

# Memorandum



CITY OF DALLAS

DATE January 23, 2015

TO Honorable Members of the Quality of Life & Environment Committee:  
Dwayne R. Caraway (Chair), Sandy Greyson (Vice Chair), Rick Callahan, Carolyn R. Davis, Lee M. Kleinman, Adam Medrano

SUBJECT **City of Dallas 2014 Energy Management Update**

On Monday, January 26, 2015, the Quality of Life & Environment Council Committee will be briefed on the City of Dallas 2014 Energy Management Update. The briefing materials are attached for your review.

Please feel free to contact me if you have any questions or need additional information.

A handwritten signature in black ink, appearing to read 'Jill Jordan'.

Jill A. Jordan, P.E.  
Assistant City Manager

Attachment

c: The Honorable Mayor and Members of the City Council  
A.C. Gonzalez, City Manager  
Warren M.S. Ernst, City Attorney  
Rosa A. Rios, City Secretary  
Daniel F. Solis, Administrative Judge  
Craig D. Kinton, City Auditor  
Ryan S. Evans, First Assistant City Manager  
Eric D. Campbell, Assistant City Manager  
Joey Zapata, Assistant City Manager  
Mark McDaniel, Assistant City Manager  
Jeanne Chipperfield, Chief Financial Officer  
Sana Syed, Public Information Officer  
Elsa Cantu, Assistant to the City Manager – Mayor and Council

