MetLife STADIUM

Sustainability Guide

Overview

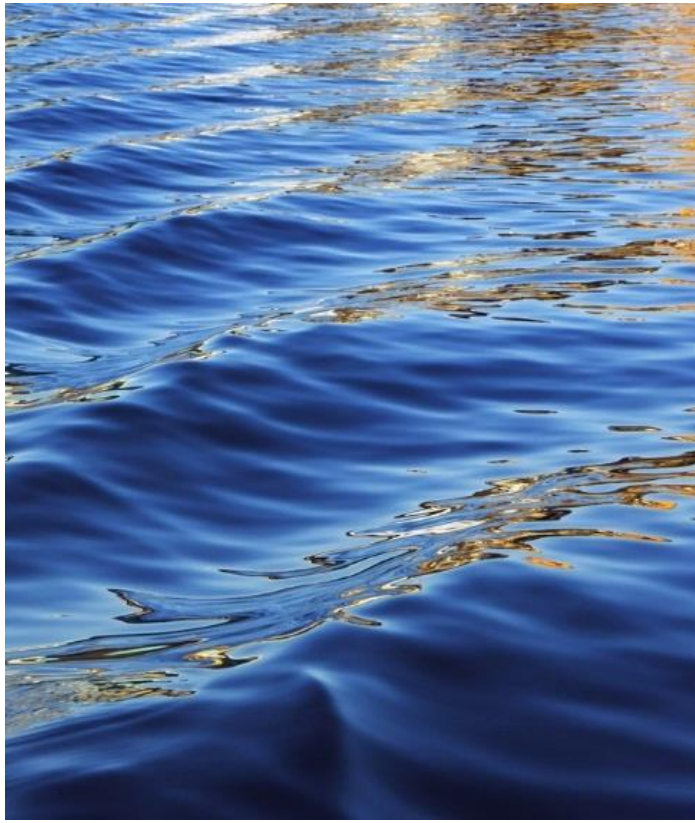
MetLife Stadium Sets Industry Precedent for Green Initiatives

Stadium Recognized by Environmental Protection Agency as Leading Venue in Carbon, Energy, Water and Solid Waste Reduction

On June 1, 2009, MetLife Stadium, home of the NFL's New York Football Giants and New York Jets, signed a Memorandum of Understanding (MOU) with the United States Environmental Protection Agency (EPA) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment.

