

DFC BUILDING 67 ENERGY & WATER SAVINGS

Advanced Metering Success Story

GSA

**DM SERVICES
COMPANY**



About DFC Building 67

- High-rise, concrete building
- Built in 1967
- Comprised of 14 floors, a penthouse, and two mechanical floors
- 1200 occupants
- 372,000 square feet



Building 67 Tenants

- Social Security Administration
- U.S. Department of Agriculture
- GSA Office of Inspector General
- GSA Field Office Operations
- Bureau of Reclamation
- Office of Natural Resource Revenue



Energy and Water Saving Projects

- 19 projects were completed in 2012-2013 to improve energy & water efficiency
- Utility savings were achieved in three categories
 - Electric
 - Water
 - Natural Gas
- *Nearly all projects resulted savings in more than one category*

Electrical Energy Savings – B67

- | | |
|---|--|
| ▪ Electrical Water Heaters—June, 2013 | ▪ Lighting Controls Commissioned in 2012 |
| ▪ Electrical Condensate Pumps—May, 2012 | ▪ Retrofit Lobby Interior Lighting to LED--March, 2013 |
| ▪ Retrofit Lobby Exterior Lighting with LED—January, 2012 | ▪ Outside Door Replacements—September, 2012 |
| ▪ Basement OA Dampers Gasket Replacements—August, 2012 | ▪ Wallpack Lighting Replaced with LED—March, 2013 |
| ▪ Installed New OA Dampers on Third Floor—May, 2013 | ▪ Leaky Steam Valves Replaced in Penthouse—September, 2013 |

✓ *Multiple energy savings projects impacted more than one category*

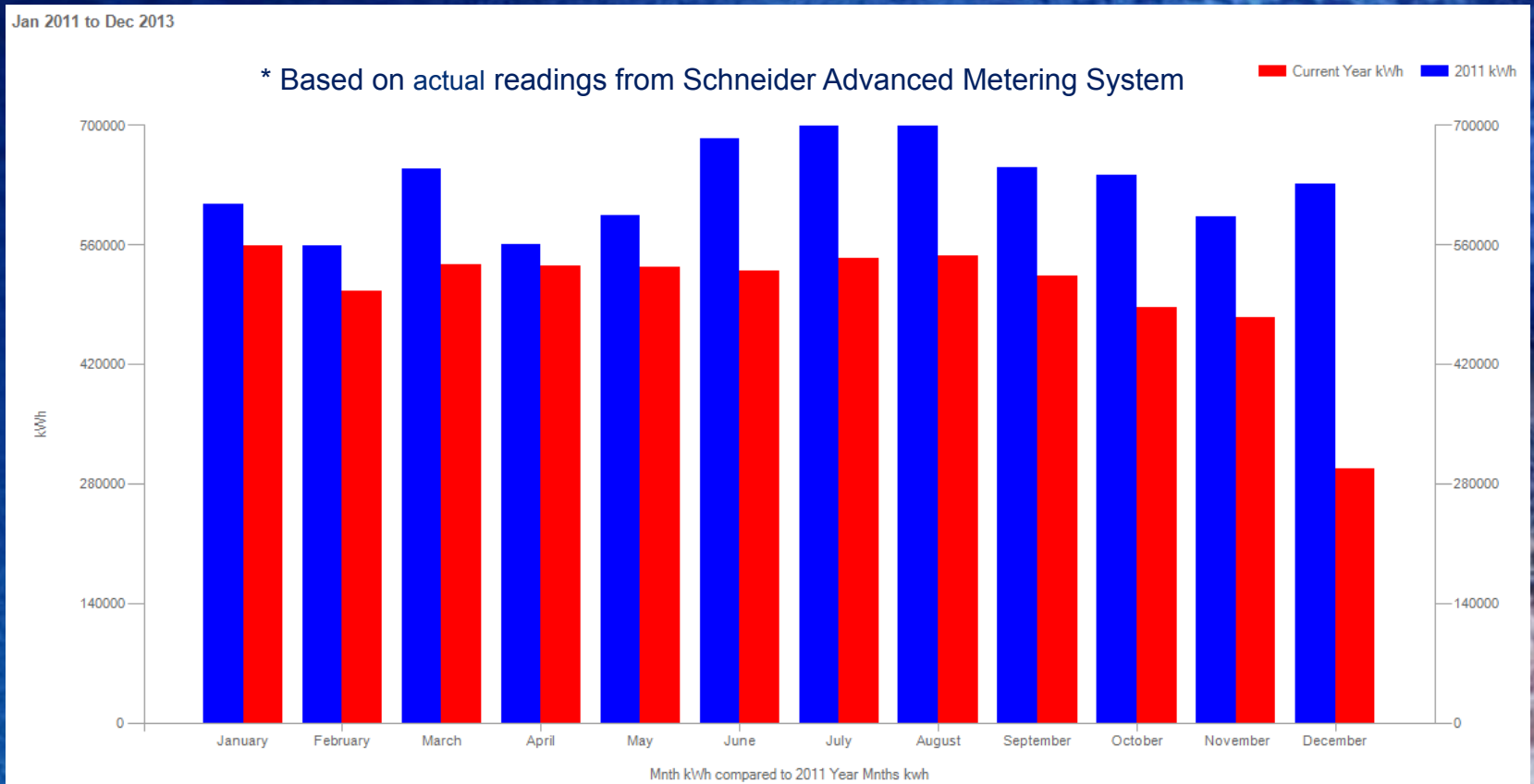
Electrical Energy Savings—B67 (con't)

