

Sustainability Lessons from Small Towns and Rural Communities

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City of Cedar Hill, Texas

ICMA Conference Presenter



Sustainable Development



- SD can only be achieved when social, economic and environmental issues are fully considered and addressed in the context of development and growth

2008 - Focus on Sustainability

- Citywide Sustainability Action Plan developed and focused on all aspects of **Growing Green**:
 - Renewable Energy
 - Recycle and Trash
 - Fleet Management
 - Water Resources



Background

- Pleasure to serve the City of Cedar Hill, Texas for over 10 years
- Assistant City Manager since 2009
- Sustainability is my passion



City of Cedar Hill

- 20 minutes southwest of downtown Dallas
- 35 square miles
- 46,000 population
- Retail HUB for the southern sector of Dallas County



Cedar Hill, Texas



2008 - Focus on Sustainability

- Citywide Sustainability Action Plan developed and focused on all aspects of **Growing Green**:
 - Renewable Energy
 - Recycle and Trash
 - Fleet Management
 - Water Resources

Vision – Energy Conservation Master Plan

We envision Cedar Hill as a regionally engaged sustainable community that manages resources wisely, conserves natural beauty, and promotes open space.





- Recycle First
- Renewable Energy
- Residential Guide
- Water Resources



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Cedar Hill Growing Green

Over the last few years, the City has experienced rapid growth and has seen many changes in economic development. Cedar Hill has made a conscious decision to preserve natural and open spaces along with adopting sustainable practices in areas as referenced below.

In January 2012, the City's Solid Waste Collection services will change and the focus will be on increasing recycling. For more information on forthcoming changes refer to Recycle First.



Recycle First



Renewable Energy



Transportation



Water Resources



Residential Guide

Renewable Energy

Solar and Wind Technology

Solar Project

- SECO Grant funding
 - \$952,000 SECO funds
 - \$164,500 Oncor program
 - \$26,000 City
- 152.64 kW solar system on roof of Government Center
- 480 solar panels



Solar: part of City's green initiative

You can't see them from the ground, but the solar panels installed on the roof of the Government Center will soon start cutting the City's electric bill by \$21,000 a year. The system is roof-mounted and grid-tied. The solar panels are strategically located at the most prominent facility in Cedar Hill for maximum energy production and awareness to those living in and visiting the City.

Asst. City Manager Melissa Stephens began submitting grant applications in August, 2000 to fund most of this project. It will cost over \$900,000 to install the system and bring it online.

Federal, state and an Oncor grant covered all but \$25,000. The City expects to save about \$21,000 a year in electricity costs at the government Center. It will take just over a year to recover



Installers finished connecting solar panels on the Government Center roof in June.

the City's portion of the cost. The panels will provide about 8% of the electricity for the Government Center. And they will enhance local awareness of alternative energy uses. An interactive video

panel in the lobby will show visitors exactly how much energy the solar panels are producing at any point in the day. Cedar Hill is adopting an aggressive "green" strategy, encouraging residents

and business for ways to conserve water resources, emissions efficiency, responsible consumption and pay dividends well in

City begins solar panel installation



BY RITA COOK
Focus Daily News
Rcook13@earthlink.net

CEAR HILL—The City of Cedar Hill got a little greener this month when the much anticipated solar panels finally arrived and are being installed this week and next on the City's Government Center. "[We are] crossing our fingers that weather cooperates in the coming weeks, we will have the panels up and producing power by the end of June," says Melissa A. Stephens, Assistant City Manager, City of Cedar Hill. "There is plenty of sun already and the summer hasn't even officially begun." The system is roof mounted and grid

located at the most prominent facility in Cedar Hill for maximum energy production and visibility by those living in and visiting the City. "With demand for energy continuing to rise, using renewable sources like the sun to produce clean, safe, reliable energy has taken on new urgency at the City of Cedar Hill," says Stephens. "This solar photovoltaic system totaling 152.64 kW is expected to produce over 200,000 kilowatt hours (KWH) and save over \$21,000 a year on electricity costs. By implementing this system, CO2 emissions will be reduced by 279,098 pounds annually, which can be equated to planting 35

acres of trees annually, or removing 24 average size cars from the road annually." Stephens says too that the kilowatts per hour that will be generated by the solar panels is approximately eight percent of the Government Center's average consumption on a daily basis. In the works since the summer of 2010, the city received the grant for the project from SECO back in January. According to Stephens, The Texas State Energy Conservation Office (SECO) is specifically designated to award solar panel projects to local governments in the area just like this one.

