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MEMORANDUM

TO: Adam Turner and Alex Elvin (Martha's Vineyard Commission) and Ewell Hopkins (Oak Bluffs Planning Board)

FROM: Eliza Hoffman & Anne Kitchell (Horsley Witten)

DATE: September 12, 2020

RE: High School Athletic Field Case Study

Purpose

This memorandum summarizes findings from a case study assessment by the Horsley Witten Group (HW) of comparable athletic fields at four high schools in the region. The Martha's Vineyard Commission (MVC) and Oak Bluffs Planning Board (OBPB) are considering a proposal from the Martha's Vineyard Regional High School (MVRHS) to renovate existing natural grass athletic fields and replace one of the natural grass fields with a multi-purpose synthetic turf field. The proposed field consists of Greenfields USA MX Elite Woven synthetic turf carpet with BrockFill Engineered Wood infill over a Brock YSR Shock pad. The goal of conducting this case study was to solicit information to help answer the following questions:

1. What additional insight can be gained in the decision-making process, implementation, and operations and maintenance of athletic fields from other schools that decided for (or against) the installation of synthetic turf fields?
2. Can a school with similar field usage requirements meet those needs with natural grass?
3. If the MVRHS request for a synthetic field is approved, how can MVHRS responsibly ensure the health and safety of users and limit environmental impacts?

Study Limitations

Our assessment was limited to four schools and was conducted in a relatively short timeframe. While we were successful in soliciting information targeting questions #1 and #3, we were less successful addressing question #2 given insufficient representation from schools with natural grass programs. The timing of interviews coincided with school reopening planning due to COVID-19 and understandably, some contacts were unresponsive or unable to participate. For the four schools that generously participated, we limited the interviews to an hour or less. We supplemented our efforts with two case studies from the Toxics Use Reduction Institute (TURI) on highly successful natural grass fields in Marblehead and Springfield.

Organization

This memo documents case study methodology; summarizes key findings and recommendations; and provides individual school profiles detailing field statistics, decision factors, operations, and maintenance programs.

Several attachments are also included:

Attachment A: Inventory of schools
Attachment B: School contact spreadsheet
Attachment C: School introduction email template and Interview questions
Attachment D: TURI natural grass case studies: Marblehead & Springfield
Attachment E: Falmouth use analysis and maintenance plan

Methods

School selection, contact identification, and interview guide development were a collaborative process between HW, MVC, and OBPB. MVC compiled an initial inventory of schools with synthetic and natural grass fields in the region which would be comparable to the climatic conditions of Martha's Vineyard (Attachment A). HW's scope included interviewing four schools, at least one of which should represent a school relying solely on natural grass fields. A shortlist of schools was generated based on the following selection factors:

1. Field materials: If synthetic, fields made from the proposed BrockFill infill and/or Greenfields synthetic turf carpet products
2. Grades and number of students: preference for schools similar to MVRHS
3. Seasonal field usage: preference for those similar to MVRHS
4. Age: at least one synthetic field old enough to have meaningful maintenance discussion

Initially, seven schools were identified as high priorities for interviewing, with the expectation that not all schools would be interested or have time to participate (Table 1). HW compiled contact information for each of the selected schools, including the principal, athletic director, facilities manager, and the town planner (where contact information was readily available). The complete list of contacts can be found in Attachment B.

HW sent an introductory email to the principal of preferred schools to provide context for the project and to identify the person with the most knowledge of the field. We arranged for a 1-hr video (Zoom) or phone conference and sent a list of questions in advance. The template for those email introductions and the list of interview topics/questions can be found in Attachment C. Discussion questions included basic field usage and specifications; key factors in the decision-making process for or against synthetic fields; and insights into design, construction, operations and maintenance. Specifically, we asked about environmental site constraints, maintenance program costs and schedules, health and safety provisions (G-max testing, disinfection policy), and any lessons for other schools deciding between synthetic turf vs natural grass.

Several schools were unresponsive or unable to participate so two additional schools were also contacted. Ultimately, we reached out to North Kingstown, Dracut, South Hadley, Shawsheen Valley Technical, Guilford, Mt. Greylock, Falmouth, Springfield Central and Springfield School of Commerce. The four schools that were responsive and available to discuss their athletic fields were Dracut High School, South Hadley High School, Mt. Greylock High School, and Falmouth High School (Figure 1). Notably, North Kingstown High School was unable to participate due to the recent passing of the athletic director, but said they would be willing to discuss at a future date. Dracut HS had recently completed installation of a synthetic field that hasn't seen playtime due to COVID. Falmouth High School was incorrectly selected as a school with only natural grass fields actually has a new synthetic field (and may

be considering another one). Mt. Greylock High School is in the process of deciding whether to implement a turf field; the Town vote was delayed due to COVID. The Dennis-Yarmouth Regional High school plays all sports on grass fields and could be contacted for an interview if additional information for natural grass field is desired.

Table 1. Short-list of schools for case study interviews.

School	Grade	# Students	Material	Priority
North Kingstown High School, RI	9-12	1486	BrockFill, Greenfields	High
Dracut High School – 2 fields	9-12	877	BrockFill	High
South Hadley High School	9-12	568	Greenfields	High
Shawsheen Valley Technical High School	9-12	1265	Greenfields installed 2016	High
Tower School, Marblehead (private)	PK-8		BrockFill, Greenfields	Low
Capuano Field, Somerville	--	--	BrockFill, Astroturf	Low
East Somerville Community School	K-8	730	BrockFill, Astroturf	Low
Haley Pilot School, Roslindale	PK-8	393	BrockFill	Low
Marlborough High School	9-12	1050	Greenfields	Low
Lewiston High School, ME	--	--	Greenfields	Low
Mt. Greylock Regional High School	7-12	553	Natural grass	High
Springfield Central High School	9-12	2063	Natural grass	Med
Springfield High School of Commerce	9-12	1096	Natural grass	Med
Falmouth HS	9-12	870	Greenfields (originally natural grass)	High
Guilford High School, CT	9-12	1,123	Enviro-fill, being replaced	High
Quinnipiac University (2017 installs)	--	--	Replacing cork infill with washed crumb rubber due to freezing in winter	Med

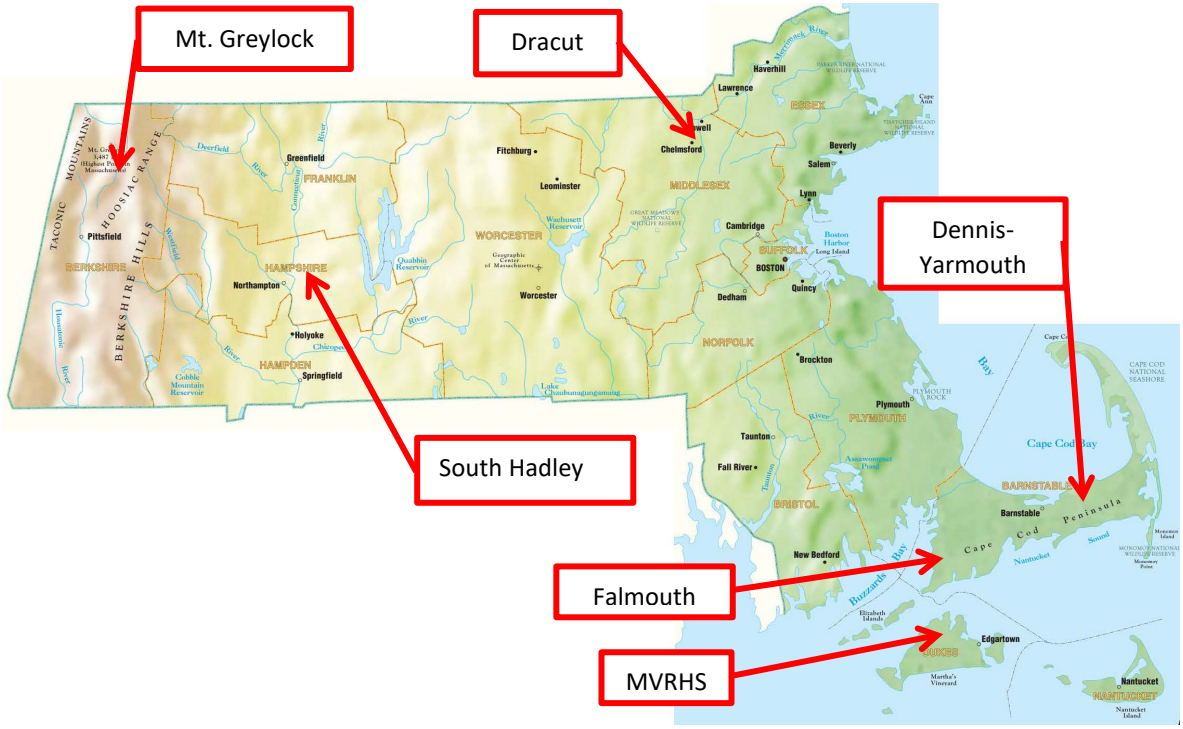


Figure 1. Map showing locations of Case Study Schools.

General Findings

General findings from our interviews with the four schools are provided below to characterize the conversations we had and to highlight similarities and unique features of each school for comparing with MVRHS.

Site Context & Field Description

All the schools are (or will be, for Mt. Greylock) hybrid programs utilizing several natural grass fields with a central multi-use synthetic turf field (or two, in the case of Dracut). South Hadley and Falmouth's fields are composed of Greenfields synthetic carpet, the same product proposed for MVRHS, with a crumb rubber infill. Dracut and Mt. Greylock's fields are a similar synthetic carpet with BrockFill wood infill, the same product as proposed for MVRHS. The rational for adding the synthetic field(s) was related to a desire to reduce wear and tear on natural grass fields or to expand playability (e.g., proper field dimensions, improved drainage, and extend seasonal capacity). None of the fields in the case study were in groundwater protection districts; several were located on poorly draining soils.

While total annual hour use estimates were only provided by Falmouth (Appendix E), the sports played at the schools are comparable to MVRHS. Additional time with these schools would be needed to solicit this information. All the synthetic fields can accommodate a soccer and football field, and several have a surrounding track similar to the proposed MVRHS field. All schools prioritize and maximize the synthetic field use with different sports and use the natural grass fields as needed for practices or simultaneous games. Most schools cited lacrosse as the most intense/destructive sport, due to wear and time of year. All schools interviewed highlighted one of the most important benefits of the synthetic field was the alleviation of pressure on the remaining natural grass fields.

Decision Making Process

The process in which each school and town decided to approve a synthetic field varied, but most were not as contentious as MVRHS except for Falmouth which spanned almost a decade. Many communities expressed similar safety and environmental concerns (especially related to crumb rubber), plastics waste, and financial costs. None of the fields were a replacement of a former synthetic field, so there were no insights on end-of-life options. For schools where funding was not already available, cost was a big concern. South Hadley had limited funds so they eliminated items not directly related to the playing surface (scoreboards, extra fencing etc.). Mt. Greylock was gifted funds for the field from a neighboring University, so it was not a concern. Many debates over health and safety were settled by the presentation of studies concluding there was no evidence of adverse health effects (South Hadley), contextualizing the project's material use (Falmouth), or changing the crumb rubber infill to BrockFill wood infill (Mt. Greylock and Dracut). Crumb rubber has traditionally been the biggest source of health concerns and environmental issues. None of the schools had fields located in groundwater protection areas. South Hadley and Dracut fields were near wetlands and stream, respectively, but none of the programs mentioned water quality as a primary concern influencing the approval process.

We did not interview any town planners involved in the permitting process, although we did have an informal discussion with a long-standing member of the Falmouth Conservation Commission. All respondents recommended the inclusion of the public in the decision-making process as critical for ensuring an end product that would be the most appealing to the largest portion of the community.

Installation

According to our contacts, all field installations went relatively smoothly. The budget for each varied drastically, depending on site, type of field, and other sitework. No insights were gained.

End-of-life Options

A major concern for MVRHS is the disposal at the end of the field's useful life, which the schools estimated to be between 10-12 years. At least one school (South Hadley) has already incorporated replacement costs into their capital improvement budget at an estimate of ½ the installation cost). None of the schools were able to provide information about where and how their field would be recycled or disposed, although some included the field recycling or disposal in the replacement contract. More information on the end of life results from replaced synthetic fields would require additional survey of fields with older installations. In addition, synthetic fields are expensive to construct and replace (one school estimated it would cost half the initial installation). To combat this, South Hadley is already planning for replacement of the field.

Synthetic Field Maintenance

In general, it seems that the maintenance of the synthetic fields has not been a problem for the schools, although all the installations are too recent to adequately account for maintenance issues or the ability of the schools to maintain the field themselves (outside installation contract). Maintenance frequencies varied, although South Hadley estimated 1-2 hrs/week for routine maintenance, 1 full day to prep for each season, and hiring of an outside contractor to do full inspection and maintenance twice a year). No issues were reported with organic infills like BrockFill (replacement rates, floating, mold, etc.), but South Hadley reported issues with coir fill at a neighboring school. Most schools purchased new equipment as part of the contract to build the field and recommended not skimping on this. The required training is usually provided by the supplier or installers and most of the schools interviewed noted that time for maintenance was low but required specific equipment and skills. Respondents found it difficult to separate out maintenance costs for synthetic fields vs other maintenance operations.

Natural Grass Maintenance

Most schools conceded that their natural grass maintenance program could be better, though it was difficult to ascertain if overuse, poor drainage, or inadequate maintenance is the primary contributor to poor field conditions. Mt. Greylock provided the most information on their natural grass maintenance program, which was recently improved using a maintenance and fertilizer routine developed by PJC Organics, a turf maintenance company. All schools noted that the reduced hours of play on the natural grass fields allowed them to spend more time on maintenance, close the field if conditions warranted, or leave a field unused for a season on a rotating basis.

To better address the question of whether grass alone can support the intense use of a typical high school athletic program, we included TURI case studies for natural grass athletic fields in Marblehead and Springfield (Attachment D). These examples showcase an eager investment in organic maintenance and the successful maintenance of field conditions under high intensity uses. Several of the fields described by TURI have usage estimates that exceed the threshold where synthetic fields are often advocated. Thus, it is likely that MVRHS could meet its usage needs with natural grass if they would commit to a maintenance program that focused on soil testing, aeration, soil amendments, frequent mowing, and the use of organic fertilizer to promote good soils and a strong root system. Table 2 summarizes seasonal/annual usage and maintenance costs estimates for two grass fields. Marblehead also has a synthetic field, so those maintenance costs are also shown in the table for comparison. It should be noted that based on information provided by TURI, Marblehead relies on fertilizer applications of ¾ lbs of nitrogen per 1000 sf per application, which over the course of the year may exceed the regulatory limit for MVRHS of 3 lbs. of nitrogen per 1000 sf per year. Springfield applies fertilizer twice a year but did not report nitrogen concentrations.

Table 2. Usage and Maintenance Estimates from the Marblehead and Springfield case studies

	Marblehead	**Springfield**
Field Studied	Hopkins Field	Treetop Park
Size	65,000 SF (full size football field)	117,771 SF (full soccer field)
Usage in 2018	1,860 total hours (all seasons) for combination of football, lacrosse, soccer, PE, and unscheduled events	1,051 total hours adult and youth soccer
Annual cost of organic maintenance (town-wide)	Town has 20 acres of fields they manage and estimates $3,650-$3,900 per acre for products and labor, not including mowing. With mowing, the cost is ~$8,650 to $8,900 per acre.	$1,500 per acre across all the properties, including products, irrigation maintenance, and all labor costs; $1,820 for Treetop
Comparative total annual cost of 1.5 acre synthetic field maintenance	$7,000 - $7,400, total annual cost assuming use of the lower-cost disinfection option and excluding up-front capital costs for installation and maintenance equipment. Outside contractor quote of $5,300-$6,800 to provide grooming, cleaning, de-compacting, field inspection, impact testing and infill depth measurements 2-6 times/yr.	N/A

Health and Safety

In light of the COVID-19 pandemic, concerns related to bacteria and virus transmission on a synthetic field and whether sanitization of the field would be necessary and/or effective have been heightened. None of the schools interviewed reported conducting field disinfection, nor did any of the programs have a disinfection plan as part of their COVID-19 response. None of the individuals interviewed were aware of any evidence that synthetic fields had a higher germ potential than natural grass fields. It is important to note that the fields have not been in use (or only minimal use) during this time, so this may change as the schools reopen and more activities return. Impact testing is also important for athlete safety, which appeared to be a concern for all communities at the schools surveyed. However, HW was

only able to confirm G-max testing at South Hadley, where the test is performed annually. Mt. Greylock has included G-max testing in the plans for their proposed field, but has yet to approve the field. None of the schools had established a tracking system for injuries and infections and could not provide information about any change in injuries after the synthetic field installation.

Recommendations

Based on information garnered from our interviews and on our research during the environmental performance review, we recommend the following actions be considered to better implement the project responsibly (in no particular order):

1. If cost is an issue, MVRHS may want to consider eliminating proposed elements of the multi-use field that do not directly contribute to improved surface playability, such as the expanded grandstand, new locker room, and bathrooms. Like South Hadley, these features could be implemented with student-sponsored fund raisers, dedicated field rental fees, and recreation-based grants or otherwise phased in over time as dictated by school budgets and master plan priorities. Critical funds necessary to conduct annual maintenance and for full field replacement (7-10 years) should be secured and set aside prior to construction.

2. Revisit the calculated field use estimates and consider applying an intensity factor to account for differences in field stress by sport/season, similar to Falmouth's weighted estimate (Appendix E). Also, consider the benefit of evaluating usage for athletic fields on an island-wide basis. Before the construction of their synthetic field, Falmouth HS played football games on a field located downtown. This influenced the analysis to be more comprehensive rather than limited to the high school and a similar approach may clarify some of the usage estimate discrepancies when accounting for non-school activities.

3. Ensure that all necessary new equipment and training for maintenance staff is part of the installation contract for the turf field, as well as any additional materials that should be provided for repairs. Determine whether the current maintenance staff at the school will have the skills, equipment, time, and budget to properly maintain this field. Establish a clear transition plan for maintenance handover at the end of warranty.

4. Commit time and resources to properly maintain the natural grass fields. Contact PJC Organics (or a similar company) to conduct soil analysis and develop an organic maintenance program. Ensure that budget and time are set aside to carry out the new regimen and that fertilization applications comply with local regulations. It may be worth contact Chip Osborne or Linda Rice Collins with the Marblehead Recreation and Parks Commission to discuss an organic maintenance program.

5. If a synthetic field is approved, MVRHS should evaluate the feasibility of implementing a field rotation schedule that allows a grass field to go unused for a season or full year. MVRHS should incorporate into its field use schedule (i.e., which fields, what sports, and when) the routine and

annual maintenance activities, non-sporting events (i.e., graduation), and estimated periods of restricted use (i.e., weather closures) to ensure that grass fields will be protected from overuse in the early spring or other vulnerable times.

6. Given that the field is in a groundwater protection district, MVC should require that runoff effluent from the field be tested (see recommendations from environmental performance review). Mt. Greylock plans to test the runoff from their field frequently in the first year after installation and reduce testing frequency, as needed.

7. Synthetic carpets will fragment and deteriorate over time and a growing body of evidence indicates that microplastics can mobilize in groundwater; therefore, attention should be given to community concerns about microplastic. Both Falmouth and Mt. Greylock attempted to alleviate community members concerns by comparing the plastic used in the field to other plastic usage in the community. MVRHS could provide offset options for field plastics and educational opportunities for students. The offset options could be a student initiative on campus or a town-wide initiative. In addition, even though none of the case study programs reported specific design elements to address this concern, we recommend MVRHS add microfilters in the drainage system to trap particulate plastic.

8. To better weigh the costs (environmental, fiscal, and social) of synthetic fields, as well as to determine if there are potential opportunities to mitigate negative impacts, MVRHS should conduct an alternatives analysis for end-of-life recycling, other waste stream diversion, or disposal options based on currently available options for synthetic carpets, infill, and shock pads.

9. MVRHS should consider how accessible the field will be to the public, if an entrance or use fee will be charged, and if so, what is the anticipated revenue generation and distribution. Outside of school and practice hours, South Hadley's field is completely open to the public and often used by community members. Their designers advised that field age and exposure to the elements contribute more to field damage than use, so they chose to allow public access to the field. However, public access should be accompanied by proper signage with rules for the field (e.g., pregnancy warnings, no gum, no high heels, vehicles) and what to do in case of an injury or damage to the field. MVRHS should coordinate with the health department about signage to inform users of health risks.

10. MVRHS should provide a field disinfection plan that meets new COVID response protocols and follows manufacturer guidelines. In addition, reporting and tracking procedures should be put in place now (if there are none) that can be used to assess the number of injuries and infections on both synthetic and natural grass fields. This will help inform future comparisons of which sports and field surfaces have the highest potential for injuries.

11. The maintenance plans recommend G-max impact testing twice a year and this information should also be summarized and publicized so that users know any potential risks with using the field. This information could be posted along with injury/illness tracking statistics.

Table 3 provides a summary of key findings and recommendations derived from interviews with each of the four schools. More detailed profiles of the individual schools are presented in the following sections of the memo.

Table 3. School Summary Table

School	Primary Sports	Motivation	Notable Features	Take home lessons
Mt. Greylock High School *Natural Grass (Current)* *Synthetic/ BrockFill (Proposed)*	Soccer, football, Lacrosse, gym class	• Funding for synthetic field was a gift from Williams college • Desire to improve field quality and to extend season	• Drastically improved conditions with grass maintenance program & PJC Organics; still consider the synthetic turf field a good choice. • Vote delayed but pending. Project is likely to pass • Plans to test runoff from field after installation	• A solid maintenance program for natural grass and reduced use allows high quality grass fields • Frequent runoff testing
South Hadley High School *Greenfields carpet, crumb rubber infill (installed 2016)*	Soccer, Field Hockey, Football, Lacrosse, public use, soccer clinics, youth soccer	• Reduce overuse of field • Poor drainage resulted in poor field quality	• Maintained by Dept. Parks & Rec. not school • Cost savings achieved due to limitations on design • Open to public • No disinfection procedures for field • Adjacent wetland contributes to saturated field conditions	• Replacement costs (1/2 installation budget) in Department budget • Schedule for rotating natural grass field use (one season of no use) • Proper maintenance equipment makes life easy • Injuries and infections should be reported and tracked
Dracut Senior High School *Synthetic carpet, BrockFill (installed 2020)*	Soccer, field hockey, football, lacrosse	• Reduce overuse of field • Improve field quality	• Not used for full season due to COVID • Two fields installed	• Maintenance duties are reasonable and doable with proper training
Falmouth High School *Greenfields carpet, crumb rubber infill (installed 2019)*	Soccer, Football, Band, Gym class, Lacrosse	• Create regulation-sized football field on campus (were using off-campus location) • Free up remaining grass fields for use and more successful maintenance.	• Unexpected benefit was the use of field for PE and band practices. • Process was long and controversial (financially and environmentally), not in zone 2 or wetland jurisdiction • Town voted to OK the field after a study showing that either one synthetic turf field or multiple new grass fields were necessary to support the high usage.	• Consider weighted usage estimates based on intensity of sport • Involve public to get most favorable outcome • Look at fields in context of town-wide recreational capacity, not just at the school

South Hadley High School

Contact: Andy Rogers, Recreation Department Director (arogers@southhadleyma.gov, 413-538-5017 x 132). Spoke via Zoom 8/5 & follow up emails.

Grades: 9-12; approximately 568 students

Installation Date: 2016 synthetic field

Key Takeaways: The goal of the project was to reduce stress on the grass fields at the school and elsewhere in town, which was achieved. The field is used as much as possible for gym classes and games, which has allowed the Parks and Recreation Department to close grass fields or do maintenance without interrupting access. The Parks and Recreation Department does all maintenance and found that the proper equipment minimizes time spent on the synthetic field. The cost to replace the field will be about half the installation cost and they are already budgeting for replacement.

Field Specs

Materials	Greenfields carpet, crumb rubber infill, no shock pad.
Size	380'L x 224'W (85,120 SF)
Materials	Greenfields carpet, crumb rubber infill
Shock pad present?	No
Depth Profile	Grass Carpet Rubber Infill Gravel (several feet) Crushed Stone
Existing Soils	Historically known as a clay field
Natural Resource	Wetlands

Reason for Implementation: Prior to the replacement of the grass football field, the conditions were poor due to overuse and poor drainage. School athletic teams were conducting some practices and games off-site because of the bad field conditions. The goal of the project was to improve the playability of the field; this project did not include upgrades to the overall athletic facilities, such as bleachers, lights, restrooms, etc.

Natural grass field shown in 2014 (inset) and in 2019 (synthetic)

Usage: The new field is used by both the school and the public. During the school day, the turf field is used for gym classes regularly. After school hours, various athletic teams use the field for practices and games, and the school tries to schedule nearly all varsity games on the field. The field is open to the public for use during all seasons, and it is often rented out by other Towns for school games and youth sports. Trainings, adult pick-up games, yoga classes, etc. are also common in the summer.

Use hour estimates were not provided.

Season	Sports/Activities
Fall	Varsity soccer, field hockey, football
Winter	Open to public use
Spring	Boys/girls lacrosse, youth soccer, soccer clinics
Summer	Trainings, soccer, captains' practice, football, field hockey

Anecdotally, it appears that there are less athlete injuries on the field than on the poor-quality grass

field, but there is no data to support this finding. The Parks Dept. does annual G-MAX impact testing, but did not provide test results.

Decision making process: During the decision-making process, the Parks and Recreation Department Director gave a presentation on the benefits of upgrading the existing field to a turf field and brought in several supporters, such as parents of students, to endorse this change. There were concerns from the public as to whether investment in the field was best use of Town funds, as well as health and safety concerns regarding the use of rubber and microplastics in the construction of turf fields. The turf field materials were not deemed a significant health concern. The Board of Health added signage around the field noting the health risks associated with the rubber infill (e.g., pregnant women). Environmental constraints did not factor into the decision, despite the field being located within 100 to 200 feet of a wetland, known as the Black Stevens Conservation Area. The Conservation Commission was involved in the permitting process and approved the plans without additional conditions or changes.

Maintenance: The Parks and Recreation Department is responsible for conducting maintenance activities on all the athletic fields in town. Approximately one to two hours a week is spent on maintenance of the fields, which consists of picking up trash daily and monitoring for/repairing deficiencies in the turf surface.

