

# **Energy & Sustainable Initiatives at Patriot Place & Gillette Stadium**

**495/Metrowest Suburban Edge Community Commission  
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# Agenda

- Vision / Mission
- Patriot Place/Stadium Property Overview
- Sustainable & Energy Conservation Initiatives in Place
  - Gillette Stadium
  - Patriot Place
- Utility Usage & Reductions
- Future Green Initiatives
- Questions



# Vision

Ensure our site program encompasses all facets of Patriot Place and Gillette Stadium operations and recognizes its environmental responsibility to set and define measurable goals and objectives to be tracked and monitored to ensure eco-friendly standards are achieved.

# Mission

Manage and sustain a comprehensive site-wide program dedicated to:

- Maximizing water and energy conservation
- Dedicated waste prevention strategies
- Promoting awareness of long-term environmental solutions
- Fostering partnerships with environmentally conscious individuals and organizations



# Property Overview





# Stadium/Patriot Place Overview

- Combined 1.5 million square foot sports and entertainment complex
- **Gillette Stadium**
  - ❑ 68,000 Seats
  - ❑ Home to 5 time Super Bowl Champion New England Patriots
  - ❑ Home to MLS New England Revolution
- **Patriot Place**
  - ❑ 1.3 million square foot shopping & dining destination
  - ❑ 125,000 square foot medical office building
  - ❑ 20 Restaurants
  - ❑ 2 Hotels
- Siemens Building Management Systems
- GE lighting control system
- Light pollution strategies
- White roofs throughout Patriot Place
  - ❑ Solar arrays and canopies
- Sustainable design practices
- Energy reduction strategies
- Green recycling initiatives





# **Sustainable & Energy Conservation Initiatives**

- **Energy & Utility Conservation**
- **Waste Water Treatment Plan**
- **Comprehensive Recycling Programs**
- **Solar**



# Energy & Utility Conservation





# Energy & Utility Consumption

## Results

- Electrical Consumption was reduced by 26% from 2007 to 2015!
- Natural Gas Consumption was reduced by 43% from 2007 to 2015!

## How

- Leveraged utility incentives
- Leveraged building management systems
- Aggressive scheduling of equipment (on/off)
- Changed occupancy set points ( 72° f summer / 68 ° f winter)
- Motion sensor upgrades in all office areas
- Lighting upgrades
  - Parking Lot LED Lighting Upgrade – 1.5 MkWH Annual Savings
- Video board upgrades (Gillette Stadium)



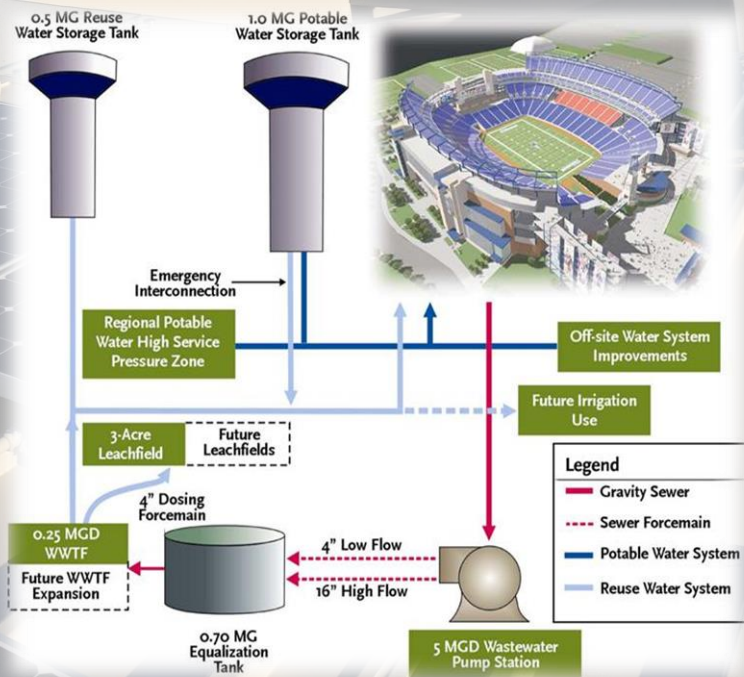
# Waste Water Treatment Plant





# WWT / Reuse Water Plant Overview

- Recycling capabilities enhanced the commercial viability of the development
- 250,000 GPD, membrane bio-reactor wastewater treatment plant – Accepts flows up to 1.1 MGD.
- Typically the WWTP reclaims 75% of the total flow for reuse on site / development
- In a one year period this plant reclaimed 15.6 million gallons of water
- 2.4 acre leach field – on site wastewater discharge and recharges local aquifer
- Reclaimed water is utilized for stadium and mall toilet flushing





# Recycling Programs





# Recycling Program Overview



- Patriot Place participates in a single stream recycling program across the property
- Partnering with Waste Management and our tenants, we delivered 1,505.11 tons of single stream waste to landfills in 2016
  - 846.42 tons of WTE (Waste To Energy) or 56% of our total waste
  - Patriot Place restaurant recycled 254.65 tons of organic material during 2016
- Patriot Place recycling efforts in 2016 alone conserved the following resources:
  - 1.6 MkWH of electricity
  - 1.7 Million gallons of water
  - Over 2,100 cubic yards of landfill airspace
  - Reduced GHG Emissions by 303 metric tons (MTCO2E)
  - 2,785 mature trees
- Named MassRecycles Business Recycler of the year 2016



# Solar Energy Program





# Solar Energy Programming

- Photovoltaic Power System installed in 2010 & 2013
- Over 3000 solar panels across 13 building rooftops
- Generating over 1.1 million kWh per year
- Provides 60% of Patriot Place power
- Reducing carbon emissions by more than 800 metric tons per year
- Generating public awareness of distributed renewable energy
- Voted Best Renewable Energy Project in New England \*

\* Association of Energy Engineers (AEE-NE) 2010





# Additional Green Initiatives

- LED Lighting /Intelligent Controls – All Parking Lots
- Kitchen Hood System (Intelligent Hoods) – Gillette Stadium Kitchens
  - Saving 93,000 kWh per year
  - Reducing 124,000 lbs of CO2 emissions per year
- Fieldhouse LED upgrade
- eVgo Vehicle Charging Station
- Big Belly Solar Trash Receptacles
  - Reduced electricity consumption and waste volume
- Energy efficient garage lighting upgrades

## Future Initiatives

- Wind power
  - MTC grant, study in progress
- Proposed (CHP) Combined Heat & Power facility
- Additional solar
- Future development permitted with planned environmentally friendly design standards



**Thank you!**