High moisture retention rates for soils in order to store rainfall and irrigation water where grass roots and utilize it. Although high infiltration and high moisture retention can be in conflict the proper balance between sand and compost can achieve both.
3. Soil conditions that promote deep rooting, thus providing high volumes of accessible nutrient storage and moisture reserves.

The way irrigation systems are controlled significantly affects how effectively they keep soil moisture at appropriate levels and the total amount of irrigation water used. Over the past few years systems that utilize soil moisture meters that can control irrigation have been developed. These systems can be set to provide irrigation water only when necessary thus ensuring adequate soil moisture for plants and turf. They prevent both over and under watering the soil and can significantly reduce total water use, which is critically important at GDRHS during droughts. One successful product is manufactured by Baseline. Irrigation Consultants of Nashua, New Hampshire designs such systems and can provide professional assistance.

#### **PRIMARY ISSUES FOR FIELD RESTORATION**

1. The silty topsoil layer reduces the amount of infiltration and also remains wet after rain or irrigation. If a sports field with wet silty soils is used when surficial soils are wet, turf deteriorates rapidly.
2. The organic content in the underlying sandy topsoil is low, reducing the water holding capacity below an acceptable level and also reducing soil biological activity and therefore the availability of nutrients.
3. There is inherent conflict between the need to provide adequate moisture for turf and potential capacity limitations of the school's well. It is therefore essential that adequate, but not excessive irrigation is provided, not just for the football field but for all the school's irrigated landscape.
4. The use of chemicals to control pests and weeds is severely limited both due to State regulations for school properties in general and the fact that the school's sports fields are located within the protection zone of its well.
5. The long term success of any high use sports field depends on a high level of quality maintenance. The constraints at the GDRHS fields makes this critical. Adequate budget to maintain fields over time is essential.



## RECOMMENDATIONS FOR FIELD RESTORATION

It is my opinion that the existing GDRHS Football Field can be restored to provide a high use quality field. The existing sandy soil beneath the upper one to two inches of imported fine-grained topsoil provides a soil base that can be amended in place to create excellent soil for this use and strategies are available to address other listed issues. The following steps are recommended.

1. Remove the existing irrigation heads and associated plumbing system. The irrigation lines and heads may be appropriate for future use but should be reviewed by an irrigation consultant. However, since some of the existing soils need to be stripped and removed and other soils need to be amended, the irrigation lines and heads need to be protected from these activities.
2. Strip and remove the existing turf layer. Grade existing soils to create a surface that will be parallel with, and approximately four inches below, final grades.
3. Blend sand and compost, each as specified and approved prior to delivery, at a mix ratio of 3 parts by volume sand to two parts by volume compost. If the mixing is carried out with a front end loader, move blended piles once prior to moving and spreading the blend in order to achieve a uniform blend.
4. Spread four inches of the sand-compost blend over the field. Check that the grades conform approximately with intended final grades.
5. Loosen the entire area to a depth of twelve to eighteen inches with a ripper bar on a bulldozer or other approved equipment. Rip a minimum of one time lengthwise and one time crosswise. Compress the entire area with one pass of the tracks of a bulldozer.
6. Rototill the entire area to a depth of 6 inches, combining the four inches of sand-compost with two inches of existing topsoil. Compress the entire area with two passes of the tracks of a bulldozer, once in each perpendicular direction. Laser-grade the entire area to achieve final grades.
7. Re-install the irrigation system if approved. Add moisture meters to control the system. Manage the system to use the minimum amount of irrigation water needed to maintain adequate moisture to fully support the turf. The application of irrigation water to all of the fields should be based on soil moisture requirements in order to use only the amount of water needed. This approach will extend the length of time that irrigation water will be available from the school's well during extreme drought conditions.
5. Seed or sod with approved, predominantly tall fescue, grass.

## RECOMMENDATIONS FOR TURF MANAGEMENT

1. Although there are strict limitations on the use of chemicals on all of the fields at the GDRHS, it is possible to successfully manage sports fields that have appropriate soil and drainage conditions to achieve high quality turf with high use. GDRHS is not the only institution with these types of restrictions on management. The State of Massachusetts has established restrictions on the use of chemicals on all school fields including for specific conditions such as well protection zones. A link to the Children and Family Protection Act is [mass.gov/courts/docs/lawlib/300-399cmr/333cmr14.pdf](http://mass.gov/courts/docs/lawlib/300-399cmr/333cmr14.pdf). A link to a document that provides guidance on how to manage fields under these regulations is [http://massnrc.org/ipm/docs/turf\\_municipal\\_athletic.PDF](http://massnrc.org/ipm/docs/turf_municipal_athletic.PDF).
2. Although the above Massachusetts school turf maintenance document, as well as other professional documents, provide excellent guidance for management of high use turf under restricted conditions, I strongly recommend that a turf consultant periodically inspect the fields to provide general management guidance as well as specific recommendations to deal with diseases that may develop. Pine & Swallow does not provide such services.
3. There are two important management practices that are not affected by regulatory controls that are essential for high use sports fields constructed on sandy loam soils. The first, as discussed above, is to regularly overseed any bare spots, preferably by slice seeding. Keeping a full cover of grass is the first and best line of defense against both weeds and turf diseases. The second management practice is to periodically, once or twice a year depending on wear, apply a thin layer of equal parts of sand and compost as specified in conjunction with 'plug pulling' aeration. After the aeration plugs are pulled, the sand-compost is dragged so that the holes are filled with the mix. This approach renews organic material in the soil and creates long term aeration since the aeration holes are prevented from collapsing.
4. If irrigation must be curtailed due to limited water supply, a turf consultant should advise on how to manage available water. Attempting to keep the turf watered with inadequate moisture can cause turf roots to grow toward the surface where they can be permanently damaged. It is often less damaging to cut off water entirely so that the turf can go into dormancy. Occasional deep watering during summer dormancy can help the turf to recover when regular irrigation is again possible.
5. It is understood that it will be feasible to rest the fields during summer when school is out of session. Allowing for such rest periods is a significant benefit that allows the turf to better resist wear during the expected periods of intense use.



