

A nighttime photograph of an outdoor sports field. In the foreground, a group of people, mostly men in jackets, are standing behind a chain-link fence on a paved walkway. The field is illuminated by tall stadium lights. In the background, a group of athletes in blue and yellow uniforms are lined up on the field. The sky is dark with some clouds.

Newton Parks, Recreation + Culture Department
NNHS Tiger Stadium Field
Sports Lighting Project
April 5th, 2022

6:00PM – 8:00PM

athleticfields@newtonma.gov

www.newtonma.gov/fieldprojects

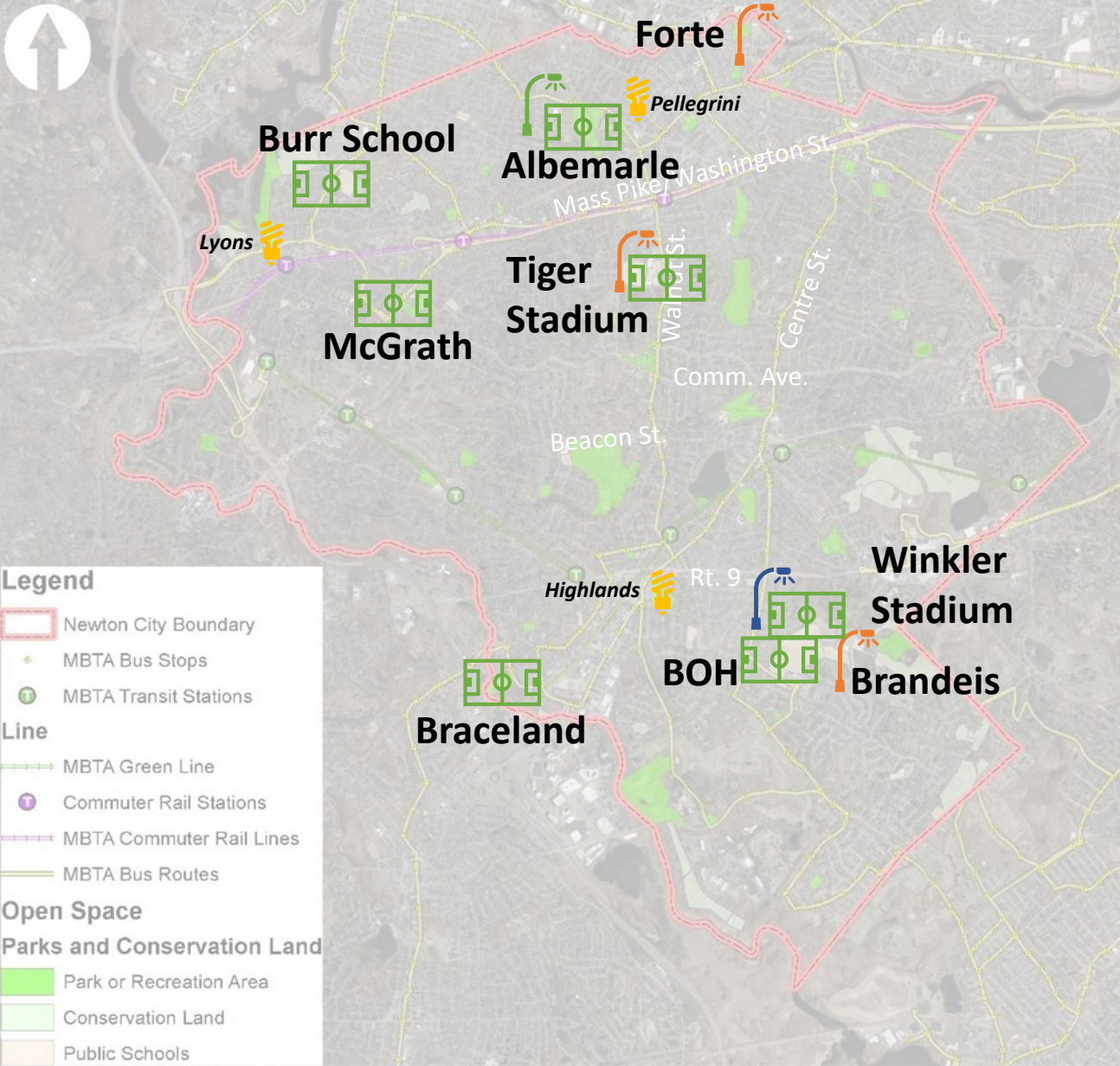
AGENDA

1

ATHLETIC FIELD CAPITAL PLAN UPDATE – ESTABLISHED NEED, SOLUTION + COMP. PROJECTS

2

TIGER STADIUM FIELD LIGHTING PROJECT DETAILS AND DATA



5-YEAR ATHLETIC FIELD CAPITAL PROJECTS:

- ALBEMARLE PARK
- FORTE PARK RELIGHTING
- BURR SCHOOL
- BROWN/OAK HILL FIELDS (BOH)
- MCGRATH PARK
- BOBBY BRACELAND
- NEWTON SOUTH BRANDEIS RD. FIELD LIGHTING
- NEWTON NORTH TIGER STADIUM LIGHTING
- NSHS SYNTHETIC STADIUM + BRANDEIS TURF REPLACEMENT
- NNHS SYNTHETIC TURF REPLACEMENT

TOTAL: 10 PROJECTS

- EXISTING SPORTS FIELD LIGHTING (NOT CURRENTLY ON 5-YEAR PROJECT LIST)
- COMPLETED SPORTS FIELD LIGHTING PROJECTS
- SPORTS FIELD LIGHTING PROJECTS: 2022-2023 CONSTRUCTION
- ATHLETIC FIELD/ PARK PROJECTS – PLANNING PHASE (2023-2027+)

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

WHY ARE THE HIGH SCHOOLS IMPORTANT IN MEETING THE CITY'S GOALS FOR ATHLETIC FIELDS?

- STEP 1 IN THE CITY'S 5-YEAR ATHLETIC FIELD STRATEGIC PLAN
- ENSURE THE SCHOOLS HAVE AVAILABLE FIELDS WHILE OTHER FIELD PROJECT GO UNDER CONSTRUCTION OVER THE NEXT 3 YEARS
- # OF SPORTS HAS INCREASED OVER TIME (E.G., SOCCER, LACROSSE)
- # OF TEAMS: NSHS, NNHS HAVE MORE TEAMS I.E., VARSITY, JV, AND FRESH. SPORTS
- MINIMIZE STUDENT ATHLETE OFF-SITE TRAVEL FOR PRACTICES AND HOME GAMES
- FIELDS ARE SYNTHETIC TURF, CAN HANDLE ADDITIONAL USE
- ONSITE AMENITIES INCLUDE LOCKERS, REST ROOMS, SHOWER/CHANGING AREA
- PARKING IS AVAILABLE
- ATHLETIC TRAINER ONSITE AFTER SCHOOL
- REDUCES DISPLACEMENT OF YOUTH SPORTS ACTIVITY AT OTHER FIELDS IN THE CITY
- ATHLETICS ARE GREAT FOR SOCIAL-EMOTIONAL HEALTH
- KEEPS NEWTON HS COMPETITIVE WITH OTHER NEARBY COMMUNITIES AND PROVIDE GREATER EQUITY
- BOTH STADIUM FIELDS HAVE FUNDRAISING EFFORTS BY THE SCHOOLS

WHY IS LIGHTING THE HIGH SCHOOLS IMPORTANT IN MEETING THE CITY'S GOALS FOR IMPROVING ATHLETIC FIELDS?

- ASSIST IN MITIGATING DISRUPTION IN FIELD AVAILABILITY FOR BOTH THE SCHOOL AND COMMUNITY ONCE CONSTRUCTION BEGINS FOR THE SITES IN THE 5-YEAR PLAN

Park	Schools served	School hours/Total hours
McGrath/Warren	NNHS	594/1189
Brown/Oak Hill	NSHS, Brown, Oak Hill	1,516/6788
Albemarle	Day, Bigelow, NNHS	436/ 13,469
Forte	NNHS	42/14,384

NEWTON NORTH HS TIGER STADIUM
ATHLETIC NEEDS

FALL ATHLETIC TEAMS & FIELD NEEDS:

- 3 GIRLS SOCCER TEAMS (9TH, JV, VARSITY)
- 3 BOYS' SOCCER TEAMS(9TH, JV, VARSITY)
- 3 FOOTBALL TEAMS (9TH, JV, VARSITY)
- 3 FIELD HOCKEY TEAMS (9TH, JV, VARSITY)
- 2 CROSS COUNTRY TEAMS ON TRACK

WINTER ATHLETIC TEAMS AND NEEDS:

- 2 INDOOR TRACK TEAMS, WEATHER PERMITTING

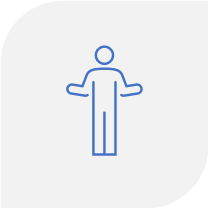
SPRING ATHLETIC TEAMS AND NEEDS:

- 3 GIRLS LACROSSE TEAMS(ALL LEVELS)
- 3 BOYS LACROSSE TEAMS(ALL LEVELS)
- 2 OUTDOOR TRACK(VARSITY, JV)

UP TO 12 PRACTICES/GAMES EACH WEEKDAY TO SCHEDULE

LATER SCHOOL DISMISSAL TIME: SAME NEEDS, LESS TIME

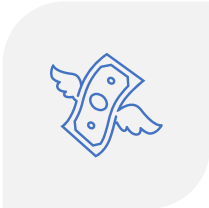
ISSUES WITH TEMPORARY LIGHTS



USED AT FIELDS WITH RECURRING ISSUES



NEED IS INCREASING



RENTAL COST + MAINTENANCE



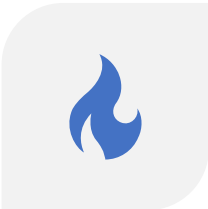
NOISE POLLUTION



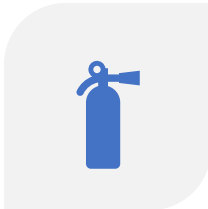
EXHAUST POLLUTION



LIGHT POLLUTION



FOSSIL FUEL CONSUMPTION



SAFETY



BRANDEIS RD. TEMP. LIGHTS



TIGER STADIUM TEMP. LIGHTS

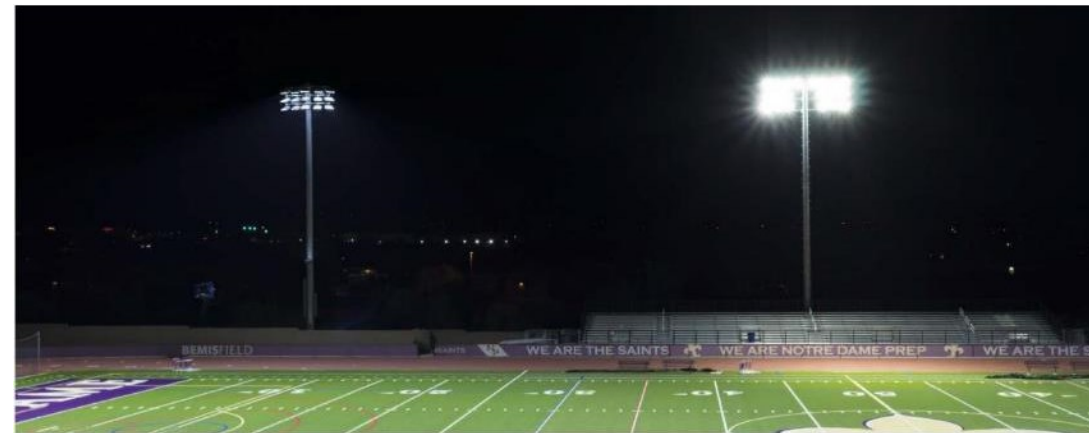
PROPOSED LIGHT SYSTEM

SITE SPECIFIC LIGHTING DESIGN CONSIDERATIONS:

- ALL DESIGNS VARY BY PROJECT OBJECTIVES
- ADJACENCY AND ABUTTING PROPERTIES + CITY LIGHTING ORDINANCE
- MINIMUM SPILLAGE
- POST-INSTALL LIGHTING ANALYSIS

OVERARCHING GOALS:

- BEST LIGHT QUALITY WHILE MINIMIZING ABUTTER IMPACTS
 - LIGHT QUALITY
 - UNIFORMITY, INTENSITY, LOW-SPILLAGE
 - ABILITY TO MEET AND EXCEED THE CITY'S LIGHT SPILLAGE ORDINANCE



