

Newton Parks, Recreation & Culture Department

Comprehensive Improvements & Maintenance Plan Update

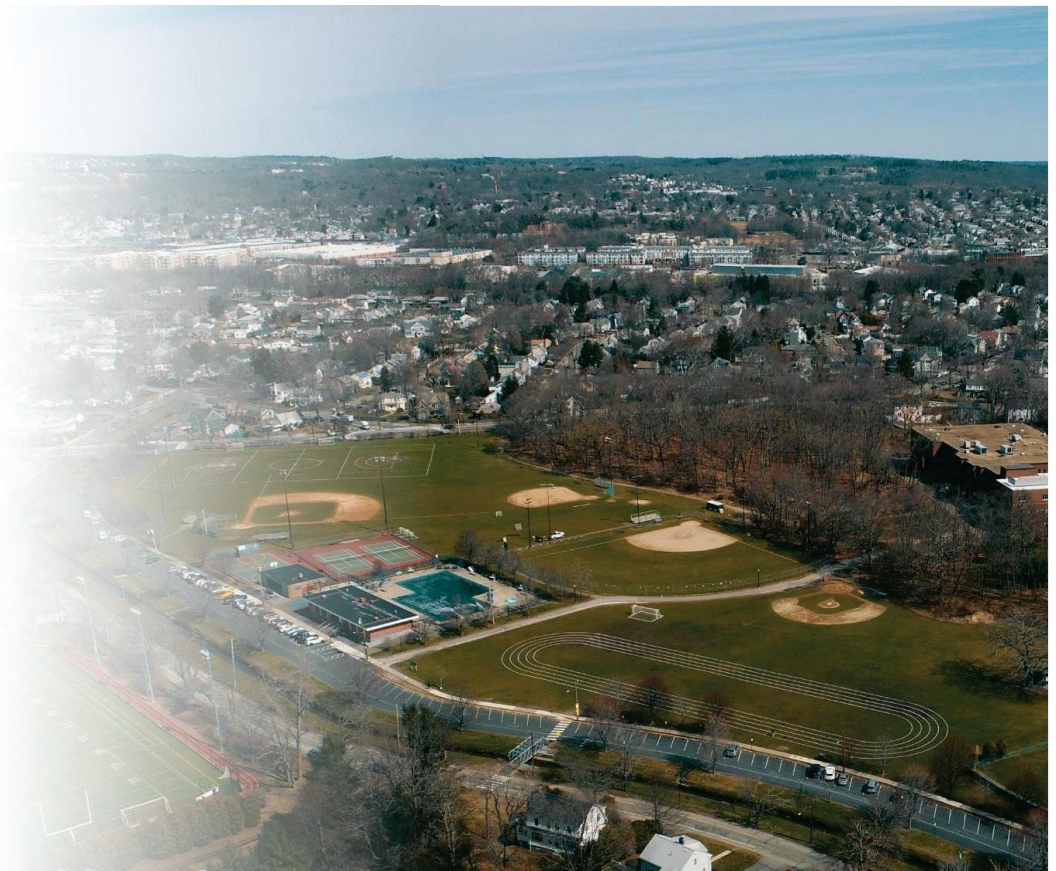
Programs & Services Committee
February 16th, 2023

athleticfields@newtonma.gov

Newton Highlands Playground

AGENDA

- INTRODUCTION
- LISTENING TO ATHLETIC NEEDS
- MAINTAINING OUR GRASS FIELDS
- EXPANDING PLAY
- SYNTHETIC TURF



Newton Athletic Fields Foundation

PETITION: 12/12/2020

Newton needs a multi-year athletic fields improvement program to:

- ✓ Rehabilitate fields in disrepair
- Construct synthetic turf fields
- ✓ Increase maintenance to support usage levels
- ✓ Configure and allocate fields based on demand (not history)
- ✓ Install additional field lighting

We seek a formal commitment from the Mayor's office, City Council and Parks, Recreation & Culture (PR&C) department to:

- ✓ Allocate capital and operating funds
- ✓ Commit to a multi-year plan (dates, deliverables, budget, resources)
- ✓ Charge market-rate rental fees and direct them to field maintenance
- ✓ Commit Community Preservation Act (CPA) funds annually
- ✓ Dedicate the required resources to both deliver improvements and maintain existing fields



A subcommittee of the Parks and Recreation Commission

Discussing the needs of athletic field user groups

Key findings

- Athletic field conditions: implement strategies to improve our grass fields
- Field availability:
 1. Add fields to increase availability
 2. Potential to convert grass fields to turf
 3. Explore ways to increase evening play availability due to school dismissal time change

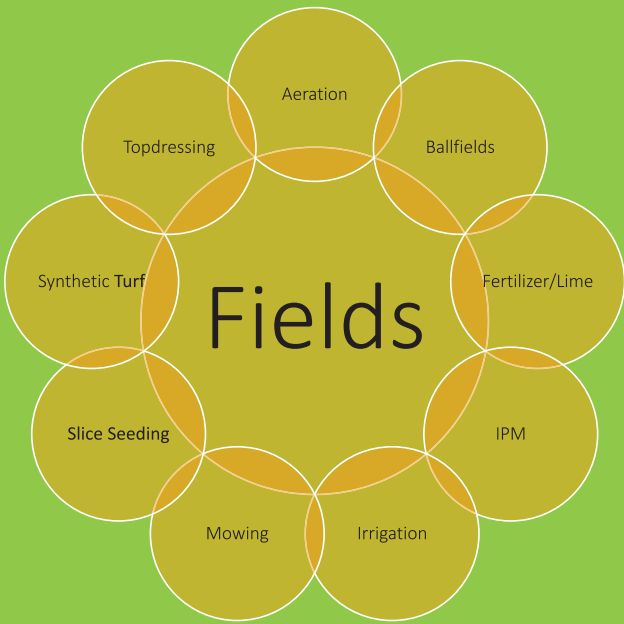
Newton HS Dismissal Time Change

	2019	2021
Athlete dismissal time	1:55-2:45	2:30-3:45
Typical game start & end times	4:00-6:30	4:30-7:00
Middle school early release days/times also adjusted in '21-'22		

Improving Quality, Quantity + Maintenance of Athletic Fields



MAINTAINING OUR GRASS FIELDS



PRC Maintenance

- ▶ We manage seven mowing contracts with 167 different locations
- ▶ We oversee all grounds including athletic fields, grass, meadows, cemeteries and traffic islands

Turf management at irrigated fields

- ▶ Cultural
 - ▶ Aeration
 - ▶ Slice seeding/sodding
 - ▶ Fertilizer/Lime
 - ▶ Topdressing
- ▶ Mechanical
 - ▶ Mowing
 - ▶ Dethatching
- ▶ IPM
 - ▶ Herbicides
- ▶ Contractors/Consultants
 - ▶ North Turf
 - ▶ Tom Irwin Advisors



Athletic Grass Turf Management

fy	locations maintained per fy	acres maintained per fy	operating budget per fy
fy19	8	22	\$ 35,000
fy20	13	30	\$ 75,000
fy21	14	40	\$ 75,000
fy22	16	54	\$ 250,000
fy23	18	69	\$ 300,000
% increase	125%	218%	757%