## **CONCLUSIONS**

It is my opinion that, if the above recommendations are implemented, it is possible to establish and maintain a high quality, intensely used football field at the Groton Dunstable Regional High School. The base conditions exist to allow restoration to achieve a very high quality soil base for the field with only in-place amendment. Although there are stringent limitations on the use of chemicals, modern organic, sustainable management can maintain high quality turf. These practices will require training of the maintenance team and periodic consultations from turf experts. However, such systems are the best approach to landscape management and should become an exemplary aspect of the school's approach to overall landscape management.

## LABORATORY TEST RESULTS

### Horticultural Soil Testing Report

**Sample ID:** High School Upper Soil

#### **Mechanical Sieve Analysis**

Sieve Size (US Standard Mesh)	% Passing based on whole sample	% Passing based on #10 (2mm) sieve	Specification Ranges (If provided)	
			Minimum	Maximum
10	93.4%	100.0%		100%
18	88.6%	95.0%	70%	90%
35	79.7%	85.3%	45%	72%
60	67.7%	72.5%	26%	40%
140	47.7%	51.1%	14%	20%
270	29.3%	31.4%	11%	14%

Uniformity		Spec. Limit	<u>USDA Textural Class</u> Sandy Loam
D70/D20:	9.2	<4.2	
D80/D30:			
% Gravel:	6.6%	<15%	

Additional Tests		Spec. Limit
pH:	6.5	6.3 - 6.8
Soluble Salts (mmhos/cm):		
Organic Matter:	4.6%	4.0 - 5.5



### Horticultural Soil Testing Report

**Sample ID:** High School Lower Soil

#### Mechanical Sieve Analysis

Sieve Size (US Standard Mesh)	% Passing based on whole sample	% Passing based on #10 (2mm) sieve	Specification Ranges (if provided)	
			Minimum	Maximum
10	89.0%	100.0%		100%
18	79.9%	89.8%	70%	90%
35	56.1%	63.1%	45%	72%
60	25.3%	28.4%	26%	40%
140	12.2%	13.7%	14%	20%
270	7.3%	8.2%	11%	14%

Uniformity		Spec. Limit	USDA Textural Class Sand
D70/D20:	2.6	<4.2	
D80/D30:			
% Gravel:	11.0%		

Additional Tests		Spec. Limit
pH:	6.1	6.3 - 6.8
Soluble Salts (mmhos/cm):		
Organic Matter:	2.5%	4.0 - 5.5

## SPECIFICATIONS

### Sand

1. Sand shall be uniformly graded medium to coarse, non-calcareous sand consisting of clean, inert, rounded to sub-rounded grains of quartz or other durable rock free from loam or clay, mica, surface coatings and deleterious materials with the following grain size distribution for material passing the #10 sieve:

U.S. Sieve Size Number	Percent Passing	
	Minimum	Maximum
10	100	--
18	60	80
35	25	45
60	8	20
140	0	8
270	0	3
0.002mm	0	0.5

2. Maximum size shall be one-inch largest dimension. The maximum retained on the #10 sieve shall be 20 percent by weight of the total sample.
3. The ratio of the particle size for 70 percent passing (D<sub>70</sub>) to the particle size for 20 percent passing (D<sub>20</sub>) shall be 3.0 or less (D<sub>70</sub>/D<sub>20</sub> <3.0). Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422.
4. pH shall be less than 7.5.

### Organic Amendment (Compost)

1. Organic Matter for amending planting soils shall be a stable, humus-like material produced from the aerobic decomposition and curing of Leaf Yard Waste Compost, composted for a minimum of one year (12 months). The leaf yard waste compost shall be free of debris such as plastics, metal, concrete or other debris. The leaf yard waste compost shall be free of stones larger than 1/2", larger branches and roots. Wood chips over 1" in length or diameter shall be removed by screening. The compost shall be a dark brown to black color and be capable of supporting plant growth with appropriate management practices in conjunction with addition of fertilizer and other amendments as applicable, with no visible free water or dust, with no unpleasant odor, and meeting the following criteria as reported by laboratory tests.
  - a. The ratio of carbon to nitrogen shall be in the range of 12:1 to 25:1.
  - b. Stability shall be assessed by the Solvita procedure. Protocols are specified by the Solvita manual (version 4.0). The compost must



achieve a maturity index of 6 or more as measured by the Solvita scale. Stability tests shall be conducted by Woods End Research Laboratory, Mt. Vernon, Maine.

- c. Organic Content shall be at least 20 percent (dry weight). One hundred percent of the material shall pass a 1/2-inch (or smaller) screen. Debris such as metal, glass, plastic, wood (other than residual chips), asphalt or masonry shall not be visible and shall not exceed one percent dry weight. Organic content shall be determined by weight loss on ignition for particles passing a number 10 sieve.
- d. pH: The pH shall be between 6.5 to 7.4 as determined from a 1:1 soil-distilled water suspension using a glass electrode pH meter American Society of Agronomy Methods of Soil Analysis.
- e. Salinity: Electrical conductivity of a one to five soil to water ratio extract shall not exceed 2.5 mmhos/cm (dS/m).
- f. The compost shall be screened to 1/2-inch maximum particle size and shall contain not more than 3 percent material finer than 0.002mm as determined by hydrometer test on ashed material.
- g. Nutrient content shall be determined by the Soil Testing Laboratory or equivalent laboratory and utilized to evaluate soil-required amendments for the mixed soils. Chemical analysis shall be undertaken for Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Aluminum, Magnesium, Iron, Manganese, Lead, Soluble Salts, Cation Exchange Capacity, soil reaction (pH), and buffer pH.