Synthetic Field: Every two weeks a groomer and magnet are run over the field to spread out the rubber and pick up trash, respectively. This maintenance activity has been viewed as being one of the most important factors to maintaining good field conditions, as more turf breakage occurs if the grass and rubber are not spread evenly. Once a month, a leaf pickup, similar to a rake, is used to collect trash and lift the grass blades. The Parks and Rec Department also complete a more comprehensive cleaning and maintenance a few times a year before the beginning of each sports season. In addition, every few years, a third-party company is hired to conduct a deep clean of the field. Parks and Rec Department spends approx. 1 hour/week on regular maintenance, plus a day long more comprehensive cleaning before each sports season. They also do a full field cleaning every other year for approx. $5,000-7,000.

Grass Field: The grass fields are seeded September 1st of each year. Regular maintenance includes fertilizing the grass a few times a year and spraying for crabgrass. The conditions of the other fields have greatly improved since the installation of the synthetic field. Moving high impact sports, such as men's lacrosse, to the synthetic field as significantly reduced the impact to the grass fields. It has also allowed some flexibility in scheduling so that the grass field is shut down for one season to give the grass some time to regenerate.

Equipment/Supplies: A "Good Groomer Plus" magnet was purchased from Greenfields as part of the contract. In addition, a leaf pickup was purchased to remove loose grass particles and tape for approximately $700. Four bags of extra infill were provided but only one has been used to replace and top up infill. Maintenance duties and cost are included in Parks Department budget and therefore difficult to break out.

Construction: The synthetic field was installed in 2016, as a replacement for a grass football field. The full construction cost of the project was $910,000; this included the installation of the turf field, the asphalt path around the field, and the fence. Gale Associates completed the design of the field and Mountain View Landscapes and Lawncare completed the construction activities. The life expectancy of the turf field is approximately 12 years. The warranty last for eight years after installation. Field replacement is estimated to cost approximately half of the amount of the original project cost and they are already budgeting for replacement.

Falmouth High School

Contact: Patrick Murphy, Director of Finance and Operations (pmurphy@falmouth.k12.ma.us, 508-548-0151 ext. 123). Spoke via phone 8/7, various follow up emails

Grades: 9-12; 870 students

Installation date: 2019 synthetic field

Key Takeaways: The main goal of the project was to allow more games to occur on campus (rather than various fields around town), which was not previously possible at the high school. This freed up other fields for use and better maintenance. One unexpected benefit was the use of field for PE and band practices. The process was long and controversial (financially and environmentally), but the town voted to OK the field after a study showing that either one synthetic turf field or multiple new grass fields were necessary to support the high usage. This need was determined by doing a weighted average of use of all fields in town where more damaging sports like lacrosse and football had a higher impact.

Field Specs

Materials	Greenfields carpet & crumb rubber infill
Size	Full football field with generous sidelines
Shock pad present?	unknown
Depth Profile	Grass Carpet Rubber Infill Gravel (several feet) Crushed Stone
Existing Soils	Loamy Sand
Natural Resource	Not in groundwater protection district or wetland jurisdiction

Reason for Implementation: Booster clubs and various organizations initially pushed for the addition of a turf field to the town. School athletic teams were traveling to downtown Falmouth to use the football field due to the poor conditions of the football field at the school. The goal of the project was to upgrade the athletic fields available in the Town of Falmouth and allow more games at the school instead of downtown.

2018 image prior to installation (synthetic field location outlined in red)

Use: During the school day, the turf field is used for gym classes regularly. After school hours, various athletic teams use the field for practices and games.

Use hour estimates are provided in Attachment F.

Season	Sports/Activities
Fall	Varsity soccer, football, band, gym class
Winter	Gym class
Spring	Boys/girls lacrosse, band, gym class
Summer	Soccer, football

HW was unable to confirm whether G-MAX or other impact testing is performed.

As part of the "Falmouth Athletic Field Master Plan," Gale Associates calculated use of the

previously existing sports fields at the high school and other sites in town, as the high school teams were using fields all over town (see Attachment F for calculations). Gale Associates calculated the "actual" demand (hours per year) and the "equivalent" demand (factoring in sports that have a higher impact on the fields) on each field. The equivalent demand calculation allowed differentiation between low impact uses (PE class, for example) and high impact uses (football, for example). This analysis revealed that over 75% of the town's fields were above the sustainable level of field use, while a new synthetic turf field and a redistribution of use of the grass fields would allow sustainable use of all fields (Attachment F, pg 3-4). All calculations and a more detailed analysis can be found in Attachment F, the Master Plan.

Decision making process: The decision-making process behind the turf field was long and contentious lasting approximately 15 to 20 years. Various stakeholders were involved in the process, including booster clubs, community groups, the school committee, citizen scientists, and other public interests. There were concerns from the public about whether investment into the field made sense financially, as well as health and safety concerns regarding the use of rubber and microplastics in the construction of turf fields. Different stakeholder groups tried to push the turf field project forward throughout the years, but there were financial conflicts with other ongoing Town and school projects.

Alignment of views and timing between different stakeholders was necessary to move the process forward. The Town had also completed a study regarding the overall need for fields across town and determined that the Town needed to upgrade facilities with either eight additional grass fields or three additional turf fields. The results of this study led to the Town allocating more funding for athletic fields to the Town budget.

Community stakeholders that were appointed by the school committee then met multiple times over several months to discuss and evaluate options and exchange opinions about the fields. This stakeholder group agreed with the Town's analysis and reported to the school committee that the school needs at least one turf field or three additional grass fields. The Town hired an environmental consultant, CDM Smith, to complete cost-benefit analysis of the different field options. This analysis was used to legitimize the decision to install the turf field to the community. After three community forums were held to discuss concerns, the group recommended moving forward with the turf field to the school committee.

Maintenance: HW has been unable to obtain detailed information on the current Falmouth maintenance activities. Attachment F includes proposed maintenance of the synthetic field on page 12 and 20, including sweeping of the field and repairs as needed.

Construction: The synthetic field was completed in 2019 at an approximate cost of $3.1 million for the field, grandstands, and various facilities. For the infill, various materials were considered but the town settled on coated crumb pellets.

Mount Greylock High School

Contact: Timothy Sears, Buildings and Grounds Director (tsears@mgrhs.org, (413) 652-5544). Spoke via phone 8/14.

Grades: 7-12, ~553 students

Installation Date: Proposed synthetic field

Key Takeaways: The proposed field is funded by Williams College and aims to reduce stress on the fields and extend the playing season. The town is planning a vote on the field in the next couple months (vote was previously delayed due to COVID). Mt. Greylock has drastically improved natural grass maintenance with the help of PJC Organics, but still considers the turf field a good choice. The school plans to test runoff frequently to monitor water quality.

Reason for Implementation: The project originally was sparked by the donation of funds from Williams College to the high school for field improvements. The rationale for a new field included poor quality existing grass fields that resulted in students being bussed to Williams or other nearby colleges to play games on synthetic turf during inclement weather.

Field Specs

Materials	typical synthetic carpet, BrockFill infill
Size	Soccer/football with track alternate
Shock pad present?	yes
Depth Profile	Grass Carpet BrockFill Shock pad Gravel (several feet) Crushed Stone
Existing Soils	Silt Loam
Natural Resource	None of concern

Use: There are six existing soccer/football sized grass fields on campus, which are used fall and spring for all sports. The turf field would lighten the load on those fields.

Location (in red) of potential synthetic field.

Use hour estimates not provided.

Season	Sports/Activities
Fall	Soccer, football, gym class
Winter	gym class
Spring	Lacrosse, gym class
Summer	

The plan includes G-MAX impact testing.

Decision making process: The decision-making process behind the turf field was a long and the public was involved. The public had many concerns about financial, safety and environmental impacts of the field. Some of these concerns lead to major changes, like the broad opposition to crumb rubber infill resulting in the switch to BrockFill infill. Other concerns included field temperature (mitigated with BrockFill and watering of field), water quality (planning to test runoff frequently after installation) and end of life

disposal. At the end of the field's lifespan (expected to be around 12 years), the field will be recycled in a facility.

Two alternative options were considered: an engineered grass field, which would have the same subsurface materials and drainage as the synthetic field but a grass surface instead of synthetic, and multiple typical grass fields like the ones already on site. The engineered grass field was eliminated due to high water and fertilizer use. The town will vote on the synthetic turf field in fall 2020.

Maintenance: Buildings and grounds calculated that the synthetic field maintenance would be cost effective because it would require less time to maintain, even with the new equipment that the department would need to purchase to maintain the turf field.

For the remaining grass fields, PJC Organics field consultation and maintenance planning services are highly recommended. They assessed the natural grass fields and provided a customized maintenance and fertilization plan. Mt. Greylock started the new plan approximately 18 months ago and has already seen a big difference in field quality.

Construction: The field has yet to be installed and final cost estimate has not been determinted. The life expectancy of the turf field is approximately 12 years. The warranty last for eight years after installation.

Field design collects the runoff from the synthetic field and will re-use water on natural grass fields.

Dracut Senior High School

Contact: Andy Graham, Build and Grounds Supervisor (agraham@dracutps.org). Various email communications, then spoke briefly by phone.

Grades: 9-12, ~877 students

Installation date: 2020 synthetic field

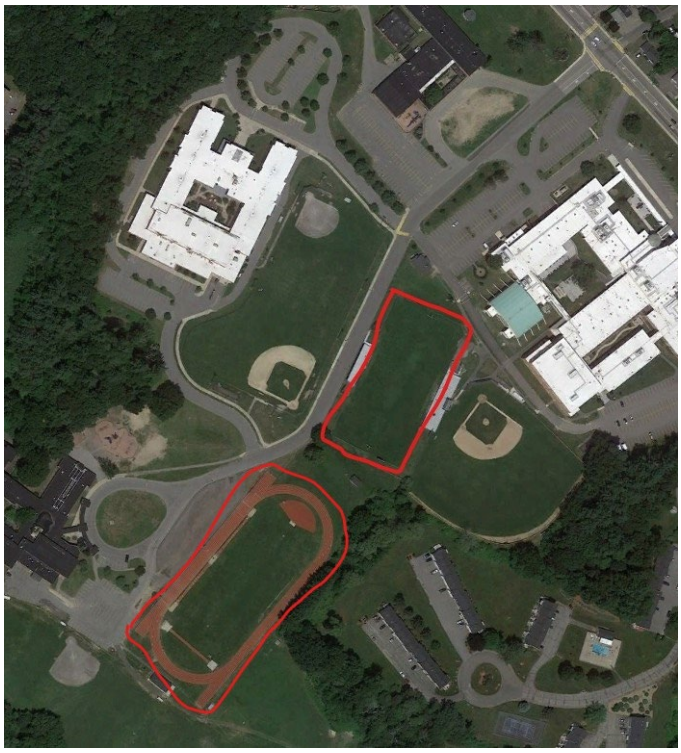
Type of field and manufacturers: Synthetic carpet, BrockFill infill, shock pad

Key Takeaways: The goal of the project was to reduce stress on the grass fields and improve condition with the installation of two synthetic fields. The fields were completed in January 2020 and therefore has not been used for a complete season yet but the maintenance staff has all needed equipment and has been trained. They are optimistic about the ease of future maintenance.

Reason for Implementation: The main reason for the new fields was exiting field condition, as well as expanding the existing football field and adjoining stadium to allow other sports. The existing fields were overused and insufficient for the needs of the school. HW did not receive any estimates of pre- or post-construction use hours.

Field Specs

Materials	Synthetic carpet, BrockFill
Size	Football/soccer/field hockey
Shock pad present?	Yes (unconfirmed)
Depth Profile	Grass Carpet BrockFill Shock pad Gravel/Crushed Stone
Existing Soils	Loamy Sand
Natural Resource	Stream at edge of field complex



2019 image, field locations outlined in red

Use: Use hour estimates not provided.

Season	Sports/Activities
Fall	Soccer, football, Field Hockey
Winter	
Spring	Boys/girls lacrosse
Summer	

Decision making process: The decision-making process lasted about 5 years. The funding came from the Community Preservation Committee and then was voted on at Town Meeting about a year later.

Community members were concerned about student health, potential environmental impacts. The final design included BrockFill instead of crumb rubber in response to community concerns.

Maintenance: As the fields were completed in January 2020 and the spring sports season was altered due to the COVID-19 pandemic, the field

has not actually been used yet. The school grounds crew has received maintenance training and is optimistic about the ease maintenance duties.

Construction: The synthetic field was designed by Huntress Associates and completed in January 2020 and the cost for the two fields was about $4 million. The life expectancy of the turf field is approximately 10 years.

Attachment A

Inventory of High Schools in Massachusetts with synthetic turf fields
(compiled by Alex Elvin, Martha's Vineyard Commission)

215 out of 464 (46%)
A small number share their fields, or use a community field

Barnstable County (5)
Barnstable High School, Hyannis
Falmouth Academy, Falmouth
Falmouth High School, Falmouth
Monomoy Regional High School, Harwich
Nauset Regional High School, Eastham

Berkshire County (2)
Lee High School, Lee
Pittsfield High School, Pittsfield

Bristol County (12)
Bedford High School, Bedford
Bishop Feehan High School, Attleboro
Dartmouth High School, Dartmouth
Dighton-Rehoboth Regional High School, Dighton
Durfee High School, Fall River
Mansfield High School, Mansfield
North Attleboro High School, North Attleboro
Oliver Ames High School, Easton
Seekonk High School, Seekonk
Somerset Berkley Regional High School, Somerset
Southeastern Regional Vocational Technical High School, South Easton
Taunton High School, Taunton

Dukes County (0)

Essex County (34)
Andover High School, Andover
Beverly High School, Beverly
Bishop Fenwick High School, Peabody
Brooks School, North Andover
Central Catholic High School, Lawrence
Danvers High School, Danvers
Essex Agricultural and Technical High School, Danvers
Georgetown Middle/High School, Georgetown
Gloucester High School, Gloucester
Governor's Academy, Newbury (South Byfield)
Greater Lawrence Technical School, Andover
Hamilton-Wenham Regional High School, Hamilton
Haverhill High School, Haverhill
Ipswich High School, Ipswich
Lawrence High School, Lawrence
Lynn Classical High School, Lynn
Lynn English High School, Lynn

Lynn Vocational and Technical Institute, Lynn
Lynnfield High School, Lynnfield
Manchester-Essex Regional Junior-Senior High School, Manchester-By-The-Sea
Marblehead High School, Marblehead
Newburyport High School, Newburyport
North Andover High School, North Andover
North Shore Technical High School, Middleton
Peabody Veterans Memorial High School, Peabody
Phillips Academy, Andover
Pingree School, Hamilton
Salem High School, Salem
Saugus High School, Saugus
St. John's Preparatory School, Danvers
St. Mary's High School, Lynn
Swampscott High School, Swampscott
Triton Regional High School, Newbury (Byfield)
Whittier Regional Vocational Technical High School, Haverhill

Franklin County (3)
Deerfield Academy, Deerfield
Northfield Mount Hermon School, Northfield
Ralph C. Mahar Regional High School, Orange

Hampden County (11)
Agawam High School, Agawam
Arthur Roberts Stadium, Holyoke High
Chicopee Comprehensive High School, Chicopee
Chicopee High School, Chicopee
East Longmeadow High School, East Longmeadow
Holyoke High School, Holyoke
Minnechaug Regional High School, Wilbraham
Monson High School, Monson
Pope Francis High School, Springfield
Springfield Central High School, Springfield
West Springfield High School, West Springfield

Hampshire County (4)
MacDuffie School, Granby
South Hadley High School, South Hadley
Wilbraham & Monson Academy, Wilbraham
Williston Northampton School, Easthampton

Middlesex County (56)
Acton-Boxborough Regional High School, Acton
Arlington Catholic High School, Arlington
Arlington High School, Arlington
Ashland High School, Ashland
Assabet Valley Regional Technical High School, Marlborough

Austin Preparatory School, Reading
Belmont High School, Belmont
Belmont Hill School, Belmont
Billerica Memorial High School, Billerica
Buckingham Browne & Nichols, Cambridge
Burlington High School, Burlington
Cambridge Rindge and Latin School, Cambridge
Chapel Hill – Chauncy Hall School, Waltham
Chelmsford High School, Chelmsford
Concord-Carlisle High School, Concord
Dracut High School, Dracut
Framingham High School, Framingham
Groton School, Groton
Groton-Dunstable Regional High School, Groton
Hopkinton High School, Hopkinton
Innovation Academy Charter School, Tyngsborough
Lawrence Academy at Groton, Groton
Lexington High School, Lexington
Lincoln-Sudbury Regional High School, Sudbury
Littleton High School, Littleton
Lowell High School, Lowell
Malden Catholic High School, Malden
Malden High School, Malden
Mystic Valley Regional Charter School, Malden
Marlborough High School, Marlborough
Marshall Simonds Middle School, Burlington
Matignon High School, Cambridge
Medford High School, Medford
Melrose High School, Melrose
Middlesex School, Concord
Nashoba Valley Technical High School, Westford
Natick High School, Natick
Newton North High School, Newton
Newton South High School, Newton
North Middlesex Regional High School, Townsend
North Reading High School, North Reading
Reading Memorial High School, Reading
Rivers School, Weston
Shawsheen Valley Technical High School, Billerica
Somerville High School, Somerville
Tewksbury Memorial High School, Tewksbury
Tyngsborough High School, Tyngsborough
Wakefield Memorial High School, Wakefield
Waltham High School, Waltham
Watertown High School, Watertown
Wayland High School, Wayland
Westford Academy, Westford (public)
Weston High School, Weston

Wilmington High School, Wilmington
Woburn Memorial High School, Woburn

Nantucket County (0)

Norfolk County (30)
Archbishop Williams High School, Braintree
Beacon High School, Brookline
Bellingham High School, Bellingham
Blue Hills Regional Technical High School, Canton
Braintree High School, Braintree
Canton High School, Canton
Cohasset High School, Cohasset
Dedham High School, Dedham
Dexter Southfield School, Brookline
Dover-Sherborn High School, Dover
Foxborough High School, Foxborough
Franklin High School, Franklin
Holbrook Junior Senior High School, Holbrook
King Philip Regional High School, Wrentham
Medfield High School, Medfield
Medway High School, Medway
Milton Academy, Milton
Needham High School, Needham
Noble and Greenough School, Dedham
Norfolk County Agricultural High School, Walpole
North Quincy High School, Quincy
Norwood High School, Norwood
Randolph High School, Randolph
Saint Sebastian's School, Needham
Stoughton High School, Stoughton
Walpole High School, Walpole
Wellesley High School, Wellesley
Westwood High School, Westwood
Weymouth High School, Weymouth
Xaverian Brothers High School, Westwood

Plymouth County (20)
Abington High School, Abington
Brockton High School, Brockton
Cardinal Spellman High School, Brockton
Carver Middle-High School, Carver
Duxbury High School, Duxbury
East Bridgewater High School, East Bridgewater
Hanover High School, Hanover
Hingham High School, Hingham
Hull High School, Hull
Marshfield High School, Marshfield

Middleborough High School, Middleborough
Norwell High School, Norwell
Notre Dame Academy, Hingham
Pembroke High School, Pembroke
Plymouth North High School, Plymouth
Plymouth South High School, Plymouth
Scituate High School, Scituate
Tabor Academy, Marion
West Bridgewater Middle-Senior High School, West Bridgewater
Whitman-Hanson Regional High School, Whitman

Suffolk County (13)
Boston College High School, Dorchester
Brighton High School, Brighton
Catholic Memorial High School, West Roxbury
Charlestown High School, Charlestown
Chelsea High School, Chelsea
East Boston High School, East Boston
English High School of Boston, Boston
John D. O'Bryant School of Mathematics & Science, Roxbury
Madison Park High School, Roxbury
Revere High School, Revere
Roxbury Latin School, West Roxbury
West Roxbury High School, West Roxbury
Winthrop High School, Winthrop

Worcester County (25)
Abby Kelley Foster Charter Public School, Worcester
Auburn High School, Auburn
Bancroft School, Worcester
Blackstone Valley Regional Vocational Technical High School, Upton
Cushing Academy, Ashburnham
Gardner High School, Gardner
Grafton High School, Grafton
Leominster High School, Leominster
Lunenburg High School, Lunenburg
Milford High School, Milford
Nashoba Regional High School, Bolton
Northbridge High School, Northbridge
Oakmont Regional High School, Ashburnham
Oxford High School, Oxford
Shepherd Hill Regional High School, Dudley
Shrewsbury High School, Shrewsbury
South High Community School, Worcester
St. John's High School, Shrewsbury
St. Mark's School, Southborough
Tantasqua Regional High School, Sturbridge
Uxbridge High School, Uxbridge

Wachusett Regional High School, Holden
Westborough High School, Westborough
Winchendon School, Winchendon
Worcester Academy, Worcester

Short list of schools with synthetic fields

Martha's Vineyard Regional High School
Grades 9-12
670 students

SYNTHETIC FIELDS

North Kingstown High School, RI
Grades 9-12
1486 students
Brockfill
Greenfields

Dracut High School – 2 fields
Grades 9-12
877 students
Brockfill

South Hadley High School
Grades 9-12
568 students
Greenfields

Shawsheen Valley Technical High School
Grades 9-12
1265 students
Greenfields
installed 2016 (many other fields are newer, so perhaps less useful to study)

Tower School, Marblehead (private school)
Grades PK-8
Brockfill
Greenfields

Capuano Field, Somerville
Brockfill
Astroturf

East Somerville Community School
Grades K-8
730 students
Brockfill
Astroturf

Haley Pilot School, Roslindale
Grades PK-8
393 students
Brockfill

Marlborough High School
Grades 9-12
1050 students
Greenfields

Lewiston High School (Maine)
Greenfields

NATURAL GRASS

Mount Greylock Regional High School
Grades 7-12
553 students

Springfield Central High School
Grades 9-12
2063 students

Springfield High School of Commerce
Grades 9-12
1096 students

Attachment B

High School contact information

School	Grade	Students	Material	Contact (contacted/interviewed)	Title	Office Number	Email
Dracut High School (2 fields)	9-12	877	Brockfill	Richard Manley Paula Chausse Andy Graham	Principal Athletic Director Build and Grounds Supervisor	(978) 957-1500 (978)-957-1500	Rmanley@dracutps.org pchausse@dracutps.org agraham@dracutps.org
Falmouth HS	9-12	870	Greenfields	Mary Gans Kathleen Burke Timothy Allen Patrick Murphy Thomas Bott	Principal Director of Athletics Lead Custodian Director of Finance and Operations Town Planner	(508) 540-2200 ext 3035 (508) 540-2200 ext 3022 508-548-0151 ext. 123 (508) 495-7440	mgans@falmouth.k12.ma.us kburke@falmouth.k12.ma.us tallen@falmouth.k12.ma.us pmurphy@falmouth.k12.ma.us thomas.bott@falmouthma.gov
Guilford High School, CT	9-12	1,123	Enviro-fill, being replaced	Mr. Kevin Buno Mrs. Julia Chaffe Mrs. Donna Pudlinski Mr. Joel Rebhun Mr. Jake Jarvis Mr. Herman Solivan George Kral	Assistant Principal Assistant Principal Assistant Principal Assistant Principal Athletic Director Head Custodian Town Planner	(203) 453-2741 x1228 (203) 453-2741 ext. 1209 (203) 453-2741 ext. 1213 (203) 453-2741 ext. 1203 (203) 453-2741 ext. 4104 (203) 453-2741 ext. 2117 (203) 453-8039	https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=532674&type=u&pREC_ID=contact https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=532681&type=u&pREC_ID=contact https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=532767&type=u&pREC_ID=contact https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=532824&type=u&pREC_ID=contact https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=532724&type=u&pREC_ID=contact https://ghs.guilfordschools.org/apps/pages/index.jsp?uREC_ID=852125&type=u&pREC_ID=contact http://www.ci.guilford.ct.us/about-guilford/contact-staff/?Department=Planning%20&%20Zoning&Title=Town%20Planner&Name=Kral,%20George&Email=kralg@ci.guilford.ct.u
Mount Greylock Regional High School	7-12	553	Natural grass	Jacob Schutz Lindsey von Holtz Timothy Sears Stephanie Boyd	Principal Director of Athletics and Co-Curricular Activities Buildings and Grounds Director Planning Board Chair	413-458-9582 ext. 1013 413-458-9582 ext. 1012 (413) 652-5544	jschutz@mgrhs.org lvonholtz@mgrhs.org tsears@mgrhs.org planningboard@williamstownma.gov
North Kingstown High School, RI	9-12	1486	Brockfill, Greenfields	Barbara Morse, Ed.D. Dick Fossa CAA (Deceased) General HS contact Mary King Nicole LaFontaine	Principal Athletic Director N/A (from website) Director of Operations Director of Planning and Development	401-268-6230 401-268-6281 401-268-6236 401-294-3331, ext. 310	barbara_morse@nksd.net Richard_Fossa@nksd.net nkhswebmaster@nksd.net NLaFontaine@northkingstown.org
Shawsheen Valley Technical High School	9-12	1265	Greenfields	Jessica Cook Diane Cedorchuk Al Costabile General HS contact Kerri Ruffo	School Principal Administrative Assistant Director of Athletic Programs N/A (from website) Planning Board - Principal Clerk	978-671-3637 978-671-3637 978-671-3632 978-667-2111 978-671-0962	jcook@shawtech.org dcedorchuk@shawtech.org acostabile@shawtech.org krufo@town.billerica.ma.us
South Hadley High School	9-12	568	Greenfields	Elizabeth Wood Patrick Lemieux Eric Castonguay Richard Harris Andy Rogers Bill Simard	Principal Assistant Principal Athletic Director Director, Planning and Conservation Director, Recreation Department Parks Department Superintendent	(413) 538-5063 (413) 538-5063 (413) 538-5063 (413)-538-5017, ext. 206 (413) 538-5017 ext. 132	ewood@shschools.com plemieux@shschools.com ecastonguay@shschools.com rharris@southhadleyma.gov arogers@southhadleyma.gov
Springfield Central High School	9-12	2063	Natural grass	Thaddeus S Tokarz Dwayne Early	Principal Athletic Director	413-787-7085 (general)	tokarzt@springfieldpublicschools.com earlyd@springfieldpublicschools.com
Springfield High School of Commerce	9-12	1096	Natural grass	Paul Neal Sonia Dinnall PhD Michael Martin	Executive Principal Athletic Director	413-787-7220 (general?) 413-787-7100 ext 55490	nealp@springfieldpublicschools.com

Attachment C

Introduction email template sent to principals and questions for school contact

INTITIAL CONTACT TEMPLATE:
Dear Principal [X],

We are reaching out on behalf of the Martha's Vineyard Commission and Oak Bluffs Planning Board who have an application before them related to installation of a synthetic turf, multi-use athletic field at the regional high school (grade 9-12, ~680 students). We hoped to talk with you about the planning process your school went through with your synthetic field, key factors in decision-making, and any operational insights you might have. I know that you are busy planning for school reopening, but we hoped you could spare 30-60 min to answer a few questions on your field's design, usage, and maintenance. We are also interested in any new disinfection practices of the field that may be part of your COVID-19 response plan. Attached is the list of the information we are compiling [Attachment D].