Acknowledgments

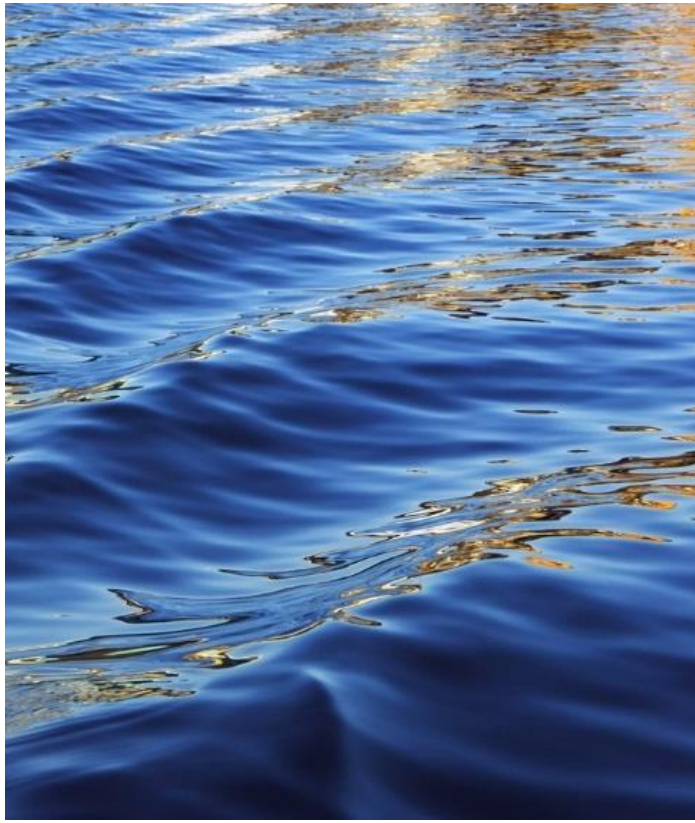
Stadium Awards and recognitions



Acknowledgements

- Team Owners John Mara, Steve Tisch (New York Giants) and Robert Wood Johnson IV (New York Jets) honored by the Natural Resource Defense Council (NRDC) in 2013 as leaders in the professional sports' greening movement and their commitment to building and operating a sustainable stadium.
- Named the "Greenest Stadium" in the NFL in 2009 by the Environmental Protection Agency (EPA)
- "Outstanding Achievement in Recycling" by the New Jersey Department of Environmental Protection.
- Named one of the Top 10 Most Energy Efficient Stadiums (#6 on Energy Digital List)

Construction of the Stadium

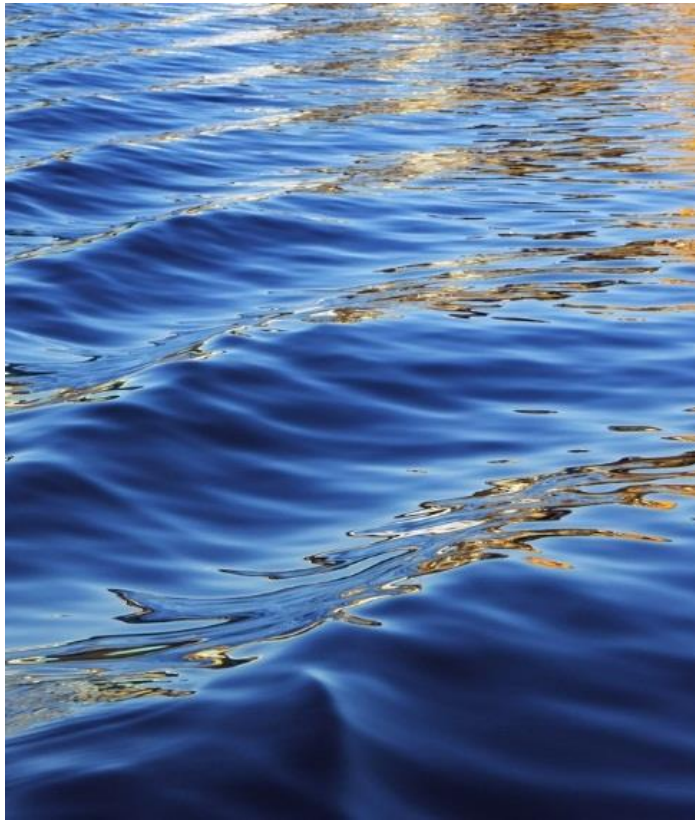


Green Elements
Construction of Stadium

- Stadium was built using approximately 40,000 tons of recycled steel
- 100,000 tons of concrete and other demolition materials were recycled from the old stadium
- EPA partnership set stringent sustainability objectives for construction and operations
- The new stadium is more than 2x as large as the old stadium but consumes 30% less energy

Recycling Program

An overview of our recycling initiatives



MetLife Stadium
Sustainability Program – Recycling Results

	2014 (Super Bowl)	2015	Variance	Variance %
Trash (tons)	917.12	721.87	195.25	21% ↓
Carboard (tons)	73.48	77.98	-4.5	6% ↑
Commingled (tons)	266.16	298	-31.84	12% ↑
Compost (tons)	261.26	186.94	74.32	28% ↓
Construction (tons)	338.38	69.78	268.6	79% ↓
Total Waste	1856.4	1330.42	525.98	28% ↓
Recyclables	939.28	608.55	330.73	35% ↓
Diversion Rate	51%	45%		

**2014 Recycling numbers include Super Bowl quantities*

- Launched on-site compost operation which reduced hauling costs and reduced carbon footprint
- Initiated aluminum & PET sorting which resulted in 840 bales of recyclable material

Post Event Sorting Process

- Mixed materials (trash/recycling) are brought down to the Service Level trash room in clear bags, where they are poured out onto a sorting table and sifted through to separate trash from recyclables.
  - Trash is compacted in the Trash Compactors
  - Commingled recyclables are either baled of compacted
  - Compostable materials are poured into a “Mixer” and then placed in the In-vessel composter

Post-Event Seating Bowl Collection

- Trash, commingled and compostable materials are collected in separate bags throughout the seating bowl
  - Trash is compacted in the Trash Compactors
  - Commingled recyclables are either baled of compacted
  - Compostable materials are baled and stored so that they are ready to be mixed.