# City of Dallas 2014 Energy Management Update

Presented to  
Quality of Life & Environment Committee  
January 26, 2015

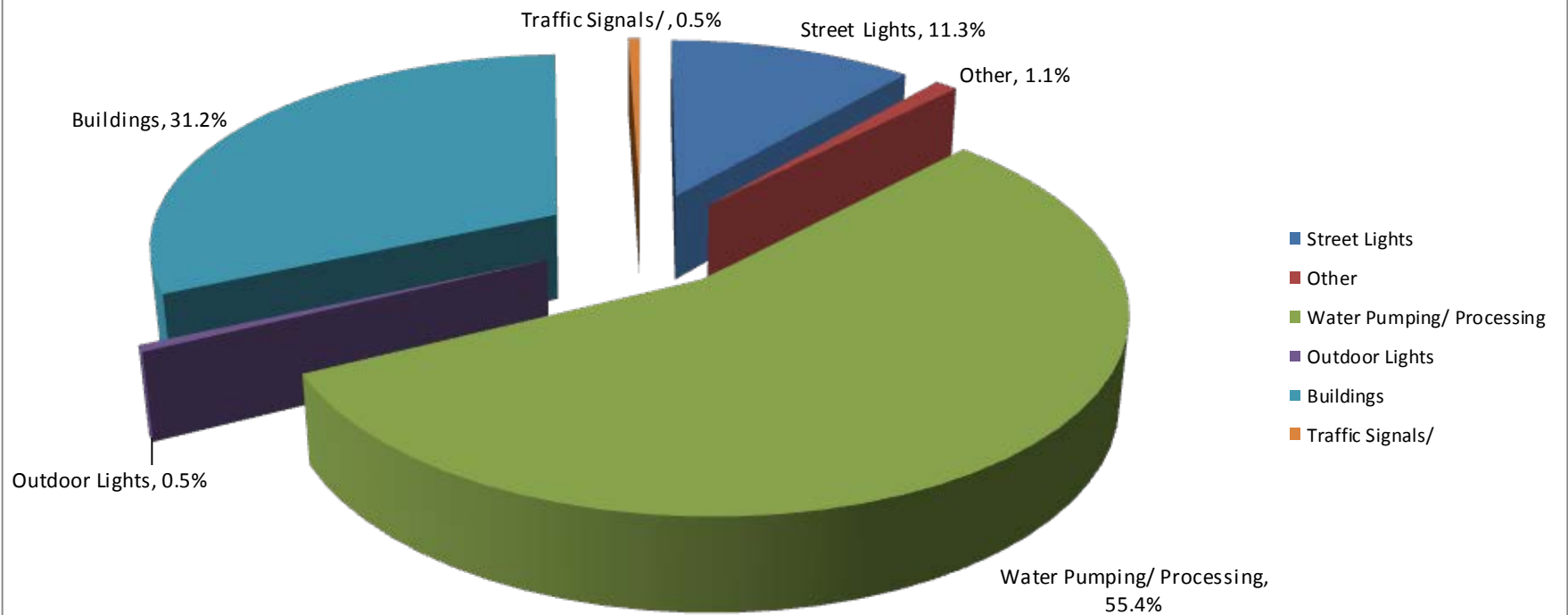


# Purpose

- Update on the City's Energy Management Program
  - Background
  - Goals
  - Current Projects and Initiatives
  - Future