Thank you for your consideration of this request during such an unprecedented time. If you have any availability over next two weeks, we would like to set up a video conference or conference call. If there is someone else you would suggest we contact instead or in addition to, such as the facilities manager, athletic director, or Town planner, please let us know. Again, thanks for your time and good luck to you, your faculty, and students.

ATHLETIC FIELD QUESTIONS

SYNTHETIC TURF FIELD

1. Site Context
   a) Is this a new field or a replacement of existing?
   b) What was the date of installation/construction?
   c) What triggered the need for field improvements?
   d) What sports are played on field? What is the seasonal variation in use?
   e) What were the pre- and post-field usage estimates (# events/yr, hours/event, people/event)?
   f) How many other fields are at the school?
   g) What were the environmental constraints at site?

2. Field description
   a) Size
   b) If synthetic, type/manufacturer of surface carpet, infill, padding
   c) Depth profile
   d) Underlying soils
   e) Drainage collection system (also irrigation system for natural grass)
   f) Life expectancy
   g) Design firm

3. Decision Making Process
   a) Length and contentiousness of process
   b) What were the primary concerns and issues raised during the planning and approval process (student health, environmental impacts, maintenance, etc.)?
   c) Was there consideration of microplastics? If so, how was this mitigated?
   d) What was the key rational supporting the final decision (science, public opinion, cost)?
   e) Were there Conservation Commission or other conditions placed on the permit?
   f) Were there changes to design as part of permitting? If so, what were they?
   g) Looking back, did you make the right decision?

4. Implementation
   a. Construction cost
   b. Installation process (were there issues?)
   c. Change orders or material substitutes
   d. Disposal procedure or disposal plan

5. O&M
   a. Have any issues arisen since construction?
   b. Do you have any disinfection issues or concerns related to COVID-19?
   c. What is the maintenance schedule during active seasons and throughout the year? What is the annual budget?
   d. Has maintenance been incorporated into school's program (or is it outside party)?
   e. Are you budgeting for replacement?
   f. What metrics are used to evaluate the field (# athletic injuries, WQ monitoring, product deterioration)?
   g. Are you happy with it?

ATHLETIC FIELD QUESTIONS
NATURAL GRASS

6. Site Context
   h) What was the date of construction or last renovation?
   i) Was this a new field or a replacement of existing?
   j) If the field was a replacement, what triggered the need for field improvements?
   k) What sports are played on field? What is the seasonal variation in use?
   l) What is the field usage estimate (# events/yr, hours/event, people/event)?
   m) How many other fields are at the school?
   n) What, if any, are the environmental constraints at site?

7. Field description
   h) Size
   i) Type of grass
   j) Depth profile
   k) Underlying soils
   l) Drainage collection system and irrigation system
   m) Life expectancy
   n) Design firm

8. Decision Making Process
   h) Have you considered synthetic turf? If so, why did you decide **not** to install synthetic turf?
   i) What were the primary concerns and issues raised during the planning and approval process (student health, environmental impacts, maintenance, etc.)?
   j) What was the key rational supporting the final decision (science, public opinion, cost)?
   k) Looking back, did you make the right decision?

9. Implementation (if applicable)
   e. Construction cost
   f. Installation process (were there issues?)

10. O&M
    a. Have any issues arisen?
    b. How successful are you with maintaining the grass last through fall/spring seasons?
    c. What is fertilizer schedule?
    d. Do you have any disinfection issues or concerns related to COVID-19?
    e. What is the maintenance schedule during active seasons and throughout the year? What is the annual budget?
    f. Has maintenance been incorporated into school's program (or is it outside party)?
    g. What metrics are used to evaluate the field (wear patterns, # athletic injuries)?
    h. Are you happy with it?

Attachment D

TURI Natural Grass Case Studies: Marblehead and Springfield

Natural Grass Playing Field Case Study: Marblehead, MA

20 Acres of Organically Managed Playing Fields

THE TOWN OF MARBLEHEAD, Massachusetts, has managed all of its playing fields organically since 2002. This approach had its origins in a policy adopted by Marblehead's Board of Health in 1998, which noted the adverse health and environmental effects of pesticides and made a commitment to protecting children's health.

The town has achieved its performance goals by focusing on building and maintaining a healthy ecosystem with active microbial life in the soil and a strong root system. Key elements of the program are frequent aeration, frequent mowing, soil testing, and the use of organic fertilizer and soil amendments.

Organically managed fields at Veterans' Middle School located in Marblehead, MA

This case study provides detailed information on the number of hours played at four multi-use fields in Marblehead. Each of these fields may serve as a useful model for other communities interested in organic field management. For example, the Seaside Park field is used for baseball and field hockey. The scheduled practice and play time on this 105,000 square foot field totaled about 1,180 hours in 2018. With estimated informal recreation included, the field was used for approximately 1360 hours.

The annual cost of organic management of Marblehead's fields is approximately $3,650 to $3,900 per acre for products and labor, not including mowing. With mowing, the cost is approximately $8,650 to $8,900 per acre.

Marblehead also has one artificial turf field, installed in 2013. Information is provided on maintenance costs for the artificial turf field, including grooming, cleaning, compaction testing, decompacting, and disinfection.

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

July 2019

Introduction

This case study has been developed by the Toxics Use Reduction Institute (TURI) as part of an effort to provide information to municipalities, schools and other institutions as they make decisions about play surfaces. TURI has documented information on the materials often used in artificial turf playing fields.[1] TURI has also gathered information on natural grass fields and has developed a series of case studies to share experiences.

This case study focuses on the organic management of natural grass on 20 acres of sports fields by the town of Marblehead. The organic practices described in this case study can be used on grass properties of any size.

Communities often have questions about whether natural grass can meet their recreation needs and be cost-effective. TURI has compiled the following information for other communities to learn from the successes of Marblehead.

Overview

In 1998, the Board of Health of the Town of Marblehead adopted a statement on pesticides that enumerated the adverse health and environmental effects of pesticides, with a particular emphasis on children's health. In this statement, the Board of Health made a commitment to phasing out pesticide use, stating: "The Board of Health of the Town of Marblehead hereby commits itself to the goal of reduction and eventual phase-out of pesticide use in the Town of Marblehead, both on public and private property."[2]

With support from a TURI grant, in 1999-2000 Marblehead developed the state's first municipal organic lawn demonstration site, serving as a resource for residents interested in alternatives to pesticides. The town also developed the state's first organic pest management policy,[3] and served as host to a wide variety of educational programs for landscapers, homeowners and others. Building on this commitment, Marblehead began organic management of all its publicly managed land, including sports fields. All of Marblehead's fields have been managed organically since 2002.

Marblehead currently has twenty acres of publicly owned grass fields, all of them managed organically. This total area includes both grass and skinned surfaces (i.e., clay in infield areas of baseball and softball fields).

Specifically, the fields include the following: five little-league baseball fields; four girls' softball fields; three all-purpose fields (soccer, lacrosse, youth football, and other activities); one 90-foot regulation baseball field where the outfield is also used for field hockey; one 90-foot regulation baseball field where the outfield

[1] Massachusetts Toxics Use Reduction Institute (TURI). 2018. Athletic Playing Fields: Choosing Safer Options for Health and the Environment. TURI Report #2018-002. Retrieved from www.turi.org/artificialturfreport

[2] Town of Marblehead Board of Health. 1998. Statement on Pesticides, May 14, 1998. Retrieved from www.turi.org/Our_Work/Community/Topic_Areas/Pesticides/Marblehead_Organic_Lawn_and_Garden_Demonstration_Project/Project_Materials/Town-Statement-on-Pesticides

[3] Town of Marblehead Board of Health. 2001. Organic Pest Management Policy for Turf and Landscape, May 3, 2001.

[4] 90-foot refers to the distance in feet between bases. This is a standard baseball field size.

is also used for all-purpose practice, including football; and additional areas used for informal recreation, including a neighborhood pocket park.[4] The town is also planning to build a new, fully renovated field, which will be organically managed from the outset; construction for this field will begin in 2020.

This case study focuses on four of the athletic fields in Marblehead. As shown in Table 1, the Seaside Park field is a well-designed park with good drainage and few maintenance difficulties; the Hopkins Field is a high-use park; the Veterans' Middle School field is used for physical education and recess and was used for field hockey in the past; and the Village School Lower Field back half field is a field with very high use and some design problems. This case study helps to illustrate the successes of a 100% organic management program, as well as the ways in which the grounds managers have overcome specific difficulties that can be faced by many communities using or renovating existing fields.

Table 1: Marblehead athletic fields included in this case study[a]

Park	Area (sq. ft.)[b]	Sports/other information
Seaside Park	105,000	Fitness trail, cross country meets, conditioning, baseball (adult & youth), field hockey
Hopkins Field	65,000	Football, soccer, lacrosse, middle school physical education
Veterans' Middle School field	90,000	Girls' youth softball, high school softball, middle school physical education, middle school advisory, high school field hockey, youth flag football, middle school ultimate Frisbee[c]
Village School Lower Field back half	65,340[d]	High school lacrosse, boys' youth lacrosse, youth soccer, middle school recess, high school soccer, youth soccer

[a] Marblehead has 20 acres of athletic fields, all of them managed organically. This table only shows the fields for which detailed information is provided in this case study.

[b] Area shown is total for grass only.

[c] Advisory is an activity break in which the students play outdoor games and do team-building activities

[d] The full Village School field is 3 acres, but the section covered in this case study is 1.5 acres (65,340 sq. ft.).

Hours of Activity: Examples from Four Sports Fields

Decision-makers often have questions about how many hours of use a natural grass field can accommodate. Marblehead documented the use of their athletic fields in 2018. Total hours of use are presented for each activity and age group, and include practice and games for sports. Hours of use per season were estimated by multiplying the number of hours booked for each activity by the number of weeks each activity was played per season.

These fields are also used by Marblehead residents for informal activities, such as pick-up games, or passive recreation, such as picnics. These activities take place during open park hours that have not been scheduled for team use, or on areas of the complex that are not in use during formally scheduled activities. In the absence of data on informal activities, TURI estimated that each case study park was used an additional 14 hours per week for informal/unscheduled activity.

Cancellations

Marblehead chooses to cancel games when there is standing water on fields. Notifications are sent by email to residents. Youth groups have learned about the importance of preserving the grass in good condition; the youth are protective of the fields and careful not to play when they are too wet. In 2018, between April 1 and November 15, the fields were closed five times due to rain and twice due to extreme heat. Each was a one-day closure. The heat-related closures were the first that the town has experienced.

Seaside Park: Baseball and Field Hockey Field within a Larger Park

Seaside Park is a 34-acre park that offers a network of walking trails as well as a play area, including a baseball diamond, a playing field, tennis courts, basketball courts, and other resources. The baseball field is a regulation 90-foot baseball field. The outfield of the 90-foot regulation baseball diamond is also used for field hockey. The total grass area is 105,000 square feet.

The fitness trail and part of the field space are used for cross-country meets. Several teams use the fitness trail for conditioning as well.

Baseball and field hockey fields at Seaside Park

Youth and high school baseball are played on the field in the spring and summer, and field hockey is played on the field in the fall. In 2018, there were about 1,180 scheduled hours of practice and play on the field.[5] Adding estimated informal recreation time in the summer months, the estimated total is about 1,360 hours of use. This total does not account for the five day-long closures that occurred in 2018.

Table 2: Seaside Park baseball and field hockey complex: hours of use, 2018

Sport	Age group	Season	Total use: hours per week	Weeks per season	Approximate hours per season[a]
Baseball	Youth	Spring	31	13	400
	High school	Spring	20	13	260
	Youth	Summer	35	9	320
Field hockey	Middle school	Fall	15	13	200
Total scheduled use – all seasons					**1180**
Estimated informal recreation hours (summer only)			14	13	180
Estimated total hours – all seasons					**1360**

Note: Hours shown here do not account for cancellations. In 2018, there were five day-long closures of Marblehead fields due to rain and two due to heat.

[a] Rounded to nearest two significant digits

[5] In summer 2019, the Seaside playing field will be temporarily shut down for improvements, allowing only 1/3 of the season to be played on this field.

Hopkins Field: Full-Sized Football Field

Hopkins Field is a full-sized football field surrounded by a track. The total grass area is 65,000 sq. ft. The field is used for soccer, lacrosse, and middle school physical education in the spring, and soccer, football, and middle school physical education in the fall. Other youth soccer-related activities are also scheduled weekly between the end of June and the end of August. In 2018, there were about 1,680 hours of scheduled practice and play on the Hopkins Field. Adding estimated informal recreation time in the summer months, the estimated total is about 1,860 hours of use, not accounting for the five day-long closures that occurred in 2018.

Hopkins Field, a full-sized football field

When organic management of Hopkins Field began in 2004, 35% of the field was covered in weeds, primarily broadleaf plantain. The high percentage of weeds was due to compaction of the fields. Compaction led to low oxygen levels, creating anaerobic conditions that fostered the growth of microbes that were not conducive to a healthy root system for the grass. The situation was reversed over time through the application of organic techniques.

Table 3: Hopkins Field full-sized football field: hours of use, 2018

Sport	Age group	Season	Total use: hours per week	Weeks per season	Approximate hours per season[a]
Lacrosse	Youth	Spring	21	13	270
Soccer	Youth	Spring	8	13	100
	Adult	Spring	4	13	50
Phys Ed	Middle School	Spring	30	8	240
Soccer	High School	Fall	17.5	13	230
	Youth	Fall	11.5	13	150
	Adult	Fall	2	13	30
Football	Youth	Fall	13.5	13	180
Phys Ed	Middle School	Fall	30	8	240
Other youth soccer activities (summer only)					190
Total scheduled use – all seasons					**1,680**
Estimated informal recreation hours (summer only)			14	13	180
Estimated total hours – all seasons					**1,860**

Note: Hours shown here do not account for cancellations. In 2018, there were five day-long closures of Marblehead fields due to rain and two due to heat.

[a] Rounded to nearest two significant digits

Veterans' Middle School Field: Softball Diamonds and Playing Field

The Veterans' Middle School field consists of two softball diamonds, one with an extended outfield. Together, these fields have an area of 90,000 square feet of grass.[6] In the spring, the field is used for high school and youth softball, and middle school physical education and school advisory. In the fall, the field is used for high school field hockey, youth flag football, middle school ultimate Frisbee, and middle school physical education and advisory.[7] During the summer in 2018, the field was used 189 hours for additional youth soccer activities. A total of about 2,140 hours of practice and play were scheduled on the field in 2018. Including estimated informal recreation, the field complex was used for about 2,320 hours.

Table 4: Veterans' Middle School Field two softball diamonds and overlapping playing field: hours of use, 2018

Sport	Age group	Season	Total use: hours per week	Weeks per season	Approximate hours per season[b]
Softball	High school	Spring	34	13	440
	Youth	Spring	55	13	720
Phys ed	Middle school	Spring	30	8	240
Advisory	Middle school	Spring	5	8	40
Field Hockey	High school	Fall	15	13	200
Flag Football	Youth	Fall	10	14	140
Phys Ed	Middle school	Fall	30	10	300
Advisory[a]	Middle school	Fall	5	10	50
Ultimate Frisbee	Middle school	Fall	1	6	6
Total scheduled use – all seasons					**2,140**
Estimated informal recreation hours (summer only)			14	13	180
Estimated total hours – all seasons					**2,320**

Note: Hours shown here do not account for cancellations. In 2018, there were five day-long closures of Marblehead fields, and two due to heat.

[a] Advisory is an activity break in which the students play outdoor games and do team-building activities.

[b] Rounded to nearest two significant digits

To aid in comparing the activity level on this field with fields in other communities, it may be helpful to consider the softball activities separately from other activities that occur on the field. The softball hours on the two diamonds total about 1,160 hours, or an average of about 580 hours per field (although there is some overlap of the outfields). Other scheduled field activities total about 980 hours.

Table 5: Veterans' Middle School Field: Subtotals of scheduled hours

Softball only	1160
All other scheduled field activities	980

[6] Each softball infield is 8,000 square feet. There is some sharing of outfields.

[7] Advisory is an activity break in which the students play outdoor games and do team building activities.

Village School Lower Field Back Half: Two U10 Soccer Fields[8]

The Village School Lower Field back half is equivalent in size to two soccer fields for age group U10, or one full sized, plus a quarter sized field. The total area is 65,340 square feet.[9] For practices, the field can accommodate four teams simultaneously; for games, it accommodates fewer teams. The field is used for youth soccer in the spring and fall, boys' lacrosse in the spring, high school soccer in the fall, and middle school recess in both fall and spring. In the summer, the field is scheduled for other youth soccer-related activities for just over 300 hours and use by a medical sports clinic for 380 hours. Thus, in spring, summer and fall 2018, a total of 2030 hours of practice, games, and recess were scheduled on the field. In addition, there were an estimated 180 hours of informal use, leading to an estimated total of 2210 hours for all seasons.

Soccer fields at the back half of Village School Lower Field

Table 6: Village School Lower Field back half two U10 soccer fields: hours of use, 2018

Sport	Age group	Season	Total use: hours per week	Weeks per season	Approximate hours per season[a]
Soccer	Youth	Spring	32	13	410
Lacrosse	Youth	Spring	9	13	120
Soccer	High school	Fall	18	13	230
	Youth	Fall	25	13	330
Recess	Middle school	Spring, fall	7	37	250
Other youth soccer activities (summer only)					310
Medical sports clinic (summer only)					380
Total scheduled use – all seasons					**2030**
Estimated informal recreation hours (summer only)			14	13	180
Estimated total hours – all seasons					**2210**

Note: Hours shown here do not account for cancellations. In 2018, there were five day-long closures of Marblehead fields due to rain, and two due to heat.

[a] Rounded to nearest two significant digits

[8] U10 is a soccer age group classification of 10 years and under.

[9] The full Village School field is 3 acres, but the section covered in this case study is 1.5 acres (65,340 sq. ft.).

Maintenance

The elements of field maintenance include mowing, aeration and application of products such as fertilizer and soil amendments. Field areas with extra heavy use, such as in front of soccer goals, are also "over-seeded" with grass seeds to allow fuller plant grown to withstand more wear.

Chip Osborne, Chair of the Marblehead Recreation and Parks Commission, designed the maintenance and testing protocols for the fields. He uses soil testing to determine the appropriate amount of products to use and the most effective maintenance approach for individual fields. This eliminates over-application of products and allows the town to adjust maintenance according to the performance needs of each field. Soil testing measures several characteristics of soil, including nutrients (such as nitrogen, potassium, and phosphorus), physical elements (such as soil texture), and biologicals (such as nematodes).

Over the years, the Marblehead field manager has experimented with a variety of approaches to optimize soil health and grass quality. The details described here represent the current approach, but can be varied.

Fertilizers and Soil Amendments

Marblehead uses organic fertilizers and soil amendments from PJC Organics, a small consulting company and fertilizer producer/distributor in Massachusetts. Amount of product ordered and their application schedules for each park are based on soil results along with the performance needs of each individual field.

The fields are fertilized four times a year with a granular fertilizer at a low dose. These granular applications are carried out in late April, mid-June, late August, and early October. In addition to the granular applications, there are three liquid fertilizer applications, in June, August, and early October.

The industry standard for use of granular fertilizers on a conventionally managed field is one pound of nitrogen per 1,000 square feet for each application. Because Marblehead uses soil testing to estimate the amount of fertilizer needed for individual fields, the most heavily used fields receive 3/4 pound of fertilizer per 1000 square feet for each application. For fields with lighter use, such as some of the baseball fields, a smaller amount of nitrogen is used.

A mycorrhizal inoculation and a biological supplement are also added to certain fields in June and August. The mycorrhizal inoculation strengthens the system of beneficial fungi that colonize root systems and supports healthy plant growth.

Marblehead field managers also add a soil conditioner to fields to jump-start microbial activity. The soil conditioner is made with biochar (charcoal), kelp, molasses, and soybean and is used to improve the chemistry, structure, and biological activity in the soil.

Aeration, Mowing, and Irrigation

Aeration is accomplished by pulling up plugs of soil and grass using a riding or push machine. This process relieves soil compaction and grass thatching and allows air, water, and added nutrients to penetrate the soil. Aeration can be

a time-consuming process, but is arguably the most important step for maintaining healthy, organic grass.

The groundskeeping crew uses two types of aerators interchangeably throughout the year to penetrate 4 inches into the soil. One is a hydraulic core aerator, and the other is a shatter-tine aerator. The crew aims to aerate the fields five times a year, although some years they aerate four times depending on staff availability and weather.

Mowing frequency changes throughout the year. Fields are mowed once a week, except during the peak grass growing season in July, August and September, when fields are mowed twice a week. Fields are irrigated once a week for 26 weeks.

Community Participation in Field Rehabilitation

At the beginning of the organic management program for Seaside Park, the density of weeds was high. This was reversed using organic techniques over the course of five years. The last stage of the field's rehabilitation occurred when a number of weed species had already been reduced and knotweed was the only remaining weed of concern in the field. This was addressed through mechanical means: The girls' hockey team, a group of 40 players, spent several hours walking systematically across the field and pulling up all the knotweed. The next day, the field was aerated and seeded, and grass grew to fill in the spaces created by removing the knotweed. In this way, the team was able to participate in the management of the field, and the weeds were removed without using herbicides.

Costs

The principal costs associated with organic maintenance of fields in Marblehead are products, labor for organic management activities such as aeration, and labor for mowing. Annual product costs, including fertilizer and soil amendments, are typically $1,500 to $1,750 per acre, or $30,000 to $35,000 for the full 20 acres.

Maintenance activities are typically spread out over about 140 days per year. Two workers are responsible for aeration, over-seeding, fertilization and baseball infield preparation. A crew of several workers mows the fields weekly. For purposes of this case study, non-mowing labor costs were estimated using the mean annual wage of landscaping and groundskeeping workers, as reported by the Bureau of Labor Statistics.[10] The cost for two groundskeeping staff for 140 days of work on 20 acres of organically maintained fields, plus an additional 30% for fringe benefits, is around $2,150 per acre, or $43,000 annually for the full 20 acres.

In addition, mowing costs were estimated to be approximately $5,000 per acre annually. This brings the total cost per acre to $8,650 - $8,900 per year.

[10] Annual mean wage, $30,860. Bureau of Labor Statistics. Occupational Employment Statistics. Occupational Employment and Wages. May 2018. 37-3011 Landscaping and Groundskeeping Workers. Accessed 6/18/2019 at www.bls.gov/oes/current/oes373011.htm.

Table 7: Estimated annual costs associated with organic management of 20 acres of athletic fields in Marblehead, MA		
Cost category	**Costs per acre**	**Total costs per year**
Products (e.g. fertilizer, soil amendments)	$1,500 - $1,750	$30,000 - $35,000
Labor (e.g. aeration, other activities)*	$2,150	$43,000
Subtotal	**$3,650 - $3,900**	**$73,000 - $78,000**
Mowing	$5,000	$100,000
Annual total for 20 acres of athletic fields	**$8,650 - $8,900**	**$173,000 - $178,000**

* Estimated using annual mean wage for groundskeeping workers in May 2018: $30,860, as reported by the Bureau of Labor Statistics.

Artificial Turf

For a maintenance and cost comparison, TURI also gathered information on Marblehead's 1.5-acre (65,340 square foot) synthetic turf field.[11] The field was installed in 2013; funding of $1.3 million was obtained privately for this project, and youth leagues pay a per-player fee to help support maintenance costs. Maintenance for the synthetic turf field requires grooming, cleaning, compaction testing, and decompacting.

The cost information presented here refers only to field maintenance, not to the initial acquisition and installation of the field. For detailed information on both acquisition and maintenance costs, see TURI's sports turf alternatives assessment cost analysis.[12]

For field maintenance, the town made a capital investment of between $10,000 and $14,000 for a Gator utility vehicle, and $7,500 for a brusher to attach to it. The field is groomed by an in-house Marblehead Recreation and Parks Department staff member who spends about a half day every three weeks in the spring and fall and every four weeks in the summer. That equates to $1,000 to $1,400 in labor costs (including fringe).

Marblehead received a bid for a disinfection product that contains several potential human carcinogens. For two applications per year, the total annual disinfection bid was $6,000. A less toxic, enzyme-based treatment could be provided for a higher cost, but specific figures are not available for this option. Assuming use of the lower-cost disinfection option, total annual costs for the 1.5-acre field add up to $7,000 to $7,400, not including up-front capital costs for field installation or maintenance equipment.

To gain more information on cost options, the town of Marblehead obtained a cost quote for synthetic turf maintenance performed entirely by an outside contractor. For two maintenance visits per year (including grooming, cleaning, de-compacting, field inspection, impact testing and infill depth measurements) the total cost would be $5,300 per year. A higher cost option would provide six visits per year, with disinfectant applied at each visit, as well as minor repairs. This option is offered for $6,800 per year for maintenance of the 1.5-acre field. Other costs to consider include the cost of installation or replacement of turf surfacing and padding after 8-10 years of wear.

[11] Marblehead All Sports Foundation. Web page available at marbleheadallsports.com/track/masf/.

[12] Sports Turf Alternatives Assessment: Preliminary Results Cost Analysis. Toxics Use Reduction Institute. 2016. Available at turi.org/artificialturf.