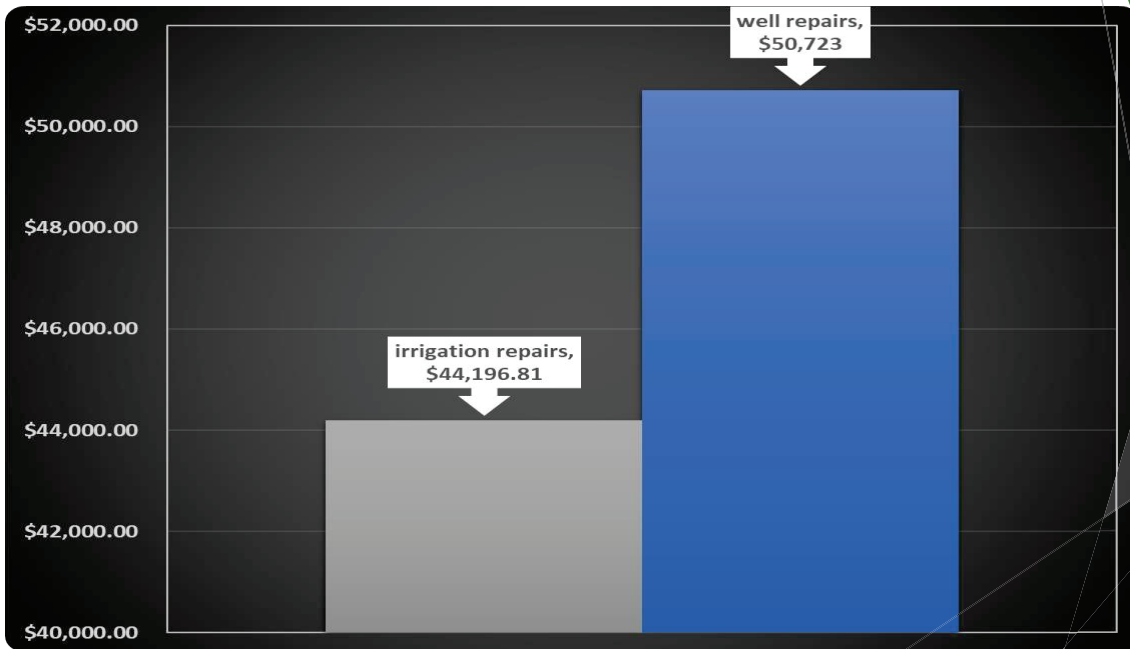
Athletic Grass Turf Management

	timeline 3 3 months	Feb-19	Jan-00	Mar-21	Aug-21	Mar-22	Oct-22
perennial ryegrass	price per pound	\$ 1.17	\$ 1.87	\$ 1.48	\$ 2.60	\$ 2.84	\$ 3.18
	price per 50 pound bag	\$ 58.50	\$ 93.50	\$ 74	\$ 130	\$ 142	\$ 159
	price per acre	\$ 292.50	\$ 467.50	\$ 370	\$ 650	\$ 710	\$ 795
	% increase	172%					

Athletic Grass Turf Management

fy	aerifying	slice seeding	fertilizing	topdressing
fy21	\$ 200	\$ 395	\$ 195	\$ 850
fy22	\$ 200	\$ 675	\$ 295	\$ 850
fy23	\$ 200	\$ 1,000	\$ 250	\$ 900
% increase	43%			

