

RePowerPVD

Creating Buildings of the Future

2018 Summary Report



For additional information on why and how to join the challenge, please visit REPOWERPVD.COM.

CO₂e: Carbon dioxide equivalent or CO₂e means the number of metric tons of Carbon dioxide (CO₂) emissions with the same global warming potential as one metric ton of another greenhouse gas.

Energy Use Intensity (EUI): Measures the energy use per square foot of a building. It is calculated by dividing the total energy consumed by the building in one year by the total gross floor area of the building.

MMBtu: MMBtu stands for one million British Thermal Units (BTU). A BTU is a measure of the energy content in fuel.

Weather Normalized EUI: Weather Normalized energy is the energy your property would have used if you had experienced 30 year average temperatures. The weather in a given year may be much hotter or colder than a building's normal climate; weather normalized energy accounts for this difference.

Zero Energy Buildings: Buildings that produce at least as much energy as they consume over the course of a year.

Glossary

2018 Summary Report

By the Numbers

- 🔌 **2,934,188** Gross Square Feet enrolled and reported on for the **20 percent by 2025** energy reduction challenge
- 🔌 Total energy savings of **8,659** MMBtu since 2015
- 🔌 Total cost savings of **\$158,354** since 2015
- 🔌 Total reduction of **514** Metric Tons of CO₂e since 2015, which is equivalent to taking **109** cars off of the road for one year

2018 Highlights

20% by 2025

- 🏆 **WINNER! Reservoir Avenue Elementary school** joins **Mary E. Fogarty Elementary school** as our second RePowerPVD challenge winner, with a 21% energy reduction since 2015.
- 🔌 Measures recently begun at the 40+ year old **Providence Marriott Downtown** building include replacing four antiquated boilers with seven efficient hot water tanks, and replacing electric AC/Heat wall mount Packaged Terminal Air Conditioners (PTACS) with a highly efficient Variable Refrigerant Flow (VRF) system that is expected to significantly reduce energy costs. The Marriott has completed other efficiency renovations such as replacing existing lighting with all new LED fixtures.
- 🔌 Planned renovations at **Regency Plaza**'s three-building complex include replacing fan coils with heat pumps, removing an unneeded cooling tower, and the installation of two new EV charging stations.
- 🔌 **Providence Housing Authority** recently retrofitted interior and exterior lighting fixtures with LEDs. PHA is now working with RISE Engineering and National Grid on purchasing and installing mini-split heat pumps and a high efficient Electronically Commutated Motor (ECM) pumps for plumbing.

Race to Zero

- 🔌 **Roger Williams Park Zoo**'s new Education Center (pictured right) will have classrooms oriented to maximize natural lighting and heating and large window panes with blinds on the upper portion of the panes designed to reflect light up and into the room. Utility rooms and bathrooms will be located where light is not needed, and insulation is naturally provided by the surrounding structure. The exterior of the structure will be covered in cedar shingles and PV panels.



Rendering of Roger Williams Park Zoo Education Center, courtesy of Roger Williams Park Zoo

About RePowerPVD

RepowerPVD is the City of Providence's voluntary energy challenge program, designed to help large buildings in the city conserve energy, save money, and gain recognition for their leadership and contributions to Mayor Elorza's goal to make Providence carbon neutral by 2050. The program is comprised of two tracks:

- 20 percent reduction by 2025**
Using a 2015 baseline, property owners may enter any building over 10,000 square feet by committing to reduce energy consumption - as measured by weather normalized Energy Use Intensity (EUI) - 20 percent by 2025.
- Race to Zero**
Property owners may also enter their buildings into the "race" to become the first Zero Energy Building (ZEB) in Providence.