Summary

Marblehead has maintained high quality, organically managed grass fields throughout the community over a period of more than 15 years. Young athletes are invested in the goal of protecting and maintaining their fields, and take pride in the results.

The town has focused on maintaining high quality fields on a limited budget. They are able to maintain a healthy soil ecosystem on 20 acres of natural grass with the use of soil testing, aeration, frequent mowing, and the use of organic fertilizer and soil amendments.

> "Marblehead's twenty-year example of organic fields shows that success can be achieved in a variety of ways. It is an approach that focuses on healthy, biologically active soil combined with best management cultural practices and the exclusive use of natural, organic inputs. It is not measured in terms of 60 or 90 days, but rather over multiple years when results meet or exceed expectations. The goal here in Marblehead always has been playing fields that are free from harmful pesticides and meet community expectations."
>
> - Chip Osborne, Chair, Marblehead Recreation and Parks Commission

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The Toxics Use Reduction Institute is a multi-disciplinary research, education, and policy center established by the Massachusetts Toxics Use Reduction Act of 1989. The Institute sponsors and conducts research, organizes education and training programs, and provides technical support to help Massachusetts companies and communities reduce the use of toxic chemicals.

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Natural Grass Playing Field Case Study: Springfield, MA

Organic Grass Fields Meet Athletes' Needs and Protect Connecticut River Watershed

THE CITY OF SPRINGFIELD, Massachusetts, manages 12 properties, or a total of 67 acres, organically. This includes sports fields, park areas, and other public properties. Springfield's organically managed fields fully meet the community's needs for sports and other recreational activities, with high quality grass and soil.

Since starting the organic program in 2014, the city has doubled the number of properties in the program and experienced an increase in overall recreational use due to the improvement in soil and grass conditions.

This case study provides detailed information on the number of hours played at three parks in Springfield: two large complexes and one single, full-sized soccer field. Communities wishing to estimate the number of playable hours on a soccer field can use Treetop Park, the full-sized soccer field, as the most relatable model of the three parks discussed here. Treetop Park is used for approximately 1,050 hours of practice, play, and informal activity annually.

Children playing a pick-up soccer game on an organically-managed field in Springfield.

Aeration of the fields is a central element of successful organic maintenance. Other key elements include product application plans based on performance needs and soil testing for each field. Field management costs in 2018, including products, irrigation maintenance, and all labor costs, were just under $1,500 per acre across all the properties.

Springfield's organic management of natural grass has eliminated the need for pesticides, while providing a practical playing surface that fully meets the needs of athletes and others who use the parks. The Parks Department also notes that their field management choices help to protect water quality in the Connecticut River.

June 2019

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

Introduction

This case study has been developed by the Toxics Use Reduction Institute (TURI) as part of an effort to provide information to municipalities, schools, and other institutions as they make decisions about play surfaces. TURI has documented information on the materials often used in artificial turf playing fields.[1] TURI has also gathered information on natural grass fields and has developed a series of case studies to share experiences.

This case study focuses on the organic management of natural grass on city properties, including sports fields, by the Department of Parks, Buildings, and Recreation Management in the city of Springfield, Massachusetts ("the Parks Department"). This large, city-wide program includes management of nearly three million square feet, or 67 acres. However, the organic practices described in this case study can be used on grass properties of any size.

Forest Park baseball outfield. This area is converted to a soccer field in the fall.

Communities often have questions about whether natural grass can meet their athletic and recreational needs, and whether organic management of natural grass is cost-effective. TURI has compiled this case study so that other communities can learn from the successes in Springfield.

Overview

In 2014, the Springfield Department of Parks, Buildings, and Recreation Management made a commitment to begin organic management of its natural grass fields and parks. Springfield received support through a TURI grant to design and implement organic land care and grass turf management practices on municipal and school properties.

The city began with six pilot sites. Over time, the city expanded organic care practices to additional school properties and public land. As of June 2019, these properties include 12 organically managed sites (Table 1). The Parks Department hopes to expand the program city-wide within the next few years.

This case study provides information on maintenance and costs for all the fields currently under organic management. It also provides detailed use information on three individual field areas. Each of these fields is used for scheduled sports team activities. In addition, each field is used for other activities, such as concerts, pick-up games, and informal picnics.

Communities may have a variety of reasons for choosing organic practices for grass maintenance. For Springfield, the motivation was to protect the surrounding watershed and provide healthy playing spaces for youth.

[1] Massachusetts Toxics Use Reduction Institute. "Artificial Turf: Seeking Safer Alternatives for Athletic Playing Fields." Available at www.turi.org/artificialturf.

Table 1: Springfield organically managed properties in order from largest to smallest, June 2019		
Park	**Area (sq. ft.)**	**Sports/Other Information**
Blunt Park	757,508	Baseball, softball, football, soccer, lacrosse, and concerts
Forest Park Playing Field	733,165	Baseball, softball, football, soccer and concerts
Van Horne	459,994	Baseball, soccer, rugby concerts
Nathan Bill Park	306,662	Baseball, softball, soccer
Central High School	231,739	Baseball, soccer; two separate fields included in organic program
Treetop Park	117,771	Soccer
Sweeny Athletic Field at High School of Commerce	104,108	Athletic play and physical education classes
Court Square	74,862	Park in downtown Springfield across the street from City Hall; heavy foot traffic
Camp Wilder	64,577	Park with playground, pond, and small playing field; leisure sports; organically managed since construction
Terrace at Mason Square	25,350	Irrigated small park in downtown Springfield
Merrick Park	24,956	Small park in downtown Springfield
Mary Troy Park	22,700	Small park in the city; includes playground
Total organically managed area	**2,923,392**	

Project Design and Startup

The first steps in the organic management program were to conduct soil testing, identify priority actions to improve soil health, and allocate staff time for maintenance activities. Chip Osborne of Osborne Organics designed the testing protocol, analyzed results, and developed a detailed maintenance plan for the city.

Soil Testing

The soil testing provided information on physiochemical characteristics of the soil such as texture and acidity (pH), and levels of key nutrients such as phosphorus, potassium, nitrogen and calcium (Table 2). Soil testing also provided information on microorganisms in the soil, including bacteria, fungi, and nematodes. The correct balance of physiochemical and biological variables is essential to healthy soil and a healthy grass root system.

Since the project startup, Springfield has repeated selected soil tests every two to three years in order to estimate an accurate amount of fertilizer and other soil amendments to add to fields throughout the year.

Table 2: Variables measured during soil testing (examples)		
Physiochemical	**Nutrients**	**Biological**
Texture	Phosphorus	Total organic biomass
Moisture	Potassium	Active bacterial biomass
pH	Nitrate	Active fungal biomass
Organic content	Calcium	Nematodes

Source: Osborne, Chip. 2015. *Organic Land Care Project: Springfield, MA: Technical Review.* Report provided to Patrick Sullivan, Director, Springfield Parks Department.

Hours of Activity: Examples from Three Sports Fields

One of the questions frequently asked by decision-makers is how many hours of activity they will be able to schedule on a natural grass playing field. According to the Parks Department, organic management has improved the overall condition of these fields. Many hours of both formal and informal sports play occur on these fields, and there are few cancellations due to weather-related field conditions.

The Parks Department provided TURI with scheduled sports team use hours for two sports field complexes, Forest Park and Blunt Park, and one full-sized soccer field, Treetop Park.

Youth and adult (high school and adult league) sports teams generally use city fields from late March through late November. Hours of sports team use were estimated by multiplying the number of scheduled practices and games per week by the number of hours booked for each activity. Table 3 shows the number of weeks each sport is played per season, and the amount of time allotted for practices and games for each sport and age group.

Table 3: Weeks per season, hours of use per practice, and hours of use per game for each sport played on case study fields

Sport	Age Group	Weeks per Season	Hours per Practice	Hours per Game
Baseball/softball (Mid-March to June)	Adult	14	2	3
	Youth	14	1.5	2.5
Football (Mid-Aug to Nov)	Adult	14	3	3
	Youth	14	2	2
Soccer (Mid-Aug to Nov)*	Adult	14	2	2
	Youth	14	1.5	1
Lacrosse (Mid-April to June)	Adult	10	2	none **

*Soccer is played in both the spring and fall at Treetop Park. Treetop is the only park with a longer soccer season.

**Lacrosse games are not played on case study fields; only practice is held on these fields.

These fields are also used by Springfield residents for informal activities, such as pick-up games, or passive recreation, such as picnics. These activities take place during open park hours that have not been scheduled for team use, or on areas of the complex that are not in use during formally scheduled activities. Though this type of use is not formally tracked, the Parks Department noted steady use for unscheduled activities throughout the year. In the absence of data on informal activities, TURI estimated that Forest Park and Blunt Park were used for an additional 14 hours per week, and Treetop Park an additional seven hours per week, of informal/ unscheduled activity.

Cancellations

Baseball games and practices are rescheduled during active rain. In general, baseball field use is cancelled during rain because puddles form on the clay areas in the infield. This is unrelated to the organically managed grass, and is standard for baseball fields. An estimated total of 30 baseball

games/practices were cancelled in 2018 in both Forest Park and Blunt Park, primarily due to rain at the time of the scheduled activity.

In contrast, soccer, football, and lacrosse generally do not need to be cancelled due to rain. Cancellations occur only if there has been heavy rain for an extended period of time (a full day or more). For soccer, football and lacrosse in 2018, there were 10 individual game or practice cancellations at Forest Park, zero cancellations at Blunt Park, and 12 individual game or practice cancellations at Treetop Park.

Forest Park: Baseball and Soccer Complex

The playing field area at Forest Park is around 730,000 square feet and includes four 60-foot diamonds and two 90-foot diamonds with converging outfields.[2] The fields are open seven days a week from dawn until dusk. Scheduled play occurs each weekday from 2 p.m. to 8 p.m., and weekend days from 9 a.m. to 7 p.m. During these time periods, the area is in continuous use by sports teams.

In the spring and summer, the sports complex is used primarily for baseball and softball team games and a few weeks of pre-season practices. An average of 20 adult and 25 youth baseball and softball team games were played weekly in the spring/summer season of 2018.

In the fall, the baseball outfields are merged together to form three soccer fields used for both team practices and games. In 2018, adult teams used the fields for 10 games and 10-15 practices per week. Youth teams used the fields for 15 games and 10-15 practices per week.

Over the course of 2018, sports teams used the Forest Park sporting complex just over 200 hours per week, or nearly 2,900 hours for the entire year, for sports practice and games. Adding estimated informal use time leads to an estimated total of nearly 3,300 hours per year. Table 4 shows the total number of hours used by adult and youth teams for each sport per season.

Table 4: Forest Park baseball and soccer complex (733,165 sq. ft.): Hours of use for sports practice and games, 2018

Sport	Age Group	Season	Total Use: Hours per Week*	Total Use: Hours per Season
Baseball/softball	Adult	Spring	67	940
	Youth	Spring	68	950
Soccer	Adult	Fall	40	560
	Youth	Fall	30	420
Total documented sports team use – all seasons			**205**	**2,870**
Estimated informal recreation hours			14	392
Estimated total hours – all seasons			**219**	**3,262**

*Baseball/ softball and soccer seasons were 14 weeks each. Informal use hours were calculated for 28 weeks. Hours do not account for cancellations. There were approximately 60 hours of baseball cancellations and 20 hours of soccer cancellations in 2018.

[2] "60 foot" and "90 foot" refers to number of feet between bases. The sizes of these fields are standard for baseball and softball diamonds.

Blunt Park: Baseball, Soccer, Football, and Lacrosse Complex

Blunt Park's field area measures around 760,000 square feet and is open from dawn until dusk. The sports complex contains four 60-foot fields and two 90-foot diamonds, along with space for other recreation. The complex is mainly used for baseball/softball, football, soccer, and lacrosse practices and games. The park is also used for pickup games and many other non-sports events, such as concerts, throughout the year. Table 5 shows the total number of hours used by adult and youth teams for each sport per season.

In spring and summer 2018, the fields were used for 35-40 adult baseball/softball practices per week before the start of the season. During the game season, they were used for an average of 20 adult games per week. Youth teams used the fields for 15-20 youth practices and an average of 10 games per week. Blunt Park outfields were also used for five youth lacrosse practices per week during the spring.

In the fall, these baseball/softball outfields are combined and converted into two football fields and one combination field area for soccer, football, and lacrosse. During the 2018 football season, the outfield complex was used for 15 adult and five youth football practices per week. The field was also used for eight adult and five youth football games per week. During the fall soccer season, the field was used for five adult and five youth practices per week throughout the season. In addition, the field was used for five adult lacrosse practices per week during the fall. The estimated hours of use by sports teams on the complex totaled just over 230 hours per week and just over 3,200 hours for the year. Including estimated informal recreation, the field complex was used for about 3,600 hours in 2018.

Table 5: Blunt Park baseball, soccer, football, and lacrosse complex (757,508 sq. ft.): Hours of use for sports practice and games, 2018

Sport	Age Group	Season	Total Use: Hours per Week*	Total Use: Hours per Season
Baseball/softball	Adult	Spring	70	980
	Youth	Spring	48	665
Lacrosse	Adult	Spring	10	100
Football	Adult	Fall	69	966
	Youth	Fall	20	280
Soccer	Adult	Fall	10	140
	Youth	Fall	8	105
Total documented sports team use – all seasons			**234**	**3,236**
Estimated informal recreation hours			14	392
Estimated total hours – all seasons			**248**	**3,628**

*Baseball/ softball, football, and soccer seasons were 14 weeks each. Lacrosse season was 10 weeks. Informal use hours were calculated for 28 weeks.
Hours do not account for cancellations. There were approximately 60 hours of baseball cancellations in 2018.

Treetop Park: Full-Sized Soccer Field

Treetop Park is around 118,000 square feet and is primarily reserved for scheduled soccer practices and games in the spring, summer, and fall. The field is used less frequently for informal recreation than Forest Park and Blunt Park, as the entrance to the parking lot is locked. Table 6 summarizes the number of hours used for each sport and age group in 2018.

Forest Park and Blunt Park both include multiple overlapping fields. In contrast, Treetop Park is a single, full-sized soccer field. Communities wishing to estimate number of playable hours on a soccer field can use Treetop Park as the most comparable model.

In spring 2018, the field was used for five adult and 10 youth practices per week, two weeks prior to the start of the official spring playing season. During the official season, the field was used for five adult and 10 youth games per week. In the fall, Treetop was used for five practices and five games by adult teams, and five practices and 10 games by youth teams per week. The soccer field was estimated to have been used by sports teams for about 60 hours per week and just over 850 hours for the year. If estimated informal use is included, usage in 2018 totals about 1,050 hours.

Table 6: Treetop Park soccer field (117,771 sq. ft.): Hours of use for sports practice and games, 2018

Sport	Age Group	Season	Total Use: Hours per Week*	Total Use: Hours per Season
Soccer	Adult	Spring	11	160
	Youth	Spring	12	170
Soccer	Adult	Fall	20	280
	Youth	Fall	18	245
Total documented sports team use – all seasons			**61**	**855**
Estimated informal recreation hours			7	196
Estimated total hours – all seasons			**68**	**1,051**

*Soccer is played year-round at Treetop Park. Spring and fall seasons were 14 weeks each. Informal use hours were calculated for 28 weeks.

Hours do not account for cancellations. There were approximately 24 hours of soccer cancellations in 2018.

Maintenance

Maintenance occurs throughout the playing season, and includes aeration and the application of organic products including fertilizer and soil amendments. Soil amendments are materials added to soil to improve physical and/or chemical properties. Table 7 shows the 2018 schedule for aeration and application of organic products for the three parks highlighted in this case study.

Aeration

Aeration is accomplished by pulling up plugs of soil and grass using a riding or push machine. This process relieves compaction of soil and thatching of grass and allows air, water, and added nutrients to penetrate the soil. Aeration can be a time-consuming process, but is arguably the most important step for maintaining healthy, organic grass.

All of the organically managed fields in Springfield are aerated four times per year (Table 7). The Park Environmental Specialist aerates all the fields, at times with the assistance of one additional staff member. Choosing the type of aerator to use depends on the size of the grass area. A riding aerator is used for large, open areas with space for wide, gradual turns. A smaller push aerator is used for smaller areas or tight spaces near sports equipment or trees.

Springfield's tractor-led aerator used for large areas

Fertilizers and Soil Amendments

Springfield uses organic fertilizers and soil amendments and utilizes services provided by PJC Organics, a small consulting company and fertilizer producer/distributor in Massachusetts. PJC organizes soil testing and recommends products and their application schedules for each park based on these results along with performance needs. Recommendations include how many pounds of product are needed per field, per acre, and per application. These site-specific recommendations help avoid over-application of products.

Springfield uses an organic granular fertilizer made from soybean meal, feather meal, and potassium sulfate. Fertilizer is added to each field twice per year: once early in the summer, and again in late summer (Table 7). Springfield uses a Lely Broadcast Spreader to apply all products to fields.

Springfield also uses soil amendments including a soil conditioner and lime. The soil conditioner is made with biochar (charcoal), kelp, molasses, and soybean and is used to improve the chemistry, structure, and biological activity in the soil. Conditioner is added to the fields in the spring or early summer to jump-start microbial activity. Lime is added to the fields in October to adjust soil pH.

Key elements of Springfield's organic grass management:

- Soil testing for physical, chemical, and biological characteristics
- Aerating grass and soil
- Using organic fertilizer & soil amendments
- Mowing regularly

Table 7: Aeration and organic product applications schedule, 2018

Location	Field Aeration				Fertilizer		Conditioner	Lime
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2		
Blunt Park	May	Jun	Sep	Nov	Jun	Sep	Jun	Oct
Forest Park	Apr	Jun	Sep	Oct	May	Sep	Jun	Oct
Treetop Park	May	Jun	Aug	Oct	Jun	Oct	spring	Oct

This table shows only the fields highlighted in this case study. The other organically managed properties follow a similar schedule.

Costs

The majority of costs fall into three main categories: products, irrigation maintenance, and staffing. In general, costs associated with organic grass management often decrease after the first few establishing years, as the health of the soil and vegetation improves. The following are cost figures for 2018, the fourth year of Springfield's organics program.

Products

Products include organic fertilizer, soil conditioner and lime. The amount of product needed for a field depends on soil properties and intended use of individual fields. Grass seed was used to fill in small areas of heavy use, such as the areas in front of soccer goals. The amount of grass seed needed to accomplish this was small, and the cost was negligible for the year.

In 2018, Springfield used 440 pounds of fertilizer (total for two applications), 420 pounds of soil conditioner, and 230 pounds of lime per acre of land (Table 8). Springfield spent a total of $670 per acre, or $45,280 total, on soil products in 2018. A further breakdown of product cost estimates per organic property is shown in Table 9.

Irrigation Maintenance

Maintenance costs associated with irrigation include repairs on sprinkler heads and water lines, as well as the winterization of the system during months when the ground freezes. Springfield spent a total of $7,200 on irrigation maintenance in 2018 (Table 9).

The total cost for the Parks Department's organic management of 12 grass properties was $98,080 in 2018 (Table 9). Broken down by acre of land, the city paid around $1,460 per acre.

Table 8: Annual amount of soil products used and associated costs per acre in Springfield's organic management program, 2018

Product	Pounds Used per Acre	Cost per Acre
Fertilizer (two applications)	440	$410
Conditioner	420	$200
Lime	230	$60
Totals	**1,090**	**$670**

Totals are rounded to the nearest 10.

Table 9: Estimated annual costs for 12 organically managed grass properties in Springfield								
Products								
Location	**Acres**	**Fertilizer (per acre)**		**Soil conditioner (per acre)**		**Lime (per acre)**		**Total Cost**
		Pounds	**Cost**	**Pounds**	**Cost**	**Pounds**	**Cost**	
Blunt Park	**17.4**	**7,650**	**$7,190**	**7,220**	**$3,500**	**3,830**	**$1,030**	**$11,720**
Forest Park Playing Field	**16.8**	**7,410**	**$6,960**	**6,990**	**$3,390**	**3,700**	**$1,000**	**$11,350**
Van Horne	10.6	4,650	$4,370	4,380	$2,130	2,320	$630	$7,130
Nathan Bill Park	7.0	3,100	$2,910	2,920	$1,420	1,550	$420	$4,750
Central High School playing field	5.3	2,340	$2,200	2,210	$1,070	1,170	$320	$3,590
Treetop Park	**2.7**	**1,190**	**$1,120**	**1,120**	**$540**	**600**	**$160**	**$1,820**
Sweeny Athletic Field at High School of Commerce	2.4	1,050	$990	990	$480	530	$140	$1,610
Court Square	1.7	760	$710	710	$350	780	$100	$1,160
Camp Wilder	1.5	650	$610	620	$300	330	$90	$1,000
Terrace at Mason Square	0.6	250	$240	240	$120	130	$40	$400
Merrick Park	0.6	250	$240	240	$120	130	$30	$390
Mary Troy Park	0.5	230	$220	220	$110	120	$30	$360
Annual total for products on 12 fields								$45,280
Maintenance								
Irrigation maintenance	Includes all repairs: broken sprinkler heads, lines, startup, shutdown and winterization							$7,200
Labor								
Labor costs for all fields	Includes full-time staff and assistant for 120 days of work							$45,600
Annual total for products, maintenance, and labor on 12 fields								$98,080
Annual total for products, maintenance, and labor per acre								**$1,460**

Totals have been rounded to the nearest 10. Case study fields are highlighted in green text.

Summary and Lessons Learned

Between the beginning of the program in 2014 and the end of 2018, the city has doubled the number of properties in its organic program and experienced an increase in overall recreational use due to the improvement in soil and grass conditions. These results were accomplished through frequent aeration of the fields, and the creation of field-specific product application plans based on performance needs and soil testing for each field. Field management costs in 2018, including products, irrigation maintenance, and all labor costs, were just under $1,500 per acre across all the properties.

Springfield's experience is that the organically managed fields fully meet the community's needs for sports and other recreational activities. They have also found that all of the organically managed

properties have higher quality grass and soil than those outside of the program.

The Parks Director notes that field needs have changed over time. In the past, there were few or no formally scheduled sports after the baseball season ended in early July. Today, sporting requirements continue throughout the year. The fields never shut down during open hours, and game cancellations are rare.

For 2018 use information, this case study focused on three fields: Forest Park, Blunt Park, and Treetop Park. Formal use of the Forest Park sports complex totaled about 2,900 hours by baseball and soccer teams, and about 3,300 hours per year with estimated informal use included. Blunt Park sports complex totaled about 3,200 hours of use by baseball, football, and lacrosse teams, and about 3,600 hours with estimated informal use included. Treetop Park was used about 850 hours by soccer teams, and a total of about 1,050 hours with an estimated informal use included. Treetop Park is the best field to use for comparison of playable hours on an individual field, as it is composed of a single, full-sized soccer field.

> "The organically managed fields are definitely in better condition than they were before organic management. When you look at a natural meadow, it's self-sustaining. That's what we're replicating with our organic fields. And our parks are part of the Connecticut River watershed, all of our choices affect that broader ecosystem."
>
> – Patrick Sullivan, Director, Springfield Parks Department

The Parks Department Director recommends using organic management as soon as a field is constructed, when possible. Camp Wilder, a field measuring 64,577 square feet and used for general recreation by a summer camp, has been managed organically since it was constructed. Planning for organic management at the beginning of the field's life saved Springfield time and money on restructuring soil and grass in the future.

Staff working on the organic program note that the process is time-consuming but that they derive satisfaction from the process and its results. They consider field aeration to be the most essential element of the program.

The Parks Department notes that their choices affect water quality in the Connecticut River, illustrating that there are broad advantages to choosing the organic approach. The Parks Department has set a goal of reaching out to homeowners to educate them about the advantages of organic grass management, further expanding the benefits of this project.

To view our video documenting the Springfield Parks Department's experience, visit:

www.turi.org/Our_Work/Community/Organic_Lawn_Care

Acknowledgments

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The Toxics Use Reduction Institute is a multi-disciplinary research, education, and policy center established by the Massachusetts Toxics Use Reduction Act of 1989. The Institute sponsors and conducts research, organizes education and training programs, and provides technical support to help Massachusetts companies and communities reduce the use of toxic chemicals.

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Attachment E

Falmouth Fields Master Plan

Athletic Field Master Plan
Town of Falmouth
Falmouth, MA

January 31, 2017

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"This report was made possible by the people of Falmouth through the Community Preservation Fund".

Gale JN 717340

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SECTION 1.0 – INTRODUCTION AND PURPOSE

Gale Associates, Inc. (Gale) was engaged by The Town of Falmouth (Town) to assist with the development of an Athletic Field Master Plan. The goals of the Master Plan were:

- *To quantify the demand, use at each athletic field venue versus capacity.*
- *To evaluate and program the Town's requirements for upgraded or new athletic field facilities.*
- *To provide master planning services, resulting in a redevelopment renovation strategy for the athletic programs and venues that meet the needs of the community.*
- *To assist the Town to program and plan for the operational, maintenance, and capital improvement needs of such facilities.*

SECTION 2.0 – BACKGROUND INVESTIGATION AND EXISTING FACILITIES ASSESSMENT

The Town previously conducted existing conditions evaluations of each venue and provided evaluation forms and field maps to Gale for use in this report. Gale was not requested to conduct further site evaluations or existing condition research or base map preparation. Gale was also not requested to provide schematic planning for proposed improvement scenarios. The information provided by the Town in Enclosure 1 – Town wide Proposed Field Projects (Existing Field Conditions and Field Reports), was used not only as the baseline for field evaluations but also in the final rescheduling and redistribution of the athletic field activities were integrated into recommendations of the Master Plan Report.

Section 2.1 – Background Investigation and Base Plan Development

The Town compiled base maps for each of the thirty-six (36) town-owned field venues and provided to Gale, Enclosure 1 – Town wide Proposed Field Project (Existing Conditions and Field Reports). Typically, in developing a Master Plan Report, Gale will utilize as much public information as possible such as assessor's maps, Town GIS data, aerial maps, FEMA floodplain maps, and any "as built" drawings for existing drainage and utility systems available. Although this information is not suitable for detailed design, it provides a basis on which planning can be made. The information that was provided to Gale to rely upon for the purposes of this Master Plan Report included aerial mapping and an Overall Condition Index (OCI) that document current field conditions. The Capital, Operations and Maintenance Category Items (The Category Items) that are listed relative to the project include, but are not limited to, benches, bleachers, fences, gates, equipment, grounds, irrigation, lighting, structures, surfaces, parking and landscaping.