- | | |
|---|---|
| ▪ Energy Efficient Motors—2012, 2013 | ▪ VFD North Cooling Tower—September, 2013 |
| ▪ Replaced 2 CRAC Units with High Efficiency (14 SEER)—February, 2013 | ▪ DA Tank Replaced—September, 2013 |
| ▪ Tunnel Insulation Installed—September, 2013 | ▪ Replaced Roof Lights with LED—March, 2013 |

✓ *Multiple energy savings projects impacted more than one category*

Electric Savings

- This graph demonstrates the annual kWh reduction from Base year 2011, compared to 2013 usage.
- Result: an annual kWh savings of 1,720,000 (22%) or roughly \$103,000, not including demand charges and not considering CDDs.



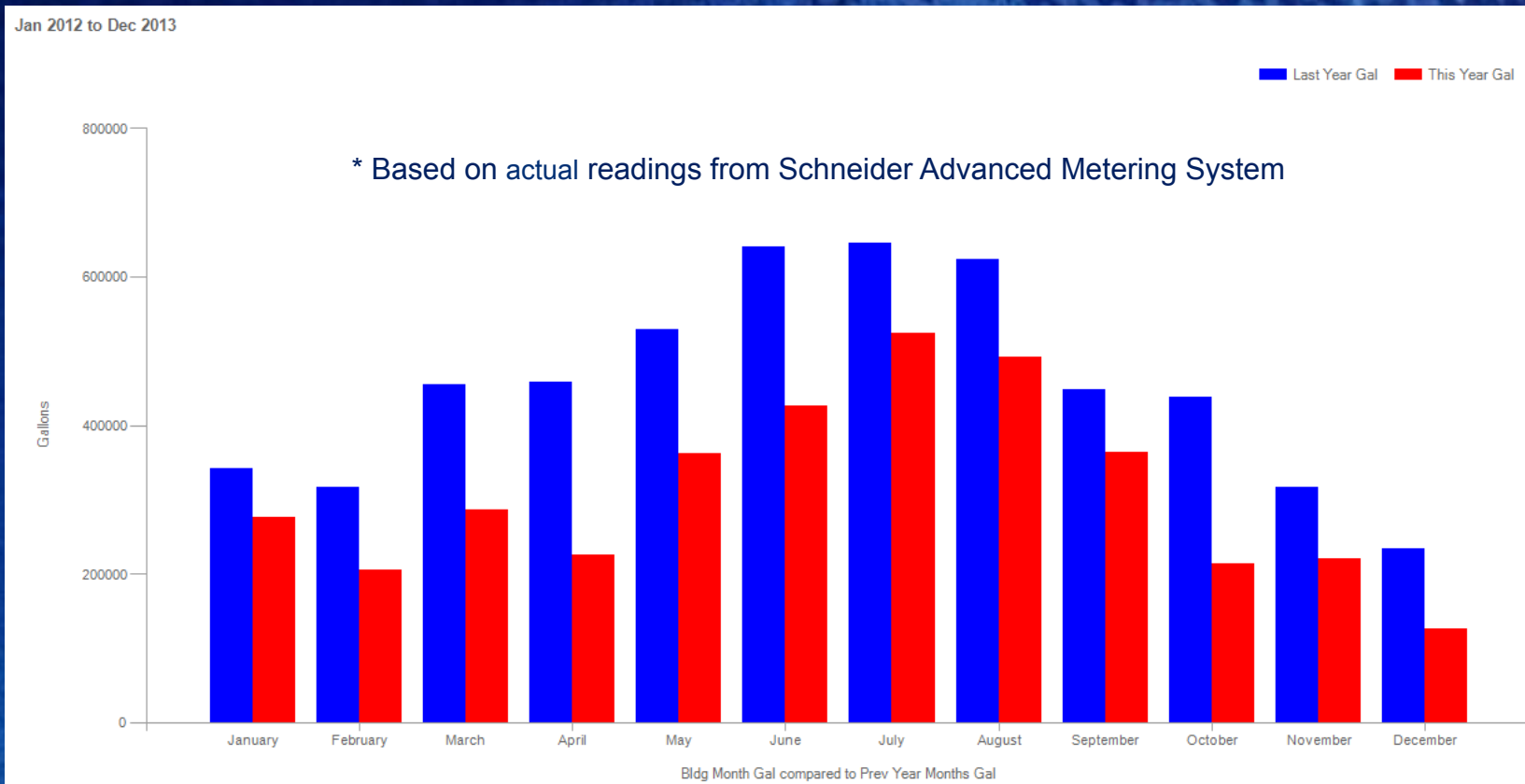
Water Energy Savings – B67

- | | |
|---|--|
| ▪ Electrical Water Heaters—June, 2013 | ▪ Electrical Condensate Pumps—May, 2012 |
| ▪ Steam Leak Repair—July, 2012 | ▪ Leaky Steam Valves Replaced in Penthouse—September, 2013 |
| ▪ Terlyn Water Treatment System installed on Cooling Tower (allows 35 cycles) with minimal blow down. Also changed CT Logic to minimize water and elect usage—October, 2013 | |

✓ *Multiple energy savings projects impacted more than one category*

Water Savings

- This graph shows annual Water reduction from Base year 2012 compared to 2013 usage.
- Result: about 1,727 Kgal (31%) or \$13,000 annual reduction (not considering CDDs).