Recycling Program Overview

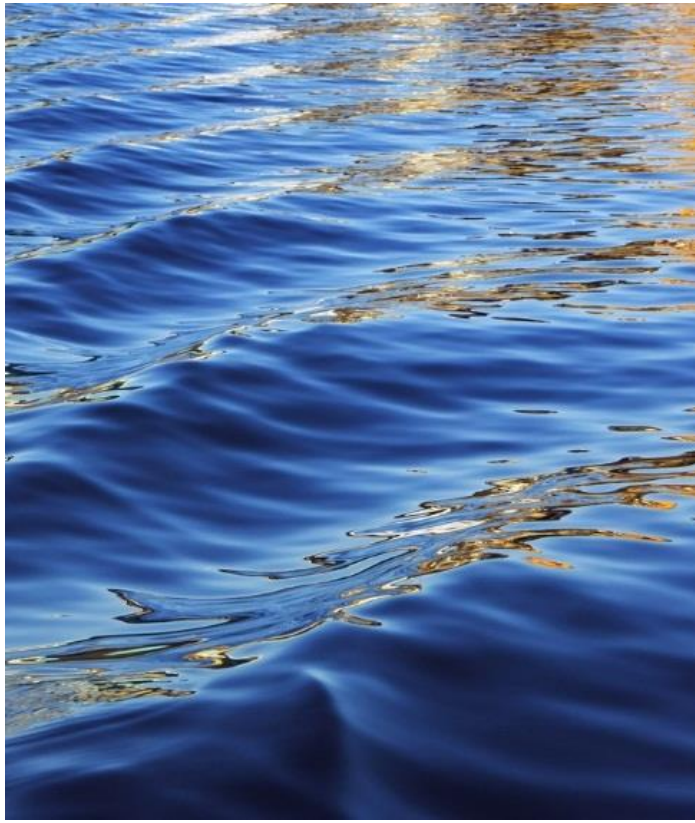
- Committed to reducing solid waste production by 25% through recycling and composting programs as compared to the old stadium
- 20 tons is produced inside the stadium
- Recycling of concessionaires waste streams
  - Cooking oils
  - Food waste (compost)
- Established team store recycling programs as part of vendor selection RFP
- Parking lot recycling program
  - 50 tons of solid waste is produced on average game day in the parking areas
  - Tailgate patrol gives fans trash bags designated for recyclables and trash to encourage participation in the parking lot recycling initiative. Bags collected during the event help to keep lots clean upon egress.

Cardboard Baling Program

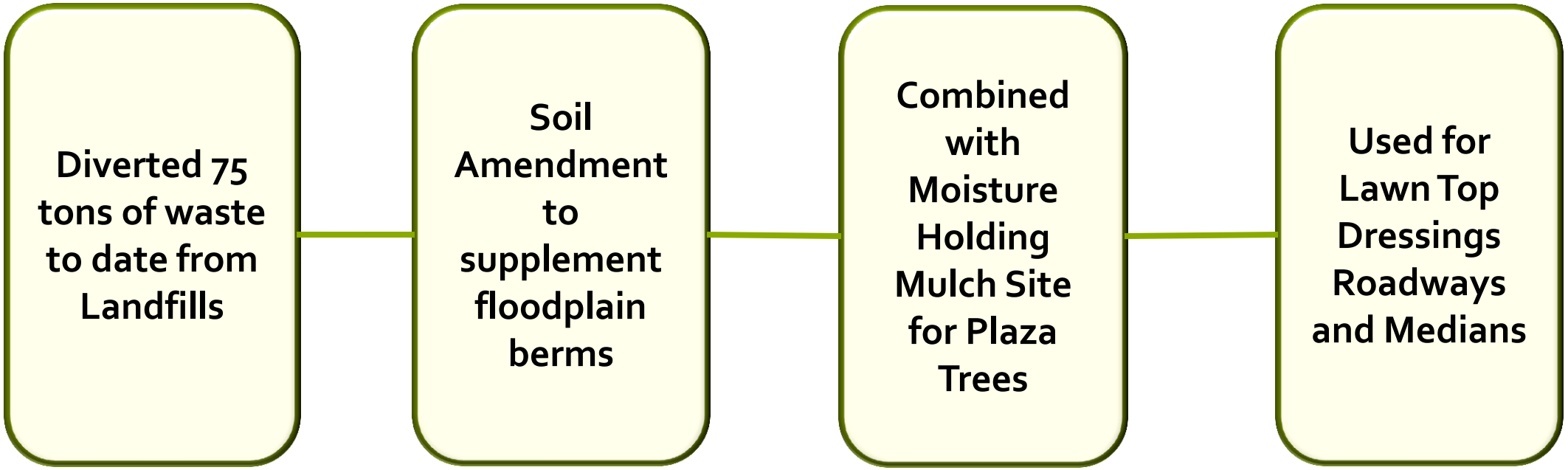
- 2 cardboard compactors
- Aggressive post consumption collection and separation program
- 500 tons baled since stadium opened in 2010