Section 2.2 – Facility Evaluation

The Town conducted a facilities inventory and condition assessment of the existing athletic field facilities. The Overall Condition Index (OCI) within the Existing Conditions Reports rates the presence and condition of the inventory. It should be noted that it does not directly address field conditions as they relate to adequacy, safety, accessibility, serviceability, and compliance with applicable geometry standards. Also, it is not clear whether the Town reviewed the fields equipment and infrastructure, such as lighting, dugouts, scoreboards, backstops, spectator seating, and soil and turf conditions, site utilities, stormwater management provisions and turf management practices. The background information that was provided, as well as the base plans and facility evaluations are provided in Enclosure 1 - Town wide Proposed Field Projects (Existing Field Conditions and Field Reports).

Review of the individual Maps and Field Reports from the Town, indicate that the Town's playing fields are generally in poor condition and need renovations in most of the areas addressed in the Category Items. Most of the fields OCI's (Overall Condition Index) list the fields in FAIR to POOR condition, with ratings between 2.4 and 4.0: 1=excellent, 4=poor, NR=Not Rated. The Town's field report cards are provided in Enclosure 1 – Town wide Proposed Field Projects (Existing Field Conditions and Field Reports).

Section 2.3 - Annual Field Use Demand

In September 2016, Gale met with the Town Recreation Department, the School Athletics Director, park maintenance staff and DPW staff to identify the formal uses made of each athletic field in the Town. Each field facility was reviewed and discussed individually with regards to type of hosted event, time spent on the field per event and how many uses per season and then per year that event occurred on each field.

The total number of "uses" each field hosts per year was then determined. Gale utilized the field use information from the Town in Enclosure 2 – Field Use Listings. First, the amount of Time Per Event (TPE) was set between 1.5 and 2.0 hours, as a typical amount of time for a game event of baseball, softball, football, soccer, lacrosse or field hockey or any other field event listed by User Organization. The TPE is an average time used only to determine total annual field use. Second, a Frequency of Use (FOU) was determined per field event per week, per season, and per year. For example, Men's Recreational Softball meets for four (4) hours (equating to two (2) scheduled uses), six (6) days per week for 20 weeks in the spring/summer season. The Field Use (FU) of that event is then calculated: 2 uses X 6 days X 20 weeks = 240 field uses/year. This procedure is done for each recreation and athletic playing field listed in the Town's field use program. The quantification of field use demand is provided in Enclosure 3 – Field Use Evaluation – Actual Demand Use Matrix. It provides a summary of the annual team and organization uses for the Town's existing recreation and athletic fields. It also implements the teams that utilize each field.

The results of the demand quantification indicate that the Town's fields are being used to accommodate over 11,288 team events per year. This number is based on scheduled events only and does not include undocumented uses. Over 75% of the recreation and athletic fields currently experience more than 250 scheduled team uses per year.

A well maintained, irrigated, natural turf field that is properly rested can typically sustain approximately 250 team-uses per year. This is dependent upon how well built and maintained it is, for such a field to sustain high quality and safe athletic turf under such a volume of use.

According to the Actual Demand quantification analysis, it appears that baseball/softball fields have the most annual scheduled uses, at approximately 5,304. The second most heavily used athletic field appears to the soccer fields, with the field experiencing 2,469 annual scheduled uses. The School's Physical Education Department activities account for 1080 field uses. Field Hockey, Lacrosse, Track and Field events, Pop Warner and Football play for 1,680 field uses. Special events and miscellaneous activities blend in for 755 field uses.

Section 2.4 - Equivalent Field Use Analysis

In comparing the uses at these athletic fields, one must consider that different sports result in different levels of stress and wear on the field. Some fields are primarily used for high/medium contact sports, where play is more aggressive, increasing the stress loads on the field and the rate of field deterioration and wear. Other fields are primarily used for low-contact sports and the stress on the field is not as detrimental. While the "Actual Team-Uses" (Enclosure 3) is a good indication of scheduled team-uses, the "Equivalent Team-Uses", Enclosure 4 – Field Use Evaluation – Equivalent Field Use Matrix_is a better indicator of stress imposed on the field. This calculation allows us to validate the quantified uses and relative condition of the fields, the "Actual Team Uses" is used for planning purposes in the development of the planning program.

Based on our experience, we have applied an impact factor of 1.0 to women's soccer as the average activity in terms of field impact and deterioration. Gale believes that high school football is twice as damaging to the turf and assign it a 2.0 impact factor accordingly. Other impact factors for various sports were assigned based on estimated turf impact, and then multiplied by the number of scheduled uses for each type activity to yield the equivalent team-uses in terms of turf damage and impact.

Based on the results of the demand analysis in Section 2.3, it is apparent that a majority of the fields of the Town are overburdened and accommodate more than the suggested 250 events per year. Ideally, heavily used athletic fields require a thirty to forty-five (30-45) day rest period during an active growth period in the fall or the spring. The Equivalent Demand Use (weighted field use) per field event is provided in Enclosure 4, and, as shown, it is apparent that the athletic fields are not afforded the consistent and appropriate rest period needed during the year due to their full use schedule throughout the year. A rest period

allows the predominately blue grass field to repair itself by rhizome propagation and "re-knitting" of the root-zone. This process does not take place during the summer, when cool weather grasses like Kentucky blue grass are dormant. This is a significant challenge for virtually all public school and municipal organizations.

SECTION 3.0 – FIELD USE REDISTRIBUTION

Section 3.1 – Redistribution of Athletic Programs

As mentioned above, for each field to achieve a sustainable playing surface, the total number of equivalent users cannot exceed approximately 250 per year. To accomplish this, uses on fields with higher existing demands will need to be moved to fields with lower existing demands in an attempt to distribute uses more evenly throughout the Town. In most cases, the overages would move to the closest field facility that had similar field characteristics as the field from which it was moved. Such considerations may include, but not limited to, playing field size and condition, availability and amount of on-site parking, team and spectator provisions. Before restructuring the current use of the fields, there were thirteen (13) fields under 200 uses, nine (9) fields between 200-250 uses, three (3) fields between 250-300 uses and eleven (11) fields with over 300 uses. The fields over 300 uses ranged from 437 to 720 uses per year, well beyond standard maintainable levels.

After all fields are scheduled with around 250 equivalent uses there are typically remaining uses that are left unscheduled. This result allows us to determine if additional fields are needed or if synthetic turf is needed in order to sustain all uses. After the redistribution, there is one (1) field under 200 uses and all the other thirty-five (35) fields have been scheduled between 200-250 uses. The result is a need for additional turf fields or the conversion of natural fields to synthetic turf, as provided in Enclosure 5 – Field Use Redistributed – Equivalent Field Use Matrix.

Per the field use redistribution, the Town needs one (1) new multi-purpose rectangular synthetic turf field and two (2) converted natural multi-purpose rectangular fields to synthetic fields in order to maintain their current field use program or nine (9) new natural grass fields. The lack of available land and maintenance budget favors the building of three (3) new multi-purpose rectangular synthetic turf playing fields. Current trends locate the first two (2) of the new synthetic turf fields at the High School facility.

Section 3.2 – Description of Improvements

The Town's Existing Condition Reports show the need for field and facility improvements in most of the Capital Category's Items and for all the Town's field facilities. The Town's busiest fields show the greatest amount of wear and stress and have been selected in this Master Plan Report by Gale for priority renovations. Also, it is often found that the fields of greatest need have similar deficiencies. The deficiencies in the fields of greatest need are listed for two (2) different types of improvements depending on their Category Score: the

items that scored a "Fair" rating have been designated for Renovation, while items that scored a "Poor" rating have been designated for Replacement. The fields are listed in Section 3.2.1.

Section 3.2.1 - Existing Town Fields Recommended For Upgrade

ITEM 1. PD/REC Fuller Baseball, Football and Track Field Facility
The PD/REC Fuller fields were selected as a priority facility for renovations because of its heavy use, consistent use and need of upgrade and repair. The field is home for the Cape Cod Commodores, the celebrated local baseball team. Renovations to the facility would include improvements to the bleachers, electrical work, and facility structures. Replacements may include fences, ground work, track and surface areas.

ITEM 2. Morse Pond (Middle) School Baseball, Multi-Purpose and Practice Field Facilities
The Morse Pond School facilities were selected as a priority for renovations because of the School's demand on the fields, the Town's consistent use of the facilities and their need of upgrade and repair. The Overall Condition Index ratings for the School's fields are Fair to Poor. The Schools current demand use for the playing fields limit efforts for the successful maintenance and sustainability of the fields. Renovations would be to benches, bleachers and selected worn playing surfaces. Replacements may include equipment, fences, selected depleted playing surfaces, facility structures and ground work.

ITEM 3. LWS Lawrence (middle) School Facility
The Town's limited number of baseball and softball fields are in high demand. In order for the playing fields at LWS Lawrence School to benefit the Town's athletic program, the fields need to be upgraded so they can be successfully maintained at the sustainable level. Renovations to the Lawrence School field facilities would include improvements to benches, facility structures, and selected playing surfaces.

ITEM 4. Falmouth High School Field #1, Field #4 & #5, and Field #7 Facilities
The Falmouth High School field facilities are in high demand in the Town of Falmouth. The majority of the demands come from the School's athletic activities and these will remain consistent. Consequently, these playing fields are a priority for renovations. Renovations would include upgrades to gates, ground work, selected playing surfaces, benches and selected facility fences.

The remaining Town field facilities all have deficiencies in one or more of their Capital Category Items. Renovations to these fields are recommended. Even distribution of the demand use on the fields will allow them to be renovated at the Town's seasonable maintenance ability.

SECTION 4.0 – PHASING AND COST ESTIMATES

Gale's evaluation of the Town's current athletic and recreational field use program has established the demand for nine (9) new natural grass fields or three (3) new multi-purpose synthetic turf fields, as well as the renovations of many of the existing municipal and school athletic fields throughout the Town. As reported to Gale by the Town of Falmouth's DPW Maintenance Department, as currently staffed the DPW cannot support the additional maintenance of nine (9) new natural grass fields. Therefore, the following is a phasing strategy for the construction of three (3) synthetic turf fields and the renovation efforts of the remaining fields.

Strategy

PHASE 1. Phase 1 involves THREE (3) ACTIONS. The first action will be to convert the current Falmouth High School (FHS) Track Field #2 into a new synthetic multi-purpose field facility and move football from Fuller Field to the High School. The second action will be to renovate the PD/REC Fuller Field Facility for baseball, plus any additional site amenities the Town may desire at the site (additional parking or Senior Center activities). The third action will be to construct a new synthetic turf field somewhere in the Town or at Falmouth High School that would be an addition to the current field inventory to be used as the football practice field, and for the need of any other field sport activity.

PHASE 2. Phase 2 will involve converting one of the Towns most heavily used fields (ie., Trotting Park, Sandwich Road) from natural grass to a new synthetic turf playing field.

PHASE 3. Phase 3 will involve the renovation of all of the playing fields at the Morse Pond Facility, as well as the Lawrence School fields.

PHASE 4. Phase 4 will renovate at the FHS playing Fields #1, #4, #5, #7, as well as the North Falmouth Fields #1 and #2.

Additional phases are recommended to include minor renovations to the Town's remaining fields and sustainable maintenance to all the new and renovated fields.

SECTION 5.0 – MAINTENANCE AND BUDGET

The implementation of a Master Plan to expand/enhance recreation facilities is only effective if the work completed is properly maintained. This section summarizes those activities that are routinely accomplished in the maintenance of high quality athletic fields, and provides recommendations in regards to maintenance activities, resources, and budget for proper maintenance of the athletic fields in the Town.

Specifically, turf grass management practices vary throughout an athletic complex, according to the type of play that is occurring in each locale and according to the stage of development of the athletic fields. Soccer, softball and baseball each dictate a different set of conditions that require unique management approaches. Additionally, specific areas within soccer fields are subject to different stresses (e.g., goal mouths, versus midfield and side line areas). Athletic complexes cycle through various stages of development including construction, grow-in, and maturity, each requiring a different approach to management.

Section 5.1 – Maintenance Activities

Natural Grass Field Maintenance. The following sections provide a description of each maintenance activity. Symbols are provided in parentheses after each activity name for quick reference.

5.1.1 Soil Sampling, Spring Inspection, Work Order Scheduling (I)

Soil tests should be taken annually for each athletic field and open grass area by early April. Samples can be submitted to the Soil & Plant Tissue Laboratory at the University of Massachusetts. The testing will establish the existing pH and micronutrient deficiencies for each facility and prescribe an amendment strategy to result in optimal turf grass development. Additionally, by establishing the actual turf grass nutritional requirements, rigorous testing of each field results in "as-needed" applications that are environmentally sensitive and cost effective. Results of these tests should be due to Falmouth by April 1 each year.

An individual maintenance worker can accomplish soil testing. A single worker can sample and ship an estimated ten to twelve playing fields per day. The cost of analysis for four (4) samples per field vary in price.
Preliminary turf inspection of facilities can be performed at the same time by parks staff and is vital as the turf is the most critical part of the playing experience for athletics, and the most visible component of grassed park areas. In addition, to the turf inspections done in conjunction with soil sampling, maintenance staff can observe the 'base line' conditions of the facilities they work on. Maintenance staff should be the most familiar with individual sites and can identify possible safety and maintenance issues such as divots, low spots, broken sprinkler heads, and the turf moisture level. Any observations need to be reported to, and documented by the Operations Manager.

5.1.2 Spring Clean Up, Service Irrigation, Inspect and Repairs (S)

The spring cleanup should be a deliberate, planned evaluation and repair program that addresses each facility in Town. It should begin as early as weather allows equipment to be on the fields without damaging the turf, usually in mid-April.

There are several valuable facility inspection checklists for overall park safety and serviceability, which should be executed for each playing field and its associated facilities (seating, scoring, public toilets, concessions, lighting, irrigation, etc.). The resultant inspection record and the recommendations therein must be compiled into a prioritized listing of maintenance and repair requirements that may be recommended for budgeting purposes.

Irrigation:

One of the most critical early spring maintenance requirements is the inspection and servicing of irrigation systems at each facility. The irrigation system servicing should include:

1. Turning the power on to the irrigation controller.

2. Re-install and test backflow preventers (if removed) and open the valves to the water source including all system isolation valves that were used for winterization.

3. Visually inspect pump systems and clean out any dust and debris that has settled on and around the pump.

4. Check the tension on any belts to the pump.

5. Once the pump is inspected, activate the pump with the controller and allow the irrigation main to pressurize.

6. Walk the water line route and check for any leaks at the valve locations.

7. Once this is complete, turn on each irrigation zone (one at a time) and again inspect the water coverage and make sure each sprinkler head is operational. It is a good practice to keep a supply of sprinkler heads and electronic valve starters in stock, so that defective ones can be replaced without delay.

8. Two (2) to three (3) days after irrigation lines are pressurized, walk the facility in order to detect any wet areas that may indicate a leak in pressurized irrigation lines that may indicate a need for repair.

9. Inspect and review irrigation application rates and zones regularly during the season to ensure proper coverage and amounts. Over-watering can damage turf more than under-watering.

For purposes of a budget development, it is impossible to predict the overall spring clean-up and repair effort required, as it will vary from year to year and from facility to facility depending on things like winter damage, surrounding tree cover, vandalism, and deferred maintenance. We have made a general assumption that the overall assessment, servicing the irrigation system, and clean-up and repairs required at each field takes 0.5 man days.

5.1.3 Weed and Pest Control Applications (P)

Herbicide and pesticide applications are a critical tool for turf managers in maintaining a vigorous stand of turf. The proper use, monitoring and application of these materials is vital in order to work effectively for their intended purpose, avoid damage to the environment and be cost effective. Application, storage and purchase of these materials must be done in the presence of a person certified in their use and treated areas may be required to be prominently tagged or signed for the public. In recent years, organic weed and pest control products have been introduced to the turf managers' palette. The choice of what methods and materials are used is sometimes the choice of the turf manager, but is frequently regulated by state or local ordinance. The key to proper herbicide and pesticide application is an integrated approach that includes all the best practices for moisture, fertilization and turf stress control, as well has proper seasonal timing.

These methods are referred to as Integrated Pest Management (IPM) practices. IPM is an approach to pest control, which seeks to anticipate and address the full range of physical, cultural and biological factors affecting the development of pest populations at a given site. The gathering of information on potential pest populations ensures that as the turf becomes established, maintenance staff has the knowledge and tools necessary to anticipate and address likely pest problems.

Pre-emergent herbicide (typically for crabgrass) should be used in March before germination of weed seeds. For highly infested areas, an additional application may be applied in mid-May. Post emergent herbicides (such as Round-Up®, or Confront®) should be used as deemed necessary by the parks superintendent or turf manager, and are rarely used for other than spot applications.

Pesticides should be used sparingly, as deemed necessary for a specific infestation, as reviewed by the Operations Manager. Chemicals used must be of recent manufacture, should be ordered as needed and used immediately to avoid storage. Only approved chemicals that do not present health hazards should be used. The Superintendent should approve any herbicide or pesticide application program used on a public property prior to application, an annual review of procedures is recommended.

For application of selected pesticides and herbicides, the resource table assumes labor at 0.5 man days for each field.

5.1.4 Fertilizer Spreading (F)

Fertilization is done in order to provide micronutrients to the soil and acts as a "food" for the turf-grass plant. Fertilization should generally be done in the early spring and summer and supplemented on selected fields in the fall on an as needed basis. This ensures that sufficient nutrients are available to develop healthy root zones during the peak growth period of May and June. The amount and type of fertilization should be adjusted for each field or facility based on the soil tests performed during spring inspections. As-needed applications of fertilizer save on materials costs and help prevent algae problems in adjacent waterways.

While actual fertilizer quantities will be dictated by soils testing results, for planning and budgeting purposes, it is assumed that fields will receive approximately one to two (1 to 2) applications of fertilizer (not more than five (5) pounds of nitrogen per 1,000 square feet) per year. The Falmouth Operations Manager will need to determine the optimal release time of the nitrogen based on field conditions, anticipated use, and time of year.

A granular materials spreader generally applies fertilizer. Organic, inorganic and/or synthetic fertilizers can be applied by hand, walk-behind spreaders or contracted spreaders for larger applications. Calibration of spreaders must be done to equipment regularly according to ground speed, type and size of material in order to accurately apply materials to the turf at the correct rate. Soils testing will recommend application rates for specific nutrients and is determined by the needs of the turf and type of soil, which affect the movement of the fertilizer and availability of nutrients to the grass plants. Application must be done in a uniform, even pattern to avoid stripping, caused by too much or not enough fertilizer applied. Turf should be watered after application of materials to work it into the soil and avoid tracking. A typical athletic field takes approximately three (3) man-hours to fertilize and requires a materials spreader, utility truck and trailer.

All employees who handle or apply fertilizer, pesticides and herbicides must have the proper training and certifications, and have the proper protective gear available for use. These materials should be ordered and applied as soon as possible to avoid storage issues and possible damage. Where appropriate, proper notifications and signage must also be displayed prior to application.

5.1.5 Cut Grass, Empty Trash, Re-Stripe, Rake Out Infield (Maintenance Rectangular/Maintenance Baseball, MR/MB)

Mowing is done to avoid having the grass go to seed, to maintain a safe, playable surface and to maintain a healthy vigorous stand of turf. Mowing is also performed to maintain a healthy, dense viable carpet of plants. It encourages root depth, grass strand density, root mass and rhizome development. It is done to keep the plants at a height that provides safe footing, cushioning and soil retention.

During the playing season, mowing on most fields will normally be conducted once a week. Mowing is usually included with litter pick-up, trash removal and striping of fields. Mowing heights should be adjusted from 2.5 inches during the spring growing season until mid-July, to 3.5 inches from mid-July to mid-September during the dry hot summer season, and then gradually brought back down to 2.5 inches during the fall season. Generally, not more than one-third (1/3) of the blade should be cut at any one time during any mowing activities.

To prevent damage to the grass blades and root systems mowing should not be conducted when frost is present on the ground, the ground is muddy, or during rainfall. It should be expected that grass will go dormant, and may 'brown-out' both in the winter season, and in the heat of the summer. Clippings may be discharged on site. The direction of mowing should be changed each week to avoid wear patterns in the turf. Mowers should be maintained regularly to ensure even, sharp blades. Do not refill mowers on the playing surface, and check equipment regularly for fuel, oil or hydraulic leaks that can kill turf grass and form mysterious patterns.

Using hand mowers, rotary mowers and reel mowers can accomplish mowing practices. Reel mowers are preferred for the best cut, and height control. The general guidelines for mowing are:

1. Mower blades should be kept sharp at all times, even if this means sharpening every day.

2. Refill mower fuel prior to starting work away from lawn areas.

3. Patrol site and remove sticks, litter and debris from mowed areas.
4. Remove no more than 1/3 of the grass plant at any one mowing.

5. The rate of turf growth determines mowing frequency, but no more than seven (7) days between mowing is recommended when possible.

6. Mow in alternate direction to avoid layover of turf blades, wear patterns and compaction.

7. The user groups using the facility should agree upon the height of the turf with the maintenance staff. No shorter than two and a half (2 ½) inches for blue grass is recommended.

The equipment used and the amount of the plant being cut off determine optimum square foot per hour. The time needed to perform this task will vary depending on the mower width from four (4) acres per hour to twelve (12) acres per hour.

For baseball and softball fields, the MR/MB activity includes grooming of the infield as well as use of application of surface infield conditioner in localized areas as necessary.

Completion of mowing, trash removal, striping and raking of infields (baseball only), is assumed to require four (4) hours of labor. Equipment used will include a utility truck, trailer, mower (rider and deck) and blowers/trimmers.

5.1.6 Maintenance of Synthetic Turf Fields (MST)

The Town currently has no synthetic turf field in its inventory of athletic facilities. There are generally only a few maintenance activities required for a synthetic turf field. However, it is often discovered that most municipalities do not perform any maintenance on their synthetic turf fields. Most synthetic turf field manufacturers provide a field groomer or sweeper upon installation of the field. The equipment is generally a pull-behind sweeper that is intended to rejuvenate the rubber infill materials and reduce compaction. There are also sweepers that provide removal of particles, fibers and debris that maybe on the surface of the turf. Manufacturers also typically recommend that the goal-mouth areas and localized areas of high demand be supplemented with rubber infill. Rubber infill material is usually leftover after construction and can be stored and used to sprinkle by hand at localized areas where demand is at its highest. In cases where synthetic turf fields are located within a track and a perimeter drain is installed, maintenance workers may need to inspect and clean areas where infill or debris has collected in the drain and to ensure that buildup at the interface between the turf and track is removed. The resource table for MST assumes 3.5 man-hours and a tractor, groomer, and blowers.

5.1.7 Aeration (A)

Aeration alleviates compaction and develops deep-rooted turf. It is accomplished by creating holes in the root zone of the soil profile, which allow moisture, nutrients and oxygen to penetrate to the root zone. Aeration also breaks up thatch, which helps contribute to the organic content of the soil and breaks the mat on the soil surface.

The best aeration method is a 1/2” + hollow tine aerator that removes plugs from the soil. When done over a period of years and followed by top dressing with sand, it is possible to dramatically improve the drainage character and compaction of the root zone, and improve its ability to drain properly and resist compaction.

Aeration is generally performed as follows:

1. Walk the field to remove rocks and trash. Flag all irrigation heads and valve box locations to avoid damage.

2. Water the field and let soak for several hours, if the moisture level is not adequate to allow penetration.

3. Core-aerate twice, once at each opposing angle to maximize the number of holes per square foot.

4. Allow cores pulled to surface to dry out.

5. Light-drag the area to break up cores on the surface, - or rake and remove cores.

6. Follow up immediately with top dressing with sand and/or over seeding.

Core to a depth of 2 ½" to 3" for most turf areas that are under stress from compaction or wear, and 4"-5" penetration for athletic fields with the need to break the compaction zone. Exercise care not to damage shallow buried irrigation or electric lines.

A slicing aerator can be used during the playing season without affecting the field playability.

Other aeration machines do deep tine aeration or deep hollow core aeration. The machine drives spikes into the soil at 90°, pulls out at a 45° angle to the surface so that it literally rips into the soil below and fractures the subsoil relieving deep soil compaction. Field managers must have intimate knowledge of the depth of irrigation and electrical lines to prevent having to make unnecessary repairs.

Aeration on municipal fields is typically performed once or twice per year depending on field use, soil structure, field condition and need to achieve field classification playing conditions. Soccer goal mouths should be aerated a minimum of every 21-30 days. The following breakdown applies to one person per task:

Core Aeration:	70 minutes per field per occurrence
Slicing:	50-60 minutes per field per occurrence
Deep Tine Aerating:	90-100 minutes per field per occurrence
Goal and Wear Areas:	30 minutes per field per occurrence

Completion of aeration of the fields and localized areas is assumed to require 0.5 man days, as well as use of an aerator, utility truck, trailer, and tractor.

5.1.7 Topdressing (TD)

Topdressing adds soil, sand or other beneficial organic material or soil amendments (as determined by turf needs) to the surface of the turf. Topdressing is a maintenance method that adds material to the surface of growing turf to fill low

areas, decrease compaction, or increase the organic content of the topsoil. Topdressing can, over a period of years, change the quality of existing in-place topsoil without taking the field off-line for a long period. Topdressing is also necessary for repairing low areas and high wear areas that typically form during regular use of a field. Topdressing usually follows core aerating operations to fill core voids and is followed by over seeding to add turf cover. For topdressing and over seeding to work properly, fields need to be taken off-line for at least a month during a growing season to let existing turf and over seeding re-establish. If soil testing indicates the need for additional organic matter in the topsoil, compost, peat, topsoil or other dry organic material can be used. Typically, coarse sand or a mix of sand and organic matter is used for topdressing to improve topsoil drainage characteristics and relieve compaction.

Topdressing is normally performed as follows:

1. The topdressing material of choice is bulk mixed, loaded and drop-spread from a hopper conveyor or top dresser. Topdressing worn areas is typically done by hand in areas such as soccer goalmouths or field centerlines.

2. Review soil sample results as noted in Section 5.1.1. Observe soil density, thatch thickness, root structure and soil composition.