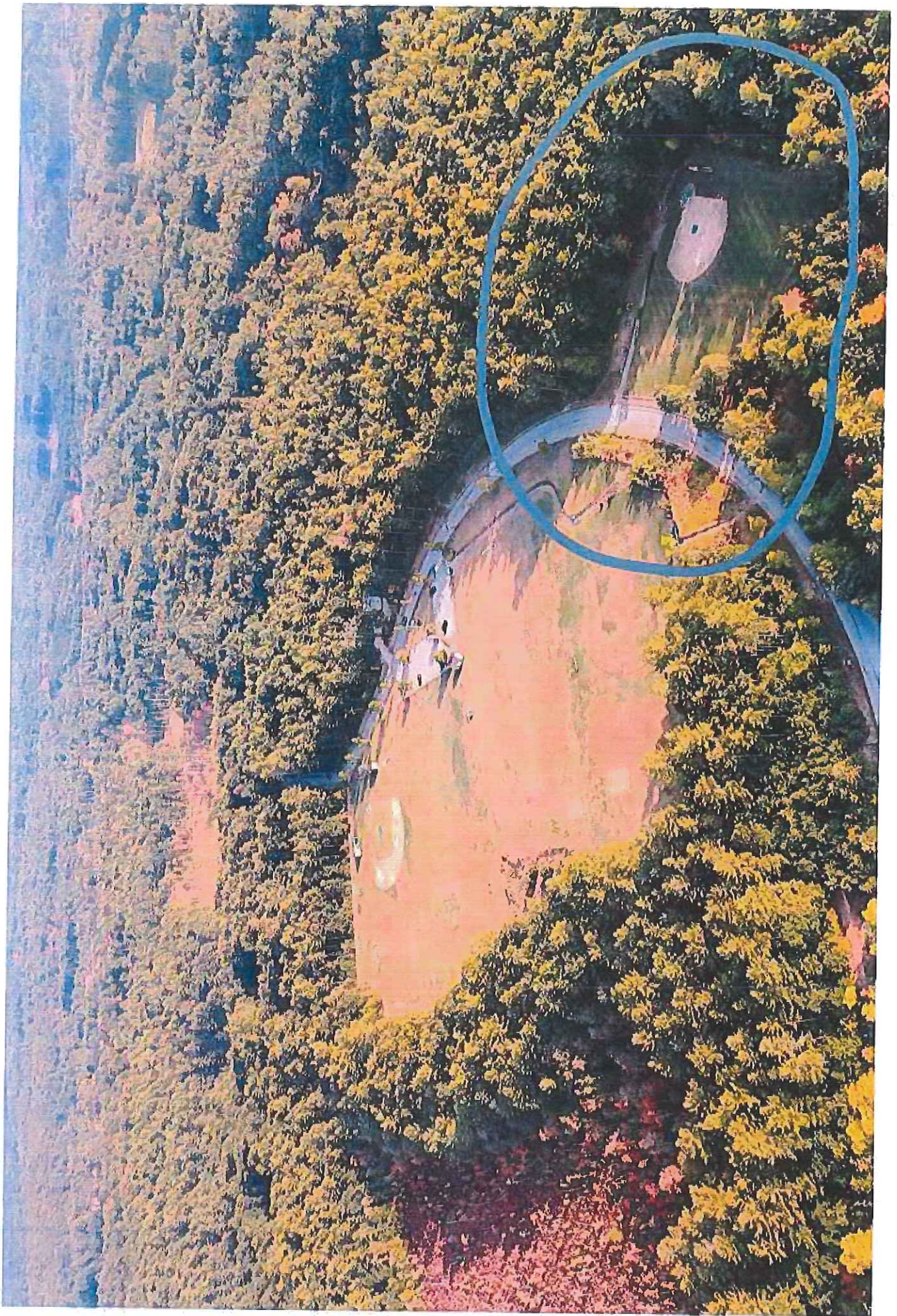
















P.O. Box 624 • Stow, Massachusetts 01775-624  
Phone/Fax: 978-298-5743 • [www.DiamondAthleticTurf.com](http://www.DiamondAthleticTurf.com)

8/15/2020

The Groton Dunstable Football Field Turf Renovation (80,000 sq. ft.)

\*Pre-bid Scope of Work from Page 7 of Pine & Swallow Environ

1. Remove existing irrigation heads and protect subsurface lines physically marking all head joints, lines and control boxes  
\$8000.00
2. Strip and remove existing turf layer  
Grade subgrade to parallel with final 4" and final grade  
\$16,000.00
3. Blend sand compost at 3 parts sand, 2 parts compost  
(1000 cu. yds. or 1500 ton materials combined)  
600 yds. sand, 400 yds. compost  
900 ton sand, 600 ton compost  
\$12,000.00 Blending Cost  
\$115,000.00 Material & Delivery Cost
4. Spread and laser grade all blended materials @ 4" depth  
Grade to final grade approximation  
\$12,000.00
5. Loosen the entire field area at a depth of 12" to 18" with a dozer ripper blade in 2 directions, then compress with dozer tracks  
NOTE: Ripping down 12" to 18" depth with the dozer  
May destroy any swingarm and irrigation line that was at or above 15" depth to begin with  
\$6000.00
6. Rototill entire area to 6" depth (new 4" & existing 2" together)  
Compact complete field in 2 directions w/tracks of dozer  
Laser grade complete field to final grade  
\$16,000.00
7. Re-install Irrigation System  
\*\*Irrigation Company Quote
8. Seed of sod with approved, predominantly tall fescue, grass  
\$20,000 Seeding  
\$90,000 Sodding

Total Estimated Cost: (less irrigation) \$205,000 - Seed  
\$275,000 - Sod





## GROTON-DUNSTABLE REGIONAL SCHOOL DISTRICT

344 Main Street Groton, MA 01450 Tel.: 978.448.5505 Fax: 978.448.9402

January 8, 2021

Community Preservation Committee  
Town Hall  
173 Main Street  
Groton MA 01450

Re: GDRSD Natural Field Restoration application.