The project actually began when the





Solar Productivity

To Date:

- Project online since July 1, 2011
- 522,264 kWh produced
- Over \$52,000 Savings

Equivalent to:

- Planting 9,400 Trees
- 42,303 gallons of gasoline saved

Annually, the System generates:

- System Generates 210,030 kWh of electricity annually (8% total building use)
- 15 Average Houses powered for entire 12 months
- \$21,000 Annual savings

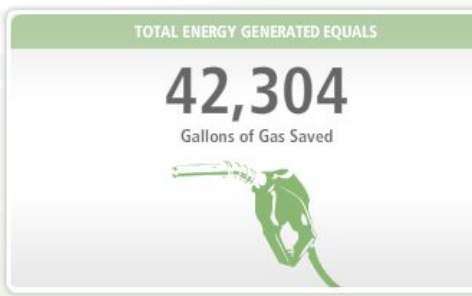


Government Center Solar Energy Systems

System Size: 152.768 kW DC
Police Department Generating Since: July 5, 2011
City Hall Generating Since: June 28, 2011
Last Updated: 4:50pm Sep 12, 2011



Broken clouds 98°F 5 mph



Powered by DECK Monitoring



SECO Wind Energy grant

- \$50,000 SECO funds
- 20% match required (\$12,500 budgeted)

Capabilities

- 4.335 Kw vertical access wind turbine
- No air pollutants / greenhouse gases
- Compliment Solar Project as hybrid solution to cost of electricity

Resulting Project parameters:

- 100% funded project
- Oncor Incentive = \$1,500



Solar and Wind Energy Benefits

- Opportunity to display various forms of clean energy
- Becoming a “sustainable” leader
- Educational component
- A destination point for Green initiatives and ISD collaboration
- Favorable publicity

Recycle & Trash Changes

Council Strategic Goals

2011

Enhanced recycling is provided to citizens = increased participation = increased recycling of materials

2015

City promotes “greener” waste disposal habits for citizens and businesses

Recycle Waste Goals

Increase (↑) ~ Enhance ~ Reduce (↓)

- ❖ Increase Recycling Participation through the use of Recycling Carts (96-gallons)
- ❖ Enhance City Beautification
- ❖ Reduce Carbon Footprint



Communicate, communicate, communicate...



CEDAR HILL *Growing Green*

For you, for the community, for the environment!

The City's solid waste collection services will change the week of January 8, 2012. The goal is to increase recycling participation, promote cleaner streets and neighborhoods and reduce carbon emissions.

- Every single-family home will receive a **96-Gallon** recycle cart
- Every home will have one weekly pick up day for trash, recycling and a bulky item
- Green waste/brush pick up will continue once a month
- Residents may rent a trash cart from Waste Management for \$2.00 per month



Cedar Hill Is Growing Green!

Picking up trash and recyclables on the same day will benefit residents and the community in several ways. Service delivery will be more efficient, it will keep Cedar Hill beautiful, and it will lower the City's carbon emissions and reduce air pollution in the metroplex!

All Recyclables go into the New 96-Gallon Cart

It's Easy! No Sorting!



Acceptable items



Cardboard & Food Boxes



Paper Bags



Glass Jars & Bottles
Clear, Brown & Green



Plastic Containers #1-7
and Paperboard containers



Junk-Mail & Telephone
Books



Aluminum & Steel
Cans, Foil & Pie Tins

Unacceptable items

Foam packaging, soiled food containers i.e. pizza boxes, dirty food containers, etc., plastic grocery bags, electronics, ceramics or dishes, food waste / garbage, light bulbs, window glass or mirrors or yard waste

Much of what goes into our landfills is recyclable - including frozen dinner containers - they just need to be rinsed before tossing them into your new recycle cart. Cedar Hill encourages residents to recycle because it is good for you, the community and the environment.