Composting

First stadium to have an in-house composter



Core Principles of In-house Compost Program



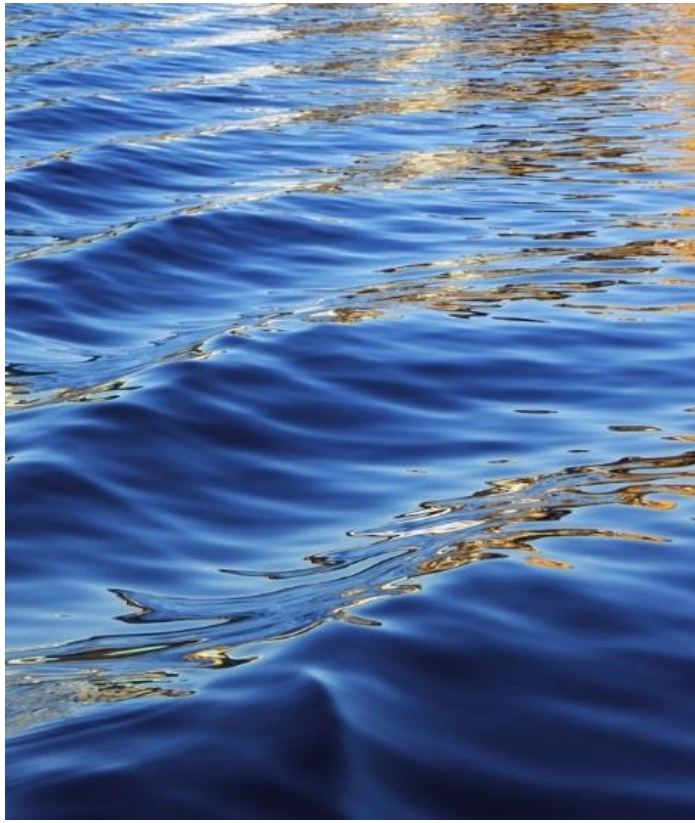
Compost Collection Program

- Use of compostable serving items in the concession areas, including concession plates, cups, cup holders/carriers, boats, etc.
- Collecting food waste from concession areas, kitchens and pantries.

In-Vessel Composter

- First sports stadium to install an In-Vessel Composter on stadium grounds
- Mulch is created from organic composted materials
- Organic mulch returned to environment on stadium grounds – helping to provide essential nutrients to plants and trees
- Helps to reduce the number of truck loads to landfills decreasing our carbon footprint