Dear Committee Members

On January 6, 2021, the Groton-Dunstable Regional School Committee unanimously voted to support the GDRSD Natural Field Restoration application. Please consider recommending this project to Groton Town Meeting.

Thank You

Marlena Gilbert  
Groton-Dunstable Regional School Committee Chair





## GROTON-DUNSTABLE ATHLETIC BOOSTER CLUB

Jan. 11, 2021

Community Preservation Committee  
Dunstable Town Hall  
511 Main Street  
Dunstable, MA 01827

Re: Application to Rehabilitate the High School Athletic Fields

Dear Members of the Committee:

On behalf of the Groton-Dunstable Athletic Booster Club, I am writing to you in support of the proposed application to rehabilitate the High School Athletic Stadium Field and the Softball Field. The conditions of both fields are in dire need of repair. The Stadium Field poses a significant risk to those who play on it due to the uneven surface and multiple bare spots. The softball field has drainage issues making it also unplayable and unsafe a lot of the time.

Rehabilitating these fields will bring back pride to our district. With the failed attempt to get artificial turf on our campus, our kids deserve to have safe and prestigious fields to call their home. There are many options for High School in our area and Groton-Dunstable has so much to offer. The athletic facilities are for some the breaking point in deciding where to send their child to school. We need to put more effort into obtaining and maintaining competitive facilities. Utilizing the Community Preservation Act funding will allow our town to gain the benefits of these fields without increasing the tax burden for its residents.

The Athletic Boosters support this application and respectfully request that the Community Preservation Committee approve the necessary funding for this project. Thank you in advance for considering this request.

Sincerely,

*Heather Van Pelt*

Heather Van Pelt  
President GDABC

A full list of our membership, directors, and contact information is available on our website at the [www.gdathleticboosters.org](http://www.gdathleticboosters.org)

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Groton-Dunstable Athletic Booster Club P.O. Box 1190, Groton, MA 01450

January 5, 2021

Groton Dunstable At Play (GDatPlay) wishes to donate \$100,000 to the Groton Dunstable-Regional School District (GDRSD) for the purposes of renovating the main athletic field at the High School with a professionally designed, high use, sustainable natural turf surface.

These funds have been raised by GDatPlay through the generous contributions of hundreds of donors who want to see the field revitalized. We ask that these funds be used exclusively for the purpose of:

- A natural turf surface replaced in accordance with the design provided by Bob Pine of Pine and Swallow. The design has been reviewed with Building And Grounds Director John Robichaud, and Athletic Director Matthew Ricard. This design includes a substantial revision of the top surface of the field and the installation of a computer-controlled irrigation system that will assure proper levels of irrigation for the field.
- Procurement of the equipment required to maintain the field properly as specified by Mr. Robichaud.
- Installation of required fencing to prevent misuse of the field.
  
- Alternatively, should the District choose to install an artificial turf playing surface on this field, this donation may be used to advance that project.
  
- A considerable portion of this donation came through a "Brick" project. Should this project go forward, we ask that the District allow us to honor this initiative by installing the bricks in an appropriate location as part of the project. GDatPlay will provide all required materials and labor.

In addition to the financial donations, the consulting for the natural turf project has been donated by Mr. Robert Pine of Pine and Swallow Environmental. Mr. Pine has committed to providing consulting services to complete the natural turf project.

On behalf of the hundreds of people that have contributed to this donation, we wish you the best of luck with this project, and hope that it will serve the students of the District and the community for years to come.

Sincerely,

GDatPlay





**Groton-Dunstable SEPAC**

February 4, 2021  
**Community Preservation Committee**

Dear Committee Members,

With a vote of the membership on January 28, 2021, the Groton-Dunstable Special Education Parent Advisory Council (G-D SEPAC) agreed to lend our support and endorse the GDRSC's recent CPC application to fund the restoration and maintenance of the GDRHS stadium field.

The G-D SEPAC is a coalition of special education and general education families for the support and betterment of all. SEPAC parents with special needs students are highly engaged in their children's education and the life of our schools. They must be in order to help their children make educational progress despite the impact of their children's disabilities. Of course, SEPAC parents are not the only engaged parents but we are in a unique position to see the School District's needs for adequate operating funds as well as capital funds. Thus, SEPAC parents understand that funds are limited and we appreciate any opportunity to seek other sources of state funding to enhance the programs our schools provide.

The HS Stadium field is not only an asset to our HS students but to our community as a whole. As parents of children with special needs, we want to see a continuation of programs like G-D Best Buddies and Unified Sports. Having a safe playing field is critical for these kinds of programs. And preserving our outdoor recreational spaces is an investment in the health and well-being of all of our students.

We hope that the committee will allocate resources to protect the HS stadium field.

Respectfully,  
G-D SEPAC

**Summary: Changes to the Community Preservation Act**  
July 2012

This document summarizes the major changes to the Community Preservation Act included in H. 4200 signed by Governor Patrick on July 8, 2012. The section numbers shown below are those found in Chapter 44B, The Community Preservation Act enabling statute, which can be found at:  
[www.communitypreservation.org/content/text-legislation](http://www.communitypreservation.org/content/text-legislation)

In addition to the changes explained below, H. 4200 also included a \$25 million transfer from the state's FY 2013 budget surplus to the statewide CPA Trust Fund, for distribution to CPA communities in the fall of 2013.