3. Evaluate needs of the field and determine appropriate mix to offset problems observed in the sample.

4. Order topdressing mix and have delivered to site.

5. Inspect and fill low areas or worn areas by hand.

6. Fill the top dresser, check conveyer and material drop mechanism for desired rate of drop.

7. Distribute evenly over the playing surface following a prescribed pattern.

8. Surface can then be light dragged or raked.

Topdressing is generally done once per year, however may be done twice per year and more if a field or soil demand, and the use of the field allows. Soccer goalmouths are topdressed following core aeration. This task usually takes one person 3-4 hours for full field application, while goal mouths take as little as 15-20 minutes per goal area.

5.1.8 Over seeding (OV)

Over seeding is recommended for all well used athletic fields and is typically performed in the spring and fall seasons. Over seeding is the spreading of turf grass seed over established turf, bare areas or areas of stressed turf in order to increase the density of actively growing turf grass and fill-in bare or worn areas on a field. In New England over seeding is typically done in the spring and fall because warm days and cool nights are ideal for turf establishment and seed growth. Fall is especially effective for over seeding as weather conditions and moisture conditions are optimum and weed competition is at a minimum. Over seeded fields must have ample down time to allow for the grow-in period and proper seed establishment. Over seeding is most effective when combined with aeration and topdressing activities to increase soil contact of the seed. Turf managers need to judge whether to dethatch or vertical mow fields prior to over seeding to increase soil contact, as well as select the proper seed for how they are managing the field. Fertilizer should be added after over seeding has been conducted.

Over seeding can be done by different methods, which is usually determined by the size of the area to be over seeded and available equipment. A mechanical tow-behind seeder with a high capacity bulk spread box is typically used for large areas. Broadcast spreaders and manual raking can be used for spot applications like sidelines or goals mouths. Over seeding should be done in conjunction with topdressing for filling low areas or when repairs are made around irrigation heads or utility boxes. Preparation for over seeding usually includes some combination of aeration, topdressing and dethatching, and is generally performed as follows:

1. Grade, level and crown field by topdressing as needed.

2. Add soil amendments as recommended reduce compaction and/or increase organic content.

3. Apply fertilizer as recommended.

4. Determine rate of seed application from size of seed and condition of the area to be over seeded. Bare areas require a higher rate than over seeding an established turf stand.

5. Always insure the seed has contact with the soil after application. Do this by dragging or applying a thin layer of topdressing and a light drag or brooming. Soil contact is critical for germination and sustained growth.

6. Set irrigation operation to maintain satisfactory soil moisture always. After germination maintain moisture level, mow at 2 ½" and fertilize every 21-days until plants reach maturity. Do not over water.

Over seeding using a bulk spreader typically takes one (1) person two (2) hours per field, depending upon equipment used and the size of area being over seeded.

5.1.9 Irrigation Operations (IR)

The irrigation activity was established to capture the cost of the time spent in adjusting and monitoring field irrigation systems, as well as the utility costs for irrigation operation. To estimate the cost, we assumed that the irrigation season was from June through August. We also assumed that each field footprint received a half inch of irrigation per week, and used this figure to determine the average volume of water used on a typical field. The costs to service, repair, and winterize the irrigation systems were captured in this model separately as they were included in the spring clean-up and fall-clean-up activities described above.

5.1.10 Fall Clean Up, Leaf Removal, and Late Fall Facilities Inspection, Repair and Irrigation System Winterization (W)

The Fall Clean-Up Program should be a deliberate, planned evaluation and repair program that addresses each facility in Town. It should begin as early as the use of the facility allows and be completed before cold weather threatens the irrigations system, usually by mid to late November.

As noted in the Spring Clean-Up section, there are several valuable facility inspection checklists for overall park safety and serviceability that should be implemented for each facility and its associated improvements (seating, scoring, public toilets, concessions, lighting, irrigation, etc.). The resultant inspection record and the recommendations should be compiled into a prioritized listing of maintenance and repair requirements, and the resultant work orders be completed during the winter and early spring.

<u>Irrigation:</u>

One of the most important fall maintenance requirements is the inspection and winterization of the irrigation system at each field before freezing weather has a chance to cause damage. There are several steps to shutting down and winterizing the system which can be completed by parks staff or an outside contractor with specialized equipment for removing water from the irrigation pipes.

1. Disconnect the electrical supply to both the controller and any pumps within the system.

2. Shut off the water supply source (well).

3. Use an air compressor that attaches to the system to “blow-out” the remaining water within the system.

4. As portions of the system are clear of water, close any isolation valves to that part of the system.

5. Remove the backflow preventer from non-frost protected systems as recommended by the manufacturer.

6. Once the entire system is purged, the winterization is complete.

Budget two (2) men, four to six (4 to 6) hours to complete if using own staff. If an irrigation service is used, budget $200/field for winterization.

The other significant, labor-intensive requirement during the Fall Clean-Up is leaf removal. The removal of leaves from park areas, athletic turf and planting beds is essential to park aesthetics and the long-term health of turf grass areas. We have assumed that a combination of leaf blowers and vacuum trucks are used for this purpose.

For purposes of budget development, it is impossible to accurately predict the fall clean up and repair effort required, as it will vary from year to year and from facility to facility depending on things like playing season damage, tree cover, exposure, vandalism, and deferred maintenance. We have made a general assumption that the overall assessment of each field will take .25 man-days. That servicing the irrigation system at each field will take .5 man-days, and that the actual clean-up and repairs required at each field will take 0.5 man-days.

5.1.11 Lime Application (L)

Lime application will generally be conducted during the last two weeks of November. Lime requires up to six months to break down and have the desired effect on soil pH.

Lime should be applied to soil based on the pH results and recommendations of the soil testing required in Section 5.1.1. Not more than 50 pounds of Lime per 1,000 square feet shall be applied at any time. Lime is typically spread using a granular materials spreader, and a typical field can be completed in approximately two hours with motorized equipment. For large lawn areas, purchasing and applying lime in bulk and having it applied more efficiently with specialty equipment (e.g. by a contractor) can provide a savings by avoiding equipment maintenance and labor costs.

5.1.12 “Off-Season” Maintenance Requirements (E)

Off-season maintenance activities, include work which is deferred during the playing season, to seasons where less direct maintenance is required. Off-season maintenance includes items which must be accomplished in the off season to

properly prepare for the next turf grass growing, and playing season. A partial listing of these activities is as follows:

- Annual services on all maintenance equipment. This generally includes thorough inspection and repair, a change of all fluids, sharpening, calibration, filter replacement, and tuning.

- Annual cleaning, service and repair of athletic equipment and facilities. (e.g. goals, goal posts, dugouts, bases, netting, etc.)

- Inventory of all hand tools and materials, repair and ordering replacements as needed.

- Completion of all the hazmat, pesticide, herbicide and fertilizer reporting requirements and logs.

- Staff professional development training on such topics as Integrated Turf Management requirements, OSHA safety, etc., re-certifications and training.

Section 5.2 – Maintenance Staffing

Gale has estimated the staffing requirements throughout the year. Assuming the employees will be dedicated to athletic field maintenance, Table 1 provides the quantity of staff members required by month, based on the maintenance requirements of the current athletic field use program.

Table 1
Recommended Staffing Numbers by Month

Month	Supervisors Required	Workers Required	Total
January	0	0	0
February	1	1	2
March	1	2	3
April	1	4	5
May	1	3	4
June	1	2	3
July	1	2	3
August	1	3	4
September	1	3	4
October	1	2	3
November	1	2	3
December	1	1	2

As shown in Table 1, the staff requirements vary by month. To account for these variations, it is Gales understanding that other Towns have hired seasonal work staff and divided staff between other divisions in order to meet peak requirements for staffing.

Section 5.3 Maintenance Budget

The Town asked Gale to quantify a typical budget associated with maintenance of the fields. A general description of a typical (mature) natural turf grass maintenance program has been summarized below and a maintenance estimate summary derived below. It is based on a 90,000-square foot multi-purpose natural grass playing field. In the smaller fields, such as the proposed youth fields, a 30% reduction in cost to maintain has been Gales practical experience. Since the smaller size fields are not played on by athletes at the same level of a full-size field and generally the field requires less area to maintain, the combination of those two factors results in a decrease in cost.

Maintenance Summary

• Mowing: Weekly for 6 Months = 24 Cuttings	$ 6,000.00
• Watering: ½" per Week for 20 Weeks	$ 5,500.00
• Irrigation: Winterize/De-Winterize	$ 3,500.00
• Chemical Applications: Fertilizer X2, Lime, Pesticides	$ 4,500.00
• Aeration, Topdressing, Over Seeding Bi-Annually	$ 8,500.00
• Lime Markings: Weekly for 24 Weeks	$ 4,000.00
	$32,000.00

The estimates for the field maintenance shown above are preliminary estimates for both materials and the man hours for each individual task. The estimates are conservative estimates based on what Gale has derived from working with various Towns throughout the northeast region of the United States. Maintenance cost can vary from Town to Town based on what available materials the Town may have as well as existing partnerships with companies who aid the maintenance of the facilities.

As stated previously, one of the most important turf management strategies is the implementation of an Inclement Weather Policy (Section 6.0). It is Gales understanding that current procedures, there is no policy in effect that prohibits use of fields under wet conditions. The single, most damaging impact on natural turf is use of a field in wet conditions. While the Department of Public Works should be expected to maintain an adequate level of turf quality, these expectations cannot be met without the use of an Inclement Weather Policy.

Section 5.4 Synthetic Turf Maintenance Budget

The sports field industry recommends that synthetic turf fields be maintained regularly to keep the playing field at their maximum playing condition. Grooming equipment is provided along with each synthetic field purchase. The Client/Owner has the option of doing the maintenance themselves self or contracting out the turf maintenance. A typical field maintenance event would happen twice a year, once in the spring and again in the fall. The costs of the two (2) different options are as follows.

MAINTENANCE OPTION 1. A basic In-house maintenance effort would involve a crew of two (2) men, one (1) machine, a field groomer attachment, and hand rakes for approximately four (4) hours/event, two (2) events/year.

Total Cost of In-House Maintenance Package $1,600.00

MAINTENANCE OPTION 2. A basic contract maintenance package would include the following services:

- INSPECTION OF THE INFILL DEPTH – Precise measurement tools determine additional infill as needed.
- INSPECTION OF FIELD SEEMS – Prior to maintenance, field seems are checked, processed and repaired up to 100 feet.
- INSPECTION OF FIBER INTEGRITY – The fields are checked for premature wear of fibers.
- INSPECTION OF HIGH TRAFFIC AREAS – Infill is replenished in the areas of high traffic use.
- THE FIELD IS GROOMED – Level infill, soften and decompact field, straighten fibers with specialized equipment.
- FOREIGN OBJECTS ARE REMOVED – A magnetized machine removes all ferrous metals from the field.
- THE FIELD IS SWEPT – Special machine attachments sweep the field and remove all loose fiber and litter.
- A MAINTENANCE REPORT IS PROVIDED – A final field inspection is made, a walk through with the Client/Owner is performed, a written report is provided.

Total Cost of Maintenance Package, Single Visit $1,850.00
Total Cost of Maintenance Package, Full Year $3,700.00

SECTION 6.0 – INCLEMENT WEATHER POLICY

How a field is scheduled is an important consideration in its ability to sustain heavy use with an acceptable decrement in turf condition. Obviously, a field with 250 scheduled uses stretched out over the year (May through October), behaves differently than if this use was broken up with rest period(s) provided. Ideally, a natural turf field should have a 30-day

rest period during the active growing season (spring or fall) to repair the root zone damage it has sustained and to propagate new crown growth. Alternatively, this rest period can be in the summer time. However, a summer rest period is less effective, as the turfgrass is somewhat dormant.

It should be noted that it only takes playing once on a very wet field to destroy the turf root zone for that season. An effort must be made not to play games or even practice on fields that are excessively wet. Based on the conclusion that the Town's fields sustain heavy use, an Inclement Weather Policy is strongly recommended as a management tool for preventing damage to fields in the event of inclement weather.

The enforcement of a restrictive inclement weather policy by field managers is the single best management practice available. A typical policy addresses the importance of not playing on fields during wet conditions. Such a policy protects the safety of players, the condition of the fields and serviceability of the facilities. It is also fiscally responsible to local taxpayers. The policy should outline condition assessment procedures and the responsibility of the Recreation Commission, Department of Public Works, athletic team staff and players, as they relate to inclement weather and field use. A complete inclement weather policy should include information on its purpose, implementation procedures, field closure guidelines, communication processes, procedure enforcement and penalty procedures. The Inclement Weather Policy should be provided to all permitted field users, as well as posted at all facilities to inform unscheduled users of the importance of prohibiting use during inclement weather.

The following is a sample Inclement Weather Policy.

SAMPLE
INCLEMENT WEATHER POLICY

PURPOSE

Town athletic fields are designed and maintained for the enjoyment and use of all residents. The purpose of this policy is to inform the public of certain rules and restrictions for fields to (1) prevent damage to the playing surface and (2) injuries to field users caused by inclement weather or unsafe playing conditions. An effective field maintenance program and inclement weather closure policy is essential for safety, upkeep, and enjoyment for all residents and visitors.

Field users are asked to help us by adhering to the following rules and procedures. Groups who use Town athletic facilities are expected to assist in protecting their participants and the fields during periods of rain and other inclement weather. With respect to field quality, it only takes on practice or game to destroy a field that is not ready for play.

POLICY

The Department of Recreation reserves the right to cancel or suspend outdoor facility and field use, including uses subject to an issued permit, for games, practices and other uses whenever field conditions might result in damage to the fields or injury to players.

Permits may also be cancelled when the health or safety or participants is threatened due to existing or predicted conditions, including but not limited to heavy rains, thunderstorms, and air quality alerts.

It is the field user's responsibility to visit the Recreation Department homepage at or call the Recreation Weather Hotline at (XXX) XXX-XXXX after 2:30 p.m. Monday-Friday, or after 7:30 a.m. Saturday and Sunday to verify field closures. Closed fields may not be used.

The Recreation Department enforces field closure notices, and if groups are found using closed fields, the permit holder may be charged for the cost to repair the field. Additionally, if the Department determines that permitholder has violated the field closure notice on multiple occasions, the entirety of their permit may be revoked and that organization's or group's ability to acquire future permits shall be under review.

PROCESS

The Department of Recreation uses various resources to get the most accurate conditions report at a site. These resources include coaches, Town employees, referees, and umpires. Information may be collected from one or more of these sources prior to a decision to close a field. Once the decision is made, the hotline and Recreation Department homepage are updated.

Weather is very difficult to predict. To assist with closure decisions, the Department utilizes weather forecasts from various sources. However, the Department reserves the right to close a field when a determination is made that use might cause damage or injury.

Please use the breakdown below as general guide for which fields are closed.

<u>Rain</u>

Artificial Turf – Open until conditions become unsafe for play

<u>Natural Turf</u> – Closed

Note: Fields may be offline for multiple days for the field to completely dry-out and return to a playable condition.

Thunderstorm

Artificial Turf – Closed until storm passes (unless field becomes saturated)

Natural Turf – Closed (may reopen)

Reopening dependent on amount of rainfall, the Recreation Department will make determination.

Snow or Ice

Artificial Turf – Please refer to the Recreation Department website or weather hotline to determine the status of artificial fields after snowfall.

Natural Turf – Closed

End of Sample Policy

SECTION 7.0 – OVERALL CONCLUSIONS

The Master Plan is the first step in identifying inventory constraints, community needs and a planning program to help the Town of Falmouth better meet the recreational needs of the community. Gale determined the level of use for each athletic facility in the Town and formulated a planning program based on these use levels. Based on these assessments and the meetings with members of the Recreation Department, this report finds that the field demands placed on the Town have resulted in a deficit of three (3) multi-purpose rectangular artificial turf fields or a deficit of nine (9) natural grass fields as determined in Section 5.0.

Gale concluded that many of the existing athletic fields have deficiencies in similar areas, which include little to no rest periods essential to turf growth and establishment, field areas devoid of turf (a potential safety hazard), a lack of site amenities, and a lack of ADA accessibility. The existing fields are significantly over-used, resulting in poor turf conditions and an unrealistic level of maintenance.

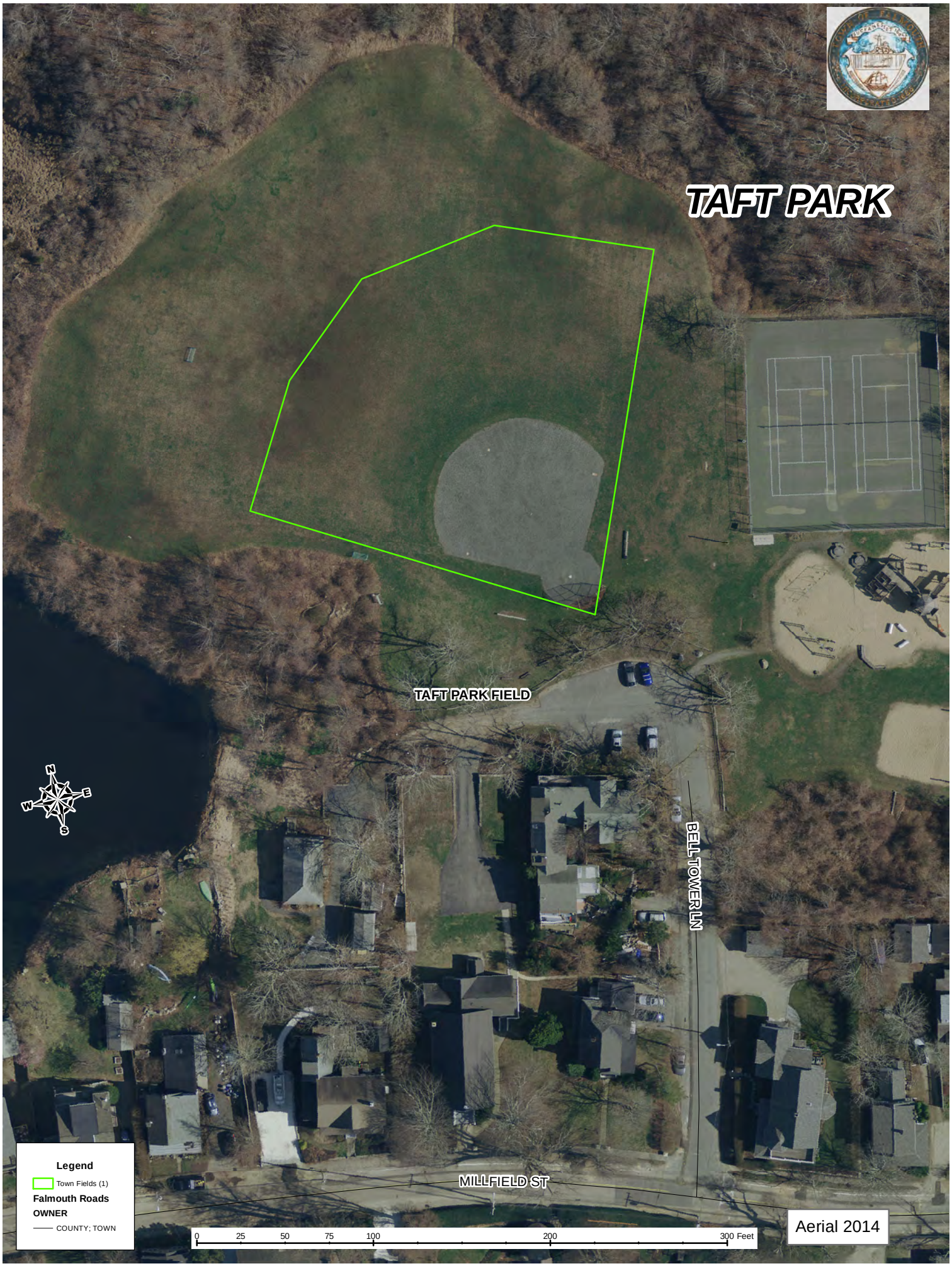
Gale's Master Plan provides a planning program that will guide the Town of Falmouth in its goal to provide adequate and safe athletic fields to its community. Additionally, Gale provided a customizable maintenance program for the Town to determine a maintenance schedule that aligns with their staffing levels and budget.

G:\717340\01 Evaluation\report\master plan\717340 the master plan report.doc

ENCLOSURE 1

TOWNWIDE PROPOSED FIELD PROJECTS

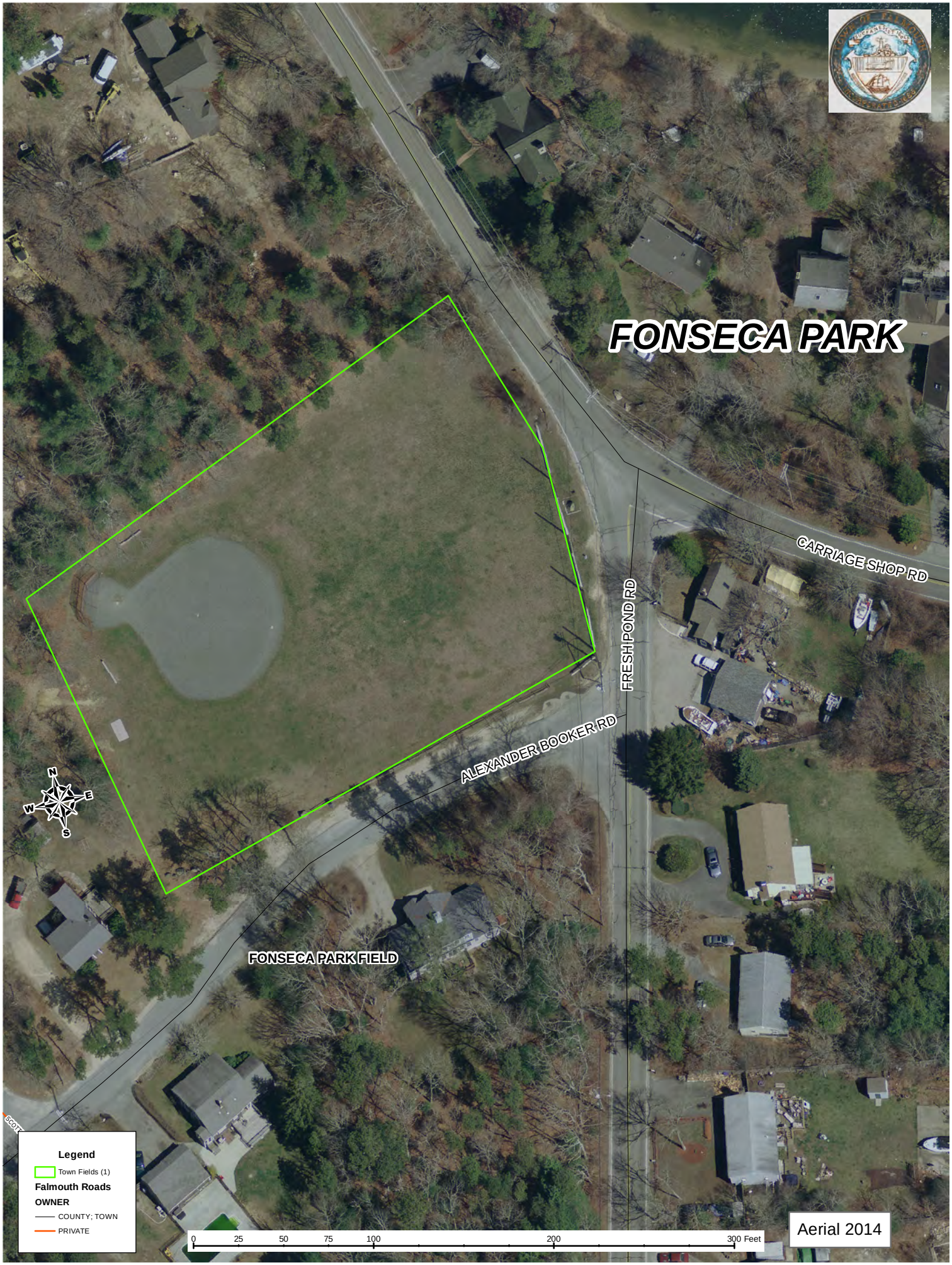
(Existing Conditions and Field Reports)


TAFT PARK
TAFT PARK FIELD
BELL TOWER LN
MILLFIELD ST
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
0
25
50
75
100
200
300 Feet
Aerial 2014

ALIETTA FIELD 151
Aerial 2014
NATHAN S ELLIS HWY
RANCH RD
ALIETTA FIELD 151 FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
0
25
50
75
100
200
300 Feet

CENTRAL PARK FIELD
CENTRAL AVE
CRESCENT AVE
NANTUCKET AVE
MASSACHUSETTS AV
CENTRAL PARK AVE
GRAND AVE
WALDEN AVE
CENTRAL PARK FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth
OWNER
COUNTY;
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

EAST FALMOUTH SCHOOL
DAVISVILLE RD
MARLIN DR
EFS FIELD 1
EFS FIELD 2
N
E
S
W
Legend
Town Fields (2)
Falmouth Roads
OWNER
COUNTY; TOWN
0 25 50 75 100 200 300 Feet
Aerial 2014