Visit www.greencedarhill.com
or call 972-291-5100 ext. 1003 for more information



Going Green gets easier, cleaner, safer

The City's solid waste services will change beginning the week of January 8, 2012. The goal is to increase recycling participation, promote cleaner and safer streets and neighborhoods and reduce carbon emissions.

The changes will include a free 96-gallon recycling cart provided for every single-family residence. Trash and recycling will be picked up on the same day every week. Brush pickup will continue once a month.

For those residents who prefer a rolling cart the City will provide a trash cart for a \$2 monthly fee added to the residence water bill.

"The larger recycling cart is intended to make it easier for residents to increase their household recycling," according to Assistant

City Manager Melissa Stephens.

"And the same-day pickup for trash and recycling will reduce air pollution by cutting back the number of large trucks working on the alleys and streets of our community."

Continues on page 2



Going Green in Cedar Hill

For you, For the community, For the environment



The City's solid waste collection services will change starting the week of January 8, 2012. The goal is to increase recycling participation, promote clean streets and neighborhoods and reduce carbon emissions.

- ◆ Every single-family home will receive a FREE 96-gallon recycle cart.
- ◆ Every home will have one weekly pick up day for trash, recycling and a bulky item.
- ◆ Green waste/brush pick up will continue once a month.
- ◆ Citizens may rent a trash cart from Waste Management for \$2.00 per month.



Visit www.greencedarhilltx.com or call (972) 291.5100 ext. 1003 for more information



Music in the Park - Vocal Trash

"Growing Green" in Cedar Hill

Saturday, October 1, 2011

6:30 - 8:30 PM

Valley Ridge Park

Amphitheater

2850 Park Ridge Drive

Cedar Hill, TX 75104

Admission is Free

Music, Food, Adopt-A-Park/Adopt-A-Trail Kick-Off, Recycling, Environmental Education and local "green" initiative, and more.

Visit www.cedarhilltx.com or call 972-291-5130 for more information.



ACTION 12.1: MUNICIPAL RECYCLING PROGRAM [ONGOING]

Recycling Update: Annual Comparisons Against 2010 Baseline

Month	2010 Baseline (Tons)	2011 Change From Baseline (Tons)	2011 Change from Baseline (Percent)	2012 Change From Baseline (Tons)	2012 Change from Baseline (Percent)
January	108.5	28.8	27%	237.04	218%
February	85.1	82.4	97%	234.44	275%
March	120.1	93.7	78%	338.29	282%
Total (Jan - March)	313.7	204.9	65%	809.77	258%

To address this action, the City issued 96 gallon recycle carts to all residents. The success of this initiative is monitored by tracking the



Collection Services

Since 2006, Waste Management has provided services to the City of Cedar Hill for its trash and recycling needs. In January of 2012, the City embarked on a path of sustainability with Waste Management. We look forward to continuing to work with the City to meet its goals.

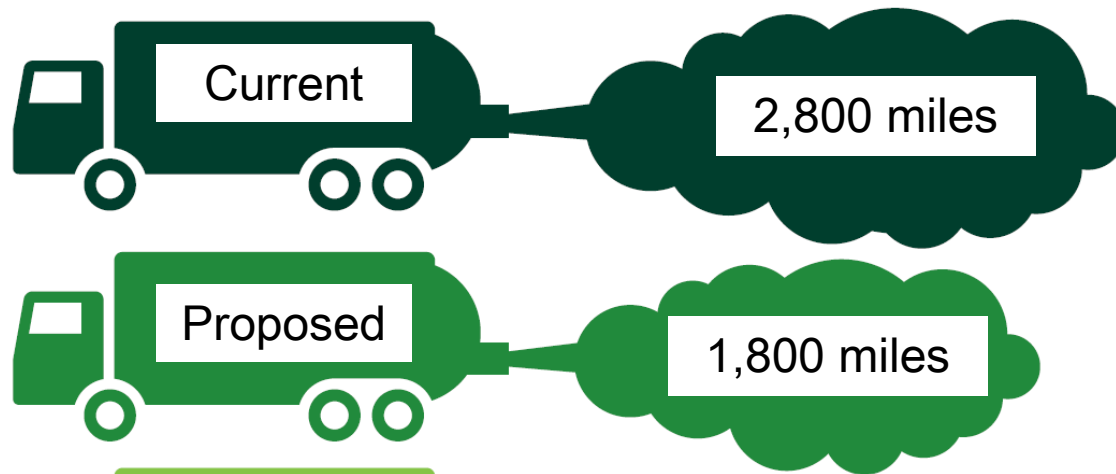


In the tables below, residential materials collected by Waste Management are separated by service type and measured in tons collected per month.