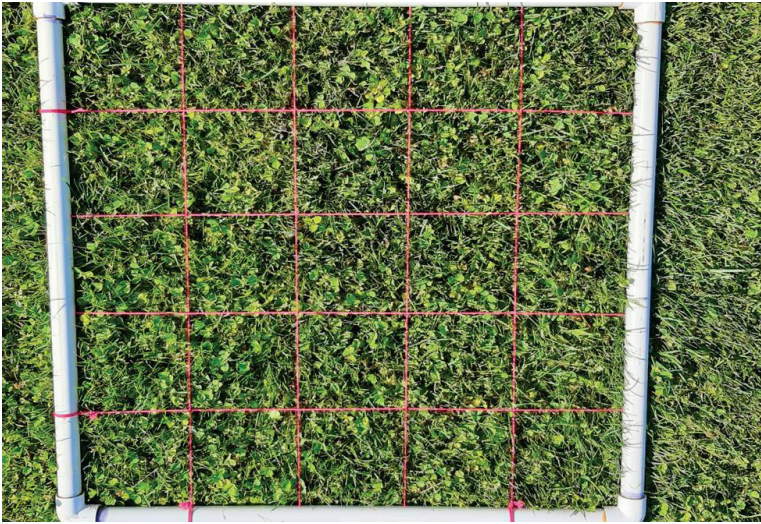
Irrigation and Well Repairs



Case Study: Lower Falls

- Fertilizer
- Dethatch
- Slice Seed
- Irrigate



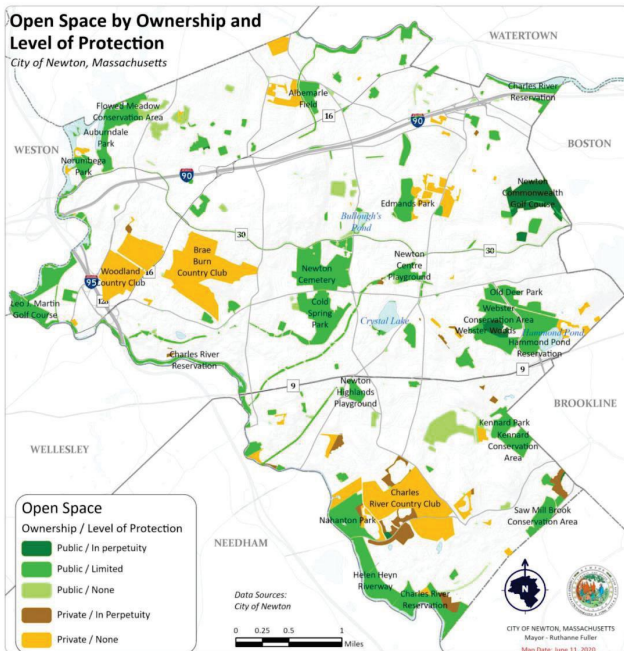


Before

After

2022 IPM Results Newton North High School

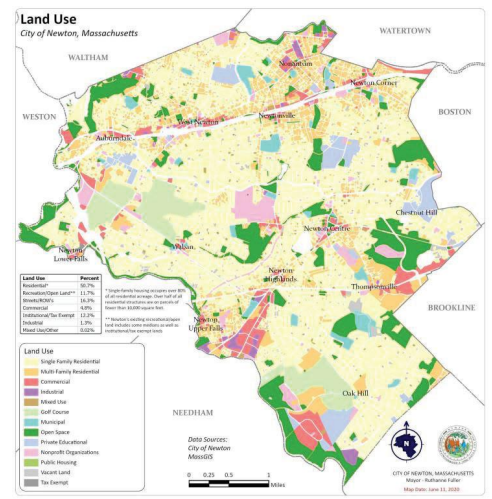
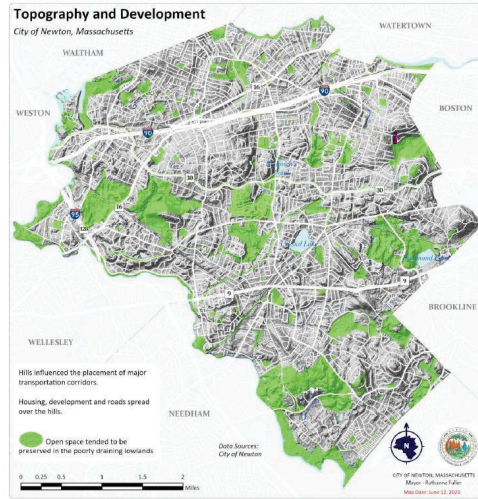
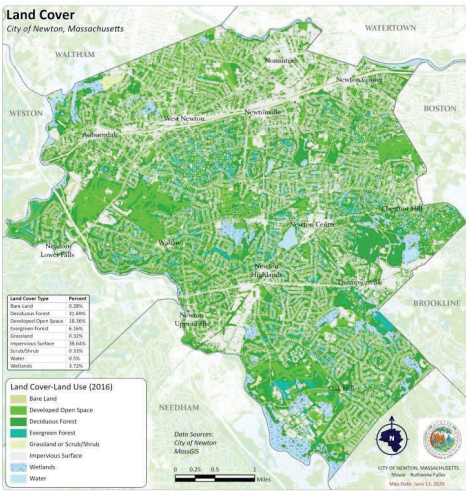
Inventory of Open Space in Newton



Category	Area in Acres	% of Total Open Space
Publicly Owned Open Space - Subtotal	1,556.96	62.2 %
Newton Parks, Recreation & Culture (Table 3)	558.6	22.4 %
Newton Parks, Recreation & Culture – Medians (Table 3)	7.34	0.03 %
Newton Conservation Commission (Table 4)	310.79	12.4 %
Newton School Department (Table 5)	200.33	8.0 %
General Municipal Control (Table 6)	71.63	2.9 %
Cochituate Aqueduct (Table 7)	41.21	1.6 %
Sudbury Aqueduct (Table 8)	20.65	0.9 %
Massachusetts Department of Conservation and Recreation (Table 9)	338.76	13.5 %
Other Municipal, State, and Federal Land (Table 10)	7.80	0.4 %
Privately Owned Open Space - Subtotal	944.86	37.8%
Golf Courses (Table 11)	542.69	21.8 %
Cemeteries (Table 12)	118.62	4.7 %
Tax Exempt Land w/ Significant Open Space (Table 13)	205.12	8.2 %
Private Land w/ Significant Open Space (Table 14)	78.43	3.2 %
TOTAL	2501.82	100 %

** Maps and data illustrated over the next few slides were taken from the 2020-2027 Open Space and Recreation Plan

**Please refer to the [City of Newton Open Space and Recreation Plan](#) for tables referenced above



City-Wide Open Space Analysis

- 62% of all Open Space is Public
- Predominantly residential
- Fully built out
- Public open space parcels inherently irregular
- Open space predominantly sloped
- Open space is landlocked with limited opportunities for horizontal expansion
- Approx 38% of Newton Covered by tree canopy
- Tree canopy is essential to the character and ecological health of the city
- Public open space is host to a large percentage of the city's contiguous forests

City-Wide Inventory Analysis

General Composition of Public Open Space	
Total acreage of public open space (Park, School, Conservation and other lands)	1556.96
Total acreage of public open space with ath. fields	476.62
Percentage of public open space with athletic fields	31%
Total acreage of public open space avail. for athletic fields	118.94
Percentage of all public open space allocated to athletic fields	8%

Athletic Field and Other Recreational Amenities	
Percentage of park and school lands allocated to athletic fields	25%
*Percentage for other amenities and uses	75%

*Other amenities include: buildings, wooded areas, courts, pathways, trails, topography, play grounds and other passive and active areas

Analysis of Athletic Field Participants

Analysis of Club and School athletics		
Approx. Number of Club Sports Participants	Approx. Total Number of HS Athletes (NSHS)	Approx. Number of HS Athletes (NNHS)
8527	655	636
Approximate athletic field participant growth 2021 to 2022		64%
Percentage of Participants in MP Sports		77%

Key Findings:

- Youth Athletics (K-12) make up approximately 11% of Newton's overall population
- Athletic field participation and needs are growing dramatically

Newton Parks, Recreation and Culture Department

Athletic Fields Capital Improvement Plan Analysis

Analysis of Permitted Land for Athletic Fields

Analysis of Lands Permitted for Athletic Fields	
Total field areas permitted	133
Percentage of lands permitted to ball diamonds	44%
Percentage of lands permitted to rectangular multipurpose fields	56%

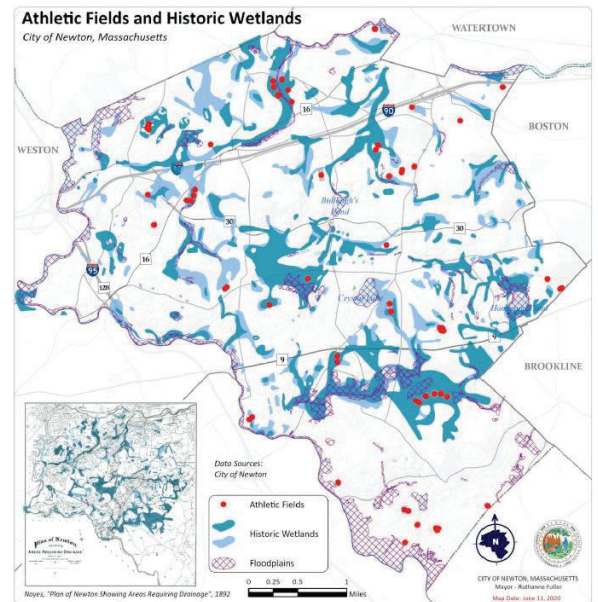
Permitted Hours per Field Type	
TOTAL PERMITTED FIELD HOURS (2021)	31,537.00
TOTAL PERMITTED RECTANGULAR FIELD HOURS (2021)	26,466.50

Newton Parks, Recreation and Culture Department

Athletic Fields Capital Improvement Plan Analysis

City of Newton Athletic Fields Analysis Recap

- Compact and irregular open space parcels
- Dynamic topography
- Significant tree canopy within public open space parcels
- Public lands with athletic fields make up 31% of all open space
- Out of the 31%, 8% of land is dedicated to athletic fields
- Majority of athletic fields were constructed in low-lying, poor draining areas
- Majority of fields permitted for multipurpose sports
- Field sports participation is increasing rapidly
- Majority of sports participants rely on multipurpose fields



