

City of Weslaco
Energy & Water
Conservation

Workshop

Aaron Garcia

David Smith, P.E., C.E.M.

April 23, 2013



Agenda

1. Introduction
 2. Top City Challenges
 3. A unique, Legal, Budget Neutral Solution
 4. Water & Wastewater Opportunity Overview
 5. Local Government References
 6. Local Resources & Support
 7. Questions?
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Global Leader In Energy Management

We provide solutions to make energy safe, reliable, efficient and productive, with an active commitment to help individuals and organizations “Make the Most of Their Energy”

170 Years of history through innovation and leading brands

[**136,000+** employees in 130+ countries + **\$31+ billion** Sales in 2012 = **1 Focus** Helping our clients “Make the most of their energy”]



Energy Solutions:
Texas based since
1992
400+ Projects
\$1+ Billion



FORTUNE
GLOBAL 500
#353 Schneider Electric





Top Challenges for Cities



Tax Revenue Reductions

Property values down, sales tax revenue down,



City Staff Reductions

Less personnel required to accomplish more



Energy Price & Availability Issues

Cost of energy increasing and availability decreasing



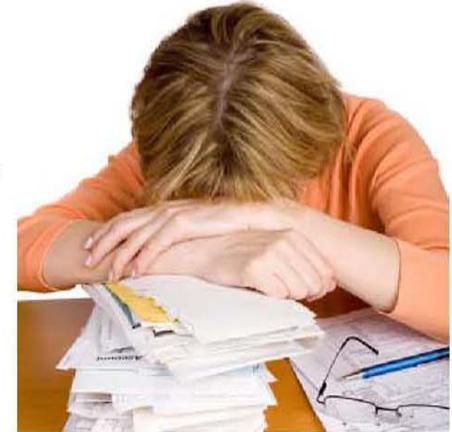
Legislative Mandates (unfunded)

SB 5, SB 831, Local Government Code Chapter 302



Deferred Maintenance

Facility issues and needs postponed





Solution

TX Government Code: 302.001

Energy Performance Contracting



Sec.302.001.ENERGY SAVINGS PERFORMANCE CONTRACTS. (a) In this section, "energy savings performance contract" means a contract for energy or water conservation measures to reduce energy or water consumption or operating costs of school facilities in which the estimated savings in utility costs resulting from the measures is guaranteed to offset the cost of the measures over a specified period.



the global specialist
in energy management

You have a choice on where to invest:

City Dollars Here ?

OR

City Dollars Here ?

| Current Charges | | Account Information/Service Address | |
|-----------------------------------|------------------------------|-------------------------------------|---|
| 3 | Silicon Valley Power | 59.24 | Account Number: 0007665-01 Route No.201 |
| 4 | Meter Charge | 4.80 | J SMITH |
| 5 | Energy | 44.08 | 123 DOUGLAS LANE |
| 300 kWh X \$0.06960/kWh = \$20.88 | | 4 Billing Information | |
| 290 kWh X \$0.09001/kWh = \$23.20 | | Previous Balance 92.14 | |
| 6 | Public Benefit Charge | 1.39 | Payment (12-23-2005) Thank You! -92.14 |
| 7 | State Surcharge | 0.12 | Current Charges 102.99 |
| 8 | Santa Clara Green Power | 8.85 | Amount Due 102.99 |
| 9 | Water / Sewer / Solar | 24.44 | Bill Comments |
| 10 | Water | 14.50 | A late charge will be applied as indicated on the back of the bill if paid after the Past Due Date: 02/16/2006. 1 |
| 11 | Sewer | 9.94 | Messages |
| 12 | Refuse | 17.30 | Use the City Calendar for events & dates. See the Camellia Show @ CRC February 25, 26. 5 |
| Garbage/Clean Green/Recyc | | 13.25 | |
| Annual Clean Up Campaign | | 3.80 | |
| Household Hazardous Waste Chg | | 0.25 | |
| 13 | Miscellaneous | 2.01 | |
| Excise Tax | | 1.85 | |
| Storm Drain Charge | | 0.16 | |
| 14 | Current Charges Total | 102.99 | |