Energy Conservation

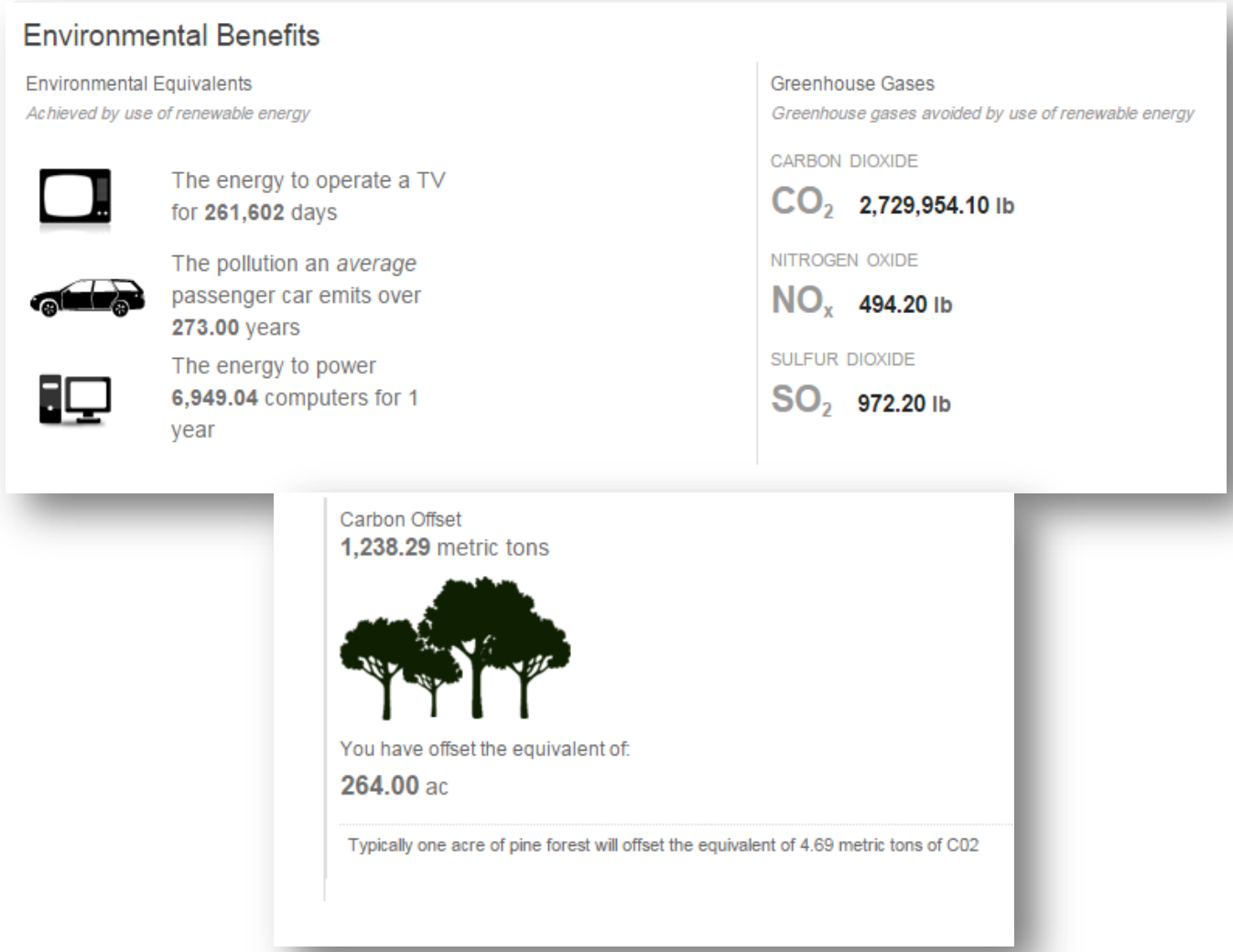


Energy Efficiency and Reduction Program

- 2014 vs 2015 consumption has been decreased by 2,193,234 kWh
- Post event controlled shutdown helps reduce energy use
- Implemented several projects to help reduce consumption
    - Solar Ring
    - Demand Flow
    - E-Cube
    - LED lighting conversions & Lighting controls

Solar Ring

- 1,350 solar panels assembled into 47 modules combine to generate 25X the power needed for the NRG Solar Ring LED lights
- The LED lights in the NRG Solar Ring have infinite color capabilities, displaying the two home teams' colors, or colors for any stadium event
- 903.4 Mwh generated since inception
- Equivalent to the amount of energy it would take to power 6,442.98 computers for a year
- 1,148.11 metric tons of carbon offset



Demand Flow

- Installed Siemens Demand Flow Logic to the stadium's chilled water A/C control
- Added a condensed water side stream filter which helps to ensure better efficiency
- Savings – 812,738.63 kWh since 2013

E-Cube

- Installed approximately 300 eCube devices throughout the stadium in Walk-In and Reach-In Refrigerators in an effort to reduce compressor run times

- Devices work with existing thermostats and are designed to make them less responsive to sudden air temperature changes and instead focus on potential changes in product temperatures.