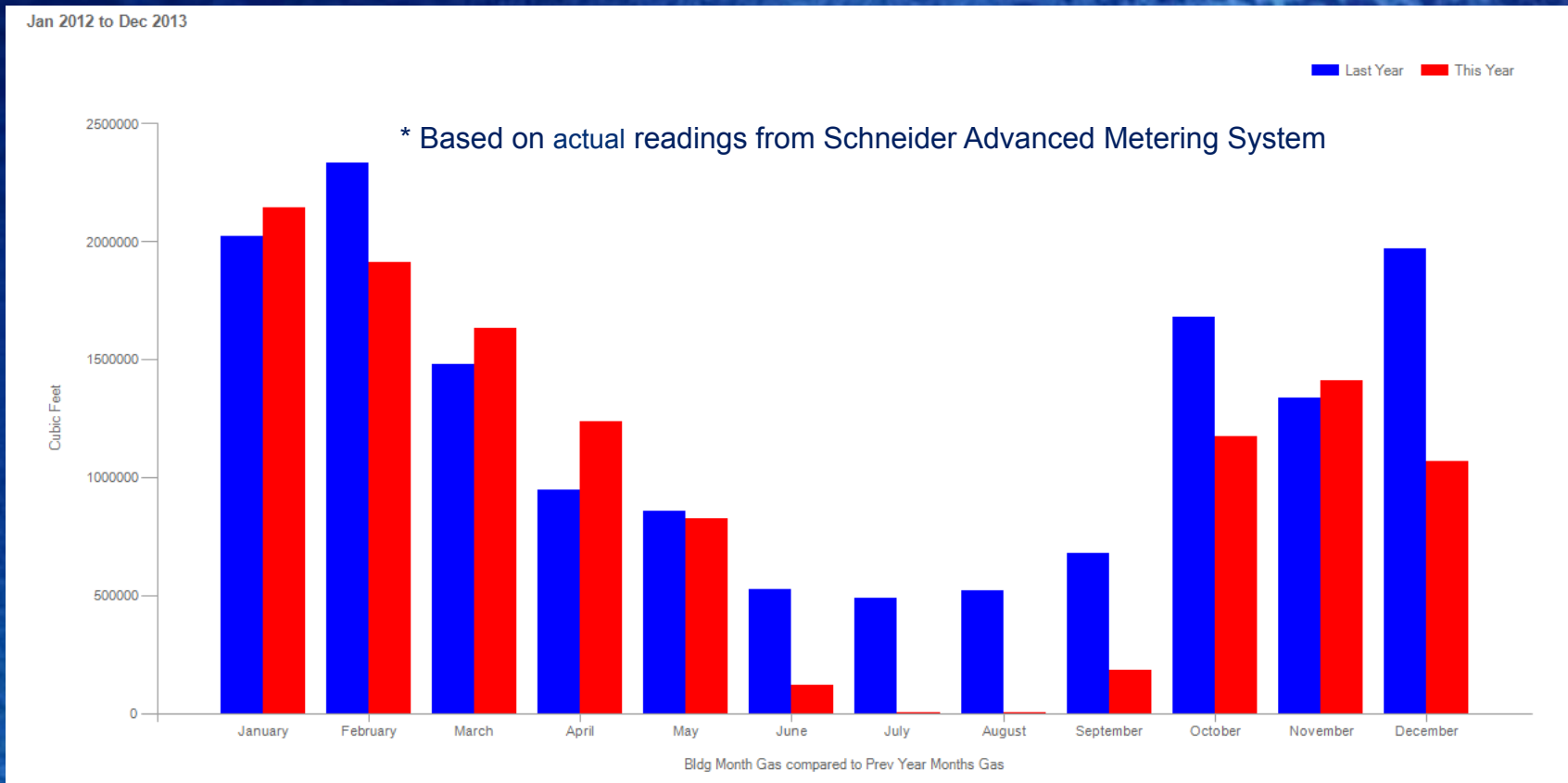


Natural Gas Energy Savings (B67)

▪ Electrical Water Heaters—June, 2013	▪ Installed New OA Dampers on Third Floor—May, 2013
▪ Steam Trap Repairs—June and December, 2012	▪ Steam Leak Repair—July, 2012
▪ Outside Door Replacements—September, 2012	▪ Electrical Condensate Pumps—May, 2013
▪ Basement OA Dampers Gasket Replacements—August, 2012	▪ Leaky Steam Valves Replaced in Penthouse—September, 2013
▪ DA Tank Replaced—September, 2013	▪ Tunnel Insulation Installed—September, 2013
✓ <i>Multiple energy savings projects impacted more than one category</i>	

Natural Gas Savings

- This graph depicts an annual Gas reduction from Base year 2012, compared to 2013 usage. June through September elect water heaters were used and in October, Pony boiler was in operation.
- For these five months, savings were 2,442,000 Cubic Foot savings or roughly \$24,000 (not considering HDDs).



Future projects scheduled for 2014

- Replace outside air dampers
- Add Co2 sensors to improve the building economizers
- Additional LED lighting retrofits
- Additional motor replacements to high efficiency motors
- Add additional Variable Frequency Drives.

Further steps

- Continue to monitor building automation and metering systems to enhance operations
- Continue to identify and implement programming & scheduling changes to improve energy efficiency.
- Continue to monitor the operation of equipment, and identify ways to become more energy efficient.