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## Section 2

- Adds a new definition for "Capital improvement" as shown below.

*"Capital improvement", reconstruction or alteration of real property that: (1) materially adds to the value of the real property or appreciably prolongs the useful life of the real property; (2) becomes part of the real property or is permanently affixed to the real property so that removal would cause material damage to the property or article itself; and (3) is intended to become a permanent installation or is intended to remain there for an indefinite period of time.*

- "Historic resources" definition: Deletes the confusing phrase "or eligible for listing," as shown below.

*"Historic resources", a building, structure, vessel, real property, document or artifact that is listed ~~or eligible for listing~~ on the state register of historic places or has been determined by the local historic preservation commission to be significant in the history, archeology, architecture or culture of a city or town.*

- Adds a clearer definition of the term "Maintenance" as shown below, and relocates the prohibition on using CPA funds for maintenance to Section 5(b)2.

*"Maintenance", incidental repairs which neither materially add to the value of the property nor appreciably prolong the property's life, but keep the property in a condition of fitness, efficiency or readiness.*

- For recreation projects only, expands the definition of "rehabilitation," as shown below, to allow for replacement of recreational equipment and other capital improvements.

*"Rehabilitation", capital improvements, or the making of extraordinary repairs, to historic resources, open spaces, lands for recreational use and community housing for the purpose of making such historic resources, open spaces, lands for recreational use and community housing functional for their intended uses including, but not limited to, improvements to comply with the Americans with Disabilities Act and other federal, state or local building or access codes; provided, that with respect to historic resources, "rehabilitation" shall comply with the Standards for Rehabilitation stated in the United States Secretary of the Interior's Standards for the Treatment of Historic Properties codified in 36 C.F.R. Part 68; and provided further, that with respect to land for recreational use, "rehabilitation" shall include the replacement of playground equipment and other capital improvements to the land or the facilities thereon which make the land or the related facilities more functional for the intended recreational use.*



**Summary: Changes to the Community Preservation Act**  
July 2012

- Adds a definition of “support of community housing,” as shown below, to clarify that assistance may be provided directly to persons that qualify for community housing.

*“Support of community housing”, shall include, but not be limited to, programs that provide grants, loans, rental assistance, security deposits, interest-rate write downs or other forms of assistance directly to individuals and families who are eligible for community housing or to an entity that owns, operates or manages such housing, for the purpose of making housing affordable.*

**Section 3**

- Allows communities to adopt CPA at the ballot with a minimum 1% property tax surcharge and then dedicate additional municipal revenues (such as hotel/motel excise taxes) to their CPA Fund, up to the full 3% of the real estate levy against real property.
- Adds a new, optional commercial exemption for the first \$100,000 of property value for commercial and industrial properties, mirroring the current optional \$100,000 residential exemption.

**Section 5**

- Adds a requirement that Community Preservation Committees should, as part of their Community Preservation Plan, consider CPA projects that are regional in scope.
- Modifies the allowable uses of CPA funds to permit the rehabilitation of existing recreational land not created or acquired with CPA funds.
- Adds a prohibition on using CPA funds to acquire artificial turf for athletic fields.
- Clarifies that in the case of cities, legislative body action on CPA spending recommendations will be governed by the same procedures used for other city appropriations, as specified in the city charter.

**Section 6**

- Allows communities to use their annual 10% open space set-aside on both passive and active recreation projects.
- Allows communities to use some of their CPA administrative and operating expenses, in their first year only, to cover CPA costs associated with tax billing software upgrades. Such costs currently must be paid from non-CPA revenue sources.

**Summary: Changes to the Community Preservation Act**  
July 2012

**Section 7**

- For communities that adopt CPA with the provision allowing for additional municipal revenue to be deposited into their Community Preservation Fund, this section provides the language that allows that additional revenue to be deposited into the fund.

**Section 10**

- Allows the CPA Trust Fund disbursement for municipalities to be delayed to November 15<sup>th</sup> each year, if necessary, so that monies from the state budget surplus can be deposited into the CPA Trust Fund prior to the distribution. Previously the deadline was October 15<sup>th</sup>.
- If applicable, requires municipalities to certify to the commissioner of revenue by October 30<sup>th</sup> each year the maximum additional funds it intends to transfer to its Community Preservation Fund from other allowable municipal revenues for the following fiscal year, and clarifies that such municipalities will qualify for annual CPA matching funds for those additional funds, as well.

**Section 12**

- Clarifies that a real property interest *acquired* by a municipality by any mechanism using CPA funds shall be bound by a permanent restriction. Current legislation uses the word *purchased*.
- Changes the term “deed restriction” to the more proper “permanent restriction,” and clarifies that the restriction must be recorded as a separate instrument that meets the requirements of Chapter 184, sections 31 to 33.
- Clarifies that CPA funds may be appropriated to non-profit organizations to hold, monitor and enforce restrictions limiting the use of land to CPA purposes.