# How does Dallas consume electricity?

Percentage Of Total FY11 kWh

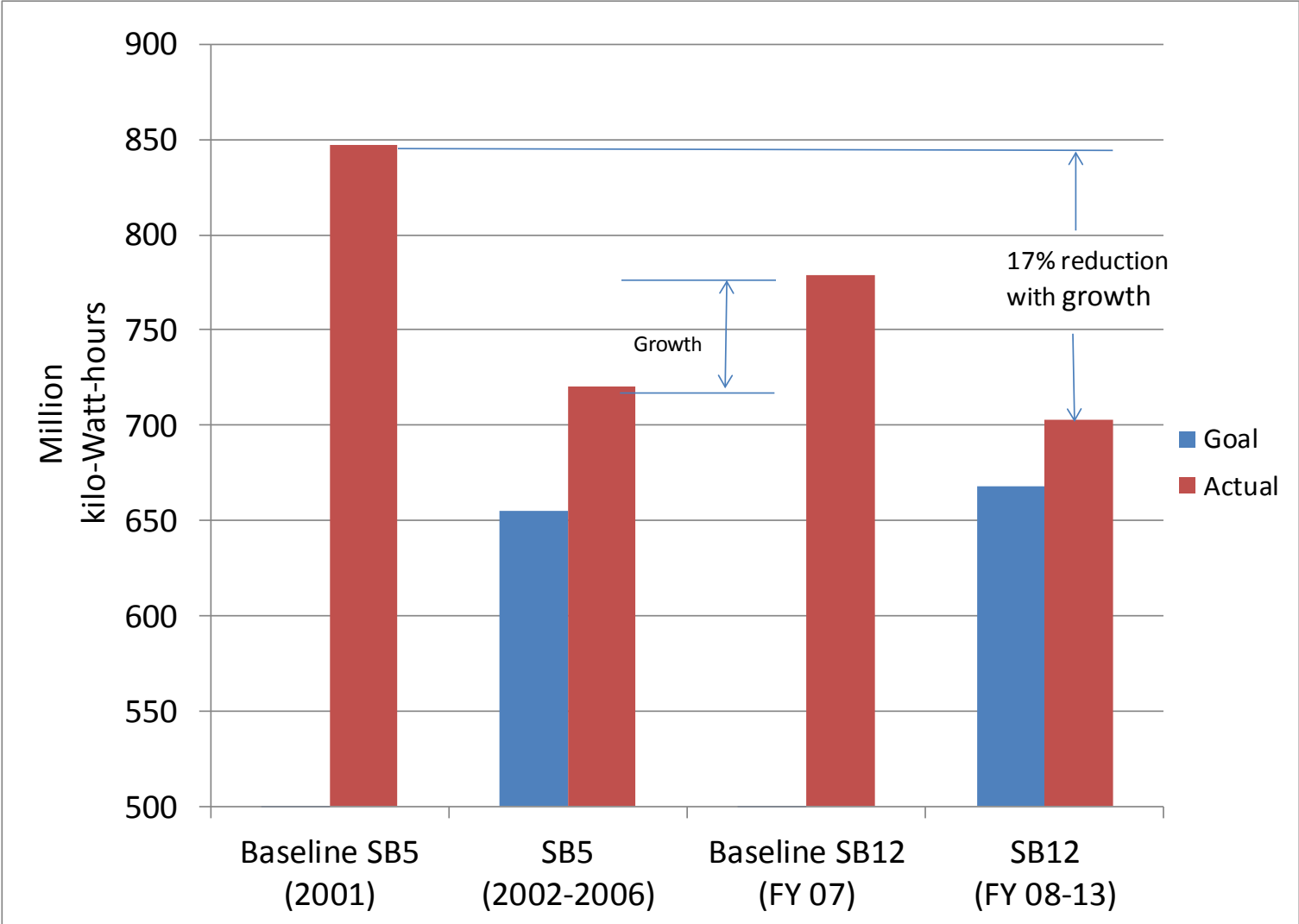


# Energy Program Background

- Major Maintenance & Bond Program - HVAC Renovations since **1995**
  - Energy efficiency and indoor air quality improvements
- Management of CFC's (harmful refrigerants) since **1997**
  - Phase out of chlorofluorocarbon (CFC) refrigerants
- Supply & Demand conservation since **2000**
  - Strategic focus: energy reduction per **SB5**, **SB12** and **SB898**
- Performance Contracting since **2001**
  - Energy projects to comply with conservation goals
- LEED minimum Silver certification goal since **2003**
  - 29 LEED certified facilities to date
  - 2 existing buildings certified as LEED Existing Building Operations and Maintenance