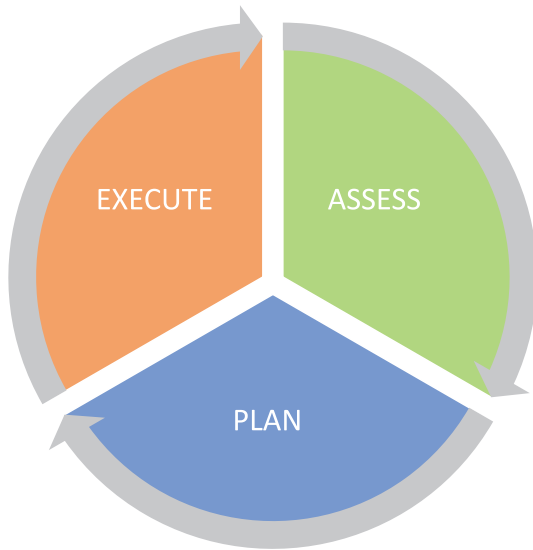
Newton Parks, Recreation and Culture Department
Athletic Fields Capital Improvement Plan Analysis

City of Newton Athletic Fields Analysis Conclusions

- Both field types are important to Newton athletics
- High demand fields are driven by quality of play surface, irrigation, and access to parking
- Prioritize projects to better meet the needs of MP sports
- Examine and identify opportunities to increase MP field usage at existing facilities with lower demand
- Strategically reduce the # of underutilized ball fields
- Find a “vertical” approach to expanding MP field offerings, Sprawling is not feasible in fully built out Eastern MA

Newton Parks, Recreation and Culture Department
Athletic Fields Capital Improvement Plan Analysis

5-Year Capital Plan Implementation Strategy



Overarching Approach to 5-Year Plan

- ✓ Assess and review current city-wide plans (OSRP + CIP)
- ✓ Develop initial 5-year athletic field capital plan
- ✓ Secure funding for initial 5-year project design
- ✓ Procure and hire consulting team/s to assist with project plans
- ✓ Evaluate and revise field permit fee structure
- ✓ Increase athletic field maintenance
- ✓ Develop community outreach processes
- ✓ Establish a recurring plan cycle
- ✓ Secure construction funds for priority field projects from the CPA and other sources

Project Prioritization Criteria

- ALIGNS WITH OPEN SPACE & RECREATION PLAN GOALS/ OBJECTIVES
- CITY OF NEWTON CAPITAL IMPROVEMENT PLAN (CIP)
- ALIGNS WITH NAFF GOALS
- POTENTIAL FOR GREATEST CITY-WIDE BENEFIT
- PRIORITIZE FIELDS WITH PLAY EXPANSION POTENTIAL (SPORTS LIGHTING + SYNTHETIC TURF)
- PLAN FOR USE ALLOCATION AT T LIGHTED SYNTHETIC TURF FIELDS IN PREPARATION FOR THE LARGE FIELD RENOVATION PROJECTS
- POTENTIAL FOR EXPANSION OF MULTIUSE FIELDS
- USE AND CONDITIONS ASSESSMENT DATA (WORK IN PROGRESS)
- SPATIAL CRITERIA FOR REGULATION MULTIUSE FIELDS & FLEXIBILITY OF PLAY IN ATHLETIC FIELDS
- INTEGRATED WITH OTHER WORK AT THE SITE
- ALTERNATIVE FUNDING SOURCE OPPORTUNITIES
- POTENTIAL FOR IMPROVED ACCESSIBILITY
- IMPACT TO THE AREA'S STAKEHOLDERS
- GEOGRAPHIC DISTRIBUTION
- PROXIMITY TO VARIOUS MODES OF TRANSPORTATION
- EXISTING SAFETY ISSUES
- MEET EMERGING NEEDS
- POTENTIAL FOR STORMWATER IMPROVEMENTS

CAPITAL PROJECT MANAGEMENT TEAM OBJECTIVES

1. EXPAND PROJECT MANAGEMENT

- ✓ Establish Parks + Open Space Division
 - ✓ Director
 - ✓ Assistant Director
- ✓ Expand project review capabilities
- ✓ Implement Park Ranger Program

2. DEVELOP STANDARD PROCESSES FOR PLANNING AND COMMUNICATING CAPITAL PROJECTS

- ✓ Develop community outreach process
- ✓ Increase engagement with commissions, committees and other stakeholders
- ✓ Establish project website for updates and information sharing
- ✓ Develop standards for project review

3. EXPAND AND STREAMLINE PROJECT PLANNING CAPABILITIES

- ✓ Procure and hire On-Call Services for project design

DIRECTOR OF PARKS + OPEN SPACE:

LUIS PEREZ DEMORIZI

ASSISTANT DIRECTOR OF PARKS + OPEN SPACE:

GREG MELLETT

PARK RANGER:

ADAM NAHABEDIAN

ON-CALL CONSULTANTS:

- **WESTON & SAMPSON**
- **CDM SMITH**



PARKS + OPEN SPACE TEAM

5 YEAR PLAN PROCESS



FIELDS COMMUNITY, STAKEHOLDER AND COMMISSION MEETINGS TO DATE

Athletic Fields Strategic Plan

- Athletic Field Sub-Committee - September 2020 Thru January 2022
- Athletic Fields Engineering Services RFQ - September 2021 Thru January 2022
- City Council Update - December 8th, 2021
- Conservation Commission Update - January 6th, 2022
- City Council Programs & Services Update - June 22nd, 2022
- Parks and Recreation Commission Update - June 22nd, 2022
- Commission on Disability Update - July 11th, 2022

Albemarle:

- Community meeting 1 - October 20th, 2021
- Community Meeting 2 - May 3rd, 2022
- Community Meeting 3 - June 2nd, 2022
- Parks & Recreation Commission - April 25th; June 27th

BOH, Burr School + McGrath:

- Community meeting 1 - October 20th, 2021; October 27th, 2021
- Community Meeting 2 - June 13th, 2022
- Parks & Recreation Commission (McGrath ONLY) - October 17th, 2022

Brandeis Rd Field Sports Lighting:

- Community meeting 1 - NOVEMBER 10TH, 2021
- Community Meeting 2 - DECEMBER 9TH, 2021
- Light Demonstration - DECEMBER 20TH, 2021
- Buffer Planting w/ Abutters - January 19th, 2022

Newton North Sports Lighting:

- Community meeting 1 - APRIL 5TH, 2022
- Light Demonstration - APRIL 7TH, 2022

Newton Synthetic Turf Replacements:

- Community meeting 1 - OCTOBER 24TH, 2022
- Community meeting 2 - NOVEMBER 2ND, 2022

Focus Groups and Stakeholders

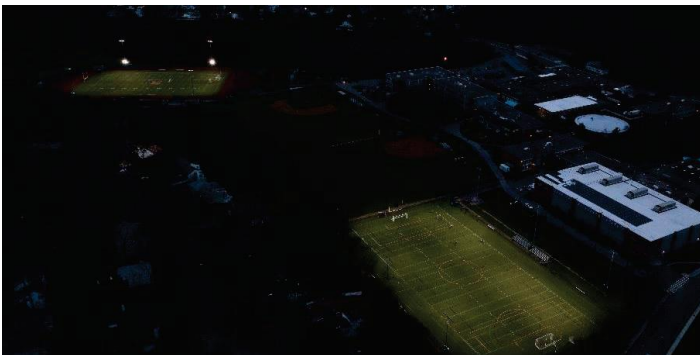
- Friends of Albemarle
- Burr School PTO & Principal
- BOH Schools PTO & Principals
- BOH Athletic Directors
- Newton South HS Athletic Director
- Newton North HS Athletic Director
- F.A. Day MS Athletic Director + Principal
- Bike Newton
- Safe Routes to Schools
- Newton Girls Soccer
- Newton Youth Soccer
- Ultimate Disk
- Newton Little League
- Newton Girls Softball
- Friends of Newton Tennis
- City Council
- Abutters and other community members