PROPOSED SPORTS LIGHTING

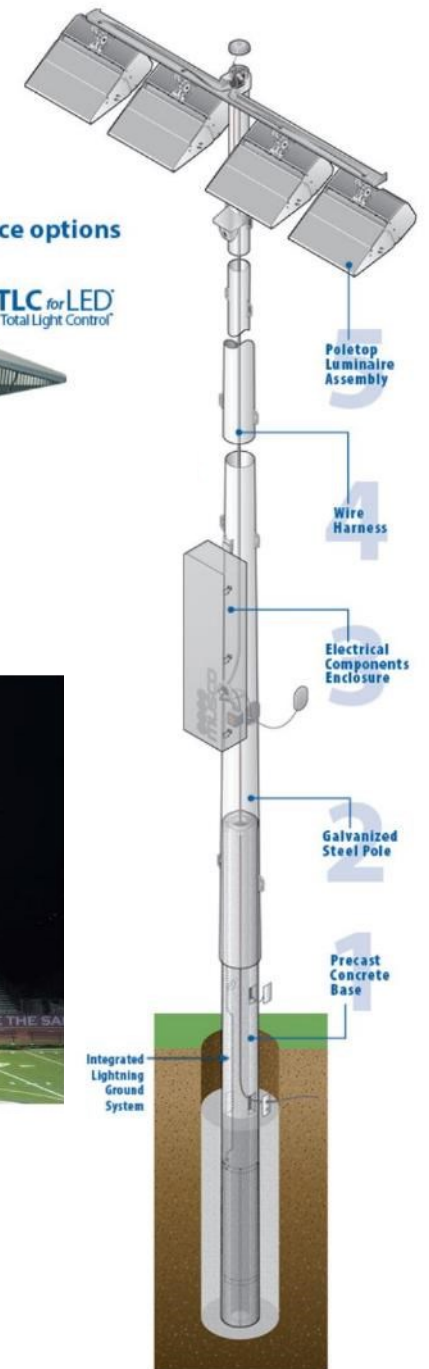
TYPICAL LED SPORTS LIGHTING

LIGHT LEVEL	
75 horizontal footcandles (750 lux)	75 horizontal footcandles (750 lux)
ENERGY CONSUMPTION	
103.5 kW	127 kW

Two light source options



TLC for LED
Total Light Control



COMPARABLE LIGHT SYSTEM AT OTHER NEWTON FACILITIES



Newton Highlands Playground MP Field:
Nearest property line to a sports light pole: ~36 feet

NSHS Winkler Stadium:
Nearest property line to a sports light pole: ~75 feet

● EXISTING POLE LOCATIONS

WHY IS LIGHTING THE HIGH SCHOOLS IMPORTANT IN MEETING THE CITY'S GOALS FOR IMPROVING ATHLETIC FIELDS?

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LIGHTING SYSTEM STANDARDS:

- LIGHT FIXTURES ARE FACTORY AIMED AND SHIELDED TO ILLUMINATE THE PLAYING SURFACE
 - INSTALLATION IS LASER AIMED TO CENTER FIELD
 - REMOTE ACCESS FOR MAXIMUM FLEXIBILITY IN SCHEDULING, AND ON/OFF
 - COST EFFECTIVE SOLUTION FOR MEETING SCHOOL AND CITY ATHLETIC FACILITY AND PROGRAMMING NEEDS
 - DESIGNED TO MEET DARK SKIES CERTIFICATION (IDA – INTERNATIONAL DARK SKIES ASSOCIATION)
-

TIGER STADIUM

SPORTS LIGHTING ANALYSIS

WHAT TO KNOW:

- TOTAL OF 4 POLES
- POLES ARE 80 FEET TALL

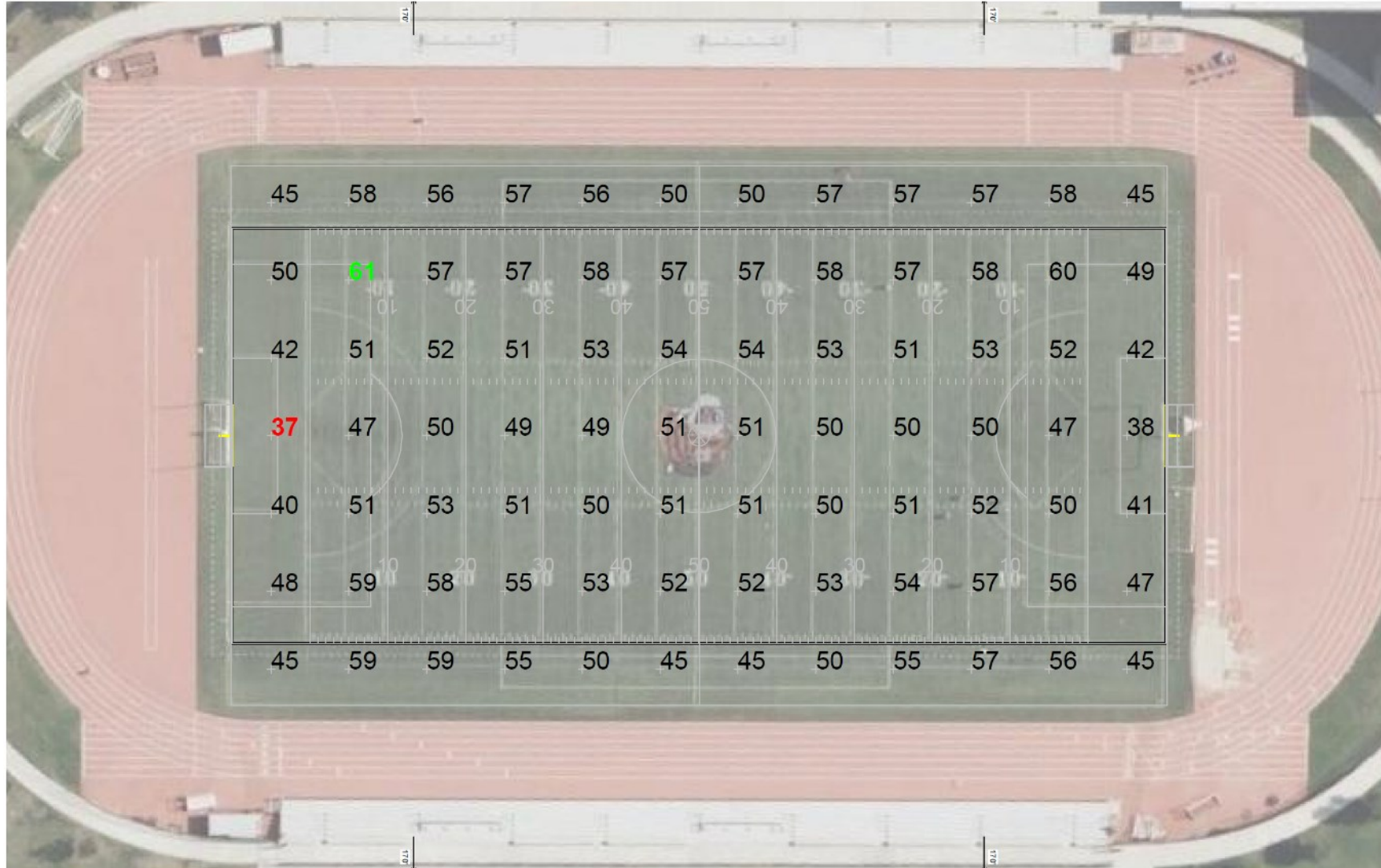
PLAYING SURFACE ILLUMINATION LEVELS AND UNIFORMITY

EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
4	F1-F4	80'	0'	25'	TLC-BI-575	2	2	0	
4				80'	TLC-LFD-1200	11	11	0	
TOTALS							52	52	0

North Newton High School Football
Newton, MA

GRID SUMMARY	
Name:	Soccer
Size:	361' x 208'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	50
Scan Average:	51.85
Maximum:	61
Minimum:	37
Avg / Min:	1.39
Guaranteed Max / Min:	2
Max / Min:	1.63
UG (adjacent pts):	1.32
CU:	0.63
No. of Points:	84
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	52
Total Load:	56.08 kW