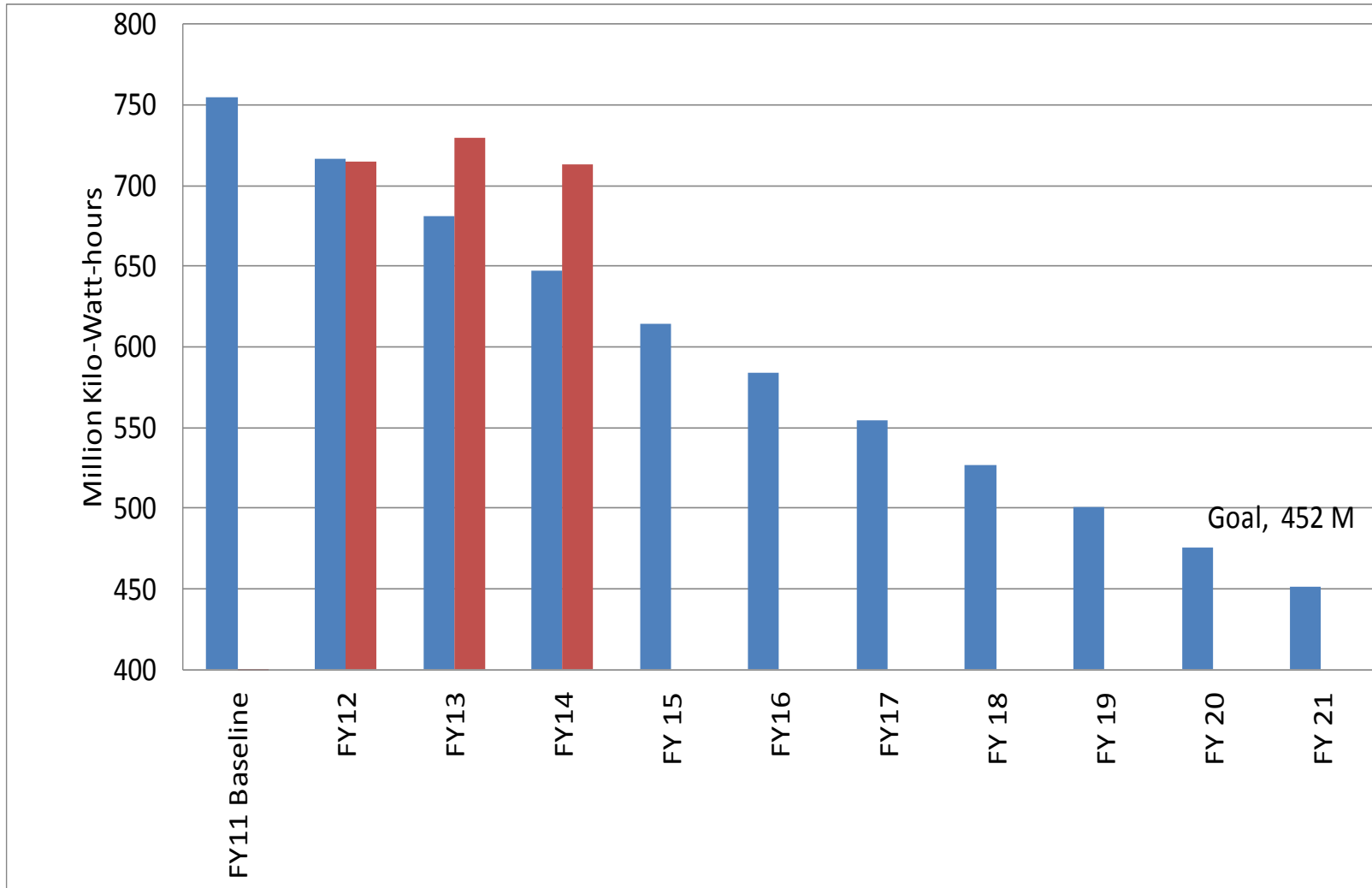
# Demand Conservation Since 2001



# SB 898 Energy Goals

- SB 898 requires each political subdivision, institution of higher education, or state agency shall establish a goal to reduce the electric consumption by the entity by at least five percent (5%) each state fiscal year for 10 years, beginning September 1, 2011
- As a result the City should decrease its consumption from 754 MkWh to 452 MkWh in FY 21, a 40% reduction

# SB 898 Reduction Goal





# The Vital Few

- The City's 3,013 electric accounts were analyzed
- 105 (4%) accounts contribute to 90% of the City total baseline load
  - 56 Enterprise
  - 49 General Fund
- Performance contracts to date on 19 of the 105 accounts have a planned to date savings of 34.6 MWh, saving of \$2.94 M (cost avoidance)

# Goals Related to Building Energy Use

- Reduce 2011 energy use by 40% by 2021
- Standardized HVAC and lighting controls
- Get major facilities in the EPA Portfolio Manager by 2016
- 10% Renewable cogeneration by 2021

# Building Energy Initiatives

- Setting temperature standards with standardized control systems
- Preventative maintenance
- Energy conservation projects
  - HVAC and lighting upgrades
- Shedding loads
- Changing behaviors
- Co-generation