PLAY EXPANSION GOALS + OBJECTIVES

1. EXPAND PLAY AT EXISTING SYNTHETIC TURF FIELDS
 - NNHS Tiger Stadium Sports Lighting
 - ✓ NSHS Stadium + Brandeis Rd. Field Sports Lighting
2. INCREASE AVAILABILITY OF SYNTHETIC TURF FIELDS
 - Albemarle Playground (1)
 - Forte Park (1)
3. EXPAND IRRIGATION AND GRASS TURF AT UNIRRIGATED, LOWER QUALITY GRASS FIELDS
 - Burr School Fields
 - Auburndale "The Cove"
 - West Newton Common
 - Boyd Park (Lincoln-Elliot)
 - Pellegrini
4. REMOVE UNDERUTILIZED BALL DIAMONDS WHEN FEASIBLE
 - McGrath
 - Albemarle

EXPANDING PLAY AT EXISTING SYNTHETIC TURF FIELDS

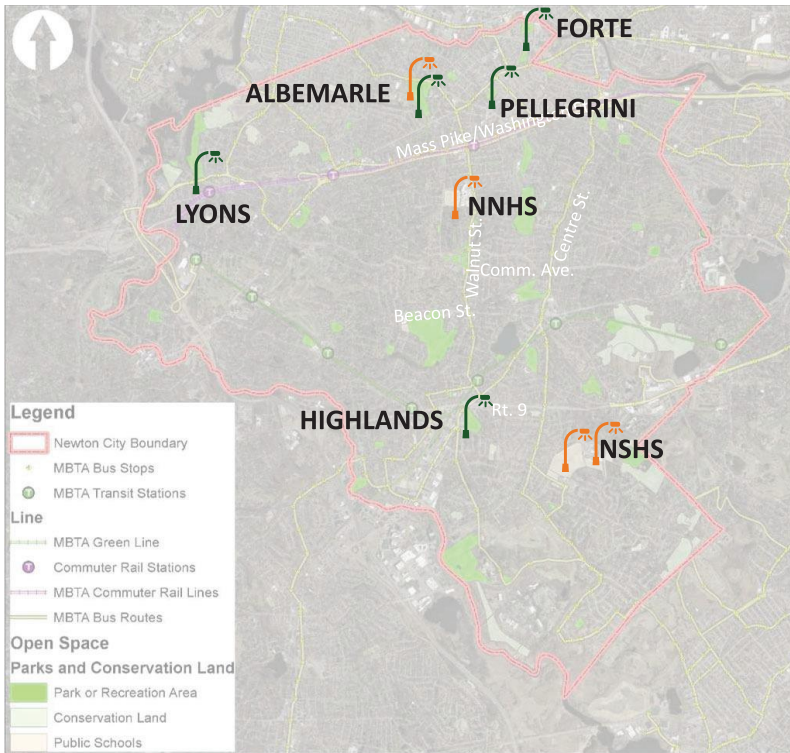
- **SPORTS LIGHTING AT SYNTHETIC TURF FIELDS:**
 - **ADDITIONAL 3 HOURS OF PLAY PER EVENING IN FALL AND WINTER**
 - **ADDITIONAL 1.5 HOURS OF PLAY PER EVENING IN SPRING AND SUMMER**
 - **AVERAGE ANNUAL USE EXPANSION: 500 HRS (BASED ON NSHS STADIUM LIGHT DATA)**



NSHS WINKLER STADIUM LIGHTS (COMPLETED)



NNHS TIGER STADIUM LIGHTS (2023)



EXISTING LIGHTED ATHLETIC FACILITIES:

- ALBEMARLE PARK
- FORTE PARK
- LYONS PARK
- NEWTON HIGHLANDS PLAYGROUND
- PELLEGRINI PARK

PLAY EXPANSION:

- NEWTON SOUTH HS BRANDEIS RD FIELD
- NEWTON SOUTH HS STADIUM
- NEWTON NORTH HS TIGER STADIUM FIELD
- ALBEMARLE - MURPHY FIELD

Newton Parks, Recreation and Culture Department
Athletic Fields Capital Improvement Plan



Existing Synthetic Turf Fields:

- Newton North HS Stadium Track & Field
- Newton South HS Stadium Track & Field
- Newton South HS Brandeis Rd Field

TOTAL: 3 Projects; 2 Locations

Synthetic Turf Field Expansion:

- Albemarle
- Forte Park

TOTAL: 2 Projects

Newton Parks, Recreation and Culture Department
Athletic Fields Capital Improvement Plan



NSHS SYNTHETIC TURF REPLACEMENTS



NNHS SYNTHETIC TURF REPLACEMENT



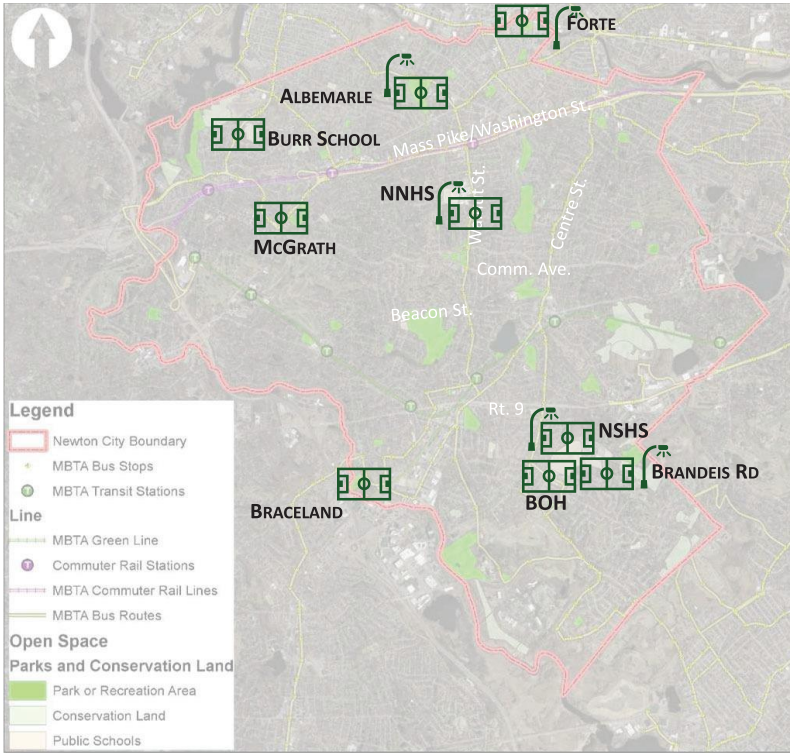
MULTIPURPOSE SYNTHETIC TURF FIELD @ ALBEMARLE



FORTE PARK MULTIPURPOSE SYNTHETIC TURF RETROFIT

ATHLETIC FIELD CAPITAL IMPROVEMENTS GOALS + OBJECTIVES

1. IMPROVE QUALITY AND QUANTITY OF ATHLETIC FIELDS
 - Increase Play Opportunities thru Sports lighting, Synthetic Turf and grass field expansion
 - Replace end-of-life Sports Lighting
 - Improve quality of athletic field surfaces
 - Increase available regulation-size athletic fields on Park and School lands
 - Replace and expand synthetic turf field offerings
 - Maximize flexibility of field usage in grass fields
2. IMPROVE ACCESSIBILITY TO AND WITHIN FIELD AMENITIES
3. IMPROVE ASSET MANAGEMENT THROUGH SUSTAINABLE, SMART TECHNOLOGY
 - Smart Irrigation
 - Smart, low-spillage lighting
 - Utilize better, more sustainable materials
 - Standardize site amenities (back stops, synthetic turf carpets and infills, benches
 - Reduce mowing in ancillary areas to increase potential for wildlife habitat