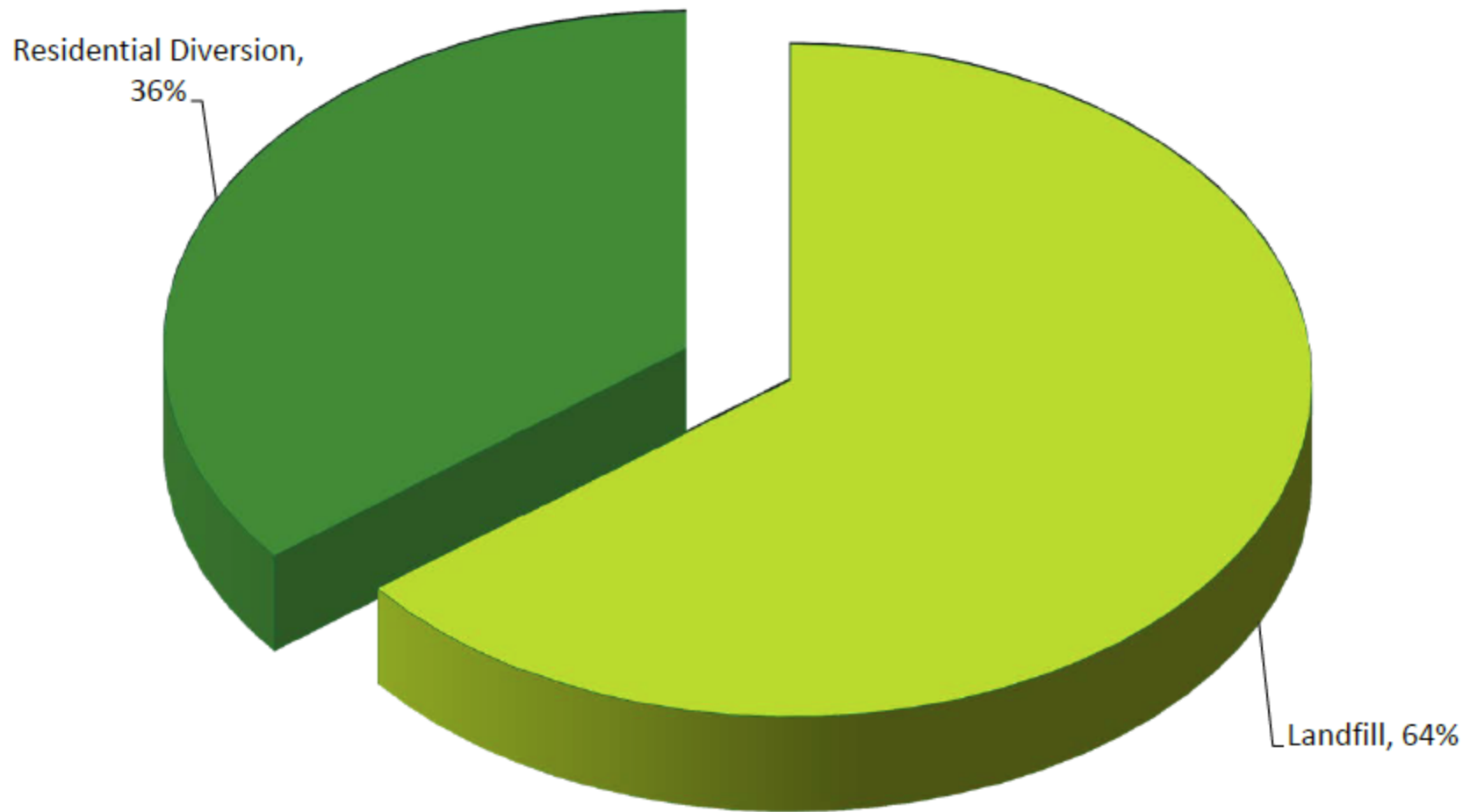
Tons of Residential Trash Materials Collected														
Service	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	AVG
Total Trash	891	924	830	899	681	849	973	931	1,008	1,116	1,016	0	10,118	920
Tons of Residential Recycling and Brush Materials Collected														
Service	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	AVG
Recycling	328	321	543	461	366	428	549	443	286	285	310	0	4,320	393
Brush	180	165	90	89	103	99	115	88	207	91	43	0	1,270	115
Total	508	486	633	550	469	527	663	531	493	376	353	0	5,590	508
Total Tons of Residential Materials Collected														
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	AVG
Total	1,399	1,410	1,463	1,449	1,150	1,377	1,636	1,463	1,501	1,492	1,369	0	15,708	1,428
Residential Diversion Rates														
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	AVG
Total Residential Diversion	36%	34%	43%	38%	41%	38%	40%	36%	33%	25%	26%	TBD	36%	38%