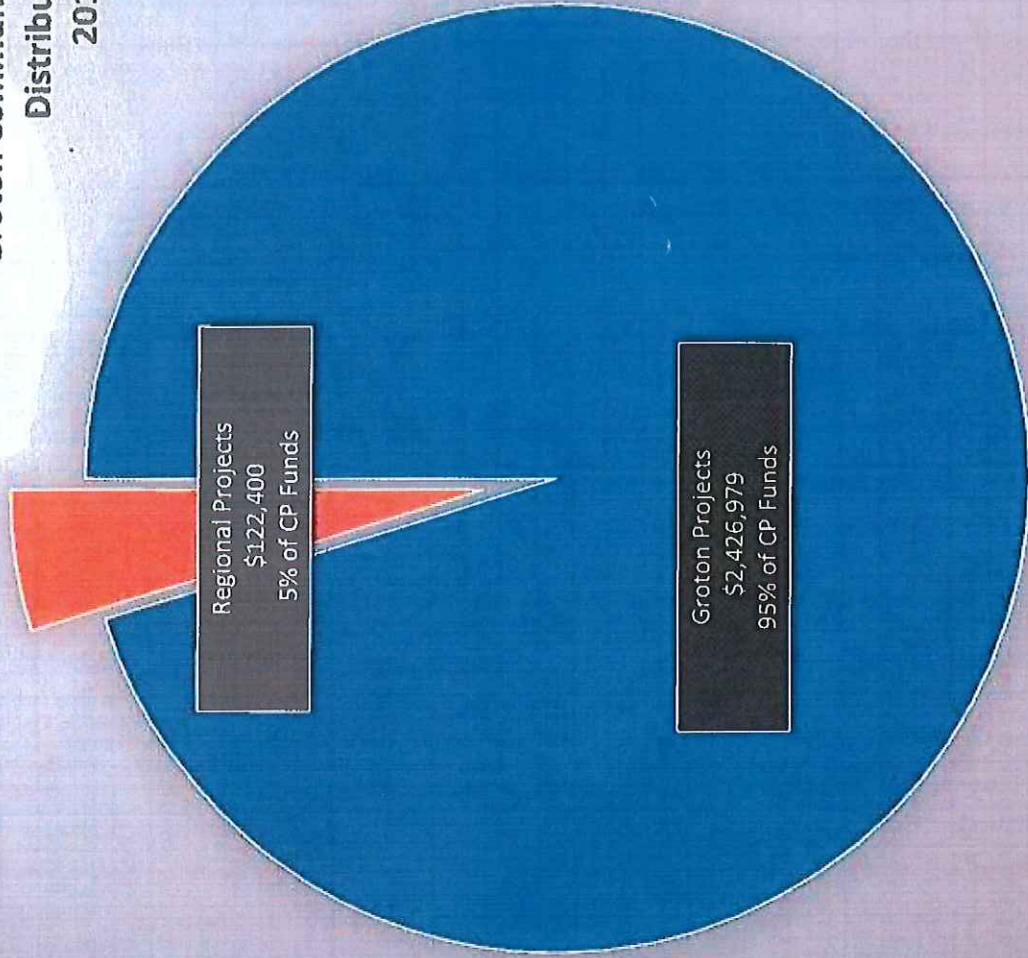
**Section 16**

- Allows communities that have already accepted the CPA at a surcharge level above 1% the option of reducing their CPA surcharge to 1% and committing additional municipal revenues to their Community Preservation Fund, pursuant to Section 2 above.

Please Note: This document was prepared on July 9, 2012 by the Community Preservation Coalition based on an unofficial version of the Community Preservation Act as amended on July 8, 2012. The Coalition does not render legal opinions or advice, and recommends consulting with an attorney.



# Groton Community Preservation Fund Distribution History 2012-2020



Dept.	Loc	Description	Projected Cost FY2022	FY 2022 Proj Groton	FY 2022 Proj Dunstable	Projected Cost FY2023	Projected Cost FY2024	Projected Cost FY2025	Projected Cost FY2026
Facilities	MSN	MSN HVAC Controls System	\$50,000	\$38,817	\$11,183	\$50,000			
Facilities	Maint	Replacement of Maintenance Vehicle	\$50,000	\$38,580	\$11,420		\$50,000	\$50,000	\$58,000
Facilities	DW	District-Wide Furniture Replacement	\$50,000	\$38,580	\$11,420		\$50,000		
Facilities	HS	Windows	\$100,000	\$75,109	\$24,891				
Facilities	SU	SU Replacement of Doors	\$30,000	\$11,362	\$18,638				
Facilities	DW	HS and MS Roadway Repair				\$500,000			
Facilities	MSS	Replacement of Windows	\$170,000	\$131,976	\$38,024				
Technology	DW	Replacement of District Wide Internet Infrastructure					\$200,000		
Facilities	MSS	Boilers (2)					\$120,000		
Facilities	Maint	Replacement of Dump Truck					\$65,000		
Facilities	MSN	Hot Water Heaters					\$60,000		
Facilities	HS	Hot Water Tanks						\$60,000	
Facilities	HS	HS HVAC System Boilers							\$225,000
Facilities	Boutwell	Boutwell Roof							\$100,000
Facilities	SU	SU Replacement of Septic System							\$150,000

Dept.	Loc	Description	Projected Cost FY2022	FY 2022 Proj Groton	FY 2022 Proj Dunstable	Projected Cost FY2023	Projected Cost FY2024	Projected Cost FY2025	Projected Cost FY2026
Technology	DW	Student Chromebook Lease	\$97,500	\$75,230	\$22,270	\$46,750	\$102,425	\$64,175	\$95,000
Technology	DW	Teacher Device Lease	\$50,000	\$38,580	\$11,420	\$32,250	\$23,500	\$28,750	\$27,250
Technology	DW	Lab Computer Lease	\$8,500	\$6,559	\$1,941	\$10,500	\$30,000	\$28,000	\$25,500
Technology	DW	iPad Lease	\$15,500	\$11,960	\$3,540	\$5,040	\$5,040	\$11,940	\$12,750
Technology	DW	Projector Replacement				\$20,000	\$60,000	\$10,400	\$25,000
Facilities	DW	Field Repair	\$10,000	\$7,716	\$2,284			\$25,000	
Facilities	HS	Natural Grass renovations (fert & seeding)	\$10,000	\$7,511	\$2,489			\$25,000	
Facilities	MSS	Doors Replacement	\$15,000	\$11,645	\$3,355				
Facilities	MS	Fence	\$10,000	\$7,763	\$2,237				
Facilities	MSN	Roof Recoat	\$10,000	\$7,763	\$2,237				