Current 5-Year Plan Projects + Status

Project	Construction Status	Project Type
Albemarle Playground Phase 1	Fall 2024	Parks/Athletic Fields
Burr School Field Improvements	Design Development	Athletic Fields
Bobby Braceland/ Upper Falls Playground	In Progress	Parks/Athletic Fields
Brown/Oak Hill Field Improvements	In Progress	Athletic Fields
Forte Park Field and Sports Lighting Improvements	2024	Athletic Fields
McGrath Park Fields	Design Development	Parks/Athletic Fields
Newton South Brandeis Rd. Field Sports Lighting	Completed 2022	Sports Lighting
Newton South Stadium Sports Lighting	Completed 2020	Sports Lighting
Newton South Stadium + Brandeis Synthetic Turf Replacement	Summer 2023	Athletic Fields
Newton North Tiger Stadium Sports Lighting	Summer 2023	Sports Lighting
Newton North Tiger Stadium Synthetic Turf Replacement	TBD	Athletic Fields

Newton Parks, Recreation and Culture Department
Capital Improvements Plan



NEWTON SOUTH HIGH SCHOOL SPORTS LIGHTING

#370-22



NNHS STADIUM SPORTS LIGHTING



ALBEMARLE PHASE 1

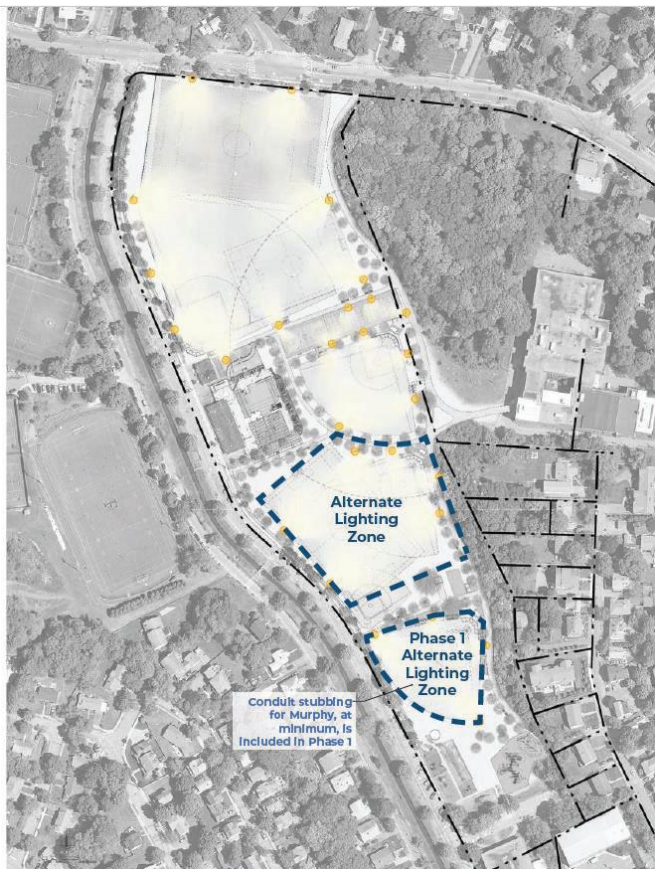
STAGED APPROACH TO IMPLEMENTATION



PLAN HIGHLIGHTS - Sports Lighting

-  Sports Lighting
-  Property Lines (approximate)

NOTE: Not shown but to be considered will be pedestrian lighting along the multi-use pathway and key connections from F.A. Day Middle School to Albemarle Road.