Participants

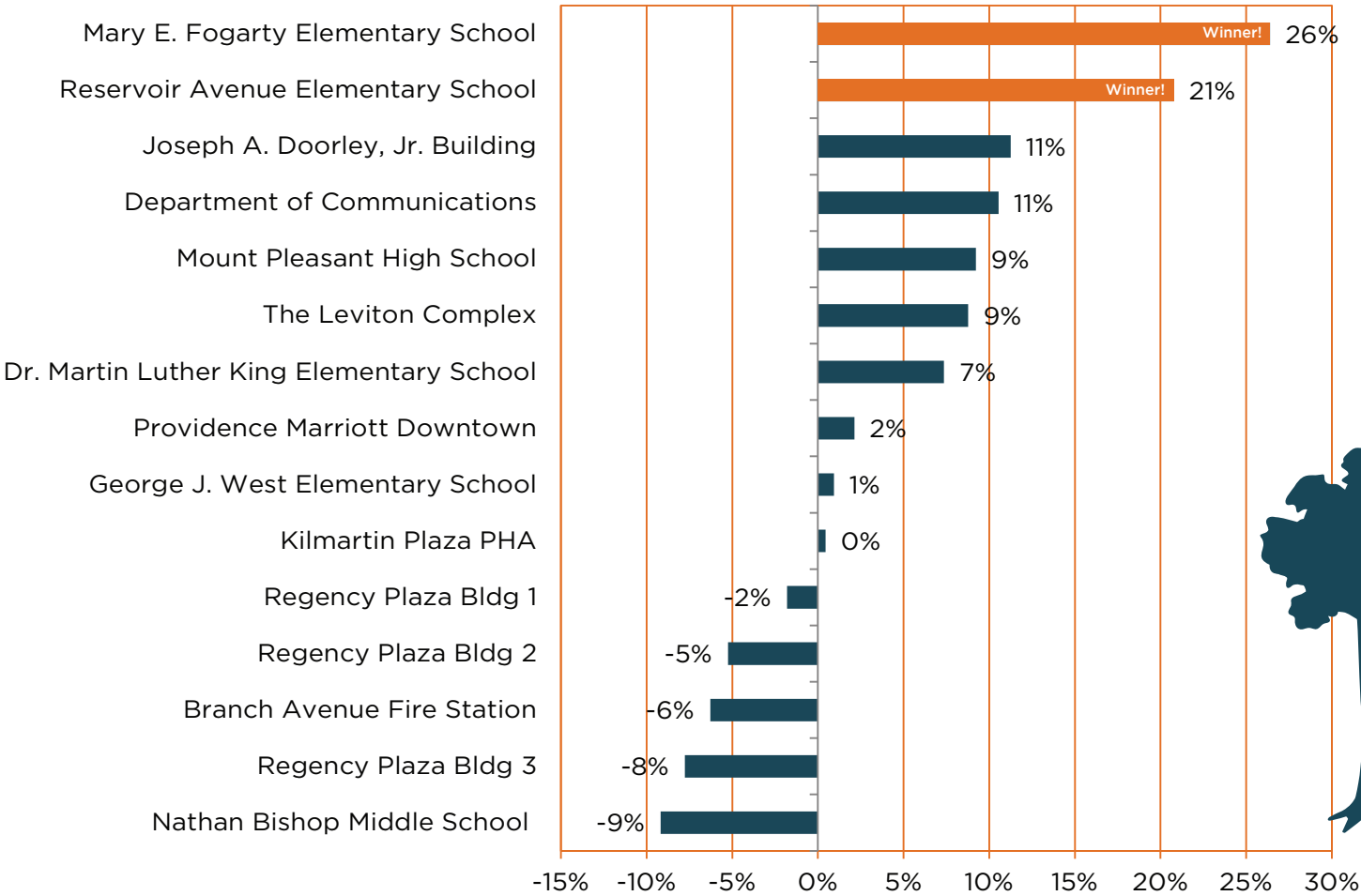
20% by 2025

Regency Plaza LLC
Providence Marriott Downtown
Providence Housing Authority
Cornish Associates
City of Providence