Lighting Control – Sylvania Encelium

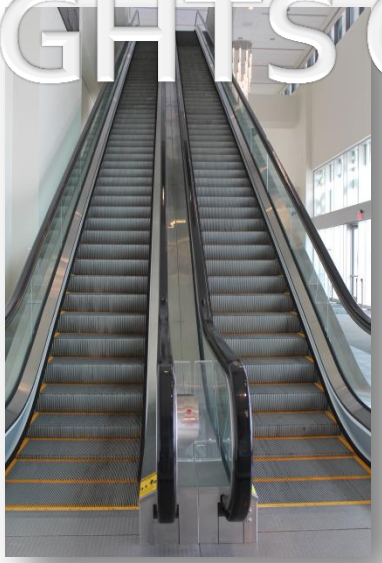
- Retrofit approximately 389 emergency lighting fixtures
- Replacement LEDs are calculated to save us approximately 1,045,643 kWh / year
- Equips the stadium with a state of the art lighting control software that through future planned projects, will enable us to have better control over our existing lighting fixtures and ensure all stadium lighting is operating at peak efficiency

LED Conversions

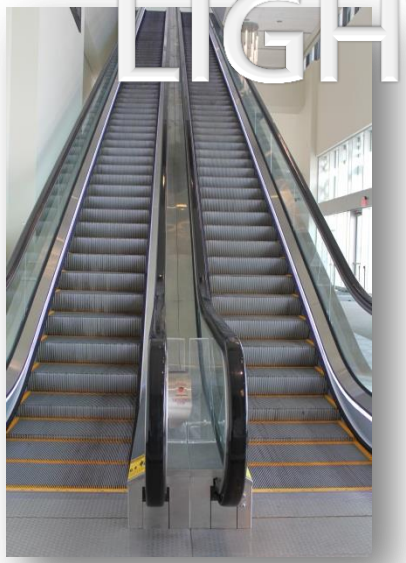
Date	Location	# of Fixtures	Existing Fixture	Existing Wattage	New Fixture	New Wattage	Difference (Kw)
2011	Track Lighting	130	MR 16	50	LED - Sylvania MR 16	5	5,850.00
2012	SL Wall Packs	68		100	LED - Grand Lite SML 106	38	4,216.00
2013	East/West VIP Lobbies	365		50	LED - Zenaro 10401	6	16,060.00
2014	Concourse Hi Bays 25 ow	12	MH	250	LED -	65	2,220.00
2014	Concourse Hi Bays 40 ow	22	MH	400	LED -	75	7,150.00
2014	Club Lounges	96	AR 111	100	LED -	24	7,296.00
Total						*kWh Annual Reduction*	42,792.00