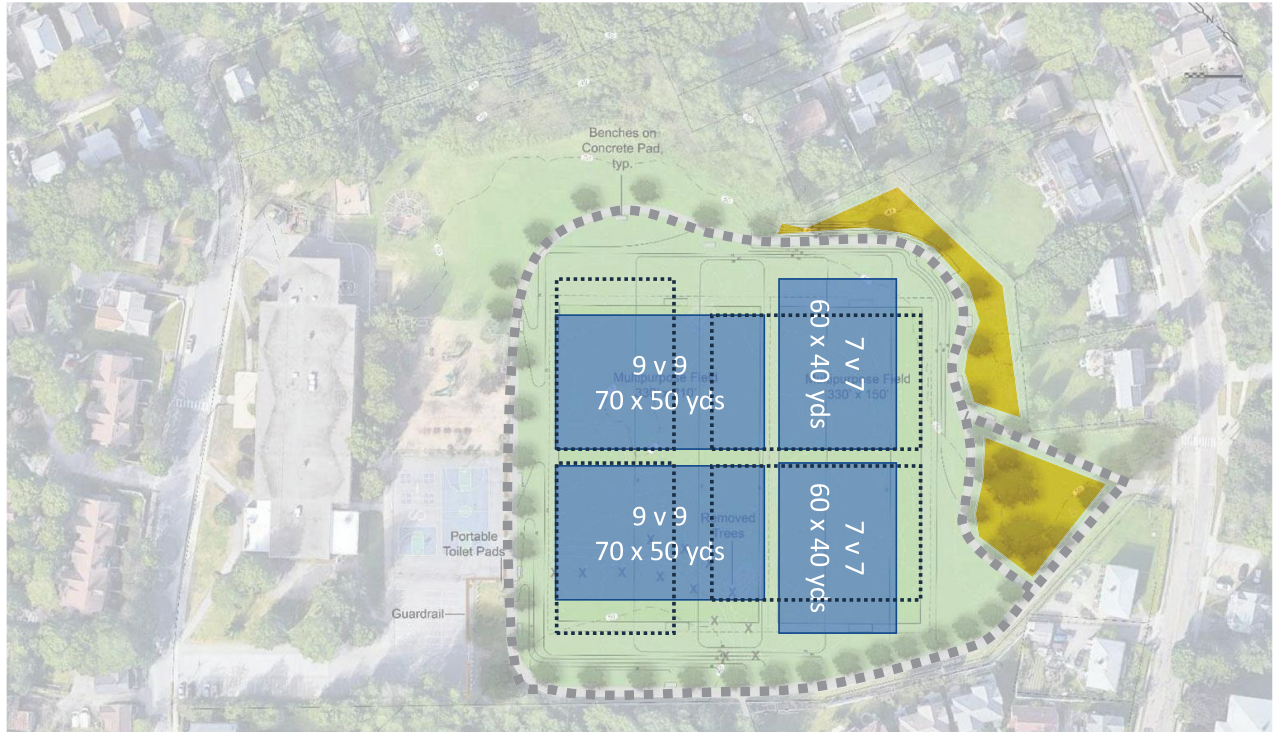


BURR SCHOOL FIELDS

Burr School Conceptual Site Plan – Soccer Fields

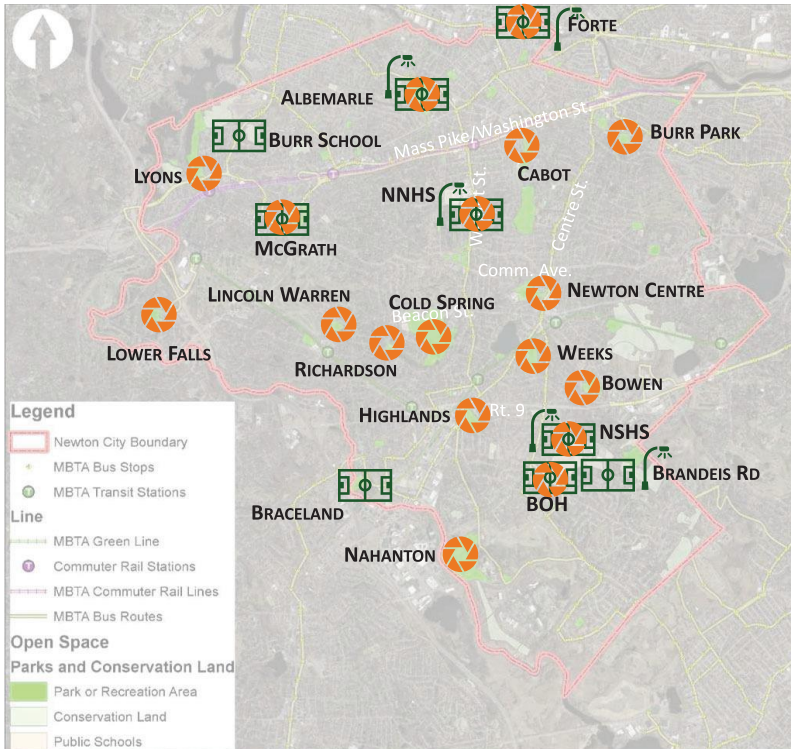
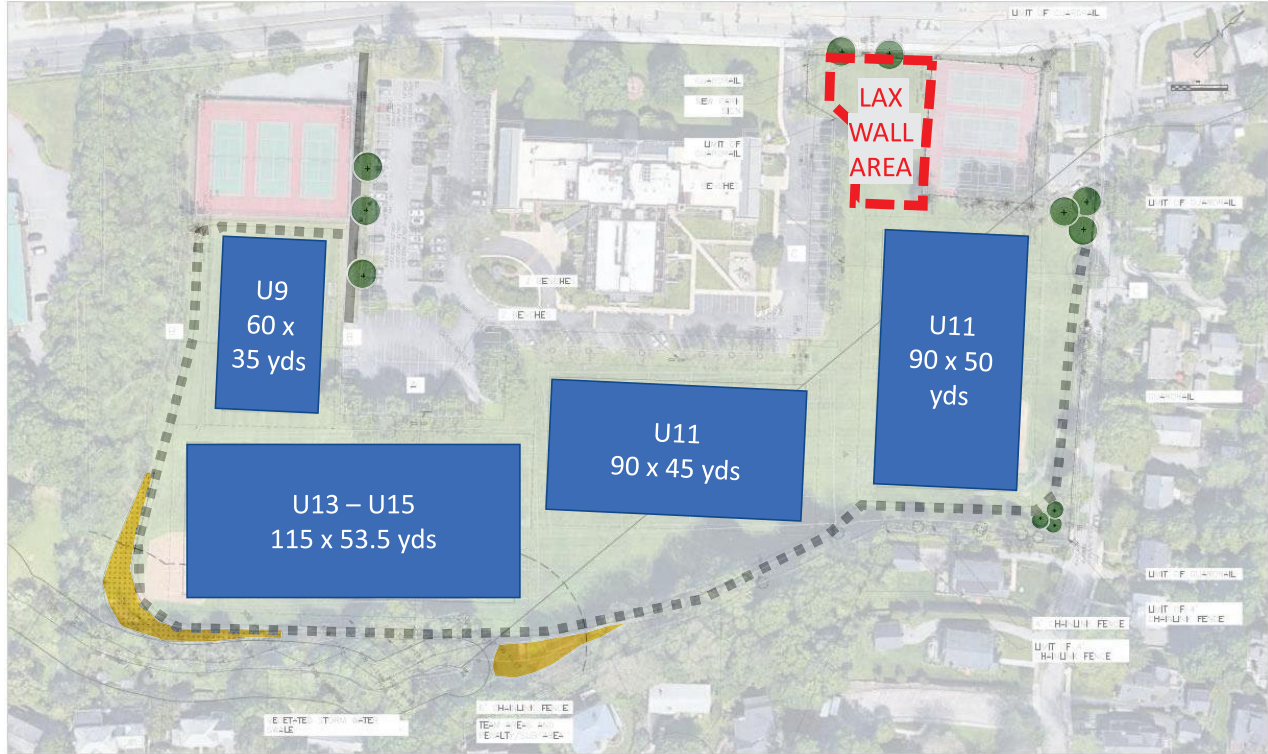