Facilities	DW	2 Lawn Mowers	\$8,000	\$6,173	\$1,827				
Facilities	HS	Well Pump	\$5,000	\$3,755	\$1,245				
Facilities	SU	CPC? - Exterior Painting of Swallow Union	\$100,000						
Facilities	FR	CPC? - New Playground for new school				\$100,000			
Athletics	HS	CPC? - New Turf (GD@Play \$ donation offset)				\$400,000			
Facilities	HS	Parking lot lighting				\$30,000			
Facilities	DW	Window Shades				\$20,000	\$10,000		\$10,000
Facilities	SU	Door Replacement				\$8,000			
Facilities	Boutwell	Resurface Parking Lot				\$50,000			
Facilities	DW	Expansion and repair of security cameras				\$20,000			
Facilities	MSN/SU	Replace exterior wall packs w/ LED				\$40,000			
Facilities	DW	Stairtread replacements (\$10,000 MSS, MSN, HS, SU)						\$40,000	
Facilities	MSS	Heating system upgrades - pneumatic to electric						\$50,000	
Facilities	MSN	Heating system upgrades - rooftop units						\$50,000	
Facilities	MSS	Heating & Cooling Main Office						\$50,000	
Facilities	HS	Heating system replace controls						\$10,000	
Facilities	MSN	Roof repair						\$20,000	
Facilities	SU	Roof repair						\$20,000	
Facilities	MSN	Sewer pipe replacement						\$20,000	
Athletics	HS/MS	Storage Sheds						\$30,000	
Athletics	MS	Bleachers & Benches						\$20,000	
Facilities	HS	Fix roof drains over gym and roof patching						\$50,000	
Facilities	HS	Fencing replacement on high school entrance						\$40,000	
			\$789,500	\$519,078	\$170,422	\$1,332,540	\$775,965	\$713,265	\$718,500

# **Groton-Dunstable Regional School District**

## **Athletic Field Turf Maintenance Plan**



**Revised: February 2021**



## **Groton-Dunstable Regional School District**

### **Athletic Field Turf Maintenance Plan**

The Groton-Dunstable Regional School District ("the School District") is a pre-K through grade 12 regional public school with seven (7) buildings on property: Boutwell Early Childhood Center, Florence Roche Elementary, Swallow Union Elementary, Middle School North, Middle School South, Groton-Dunstable Regional High School and Peter Twomey Youth Center. Along with the responsibility of maintaining the proper, operational conditions of the buildings, the maintenance department of the School District is also charged with maintaining all school grounds which includes 25 acres of athletic fields as well as two (2) running tracks. This document will outline expectations of care and maintenance to ensure the safety and longevity of the natural turf and running tracks for the use of our students and taxpayers of the Towns of Groton and Dunstable.

#### **Budget**

The Director of Buildings and Grounds is responsible for presenting annual budget requests to the Director of Finance and Operations, Superintendent of Schools and Regional School Committee. The requests must be sufficient to maintain healthy turf which includes, but is not limited to: appropriate manpower, supplies & materials, equipment repair and replacement, scheduled equipment maintenance and specialized contracted service when necessary. Additionally, the Director will actively participate in long-term capital planning for larger priced projects and purchases.

#### **Communication**

The Director of Buildings and Grounds and the Groundskeeper will work together to ensure all fields are safe and playable. The Groundskeeper will be responsible for the day-to-day maintenance of the fields. As an oversight initiative, the Director of Buildings and Grounds will walk the fields weekly to personally observe the condition of the fields, look for any safety issues as well as signs of field failure. The Athletic Director will communicate any observed or reported problems to the Director of Buildings and Grounds for timely actions/responses. Coaches will report any problems directly to the Athletic Director.

#### **Scheduling/Traffic Control**

The Groundskeeper will observe and monitor turf health on a daily basis. With the anticipated high utilization of school fields, it is imperative to occasionally rest the high wear areas on the fields. When a high wear area starts to show signs of failure, the Groundskeeper should close the field to allow it to recover. When closing the field is not an option, actions should be taken to shift the field to allow the high wear areas to rest. The Groundskeeper must communicate in a timely manner with the Athletic Director of any changes or restrictions in order for coaches to be informed of changes.

#### **Agronomy**

The definition of agronomy is the science of soil management and the production of field crops. The taxpayers of both Towns have entrusted the School District to thoughtfully plan and dutifully perform proper care and maintenance of the fields and running tracks in which, they have invested millions of

**Groton-Dunstable Regional School District**  
**Athletic Field Turf Maintenance Plan**

dollars. Below are the basic agronomic components that will be followed to manage a safe and attractive playing surface.

**Summary:**

Action	Description
Mowing	Base line every 2-3 days, can vary with turf growth and health as well as sports being played on the field.
Irrigation	Beginning on or around May 1 <sup>st</sup> , base line every other day for 15 minutes, can vary based on turf health and weather.
Aeration	At minimum prior to the start of each sports season, targeted aeration as needed. 3-4 times annually is standard. Core aeration should be every other year.
Top Dressing	Spring just prior to the growing season, also as needed and according to product recommendation
Overseeding	Late summer or early Fall, ground must be warm for germination, but no extreme cold or heat.
Soil Testing/Treatment	Mid October prior to the ground freezing
Fertilization	4 times per year, weather above 50 degrees, April, June, August and October
Pest Management/Pesticides	Pre-emergent is applied in conjunction with Spring fertilizer, also as needed and according to Integrated Pest Management Plan.