| Usage Table and History Graphs | | | | | | | | | | | |
|--------------------------------|-----------------|-------|------|------------------------|-------|-------|--------|--------------|------|----------------------------------|----------------------------------|
| Service Type | Road Dates From | To | Days | Meter Readings Current | Prior | Multi | Usage | Meter Number | Rate | This Month This Year (Daily Avg) | This Month Last Year (Daily Avg) |
| E | 12/12 | 01/11 | 30 | 1091E | 491 | 1 | 190kWh | 43212 | D2HG | 20 kWh | 20 kWh |
| W | 12/12 | 01/11 | 39 | 3946E | 3438 | 1 | 8 HCF | 123221 | W5E | 199 Gal | 491 Gal |

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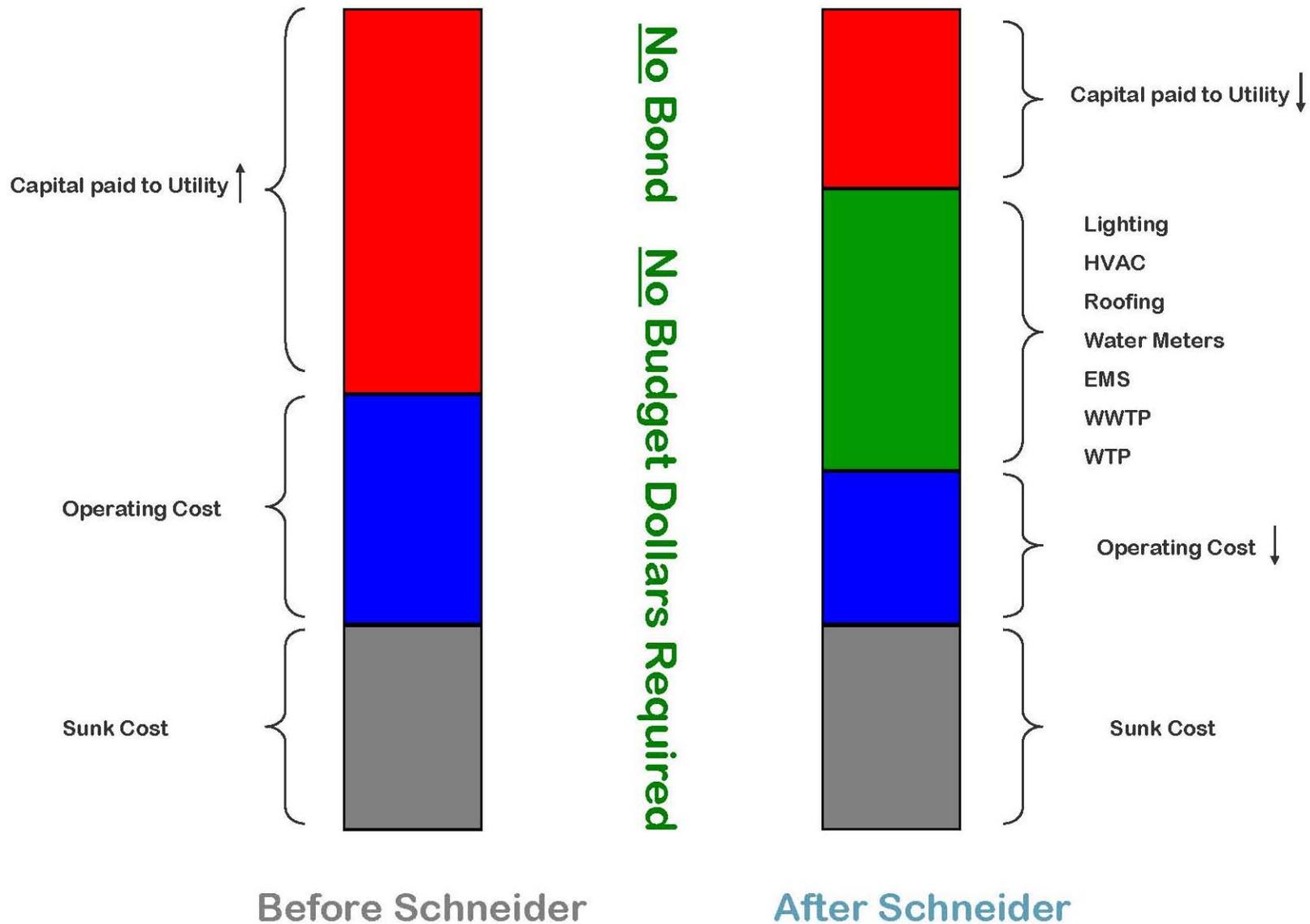
Get Rid of that Old Fridge in your Garage, and We'll Pay you \$35!