Lighting Control – Escalator LED Lighting

LIGHTS OFF



LIGHTS ON



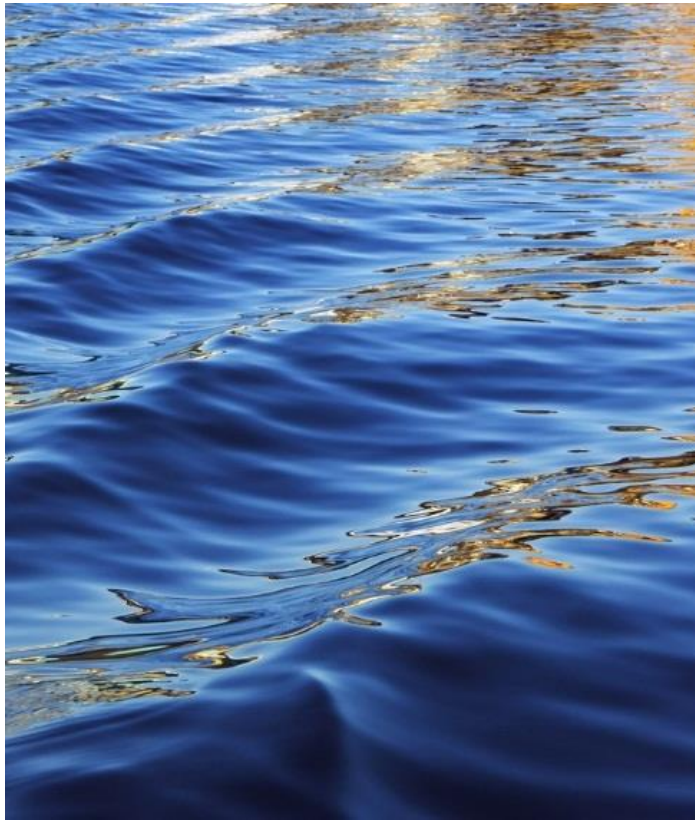
- Estimated cost to keep lights on when units aren't running = 147,781 kWh (24/7 operating cost) – 12,146 kWh (major event cost) – 5,541 kWh (small event cost) = 130,094 kWh
- **Projected Annual Savings = 130,094 kWh**

Electronics

- Uses Energy Star office equipment that includes computers, monitors, printers, faxes, copiers, scanners and water coolers
- Energy Star kitchen appliances include dishwashers, solid door reach-in freezers, under counter refrigerators and convection ovens