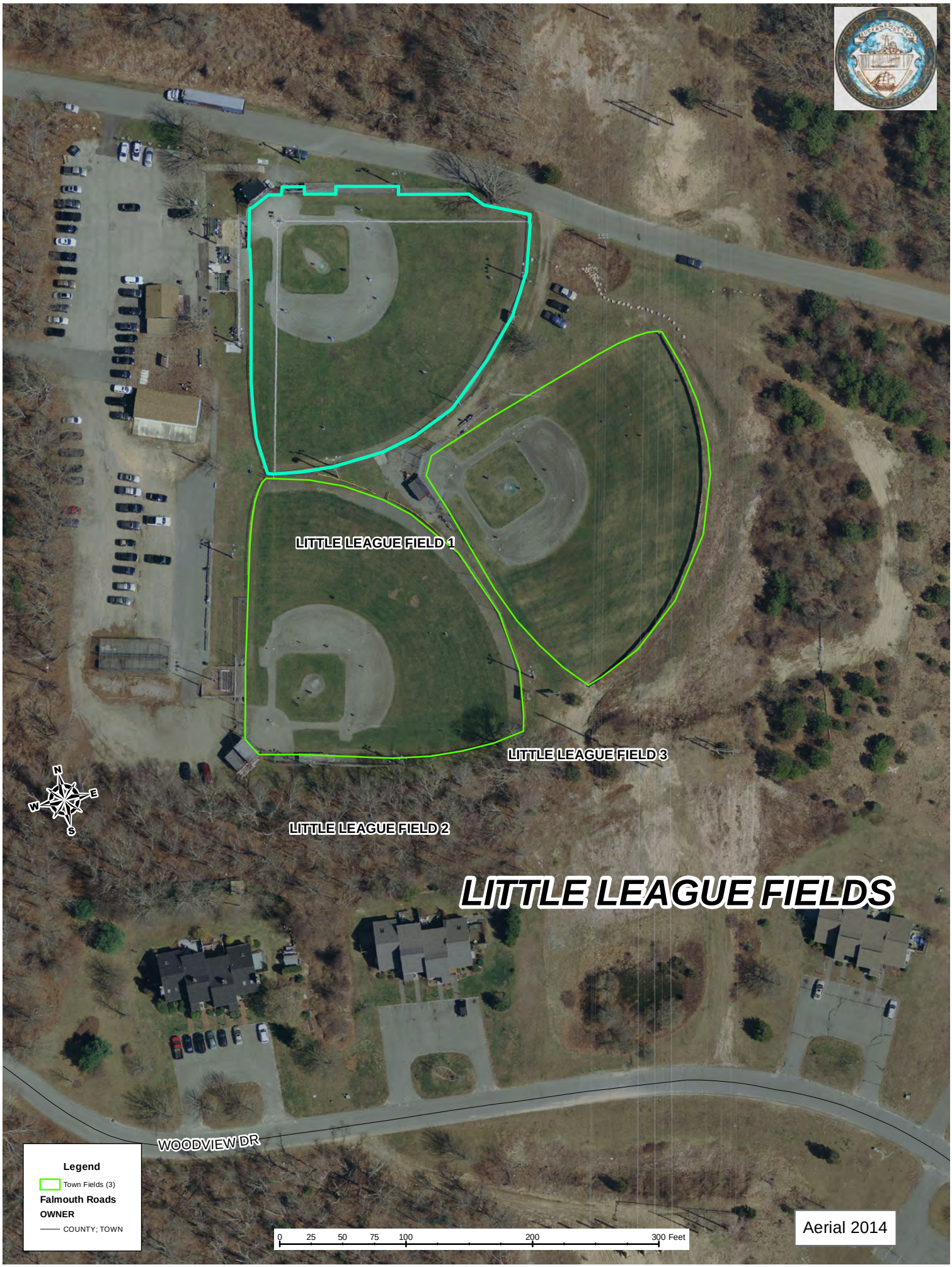

FONSECA PARK
CARRIAGE SHOP RD
FRESH POND RD
ALEXANDER BOOKER RD
FONSECA PARK FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0
25
50
75
100
200
300 Feet
Aerial 2014

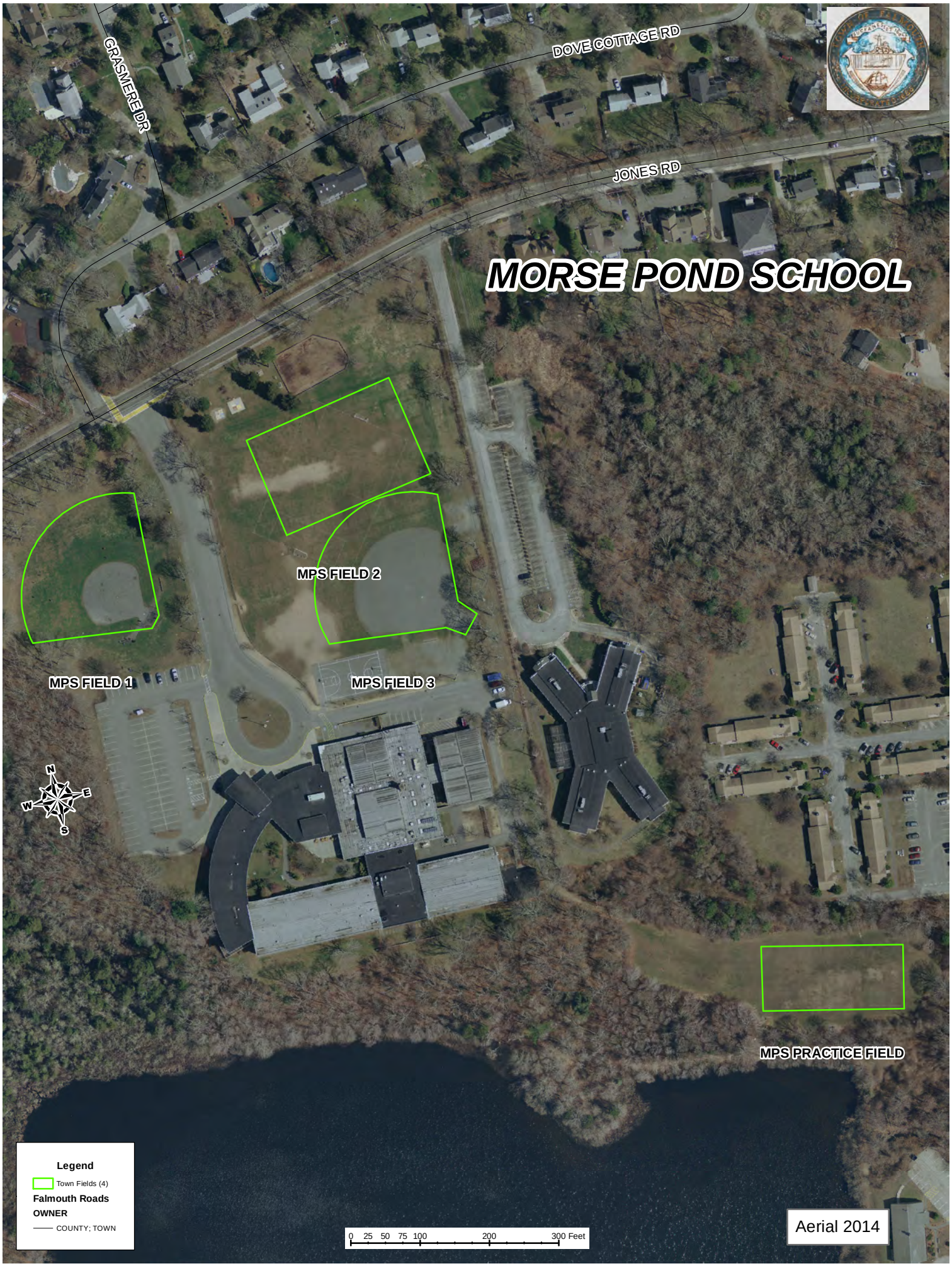
FULLER FIELD
DILLINGHAM AVE
PD\REC FOOTBALL FIELD
PD\REC FULLER FIELD
MORSE POND RD
N
E
S
W
Legend
Town Fields (2)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

PUMPING STATION RD
GOODWILL PARK
GOODWILL PARK FRISBEE FIELD
N
E
S
W
GOODWILL PARK
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
0 25 50 75 100 200 300 Feet
Aerial 2014

HIGH SCHOOL FIELDS
FHS FIELD 1
FHS FIELD 2
FHS FIELD 3
FHS FIELD 4
FHS FIELD 5
FHS FIELD 6
FHS FIELD 7
HARRIETTE R
LOCUSTFIELD RD
GIFFORD ST EXT
GIFFORD ST
BRICK KILN RD
ANDYS LN
N
E
S
W
Legend
Town Fields (7)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

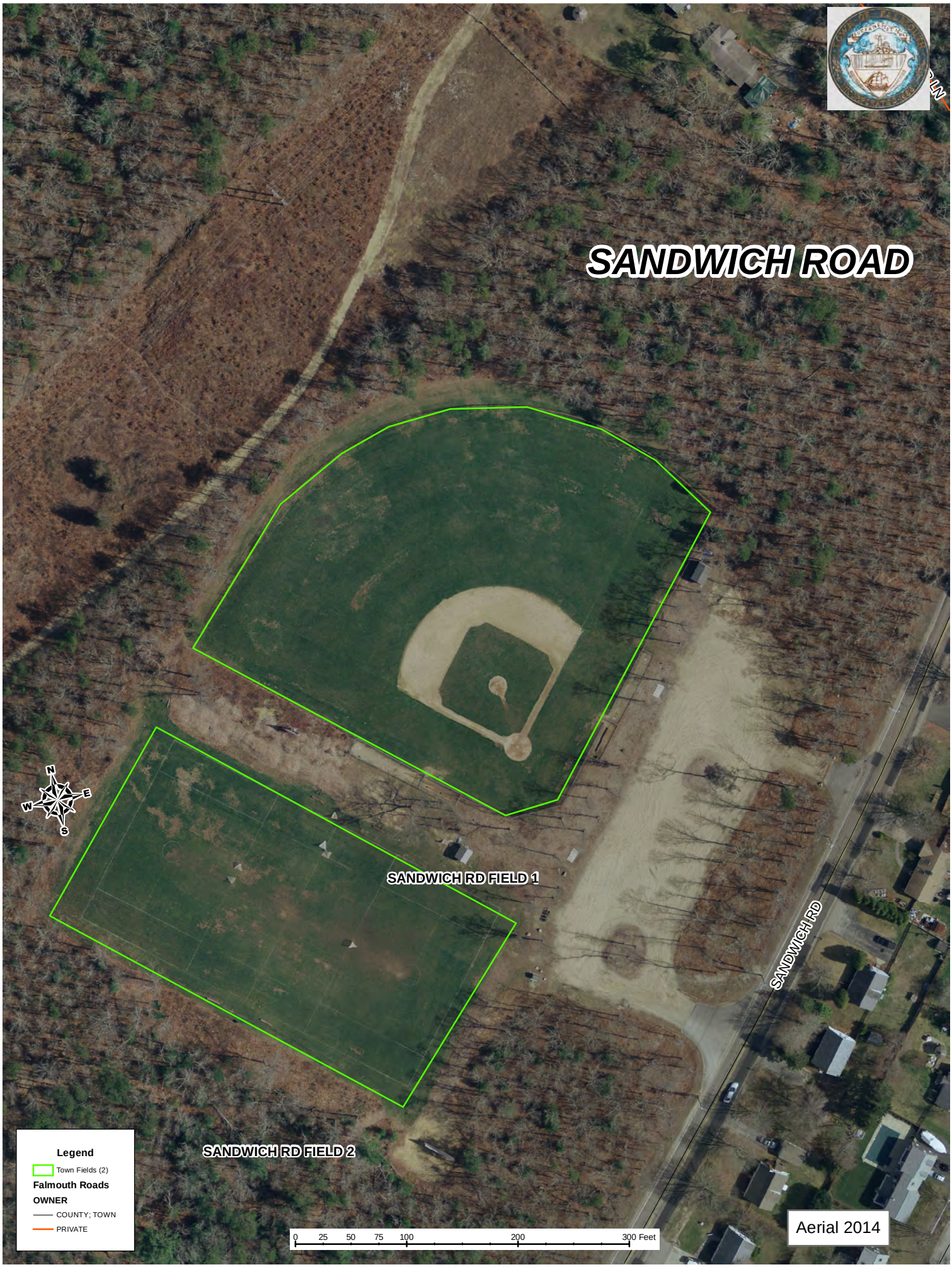
LWS FIELD 3
LWS FIELD 1
LWS FIELD 2
LAWRENCE SCHOOL
KATHARINE LEE BATES
POST OFFICE RD
N
E
S
W
Legend
Town Fields (3)
Falmouth Roads
OWNER
COUNTY; TOWN
0 25 50 75 100 200 300 Feet
Aerial 2014


LITTLE LEAGUE FIELD 1
LITTLE LEAGUE FIELD 2
LITTLE LEAGUE FIELD 3
LITTLE LEAGUE FIELDS
WOODVIEW DR
N
E
S
W
Legend
Town Fields (3)
Falmouth Roads
OWNER
COUNTY; TOWN
0 25 50 75 100 200 300 Feet
Aerial 2014


MORSE POND SCHOOL
DOVE COTTAGE RD
GRASMERE DR
JONES RD
MPS FIELD 1
MPS FIELD 2
MPS FIELD 3
MPS PRACTICE FIELD
N
E
S
W
Legend
Town Fields (4)
Falmouth Roads
OWNER
COUNTY; TOWN
0 25 50 75 100 200 300 Feet
Aerial 2014

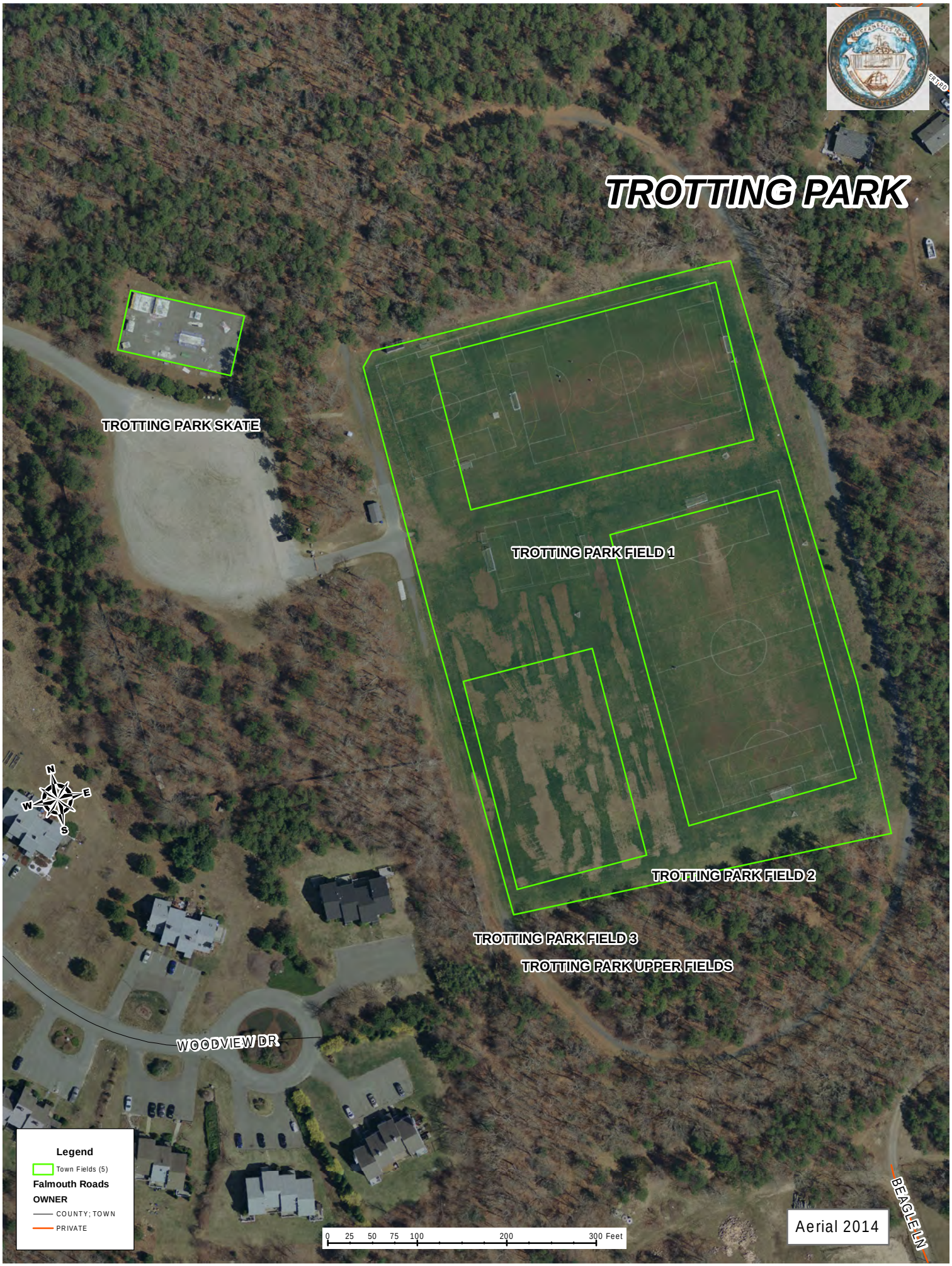
NORTH FALMOUTH SCHOOL
COBBLESTONE LN
HOLLIS ST
OLD MAIN RD
NFS FIELD 1
NFS FIELD 2
LONGVIEW RD
N
E
S
W
Legend
Town Fields (2)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

NYE PARK
CHESTER ST
GARNET AVE
PEQUOSSETT AVE
COUNTY RD
NYE PARK FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

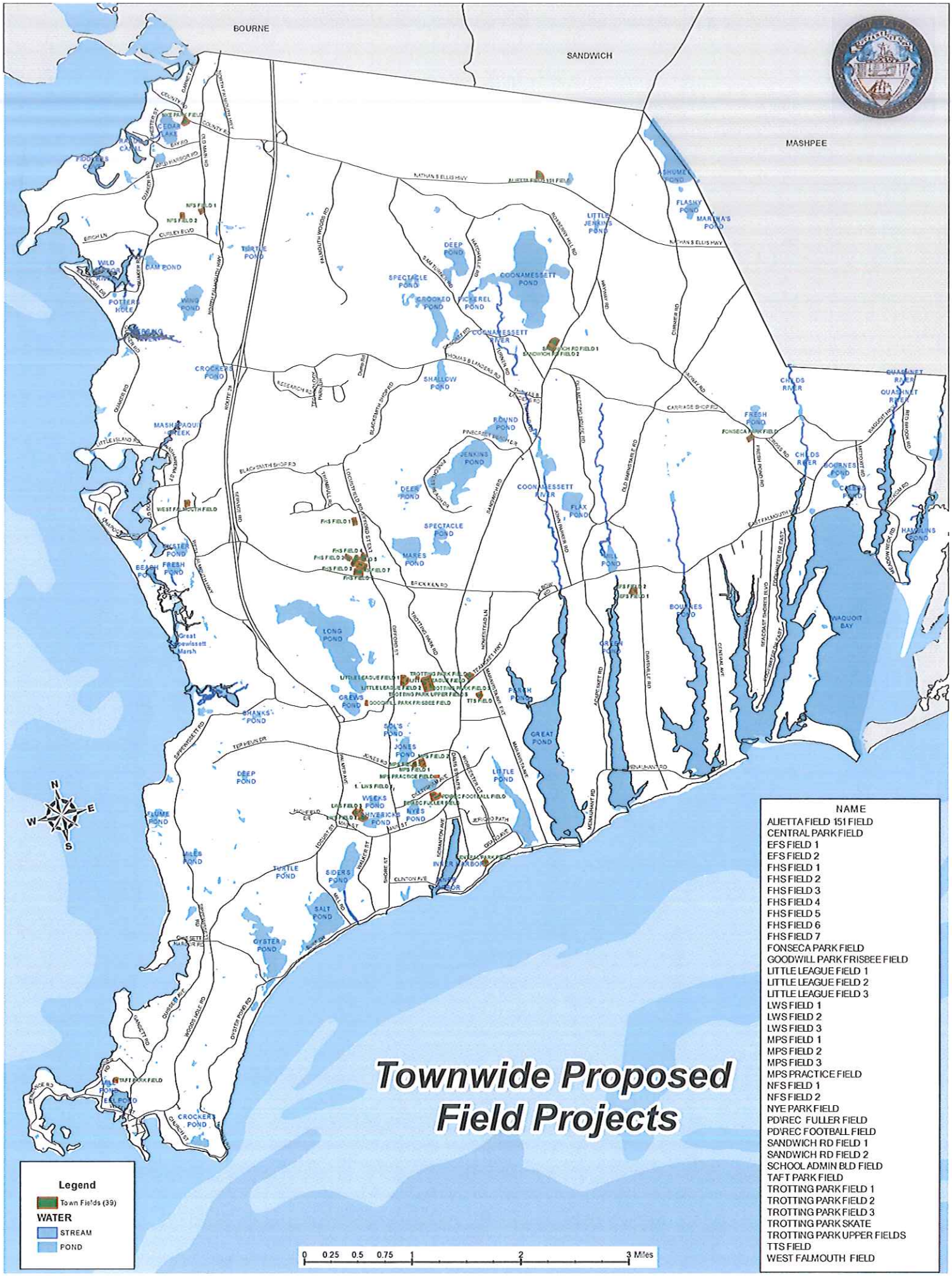

SANDWICH ROAD
SANDWICH RD FIELD 1
SANDWICH RD FIELD 2
SANDWICH RD
N
E
S
W
Legend
Town Fields (2)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

SCHOOL ADMINISTRATION
TEATICKET HWY
SCHOOL ADMIN BLD FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
PRIVATE
STATE
0 25 50 75 100 200 300 Feet
Aerial 2014

PEARL LN
TEATICKET SCHOOL
TTS FIELD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014


TROTTING PARK
TROTTING PARK SKATE
TROTTING PARK FIELD 1
TROTTING PARK FIELD 2
TROTTING PARK FIELD 3
TROTTING PARK UPPER FIELDS
WOODVIEW DR
BEAGLE LN
N
E
S
W
Legend
Town Fields (5)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 25 50 75 100 200 300 Feet
Aerial 2014

WEST FALMOUTH
WEST FALMOUTH FIELD
BLACKSMITH SHOP RD
FRAZAR RD
N
E
S
W
Legend
Town Fields (1)
Falmouth Roads
OWNER
COUNTY; TOWN
PRIVATE
0 12.5 25 37.5 50 100 150 Feet
Aerial 2014


BOURNE
SANDWICH
MASHPEE
Townwide Proposed Field Projects
Legend
Town Fields (39)
WATER
STREAM
POND
0 0.25 0.5 0.75 1 2 3 Miles
N
S
E
W
NAME
AUETTA FIELD 151 FIELD
CENTRAL PARK FIELD
EFS FIELD 1
EFS FIELD 2
FHS FIELD 1
FHS FIELD 2
FHS FIELD 3
FHS FIELD 4
FHS FIELD 5
FHS FIELD 6
FHS FIELD 7
FONSECA PARK FIELD
GOODWILL PARK FRISBEE FIELD
LITTLE LEAGUE FIELD 1
LITTLE LEAGUE FIELD 2
LITTLE LEAGUE FIELD 3
LWS FIELD 1
LWS FIELD 2
LWS FIELD 3
MPS FIELD 1
MPS FIELD 2
MPS FIELD 3
MPS PRACTICE FIELD
NFS FIELD 1
NFS FIELD 2
NYE PARK FIELD
PD\REC FULLER FIELD
PD\REC FOOTBALL FIELD
SANDWICH RD FIELD 1
SANDWICH RD FIELD 2
SCHOOL ADMIN BLD FIELD
TAFT PARK FIELD
TROTTING PARK FIELD 1
TROTTING PARK FIELD 2
TROTTING PARK FIELD 3
TROTTING PARK SKATE
TROTTING PARK UPPER FIELDS
TTS FIELD
WEST FALMOUTH FIELD

Overall Condition Index: 3.1429

Asset ID / Name: ALIETTA FIELD 151 FIELD

Name: ALIETTA FIELD 151 FIELD
Overall CI: 3.1429 :1=Excellent, 4=Poor
General Notes: Field is in general disrepair.
Ownership/Caretaking: This is town land. Recreation department/scheduling the field. Parks/maintenance.