We are offering a \$35 rebate to customers for removing an older working refrigerator or freezer with our new recycling rebate program. Residents may recycle up to two units per household and must own the appliances. Start by calling toll free at 877-677-6519 to arrange a pickup. The appliances must be in working order and at least 1.4 cubic feet. For details, see our website at www.siliconvalleypower.com/refrigerator.

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You have Challenges... We have Solutions !!!!



Water & Wastewater Opportunity Overview

David Smith, P.E., C.E.M.



Water Meter System - Water Loss Summary

AWWA Water Audit Results

- Non Revenue Water = **20.8%**
- Apparent Loss = 87 MG / year
(\$313,000 / year)
- Real Loss = 280 MG / year
(\$140,000 / year)
- Total Cost of Apparent and Real Loss = **(\$453,000 / year)**



Water Meter System – Solutions and Benefits

Meter Replacement with AMR Technology

- System wide replacement allows City to capture lost revenue
- Creates funding mechanism for meter replacement program
- More accurate billing and improved customer service
- Minimizes data collection and entry errors
- Reduced cost to read meters

Water Meter System – Solutions and Benefits

Leak Detection Program

- Installation of electronic leak detection equipment to systematically identify leaks
- Generation of daily leak reports (prioritized by size)
- Timely and accurate identification of leaks allows operator to focus resources more effectively

Water Meter System – Solutions and Benefits

Water Main Repair and Replacement Program

- Prioritized repair and replacement of water mains based on severity of leaks
- Provides opportunity to reallocate meter reader resources to repair and replacement program
- Creates funding mechanism for the identification of water leaks and repair and replacement of affected water mains

Water System - ECMs

- Reduce Water Loss (Meter Replacement & Leak Detection)
- Pump Optimization and Control
- Energy Demand Monitoring and Control
- Power Conditioning, Power Factor Correction
- Motor Efficiency Upgrades
- VFDs and Motor Controls
- Lighting, HVAC, Solar Power
- Water Conservation, Smart Irrigation, Reclaimed Water



Water System Energy Savings

| Water Treatment Plants | Energy Saving |
|---|----------------------|
| Pump optimization and Controls | 5 -10% |
| Replace Inefficient Motors and Install VFDs | 5 -10% |
| Energy Demand Monitoring and Control | 3 - 5% |
| Power Factor, Harmonics, Power Quality | 3 - 5% |

| Water Distribution System | |
|---|---------|
| Pump optimization and Controls | 5 - 10% |
| Replace Inefficient Motors and Install VFDs | 5 - 10% |
| Energy Demand Monitoring and Controls | 3 - 5% |

Wastewater System - ECMs

- Demand Monitoring and Control Improvements
 - Process Control Improvements
 - Disk Aerator Speed Control
 - Blower Sizing and Control
 - Motor, Pump Efficiency, VFDs and Controls
 - Low Energy Mixers
 - Power Conditioning, Power Factor Correction
 - Lighting, HVAC, Solar Power
 - Water Conservation, Smart Irrigation, Reclaimed Water
-