Mowing				X	X	X	X	X	X	X			
Irrigation				X	X	X	X	X	X	X			
Aeration				X				X					
Top Dressing				X									
Overseeding									X	X			
Soil Testing/Treatment										X			
Fertilization				X		X		X		X			
Pest Management/Pesticides				X									

\*\*The following schedule is a guide, actual timing is dependent on soil temperature, soil test results, turf conditions, sports currently being played and weather.

**Mowing**

The Groundskeeper will mow the fields as needed. A healthy field will need to be cut two (2) or three (3) times per week. The guidelines for cutting height is to remove no more than 1/3 of the existing leaf blade. Mowing cool season grasses at 2" to 3" is best for traffic tolerance. Clippings should filter into the turf canopy and should not be removed by bagging. Lower mowing heights such as 0.5" to 1.5" may be expected with baseball, soccer, and field hockey fields which will require cutting every one (1) to two (2) days.



## **Groton-Dunstable Regional School District**

### **Athletic Field Turf Maintenance Plan**

It is imperative that mowing equipment be well maintained. Regular maintenance to mowing equipment including sharp blades are important and expected.

#### **Irrigation**

The Groundskeeper will monitor the irrigation system daily. Specific tasks include looking for failed sprinkler heads or inoperable zones. The irrigation system should be filled and completely operational by May 1<sup>st</sup> of every year. Initially the schedule for irrigation should be every other day for 15 minutes per zone or supply a minimum of 1/4" water per day. Irrigation frequency and run times should be adjusted depending on daily observed turf and weather conditions.

It may be necessary to water with lighter amount more frequently when attempting to force growth with nitrogen fertilizer and when establishing grass from seed or sod.

The School District fields are sand based. The irrigation system must be capable of supplying light and frequent irrigation cycles for syringe cooling and seed establishment.

#### **Aeration**

The Groundskeeper will aerate all the fields before the start of each sports season. Throughout the season there should be targeted aeration to goal mouths, high wear areas, and areas with poor drainage. Aeration relieves compaction therefore reducing weed population and should not be done in extreme conditions i.e., cold or heat.

#### **Core Aeration**

Core aeration is recommended every other year to promote overall health of the fields. This will relieve compaction as well as allow air, water and fertilizer to reach the roots. The Groundskeeper will schedule core aeration taking into consideration sports schedules and rest times.

#### **Top Dressing**

The Groundskeeper will be responsible for top dressing the lawns after consultation with the Director of Building and Grounds. This task will be done on an as needed basis as well as if determined by soil testing. Top dressing is a way to add compost, sand, or loam to the soil to repair holes or uneven turf. Top dressing for nutrients can be applied at any time during the growing season.

#### **Overseeding**

The Groundskeeper will perform overseeding of the fields in the fall. This will be done to fill in bare spots, improve the density of the turf and enhance the fields appearance. Targeted overseeding will be done on an as needed basis on goal mouths and high wear areas. The Groundskeeper should overseed at a rate of at least 5-10 lbs. per 1000 sq. ft. It is preferable that the overseeding be performed using a slice seeder. Proper watering/irrigation is critical with this process.

#### **Soil testing/Treatment**

The School District will arrange for soil samples will be taken every fall using a soil probe. Samples will be taken from six (6) different areas on each field by inserting a soil probe 4 to 6 inches into the turf. Before placing the sample in a container along with the other samples from that field, remove any grass,

## **Groton-Dunstable Regional School District**

### **Athletic Field Turf Maintenance Plan**

thatch, or organic materials from the sample. Label the container with field name and date sample was taken. Do not mix samples with samples from other fields. The sample(s) will be sent to a lab for testing. Soil samples will be used to determine when to apply fertilizer, soil treatments and top dressing applications.

#### **Fertilizing**

The Groundskeeper should apply fertilizer four times a year. The spring application should be applied when the soil temperature is 50 degrees. The fertilizer should be applied in April, June, August and October. Soil test results will determine which fertilizer and the rate of application.

#### **Pest Management/Pesticides**

The School District has an Integrated Pest Management (IPM) plan approved by the Commonwealth of Massachusetts. The IPM is inclusive of herbicides, pesticides and insecticides. The plan outlines when, where, who, and how to apply specific pesticides and herbicides to combat invasive weeds and pests.

#### **Renovation (when necessary)**

The Director of Buildings and Grounds together with the Groundskeeper will recommend adequate funding to identify and secure funding to perform field renovations. These renovations should be performed every one (1) to three (3) years depending on the condition of the fields. Renovations typically involve: repairing field crown by adding soil and grading, core aeration with soil corrections, top dress, slit seed in two to four different directions. The expectation is that the school district will perform these larger tasks when necessary to avoid the need and expense of a total field replacement.

#### **Running Track Maintenance**

The Groundskeeper will check the track daily to keep it free of foreign matter. Remove sand, leaves, dirt, debris, moss, mold and mildew as needed. Ensure the irrigation system is set up to prevent excess water from spraying on the track. Place protective matting on the track when heavy traffic is expected to cross the track i.e. sports team's / maintenance equipment. Any repairs to the track should be made with products approved by the manufacturer of the track surface.

The Groundskeeper will communicate with the Director of Building and Grounds to monitor normal wear of the track surface. Capital planning will be necessary to secure funding for track resurfacing in order to maintain a safe, usable track.

#### **Accountability**

The Groundskeeper will be evaluated annually by the Director of Buildings and Grounds on adhering to the Athletic Turf Maintenance Plan regarding accomplishment of the daily, monthly and annual duties as outlined. The Director of Buildings and Grounds will prepare a quarterly report for the Director of Finance and Operations. This report should include work completed, successful actions taken to preserve the turf fields, any care deficiency concerns, any track concerns and recommendations for the upcoming quarter.