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	Benches Need Replacement
Bleachers	Fair	1	3	Bleechers Need new seating boards
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	Fences Need Replacement
Gates	NR	1		
Grounds	NR	1		
Irrigation	Excellent	1	1	Recently installed
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	Poor	1	4	Parking Needs fill and grinding
Railing	NR	1		
Structures	Fair	1	3	
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	NR	1		
Grounds	NR	1		
Irrigation	Excellent	1	1	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	Poor	1	4	
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: CENTRAL PARK FIELD

Name: CENTRAL PARK FIELD
Overall CI: 3.0001 :1=Excellent, 4=Poor
General Notes: Primary field

Field is in poor condition, field needs bases, edging and general grooming. Backstop is rusted and falling apart needs to be replaced or repaired.
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	Benches need replacement
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	backstop needs replacing.
Gates	Poor	1	4	
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	Poor	1	4	
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: EFS FIELD 1

Name: EFS FIELD 1
Overall CI: 2.7779 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.9166

Asset ID / Name: EFS FIELD 2

Name: EFS FIELD 2
Overall CI: 2.9166 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.5556

Asset ID / Name: FHS FIELD 1

Name: FHS FIELD 1
Overall CI: 2.5556 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	Good	1	2	bleachers need repair, replacement or updating.
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Fair	1	3	
Grounds	Fair	1	3	
Irrigation	Good	1	2	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	Center of field and goal areas need to be stripped and seeded or sod layed.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Fair	1	3	
Grounds	Fair	1	3	
Irrigation	Good	1	2	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.4001

Asset ID / Name: FHS FIELD 2

Name: FHS FIELD 2
Overall CI: 2.4001 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 2 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Good	1	2	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	No irrigation at back of field, should be extended.
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Surface	Fair	1	3	play surface is below average.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 2 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Good	1	2	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Good	1	2	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: FHS FIELD 3

Name: FHS FIELD 3
Overall CI: 2.4167 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 2 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Fair	1	3	Fencing needs work.
Gates	NR	1		
Grounds	Good	1	2	field needs spot loaming and seed.
Irrigation	Good	1	2	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Good	1	2	shot put surface needs overhaul.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Fair	1	3	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	Good	1	2	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Falmouth DPW

CPC Condition Rating Report

Overall Condition Index: 4.0000

Asset ID / Name: FHS FIELD 4

Name: FHS FIELD 4
Overall CI: 4.0000 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 4 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	Field needs complete overhaul. Field does not have irrigation, should be tied in.
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Poor	1	4	
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.8333

Asset ID / Name: FHS FIELD 5

Name: FHS FIELD 5
Overall CI: 2.8333 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need replacement.
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Fair	1	3	Backstop and fencing need replacement or repair.
Gates	NR	1		
Grounds	Good	1	2	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	Infield needs overhaul. No irrigation.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	NR	1		
Grounds	Good	1	2	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.3751

Asset ID / Name: FHS FIELD 6

Name: FHS FIELD 6
Overall CI: 2.3751 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 2 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	Benches need work and/or refinishing.
Bleachers	Good	1	2	bleachers need work and/or refinishing.
Borders	NR	1		
Electrical	Good	1	2	
Equipment	Good	1	2	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	field needs loaming/seed/sod.
Irrigation	Good	1	2	Irrigation shed needs maintenance.
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Good	1	2	
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	Good	1	2	
Equipment	Good	1	2	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	Good	1	2	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 1.5001

Asset ID / Name: FONSECA PARK

Name: FONSECA PARK
Overall CI: 1.5001 :1=Excellent, 4=Poor
General Notes: Secondary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 2 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Excellent	1	1	baseball backstop needs new fencing, fencing around field needs new split rail
Gates	NR	1		
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 2 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Excellent	1	1	
Gates	NR	1		
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: GOODWILL PARK FRISBEE FIELD

Name: GOODWILL PARK FRISBEE FIELD
Overall CI: 2.7779 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Fair	1	3	
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	Good	1	2	

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Fair	1	3	
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	Fair	1	3	

Asset ID / Name: LWS FIELD 1

Name: LWS FIELD 1
Overall CI: 2.6667 :1=Excellent, 4=Poor
General Notes:
Ownership/Caretaking:

Category: Capital — **Capital:** 3 — **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	benches need replacement.
Bleachers	Good	1	2	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Good	1	2	
Gates	NR	1		
Grounds	Good	1	2	Infield needs overhaul and sod.
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	backstop needs replacement.
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M — **O&M:** 3 — **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Fair	1	3	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.5833

Asset ID / Name: LWS FIELD 2

Name: LWS FIELD 2
Overall CI: 2.5833 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need refinishing.
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Good	1	2	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	Backstop needs replacement.
Surface	Good	1	2	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Good	1	2	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 3.0667

Asset ID / Name: MPS FIELD 1

Name: MPS FIELD 1
Overall CI: 3.0667 :1=Excellent, 4=Poor
General Notes: Primary field

Field is in poor condition needs work. Landscaping and general grounds need attention to make field in good playing condition. Backstop is rusted and has pieces hanging off needs to be replaced.
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Bench tops need refacing
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Fair	1	3	
Gates	NR	1		
Grounds	Fair	1	3	Infeild needs edging
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	Fair	1	3	

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	Fair	1	3	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: MPS FIELD 2

Name: MPS FIELD 2
Overall CI: 3.3334 :1=Excellent, 4=Poor
General Notes: Primary field

Field is in poor condition and needs major work. Landscaping and grounds are poor, field has been ripped up and needs sod and seeding to restore.
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: MPS FIELD 3

Name: MPS FIELD 3
Overall CI: 3.3333 :1=Excellent, 4=Poor
General Notes: Primary field

Field needs edging and bluestone to bring back to playing condition. Grounds and general landscaping are poor needs to be seeded. Backstop is falling apart needs replacement fencing and posts.
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need resurfacing
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Poor	1	4	Bike rack needs replacing, backstop needs repairs and refacing
Fences	Fair	1	3	
Gates	NR	1		
Grounds	Fair	1	3	Infield needs bases, bluestone, and edging
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Poor	1	4	
Fences	Poor	1	4	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: NFS FIELD

Name: NFS FIELD
Overall CI: 3.0001 :1=Excellent, 4=Poor
General Notes:
Ownership/Caretaking:

Category: Capital — **Capital:** 3 — **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need replacement.
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	Infield needs overhaul.
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	Backstop needs repair.
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M — **O&M:** 3 — **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: NYE PARK

Name: NYE PARK
Overall CI: 3.1112 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need replacement.
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	Infield needs work.
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	Bskcstop needsreplacment fencing.
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 3.1573

Asset ID / Name: PD\REC FIELD

Name: PD\REC FIELD
Overall CI: 3.1573 :1=Excellent, 4=Poor
General Notes:
Ownership/Caretaking:

Category: Capital — **Capital:** 3 — **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	Fair	1	3	bleachers need replacement, some seats need repair/replacemnt
Borders	NR	1		
Electrical	Fair	1	3	
Equipment	NR	1		
Fences	Poor	1	4	most fencing needs replacement
Gates	NR	1		
Grounds	Poor	1	4	field in poor condition
Irrigation	NR	1		
Landscaping	Fair	1	3	
Lighting	Excellent	1	1	
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	dugouts need renovation, irrigation pump house shed roofing and renovating, storage sheds need replacement, announcers box needs renovation, scoreboard past life expectancy, backstop needs refacing.
Surface	NR	1		
Track	Poor	1	4	
Trailways	NR	1		
Trees	NR	1		

Category: O&M — **O&M:** 3 — **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	Poor	1	4	
Borders	NR	1		
Electrical	Fair	1	3	
Equipment	NR	1		
Fences	Poor	1	4	
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	Good	1	2	
Landscaping	Fair	1	3	
Lighting	Excellent	1	1	
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Poor	1	4	
Track	Poor	1	4	
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.2858

Asset ID / Name: PD\REC GRNDS

Name: PD\REC GRNDS
Overall CI: 2.2858 :1=Excellent, 4=Poor
General Notes: Primary Field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 2 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Good	1	2	
Irrigation	NR	1		
Landscaping	Good	1	2	
Lighting	Fair	1	3	
Markings	NR	1		
Pavement	Good	1	2	
Parking	Good	1	2	
Railing	NR	1		
Structures	Good	1	2	
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	Good	1	2	

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	Fair	1	3	
Lighting	Fair	1	3	
Markings	NR	1		
Parking	NR	1		
Pavement	Fair	1	3	
Surface	Good	1	2	
Railing	NR	1		
Structures	Good	1	2	
Track	NR	1		
Trailways	NR	1		
Trees	Good	1	2	

Asset ID / Name: PD\REC TRACK

Name: PD\REC TRACK
Overall CI: 4.0000 :1=Excellent, 4=Poor
General Notes: Primary Field

Track is poorly maintained, has been used as path for contruction and has been ripped up. Needs to be leveld and graded and have new bluestone added.
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 4 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Poor	1	4	needs new surface material.
Track	Poor	1	4	Track needs edging and grading.
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	NR	1		
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	Poor	1	4	
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: SANDWICH RD FIELD 1

Name: SANDWICH RD FIELD 1
Overall CI: 3.4999 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Poor	1	4	
Grounds	Fair	1	3	Field needs repair.
Irrigation	Fair	1	3	irrigation needs work and repairs.
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Poor	1	4	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	Poor	1	4	
Grounds	Fair	1	3	
Irrigation	Fair	1	3	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Poor	1	4	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: SANDWICH RD FIELD 2

Name: SANDWICH RD FIELD 2
Overall CI: 3.4999 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	Poor	1	4	
Grounds	Fair	1	3	Infield needs repair, outfield needs repair.
Irrigation	Fair	1	3	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	Poor	1	4	
Grounds	Fair	1	3	
Irrigation	Fair	1	3	
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 3.4285

Asset ID / Name: SCHOOL ADMIN BLD FIELD

Name: SCHOOL ADMIN BLD FIELD
Overall CI: 3.4285 :1=Excellent, 4=Poor
General Notes: Primary field

Field is in poor condition, field needs general maintenace and grooming, fencing needs to be replaced, backstop is falling apart needs to be repaired or replaced, bleachers are out of date and rotted need to be repaired or replaced.
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	Benches need replacement
Bleachers	Poor	1	4	Bleachers need replacement
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	All fencing needs replacement, Backstop needs replacement.
Gates	NR	1		
Grounds	Fair	1	3	Infeild needs edging, bluestones and bases
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	Fair	1	3	
Markings	NR	1		
Pavement	NR	1		
Parking	Fair	1	3	Parking bumpers broken, missing or need refastening.
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	
Bleachers	Poor	1	4	
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	Poor	1	4	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	Fair	1	3	
Markings	NR	1		
Parking	Fair	1	3	
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: TAFT PARK FIELD

Name: TAFT PARK FIELD
Overall CI: 3.4000 :1=Excellent, 4=Poor
General Notes:
Ownership/Caretaking:

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	Benches need replacement.
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	Backstop needs replacement fencing.
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Poor	1	4	
Track	NR	1		
Trailways	NR	1		
Trees	Poor	1	4	

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Fair	1	3	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees.	Poor	1	4	

Asset ID / Name: TROTTING PARK FIELD 1

Name: TROTTING PARK FIELD 1
Overall CI: 3.3334 :1=Excellent, 4=Poor
General Notes: primary field
Ownership/Caretaking: town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	Field needs overhaul, poor condition.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: TROTTING PARK FIELD 2

Name: TROTTING PARK FIELD 2
Overall CI: 3.3334 :1=Excellent, 4=Poor
General Notes: primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	field needs overhaul, poor condition.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 4 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 2.8334

Asset ID / Name: TROTTING PARK FIELD 3

Name: TROTTING PARK FIELD 3
Overall CI: 2.8334 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Fair	1	3	field in poor condition, needs overhaul.
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	NR	1		
Fences	NR	1		
Gates	NR	1		
Grounds	Poor	1	4	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Excellent	1	1	
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: TROTTING PARK SKATE

Name: TROTTING PARK SKATE
Overall CI: 3.0001 :1=Excellent, 4=Poor
General Notes: Primary field

Skate park is destroyed, fencing and railings have been torn down, trash has been dumped everywhere and epuipment is in need of major repairs. Parks is covered in graffiti.
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	Fair	1	3	
Surface	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Fair	1	3	
Railing	NR	1		
Structures	Fair	1	3	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Overall Condition Index: 3.5237

Asset ID / Name: TROTTING PARK UPPER FIELDS

Name: TROTTING PARK UPPER FIELDS
Overall CI: 3.5237 :1=Excellent, 4=Poor
General Notes: Fields are in general despair, all fields need to be repaired before they are back to playable condition. All fields have severe flooding issues. Fields need sod, fill, and ariation. Parking lot is in terrible condition, needs to be filled and graded.
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 4 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	All goals are rusted and missing neting. All goals need replacement.
Fences	NR	1		
Gates	Fair	1	3	Entrance gate needs refinishing.
Grounds	Poor	1	4	Grounds are in poor condition, need attention.
Irrigation	Fair	1	3	Irrigation is fairly new but needs to be extended for all fields.
Landscaping	Poor	1	4	Landscaping is poor, all fields need overhaul to be back to playable condition.
Lighting	NR	1		
Markings	Poor	1	4	Fields have no marking.
Pavement	NR	1		
Parking	Poor	1	4	Parking lot is in poor condition, holes need to be filled and lot needs to be graded.
Railing	NR	1		
Structures	NR	1		
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	NR	1		
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Fair	1	3	
Fences	NR	1		
Gates	Fair	1	3	
Grounds	Poor	1	4	
Irrigation	Fair	1	3	
Landscaping	Poor	1	4	
Lighting	NR	1		
Markings	Fair	1	3	
Parking	Poor	1	4	
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: TTS FIELD

Name: TTS FIELD
Overall CI: 3.0001 :1=Excellent, 4=Poor
General Notes: Primary field
Ownership/Caretaking: Town/school/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Poor	1	4	
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	NR	1		
Railing	NR	1		
Structures	NR	1		
Surface	Poor	1	4	
Track	Good	1	2	
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Good	1	2	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Poor	1	4	Backstop needs attention
Fences	NR	1		
Gates	NR	1		
Grounds	Fair	1	3	Infield needs edging, bluestone, and bases
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	NR	1		
Pavement	NR	1		
Surface	Poor	1	4	
Railing	NR	1		
Structures	NR	1		
Track	Good	1	2	
Trailways	NR	1		
Trees	NR	1		

Asset ID / Name: WEST FALMOUTH FIELD

Name: WEST FALMOUTH FIELD
Overall CI: 2.8333 :1=Excellent, 4=Poor
General Notes:
Ownership/Caretaking: Town/parks

Category: Capital **Capital:** 3 **Weight** 2

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Excellent	1	1	
Fences	Excellent	1	1	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Pavement	NR	1		
Parking	Poor	1	4	
Railing	NR	1		
Structures	Poor	1	4	baseball backstop needs replacing, Tennis court mild splitting and needs new nets
Surface	NR	1		
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

Category: O&M **O&M:** 3 **Weight** 1

Item	Severity Rating	Weight	Score	Comment
Benches	Poor	1	4	
Bleachers	NR	1		
Borders	NR	1		
Electrical	NR	1		
Equipment	Excellent	1	1	
Fences	Excellent	1	1	
Gates	NR	1		
Grounds	Fair	1	3	
Irrigation	NR	1		
Landscaping	NR	1		
Lighting	NR	1		
Markings	NR	1		
Parking	Poor	1	4	
Pavement	NR	1		
Surface	NR	1		
Railing	NR	1		
Structures	Poor	1	4	
Track	NR	1		
Trailways	NR	1		
Trees	NR	1		

ENCLOSURE 2

FIELD USE EVALUATION – Actual Demand Use Matrix

Town of Falmouth Athletic Fields Study

Falmouth User Demand Statistics

	1	2	3		4							5	6	7			8			9				10		11	12			13		14	15	16					17	18	
User Organization	**Alietta Field**	**Central Park**	**East Falmouth School**		**Falmouth High School**							**Fonseca Park**	**Goodwill Park**	**Little League Fields**			**Lawrence School Fields**			**Morse Pond School**				**North Falmouth School**		**NYE Park**	**PD/REC Fuller / Footbal Fields**			**Sandwich Road Fields**		**Admin Building**	**Taft Park**	**Trotting Park**					**TTS Field**	**West Falmouth Field**	
	60' Diamond	60' Diamond	EFS Field 1 90' Diam	EFS Field 2 60' Diam	FHS Field 1	FHS Field 2	FHS Field 3	FHS Field 4 60" Diamond	FHS Fields 5 and 7 60" Diam / MPR	FHS Field 6		60" Diamond	Frisbee Field Not Used	Field 1	Field 2	Field 3	LWS Field 1 75' Diamond	LWS Field 2 90" Diamond	LWS Field 3	MPS Field 1	MPS Field 2 / 3		Practice Field	NFS Field 1 60" Diamond	NFS Field 2	60" Diamond	Field 1 90' Diamond	Field 2 Football	Grounds	Field 1 90" Diamond	Field 2 MPR	60' Diamond	60" Diamond	Field 1	Field 2	Field 3	Skate - N/A		50' Diamond	60' Diamond	
High School Football																												162													
High School Soccer - BOYS						10			100	120																								32	32						
High School Soccer - GIRLS						10	120																																		
High School Baseball																	100	120									120														
High School Softball								120	100																																
Ultimate Frisbee										24																						16									
Recess / Phys Ed.																				120	120		840																		
High School Field Hockey - GIRLS					240														40																						
High School Lacrosse - BOYS						10	20		100	120																															
High School Lacrosse - GIRLS					240																																				
Track and Field Events							120																																		
Javelin						50																																			
Non School Uses																																									
Youth Soccer																		480			360				100								160	386	386						
Youth Baseball M		80	96	120								156		288	288	288	270	270		270				270			12			340									228	214	
Youth Softball								70	60																	128						48	160								
Adult Recreational Softball - MEN'S	240																																								
Adult Recreational BaseBall - MEN'S																											336												24		
Adult Recreational Soccer - MEN'S		112																																							
Youth (Pop Warner) Football																															214										
Misc.Activities / Special Events		5																		96	96			200		40		140			80					255					
Kickball																																								24	
Womens's Recreational Softball																																80									
Misc. Field Days						10																																			
Senior Softball		192																								40															
Weekend (Open Gender) Pick Up Games		60																														24							20		
Flag Football		64																																							
Youth Group Lacrosse					16	16			20	60																					180					96					
Youth Group Field Hockey - GIRLS					16	16																																			
Church Softball (Family)																										40						32									
	240	**513**	**96**	**120**	**512**	**122**	**260**	**190**	**380**	**324**	**0**	**156**	**0**	**288**	**288**	**288**	**370**	**870**	**40**	**486**	**576**	**0**	**840**	**470**	**100**	**248**	**468**	**302**	**0**	**340**	**474**	**200**	**320**	**418**	**418**	**351**	**0**	**0**	**272**	**238**	**0**

ENCLOSURE 3

FIELD USE EVALUATION – Equivalent Demand Use Matrix

Town of Falmouth Athletic Fields Study — **FIELD USE EVEALUATION - EQUIVALENT DEMAND (Scheduled Team Uses)**

User Organization	Total Equiv. Uses	Equivalent Use Factor	1 Alietta Field	2 Central Park	3 East Falmouth School		4 Falmouth High School							5 Fonseca Park	6 Goodwil Park	7 Little League Fields			8 Lawrence School Fields			9 Morse Pond School				10 North Falmouth School		11 NYE Park	12 PD/REC Fuller Footbal Fields			13 Sandwich Road Fields		14 Admin Building	15 Taft Park	16 Trotting Park					17 TTS Field	18 West Falmouth Field	
					EFS Field 1	EFS Field 2	FHS Field 1	FHS Field 2	FHS Field 3	FHS Field 4	FHS Fields 5 and 7	FHS Field 6			Frisbee Field	Field 1	Field 2	Field 3	LWS Field 1	LWS Field 2	LWS Field 3	MPS Field 1	MPS Field 2 / 3		Practice Field	NFS Field 1	NFS Field 2		Field 1	Field 2		Field 1	Field 2			Field 1	Field 2	Field 3	Skate - N/A			
			60' Diamond	60' Diamond	90' Diam	60' Diam				60" Diamond	60" Diam / MPR			60" Diamond	Not Used				75' Diamond	90" Diamond						60" Diamond		60" Diamond	90' Diamond	Football	Grounds	90" Diamond	MPR	60' Diamond	60' Diamond						50' Diamond	60' Diamond	
High School Football	324	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	324	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Soccer - BOYS	366	1.25	0	0	0	0	0	13	0	0	125	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0	0	0	0
High School Soccer - GIRLS	130	1.00	0	0	0	0	0	10	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Baseball	306	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	108	0	0	0	0	0	0	0	0	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Softball	198	0.90	0	0	0	0	0	0	0	108	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ultimate Frisbee	36	0.90	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0
Recess / Phys Ed.	810	0.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	90	0	630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Field Hockey - GIRLS	350	1.25	0	0	0	0	300	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Lacrosse - BOYS	438	1.75	0	0	0	0	0	18	35	0	175	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Lacrosse - GIRLS	360	1.50	0	0	0	0	360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Track and Field Events	120	1.00	0	0	0	0	0	0	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Javelin	25	0.50	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non School Uses	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth Soccer	1403	0.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	360	0	0	270	0	0	0	75	0	0	0	0	0	0	0	120	289	289	0	0	0	0	0	0
Youth Baseball M	2393	0.75	0	60	72	90	0	0	0	0	0	0	0	117	0	216	216	216	202.5	202.5	0	202.5	0	0	0	202.5	0	0	9	0	0	255	0	0	0	0	0	0	0	0	171	160.5	0
Youth Softball	350	0.75	0	0	0	0	0	0	0	53	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0	0	0	0	36	120	0	0	0	0	0	0	0	0
Adult Recreational Softball - MEN'S	216	0.90	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Recreational BaseBall - MEN'S	324	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302.4	0	0	0	0	0	0	0	0	0	0	0	22	0	0
Adult Recreational Soccer - MEN'S	140	1.25	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth (Pop Warner) Football	375	1.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	374.5	0	0	0	0	0	0	0	0	0	0
Misc.Activities / Special Events	1367	1.50	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144	144	0	0	300	0	60	0	210	0	0	120	0	0	0	0	381	0	0	0	0	0
Kickball	24	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0
Womens's Recreational Softball	72	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0	0	0	0	0	0	0	0	0
Misc. Field Days	15	1.50	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Senior Softball	174	0.75	0	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekend (Open Gender) Pick Up Games	104	1.00	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	20	0	0
Flag Football	48	0.75	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth Group / Travel Lacrosse	485	1.25	0	0	0	0	20	20	0	0	25	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	0	0	0	0	120	0	0	0	0	0
Youth Group Field Hockey - GIRLS	32	1.00	0	0	0	0	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Church Softball (Family)	65	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0
total	11049																																										
			216	460	72	90	696	117	275	161	460	457	0	117	0	216	216	216	293	671	50	437	504	0	630	503	75	222	419	534	0	255	720	175	240	328	328	501	0	0	213	185	0

ENCLOSURE 4

FIELD USE REDISTRIBUTED – Equivalent Use Matrix

Town of Falmouth Athletic Fields Study — **FIELD USE REDISTRIBUTED - TOTAL EQUIVALENT DEMAND USES (Scheduled Team Uses)** — 0-200 Uses / 1 FIELD, 201-250 Uses / 35 FIELDS, 251-300 Uses / 0 FIELDS, 300+ Uses / 3 NEW MPR TURF FIELDS

			1	2		3		4							5	6	7			8			9				10		11	12		13		14	15	16					17		18	19
User Organization	**Total Equiv. Uses**	**Equivalent Use Factor**	**Alietta Field**	**Central Park**		**East Falmouth School**		**Falmouth High School**							**Fonseca Park**	**Goodwil Park**	**Little League Fields**			**Lawrence School Fields**			**Morse Pond School**				**North Falmouth School**		**NYE Park**	**PD/REC Fuller Footbal Fields**		**Sandwich Road Fields**		**Admin Building**	**Taft Park**	**Trotting Park**					**TTS Field**	**West Falmouth Field**		**NEW MPR TURF FIELD**
			60' Diamond	Rear Open Field	60' Diamond	EFS Field 1 90' Diamond	EFS Field 2 60' Diamond	FHS Field 1	FHS Field 2 NEW TURF FIELD #1	FHS Field 3 Track and Lacrosse Field	FHS Field 4 60' Diamond	FHS Field 5 60' Diamond	FHS Field 6 MPR	FHS Field 7 MPR	60' Diamond	(Ex.Frisbee Field)	Field 1	Field 2	Field 3	LWS Field 1 75' Diamond	LWS Field 2 90' Diamond	LWS Field 3	MPS Field 1	MPS Field 2	MPS Field 3	Practice Field	NFS Field 1 60' Diamond	NFS Field 2	60' Diamond	Field 1 90' Diamond	Field 2 Football	Field 1 90' Diamond	Field 2 MPR	60' Diamond	60' Diamond	Field 1 NEW TURF FIELD	Field 2	Field 3	Skate - N/A		50' Diamond	60' Diamond		FHS / WOODS Location - TBD
High School Football	324	2.00	0	0	0	0	0	0	0	**199**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	**125**
High School Soccer - BOYS	366	1.25	0	0	0	0	0	0	**101**	0	0	**0**	**150**	**75**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0	0	0	**40**
High School Soccer - GIRLS	130	1.00	0	0	0	0	0	0	**10**	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**120**
High School Baseball	306	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**90**	**0**	0	0	0	0	0	0	0	0	**216**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Softball	198	0.90	0	0	0	0	0	0	0	0	**108**	**90**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ultimate Frisbee	36	0.90	0	0	0	0	0	0	0	0	0	0	**21.5**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**14.4**	0	0	0	0	0	0	0	0	0	0
Recess / Phys Ed.	810	0.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**190**	**190**	**215**	**215**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Field Hockey - GIRLS	350	1.25	0	0	0	0	0	**150**	**150**	0	0	0	0		0	0	0	0	0	0	0	**50**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High School Lacrosse - BOYS	438	1.75	0	0	0	0	0	0	**228**	**0**	0	**0**	**0**	**175**	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**35**
High School Lacrosse - GIRLS	360	1.50	0	0	0	0	0	**40**	**120**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	**200**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Track and Field Events	120	1.00	0	0	0	0	0	0	**70**	**50**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Javelin	25	0.50	0	0	0	0	0	0	**25**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non School Uses	-		0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth Soccer	1,403	0.75	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	**0**	0	0	**0**	0	0	0	**50**	0	0	**25**	0	**0**	0	**129**	**744**	**280**	**75**	0	0	0	0	0	**100**
Youth Baseball M	2,393	0.75	0	**0**	**0**	**152**	**172**	0	0	0	**30**	**150**	0	0	**200**	0	**226**	**226**	**226**	**152**	**0**	0	**23**	0	0	0	**203**	0	0	**22**	0	**250**	0	**30**	0	0	0	0	0	0	**171**	**161**	0	0
Youth Softball	350	0.75	0	0	0	0	**45**	0	0	0	**52.5**	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**96**	0	0	0	0	**36**	**120**	0	0	0	0	0	0	0	0	0
Adult Recreational Softball - MEN'S	216	0.90	**216**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adult Recreational BaseBall - MEN'S	324	0.90	0	0	0	**60**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**230**	0	0	0	0	0	0	0	0	**12**	0	0	0	0	0	0	0	0	0	0	**22**	0	0	0
Adult Recreational Soccer - MEN'S	140	1.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**140**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth (Pop Warner) Football	375	1.75	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	0	**375**
Misc.Activities / Special Events	1,367	1.50	0	**250**	**8**	0	0	0	**0**	0	**54**	0	0	0	0	**250**	**20**	**20**	**20**	0	0	**10**	**36**	**60**	**35**	**35**	**46**	0	**87**	0	**220**	0	**24**	0	0	**0**	**0**	**142**	0	0	0	0	0	**50**
Kickball	24	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**24**	0	0
Womens's Recreational Softball	72	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**72**	0	0	0	0	0	0	0	0	0	0
Misc. Field Days	15	1.50	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Senior Softball	174	0.75	0	**0**	**144**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**30**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekend (Open Gender) Pick Up Games	104	1.00	0	**0**	**60**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**24**	0	0	0	0	0	0	**20**	0	0	0
Flag Football	48	0.75	0	**0**	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**48**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youth Group / Travel Lacrosse	485	1.25	0	0	0	0	0	**45**	**20**	0	0	**0**	**75**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**225**	0	0	**40**	**0**	**80**	0	0	0	0	0	0
Youth Group Field Hockey - GIRLS	32	1.00	0	0	0	0	0	**15**	**17**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Church Softball (Family)	65	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**36**	0	0	0	0	**28.8**	0	0	0	0	0	0	0	0	0	0
total	11,049																																											
			216	250	212	212	217	250	756	249	245	240	247	250	200	250	246	246	246	242	230	248	249	250	250	250	249	250	249	250	245	250	249	205	249	784	280	297	0	0	213	185	0	785