# Set Standards

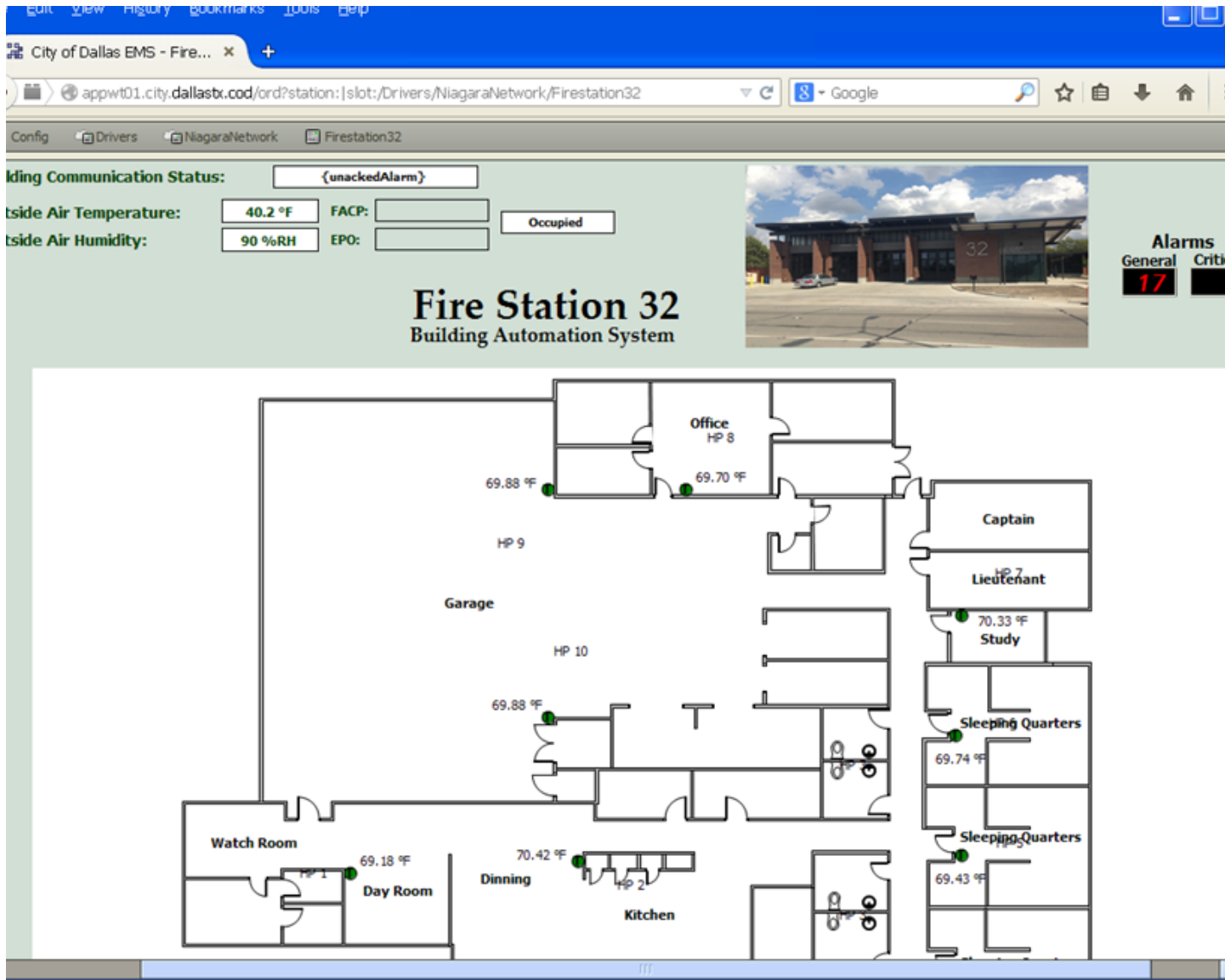
## Temperature

- Cooling 75F +/-2
  - Unoccupied set to 90F
- Heating 70F +/-2
  - Unoccupied set to 55F
- Hot water 120F