Reduce Carbon Footprint

- Surface miles traveled reduced an estimated 1,000 miles per week under the new program



2013 Total Residential Diversion Rate



Solar Recycle Compactors



- \$50k grant through Regional Planning agency
- 12 Solar Recycle compactors
- Located at largest Sports complex in the City where there is significant amounts of recyclable material disposed

To Date:

- Recycle collection has increased by 42%

Electric Vehicle Fleet and Equipment

ELECTRIC VEHICLES



- City purchased two all Electric vehicles
- Received 100% grant funding for Electric vehicle charging stations



City / Staff

Public Parking

Uptown Blvd

Uptown Blvd

Source: USGS
Source: NASA, NGA, USGS
© 2008 Microsoft Corp.

Future Initiatives

Multi-Family Recycling Program



- Starting October 1, 2013
- Required of all multi-family complexes within City limits
- Negotiated rate of \$1.00 / unit per month regardless of occupancy
- Billed on water bill through City Utility Billing

Automatic Meter Infrastructure - Water

- Awarded \$300,000 grant from Bureau of Reclamation for Pilot project
- Currently a City-wide replacement project of 16,000 meters and AMI equipment
- In contract negotiations with vendor for Public Private Partnership



Current Operation

1. Meter Reader inputs the monthly consumption into Datamatic device
2. Meter Reader loads Datamatic readings into the Eden Billing System
3. Staff review reports:
 - High and Low Reads
 - No Reads
 - Active Accounts with no usage
 - Inactive Accounts with usage



4. Re-Read Service orders are created to verify reads
5. After reads are verified or corrected, staff runs bills to be sent to customer

Proposed Operation

- Meters outfitted with built-in wireless transmitting devices
- Data sent wirelessly into City's billing system



- City defines increments of reads to be collected

AMI Project Goals and Objectives

- Recover Lost revenue due to Unaccounted for Water Loss
- Reduce Expenditures
- Enhance Customer Service
- Facilitate Conservation
- Be Fiscally Prudent (system to pay for itself)

AMI Return on Investment (ROI)

Total Annual Debt Cost of AMI System	\$1,383,955
Total Potential Annual Savings and Found Revenue with FATHOM	\$1,794,348
Conservative Total Net Annual Savings (based on 5% UFWL)	\$410,393

Unaccounted For Water Loss (UFWL)	Found Revenue and Savings	Difference
10%	\$2,587,590	\$1,230,635
5%	\$1,794,348	\$410,393

The City's grant funding and match are not included in the above numbers.

Sustainability Lessons Learned

Lesson One:

- True Sustainable Change takes time
 - Examples:
 - Recycle focused waste diversion and Trash contract discussions
 - AMI project discussions with City Council

Lesson Two:

- We are not Politicians, and we see Sustainability projects differently

Lesson Three:

- Always take Sustainability projects personally but never take them personally
 - Contradicting, but necessary

Questions/Comments?

For Additional information:

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ICMA
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BOSTON
NEW ENGLAND 

September 22-25, 2013