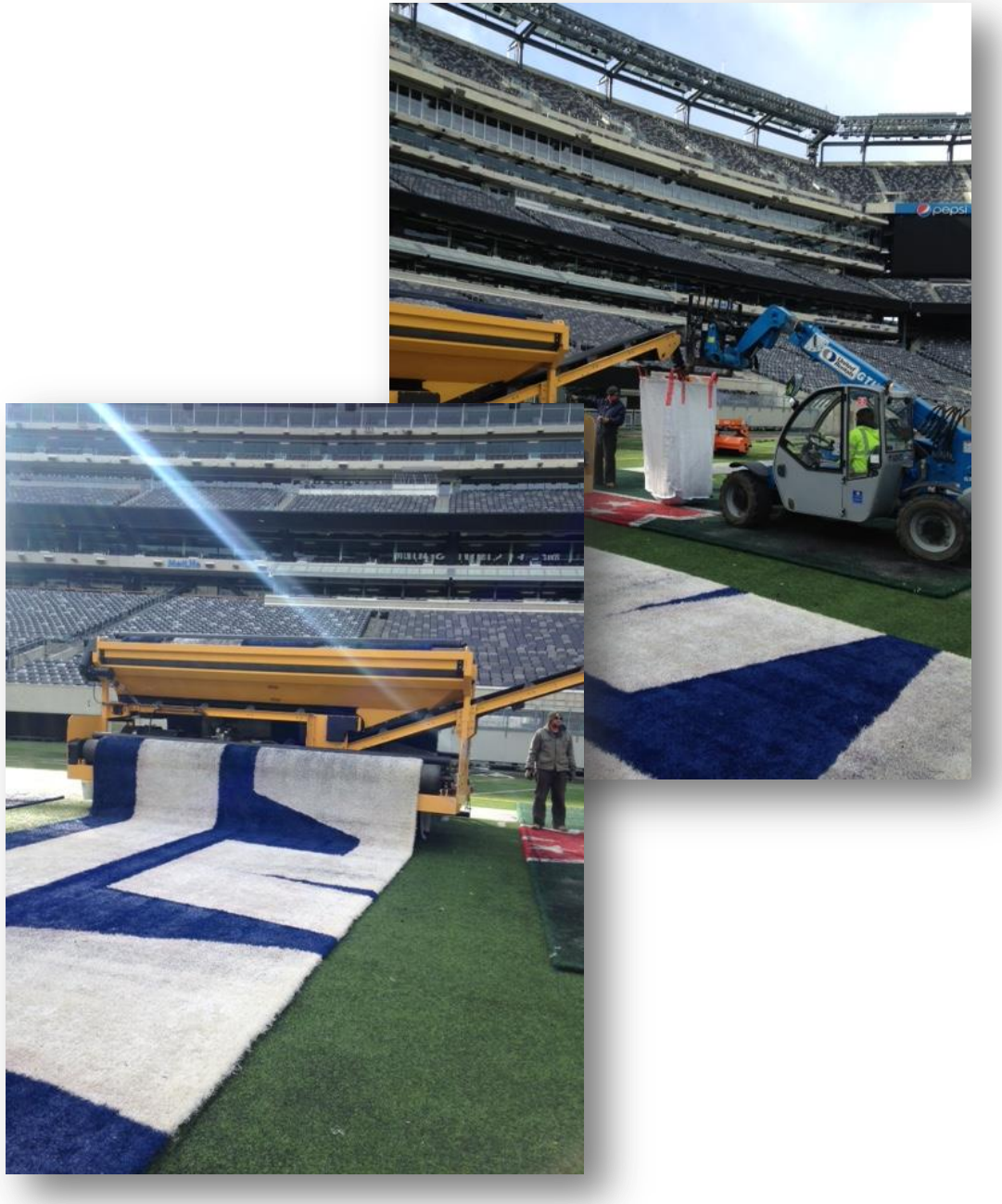
Field Construction

Turf Recycling Program

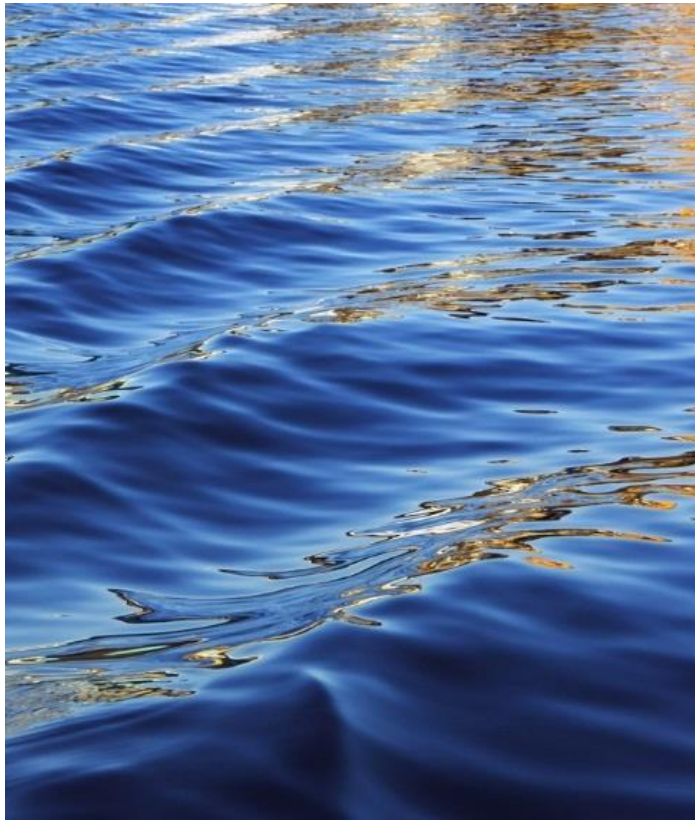


Turf Replacement

- During the replacement of the playing field, best efforts are made to ensure that the process is as sustainable as possible.
- Rubber infill is used in turf playing fields
- The infill is separated from the turf by vibrating it
- The infill then gets processed into plastic bags
- 400,000 pounds of infill is collected and reused for other fields
- The old turf field is recycled to be used in gyms and batting gages



Other Important Initiatives



Water Reduction

- Waterless Urinals in men's restrooms
- Low-flush toilets – rate of 1.6 gallons per flush
- Low-flow showerheads – 2.5 gallons per minute
- Sensor faucets to reduce water demand
- Synthetic turf reduces watering needs on playing field
- Utilize native planting species which are low watering plants
- High efficiency irrigation system with a 95% efficiency rate
- Energy Star concession equipment

Sustainability Awareness

- Earth Day Initiatives 2011, 2012, 2013, 2014, 2015
- Promote use of mass transit for events
- Developed comprehensive fan education and participation programs (PSA, scoreboard messages and Green Promotional Events)

Super Bowl XLVIII Initiatives

- PSE&G Renewable Energy for every Megawatt of electric used (equivalent of 240 solar energy certificates)
- Ceremonial tree plantings