Wastewater System Energy Savings

| Wastewater Treatment Plants | Savings |
|---|----------------|
| Pump Optimization and Controls | 5-10% |
| Replace Inefficient Motors and Install VFDs | 5-10% |
| Disk Aerator Speed Control | 20-30% |
| Blower sizing and control | 20-30% |
| Demand Monitoring and Control | 3-5% |
| Power Factor, Harmonics, Power Quality | 3-5% |
| Wastewater Collection System | |
| Replace inefficient motors and Install VFDs | 5-10% |
| Pump Optimization and Controls | 5-10% |
| Optimize Operating Schedule | 5-10% |

Opportunity Summary

Water Meter System Improvements

- Meter Replacement savings >\$300k
- Leak Detection, WM R&R >\$100k



Water System Improvements

- Can save \$26k - \$38k on energy



Wastewater Improvements

- Can save \$35 - \$53k on energy



“All improvements are self funding”

Experience,
Resources & Local
Presence

Aaron Garcia



Local Government Experience

- City of Alvarado
- City of Harlingen (multiple phases)
- City of Abilene (multiple Phases)
- City of Houston (multiple phases)
- City of Arlington (multiple phases)
- City of Lufkin
- City of Carrollton
- City of Marshall
- City of Dallas
- City of Sequin
- Dallas County (multiple phases)
- City of Texarkana
- City of Elgin
- City of Frisco
- Denton County
- City of Denison
- Fort Bend County
- County of Riverside
- Kitsap County
- Walker County
- Oklahoma County
- Wilson County
- Tulsa County
- City of Wichita



Project Cost
\$1,279,890

Annual Project Savings
\$121,015



Utility Conservation Measures

- HVAC replacement- City Hall
- Facility lighting retrofit
- Street lighting retrofit
- LED signal light retrofit
- Energy management system
- Exit lighting retrofit



Contact Information
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Public Buildings Director
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502 E. Tyler
Harlingen, TX 78561



City of Harlingen Harlingen, TX

Comprehensive Utility Conservation Project

After watching taxpayers vote down a bond that would have replaced the HVAC system at City Hall, the City of Harlingen looked to performance contracting as a way to pay for necessary improvements. By implementing a performance contract with Schneider Electric, the city was able to replace the HVAC system at City Hall, perform a LED signal light retrofit at seventy-four intersections, perform a street lighting retrofit, replace over 2,000 inefficient fluorescent ceiling lights, ballast and exit signs in eighteen city buildings, and implement an energy management system in fourteen facilities. The improvements were completely funded by energy savings. The city was attracted to performance contracting because it allowed the city to fund improvements without increasing the burden to taxpayers.

Summary

Project Total Savings - **\$1,279,890**

Annual Project Savings - **\$121,015**

Project Scope Included:

Facility Lighting Retrofit

Street Lighting Retrofit (Billing Errors)

LED Traffic Signal Lighting Retrofit

Energy Management Systems

City Hall HVAC Replacement

Local Resources & Support

- **Local Office's in Weslaco, Corpus Christi & San Antonio**
- Aaron Garcia, Sr. Energy Solutions Specialist (**Resides in McAllen**)
- Layne Mutchler, Service Team Leader for RGV & Corpus Christi area (**Resides in Corpus**)
- Antonio Lopez, Systems application Engineer (**Resides in Edinburg**)
- Dave Pacheco, Service Application Engineer (**Resides in McAllen**)
- Eddie Garcia, Service Specialist (**Resides in Edinburg**)
- Jaime Jimenez, Performance Assurance Specialist (**Resides in Harlingen**)
- Schneider Electric will subcontract with local subcontractors & Eng.
- US Dept of Commerce Economic Impact – Approx \$36,000,000.00

Questions & Discussion