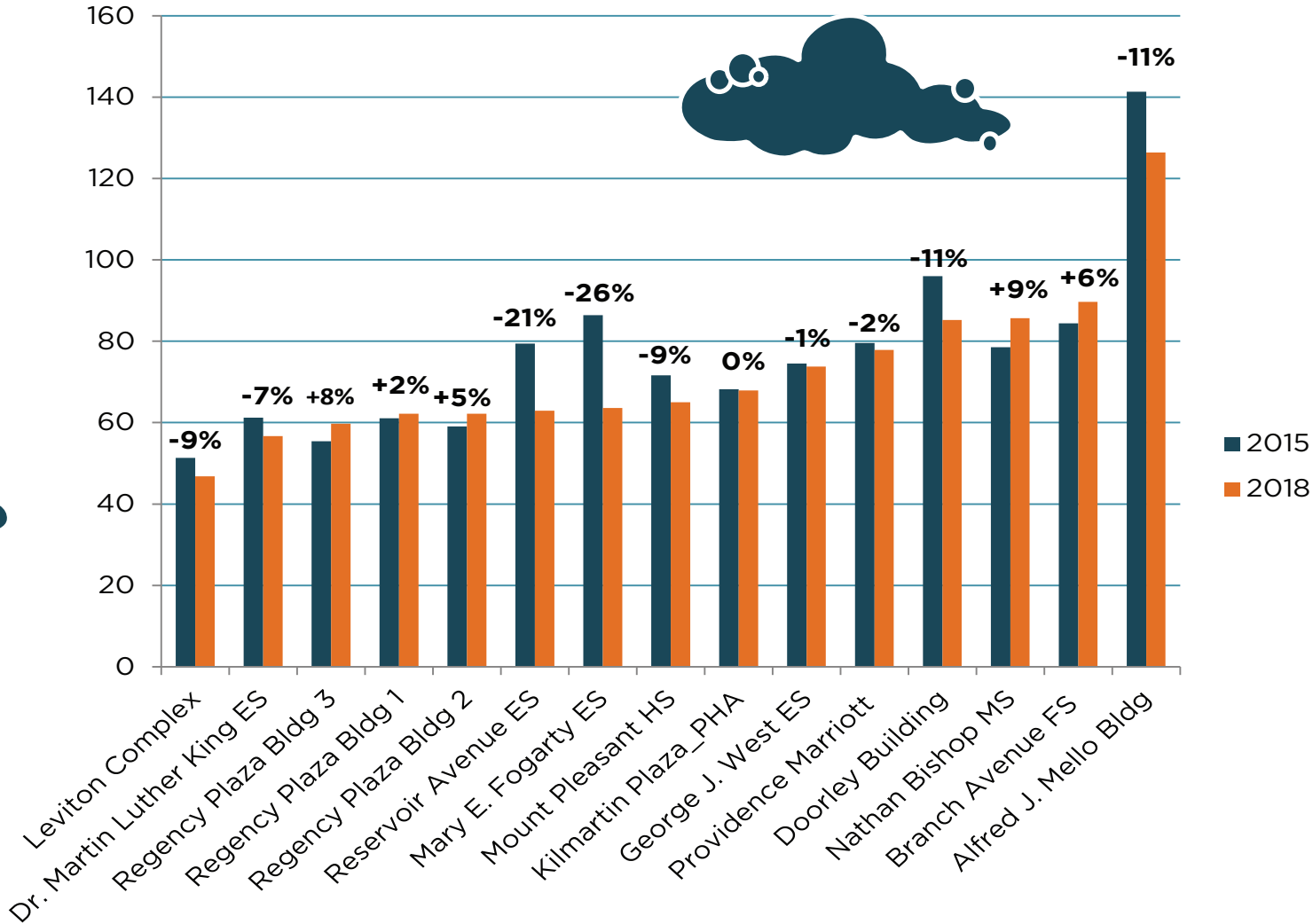
Race to Zero

Truth Box, Inc
Sheridan Small Homes
by ONE Neighborhood builders
RWP Zoo Education Center

Energy Reduction by Building



RePowerPVD Participant Weather Normalized Site EUI (kBtu/sf)



Participant	2015 EUI (kBtu/sf)	2017 EUI (kBtu/sf)	2018 EUI (kBtu/sf)	Percent Reduction (since 2015)
Mary E. Fogarty ES	86.4	64	63.6	26
Reservoir Avenue ES	79.4	67.1	62.9	21
Doorley Building	96	91.4	85.2	11
Dept. of Communications	141.3	128.7	126.4	11
Mount Pleasant HS	71.6	62.8	65	9
The Leviton Complex	51.3	43.5	46.8	9
Dr. Martin Luther King ES	61.2	55.2	56.7	7
Providence Marriott	79.6	76.1	77.9	2
George J. West ES	74.5	66.1	73.8	1
Kilmartin Plaza PHA	68.2	64.3	67.9	-
Regency Plaza Bldg 1	61.1	61.2	62.2	(2)
Regency Plaza Bldg 2	59.1	60.2	62.2	(5)
Branch Ave Fire Station	84.4	75.6	89.7	(6)
Regency Plaza Bldg 3	55.4	54.4	59.7	(8)
Nathan Bishop MS	78.5	65.9	89.7	(9)

TOTAL SAVINGS

8,659 MMBtu \$158,354

Reduction of 514 Metric Tons CO2e

Taking 109 cars off the road

Electricity use in 90 homes for one year