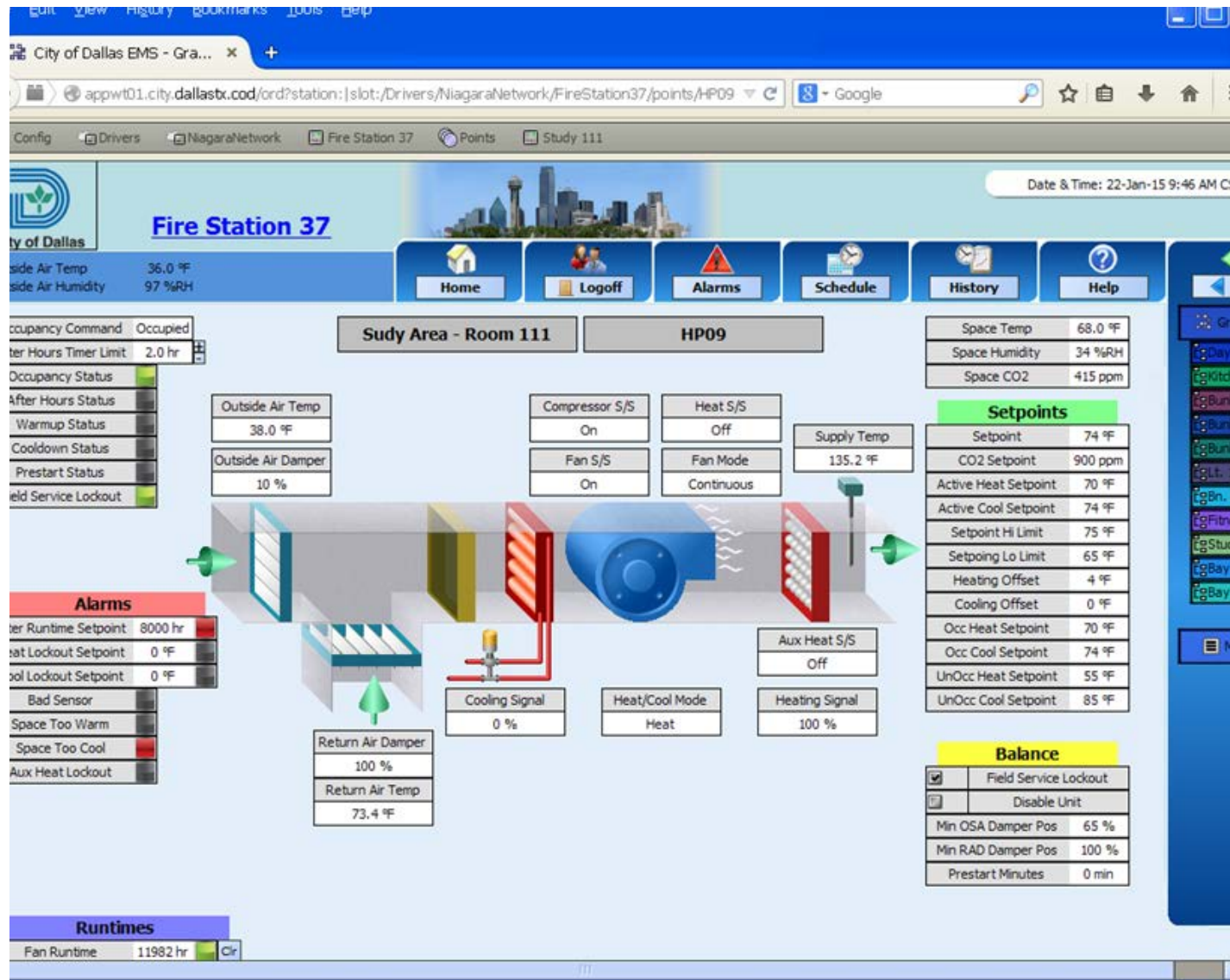
## Standardized Controls

- 140 bldgs to date
- Direct digital controls automated
- Eliminate pneumatic
- Standardize graphics for diagnostic capability
- Web-enabled remote access
- Competitive bid repairs

# Standard Building Floor Plan Graphics



# Standard Air Handling Unit Graphics



# HVAC Upgrade Projects

- City Hall Law Library
- Recreation Centers –Tommy Allen, JC Phelps, Eloise Lundy, Fireside
- Libraries- Renner Frankford, Oak Lawn, Park Forest, Preston Royal, Forest Green, North Oak Cliff
- Oak Cliff Municipal Center
- Perot Museum of Natural History at Fair Park

# Performance Contracts

**Comprehensive** electric, water, gas, behavioral projects paid through energy savings

- Equipment retrofits and commissioning;
- Renewable energy
- Partnering for financing
- International Measurement and Verification Protocol
- Independent PE review of guaranteed saving




# Current Performance Contracts

1. Pepco- **City Hall and Libraries** – Council Chamber LED Lights – 9.9 MkWh (\$798K/yr)
2. Pepco City Hall Phase #2 amendment pending
3. Schneider – Joulex Automation- **Citywide** - 3.2 MkWh (\$284k/yr)
4. Texas A&M Energy Systems Lab –**Park and Recreation** –Pending Independent Review- 10.5 MkWh (\$639K/yr)
5. Pepco – **Office of Cultural Affairs** – MOU On the 1-28-15 Agenda – 10.6 MkWh (\$706/yr)