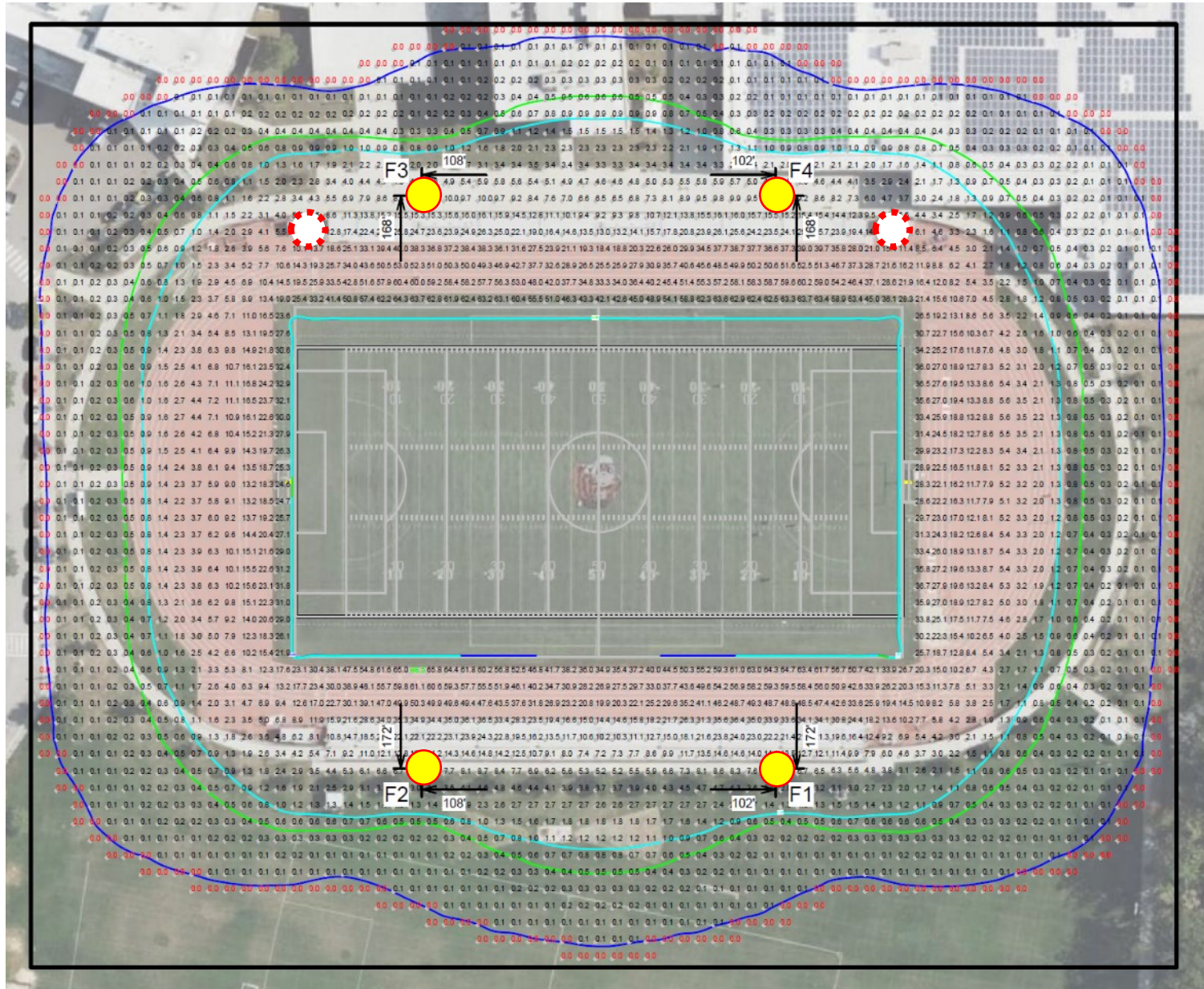
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

NNHS TIGER STADIUM LIGHT SPILLAGE LEVEL SUMMARY



WHAT TO KNOW:

- **RED #S** = DARKNESS
- **BLUE & GREEN** = CITY LIGHTING
- **ORDINANCE THRESHOLD**
- **PROPOSED POLE LOCATIONS**
- **ALT. POLE LOCATIONS**
- Nearest property line to a sports light pole(F2): ~230 feet
- Clearances vary to upward of 270' along Hull St.

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