Burr School Conceptual Site Plan – Soccer Fields



MCGRATH PARK

McGrath Park Conceptual Site Plan – Lacrosse Fields

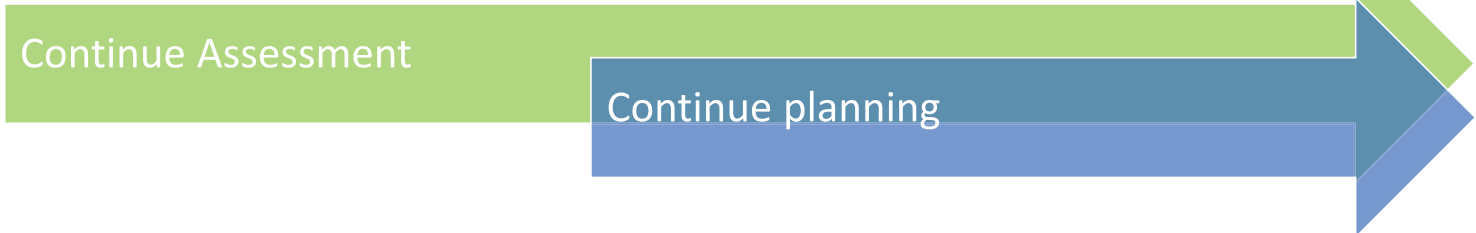
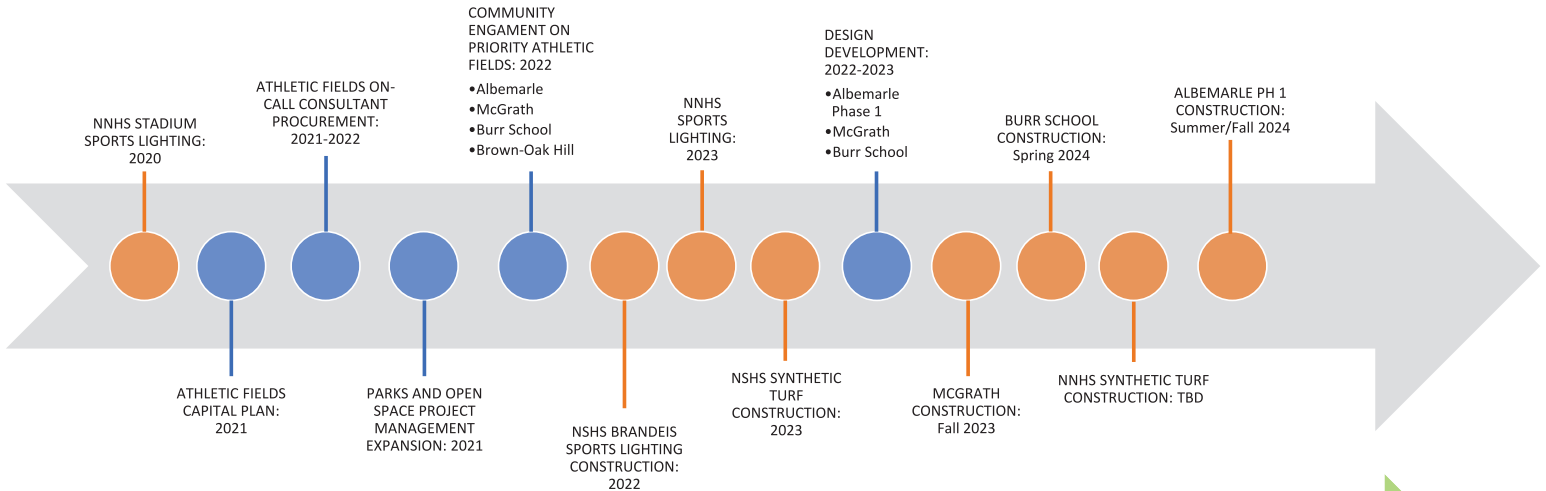


Current Projects + Status		
Project	Construction Status	Project Type
Albemarle Playground Phase 1	Fall 2024	Parks/Athletic Fields
Albemarle Athletic Fields	On Going	Turf Management
Burr School Field Improvements	Design Development	Athletic Fields
Burr Park Fields	On Going	Turf Management
Bobby Braceland/ Upper Falls Playground	In Progress	Parks/Athletic Fields
Brown/Oak Hill Field Improvements	In Progress	Athletic Fields
Brown/Oak Hill Fields	On Going	Turf Management
Bowen Athletic Fields	On Going	Turf management
Cabot Pasrk Fields	On Going	Turf Management
Cold Spring Park Fields	On Going	Turf Management
Forte Park Field and Sports Lighting Improvements	2024-2025	Athletic Fields
Forte Park Fields	On Going	Turf Management
Highlands Athletic Fields	On Going	Turf Management
Lincoln-Warren Athletic Fields	On Going	Turf Management
Lower Falls Athletic Fields	On Going	Turf Management
Lyons Field	On Going	Turf Management
McGrath Park Fields	Design Development	Parks/Athletic Fields
Mcgrath Athletic Fields	On Going	Turf Management
Nahanton Athletic Fields	On Going	Turf Management
Newton Centre Athletic Fields	On Going	Turf Management
Newton South Brandeis Rd. Field Sports Lighting	Completed 2022	Sports Lighting
Newton South Stadium Sports Lighting	Completed 2020	Sports Lighting
Newton South Stadium + Brandeis Synthetic Turf Replacement	Summer 2023	Athletic Fields
Newton South Athletic Fields	On Going	Turf Management
Newton North Tiger Stadium Sports Lighting	Spring/Summer 2023	Sports Lighting
Newton North Tiger Stadium Synthetic Turf Replacement	Summer 2024	Athletic Fields
Newton North Athletic Fields	On Going	Turf Management
Richardson Athletic Fields	On Going	Turf Management
Weeks Athletic Fields	On Going	Turf Management

Improving Quality and Quantity at 20 Athletic field sites

- 18 sites with Increased Grass Turf Management
- 11 Capital Projects

5 YEAR ATHLETIC FIELD PLAN OUTLOOK



NEXT STEPS ON ATHLETIC FIELDS PLAN:

- CPA Construction Funding Request (February Thru April)
- Finalize field project plans to shovel-ready status
- Begin Construction Fall 2023
- Continue monitoring, evaluating and improving grass field maintenance
- Continue evaluating and analyzing field usage
- Continue evaluating and prioritizing projects for the next 5 years



Synthetic turf benefits

- Current fields are synthetic turf and provide near year-round use
- Can handle unlimited use including during peak-use seasons
- Zero downtime: weather, rain do not impact availability
- Synthetic turf fields equal to approx. 3 grass fields
- Every hour on turf is an hour not on grass



Turf and lights at the High Schools

- # of sports has increased over time (e.g., lacrosse)
- # of teams: NSHS, NNHS have more teams because they have Varsity, JV, and Fresh. Sports
- Configured to host most all rectangular sports
- Maximize # of players during practices
- Less travel needs for students to get to fields
- Onsite Amenities include lockers, rest rooms, shower/changing area
- Athletic trainer onsite after school
- Onsite Parking

Synthetic Turf Fields In Neighboring Communities

Municipality	Population	# of Muni. Public Synth. Turf Fields	# of Public High Schools	# of HS Students	# of Students/ Synth. Turf Field
CAMBRIDGE	117,090	7	3	1,867	266
SOMERVILLE	79,815	4	1	1,310	327
WALTHAM	64,015	5	1	1,751	350
BROOKLINE	59,223	4	1	2,087	521
ARLINGTON	42,844	3 (Soon to be constructed)	1	1,527	509
LEXINGTON	33,792	4	1	2,303	575
MEDFORD	62,098	2	1	1,260	630
NEEDHAM	31,248	3	1	1,645	548
WELLESLEY	28,747	3	1	1,412	470
NEWTON	87,453	3	2	3,936	1,312

- Data collected through email confirmations by various recreation departments and data available online for each municipality
- Population data for each school district derived from Mass Dept. of Education
- Municipal population data gathered from available population data through Google.

Key Findings:

- High School students in Newton (NNHS +NSHS) make up approximately 4.5% of total population
- On average, HS students for nearby towns make up between 1.5% to 4% of the total population
- Newton has the most students per synthetic turf as compared to neighboring communities

Newton Parks, Recreation and Culture Department Athletic Fields Capital Improvement Plan

A photograph of a large, green synthetic turf field in a park setting. In the background, there are trees with some autumn-colored leaves and a clear blue sky. A person is walking on a path to the left. The text is overlaid on the center of the image.

Questions and Discussion

For additional questions and input please contact: athleticfields@newtonma.gov

For Presentation, Chat, recordings and meeting recordings, please go to www.newtonma.gov/fieldprojects