# Load Shedding

- Electric Reliability Council Of Texas– Reliability & Operations Committee
- Emergency Response Service Program
  - Voluntary load reduction within 10 minutes during a grid emergency
  - Assists in preventing rolling black-outs citywide
- 4 Buildings currently included
  - City Hall
  - Central Library
  - Oak Cliff Municipal Center
  - Jack Evans Police Headquarters

# Behavioral

- **SECO Low Cost Guidelines Implementation**
  - 140 initiatives for energy management
  - Department savings competition
  - EBS preventative maintenance coordination
- **Join DOE Better Buildings Program**  **Better Buildings CHALLENGE**  
U.S. DEPARTMENT OF ENERGY
  - Commitment to lead in saving energy, saving money, and showcasing the best energy saving strategies and their results. Partners commit to an energy savings pledge, a showcase building, and to share their progress
  - EPA- Portfolio Manager Benchmarking

# Energy Management Committee

Led by **PBW**— includes representatives from city departments: AVI, CES, CIS, DFD, DPD, DWU, EBS, EHS, OCA, PKR and TWM

- Assists in coordination of electric procurement contract
- Monitors compliance with Environmental Management Plan energy issues
- Communicates building standards
- Develops behavioral initiatives (Training & Publications)
- Tracks annual department projects and results

# Sustainable Technologies

- 50% of electricity renewable energy credits- wind energy
- DWU bio-gas - approx. 5% city total
- Geothermal HVAC
  - South Central Police, Fire Stations #32 & #37, Pleasant Grove Library
- Solar thermal water heating
  - City Hall, OCMC, Jack Evans, Central Library
- Solar photovoltaic
  - Prairie Creek Library, Hensley Field and Fire Stations #27

# Planned Solar Projects

- **Rooftop Solar**

- Convention Center - pending verification of ROI and scheduling
  - Scheduling and funding challenges
- SECO LoanSTAR funding
- Oncor solar rebates

- **Solar Farms**

- Exploring RFP for site selection services
- Researched demand generation alternative to decrease solar system cost



# Dallas 2030 District

- The 2030 District is a national, private sector led effort, utilizing collaboration, incentives, and shared resources to improve the performance of buildings
- The Dallas 2030 District (8<sup>th</sup> in nation) is a non-profit collaborative managed by a Leadership Council and the South Central Partnership for Energy Efficiency as a Resource (SPEER)
- The District goals include reducing the district energy and water use by 50% by 2030 and reducing transportation impacts

# DALLAS 2030 DISTRICT®



## City Buildings Included:

- City Hall
- Dallas Convention Center
- Central Library
- Meyerson
- Dallas Museum of Art



# Financing/Budget

Conservation projects are funded through:

- Bond Program
- Major Maintenance
  - Leveraged by ONCOR incentives
- Performance Contracts
  - Low interest loans
    - State Energy Conservation Office- LoanSTAR Funds
    - Private Party
- Grants/loans- ARRA, CDBG, QECCB's, DWU

# Current Actions Timeline

<b>Action Item</b>	<b>Timeframe</b>
Submit ERCOT ERS Program– Feb- May Term	Jan 2015
Notification from SECO of Solar PV Project Loan	Feb 2015
Behavioral Policy and Library Contest	Mar 2015
Join Better Buildings Program	Mar 2015
Council award PKR Performance Contract	Mar 2015
Council award Office of Cultural Affairs Performance Contract SA#1	Apr 2015
Review usage of Qualified Energy Conservation Bonds	Jul 2015
Submit SECO Performance Contract- City Hall #2	Jul 2015

# Future Actions

- Decide what to do with City Hall Data Center
- Coordinate Solar PV with 2016 Electric Procurement to incorporate solar net-metering
- Develop automated commissioning into controls systems
- Monitor Oncor LED Street Lighting changes
- Develop next bond program energy projects

# Questions ?