

Memorandum



CITY OF DALLAS

DATE October 21, 2011

TO Members of the Transportation and Environment Committee:
Linda L. Koop (Chair), Sheffie Kadane (Vice Chair), Sandy Greyson,
Delia Jasso, Vonciel Jones Hill, Pauline Medrano

SUBJECT Update on Green Initiatives

On October 24, 2011, staff will present an informational briefing to the Committee with an update on environmental green initiatives throughout the City. Please find attached a copy of the presentation, and feel free to contact me if you need additional information.

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

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

c: The Honorable Mayor and Members of the City Council
Mary K. Suhm, City Manager
Thomas P. Perkins, Jr. City Attorney
Rosa Rios, Acting City Secretary
Craig Kinton, City Auditor
Judge C. Victor Lander, Administrative Judge
A.C. Gonzalez, First Assistant City Manager
Ryan S. Evans, Assistant City Manager
Forest Turner, Assistant City Manager
Joey Zapata, Interim Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Edward Scott, Director, Controller's Office
Frank Libro, Public Information Office
Helena Stevens-Thompson, Assistant to the City Manager – Council Office



Update on Green Initiatives

Transportation and Environment Committee
October 24, 2011



City of Dallas Profile

- Approximately 12,500 employees
- 28 departments with wide-ranging missions
- 800+ buildings
- 55 “Industrial” Facilities
 - 2 Waste Water Treatment Plants
 - 3 Water Treatment Plants
 - Landfill and Transfer Stations
 - Airports
 - 6 Major Service Centers



= Thousands of Environmental Requirements!



Why Did the City of Dallas Go Green?



Fiscal Responsibility

- **Green initiatives save the City millions of dollars**
 - **Energy savings**
 - **Fuel savings**
 - **Water conservation**
- **And generate revenue through recycling**



Fiscal Responsibility

- **Non-attainment of federal ozone standard for air quality could result in loss of highway funds, Community Development Block funds, and grant funds**



Fiscal Responsibility

- **Consent decree with the US Department of Justice and EPA for environmental violations requiring the City to spend in excess of \$3.5 million in a comprehensive effort to decrease the amount of pollution entering the City's storm water system**
- **The settlement required the City to construct two wetlands at an estimated cost of \$1.2 and to pay a civil penalty of \$800,000, with potential for much more if certain improvements were not made**



Fiscal Responsibility

- **Enhance Economic Development**
 - **Business relocations**
 - **Conventions and visitors**



Social and Leadership Responsibilities

White Rock
Creek





Media and Stakeholder Interest





So what are we doing?



Environmental Management System

- Implement an International Organization for Standardization (ISO) 14001:2004 based EMS
- Focus of EMS is to reduce the City's impact on the environment
 - Compliance is a portion of the EMS
 - So is going beyond compliance
- 11 departments
- June 2008
First U.S. city to achieve ISO 14001:2004 certification for broad scale operations
- March 2011
Recertified





Driving Green

1980's – Began converting to propane and dual-fuel (CNG and gasoline)

1992 – Dallas purchased first alternative fueled vehicle

2002 - Dallas is first city in Texas to use biodiesel (B20)

2011 – Dallas has one of the largest alternative fueled fleets in Texas and the nation with nearly 35 percent running on biodiesel or natural gas or a gas/electric hybrid

- The City purchases biodiesel which is blended with diesel fuel to reduce emissions by about 16% per gallon compared with regular petroleum diesel
- Biodiesel accounts for 12% and compressed natural gas (CNG) 8.6% of the City's total fuel purchases



Clear the Air

- **70% of D-FW region's harmful NO_x (nitrogen oxide) emissions come from mobile sources, like vehicles, lawn equipment, construction equipment, airplanes, etc.**
- **Dallas clean air ordinances**
 - **Clean construction**
 - **Green cement policy**
 - **Anti-idling ordinance**



More on the Anti-Idling Ordinance

- Ordinance passed on May 23, 2007 to prohibit vehicle operators with a gross weight over 14,000 lbs to idle for more than 5 minutes during ozone season (April – October of each year)
- Approximately 900 citations have been issued since 2008 when enforcement began
- Council to consider the following ordinance changes on November 7, 2011
 - Year-round enforcement of motor vehicle idling restrictions
 - Allow a motor vehicle to idle under certain circumstances to provide air conditioning or heating in an armored vehicle





Saving Energy

Overall energy usage has been reduced at existing City facilities by 5% per year over the past seven years

- **Energy Performance Contracting to provide energy efficient equipment and improved building operations in existing City facilities has saved more than \$5.3 million in reduced energy costs**



- **Lighting Retrofits to replace light bulbs and lamps in City buildings (including police stations, fire stations, recreation centers and libraries) with more efficient bulbs is expected to reduce lighting costs by 30%**



Making Energy

McCommas Bluff Landfill

- 994.7 million cubic feet per year of methane captured at McCommas Bluff Landfill
- Enough to heat approximately 25,000 homes for an entire year

Wastewater Treatment Plant

- Recover and utilize the energy contained within the biogas
- Approximately 1.5 million cubic feet of biogas per day
- Adds 30,000,000 kWh per year to our green purchase quantity
- Estimated to save \$1.5 to \$2 million per year in energy costs





Building Green in Dallas

- All building phases: design, transportation of materials, construction, and operation, consume more energy than any other part of the economy
- **LARGEST CONTRIBUTOR** to climate change/greenhouse gas emissions in the country
- Green Building Program = greenhouse gas emissions reductions





Building Green in Dallas

DALLAS GREEN BUILDING POLICIES

1. City-owned buildings
2. Privately-owned buildings

City-owned buildings (Policy adopted Jan. 2003)

New City facilities over 10,000 square feet must be designed and built to meet—at minimum—the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard.





Building Green in Dallas

Privately-owned buildings (Policy adopted April 2008)

Dallas is among the first major U.S. cities to pass comprehensive building standards for both residential and commercial construction.

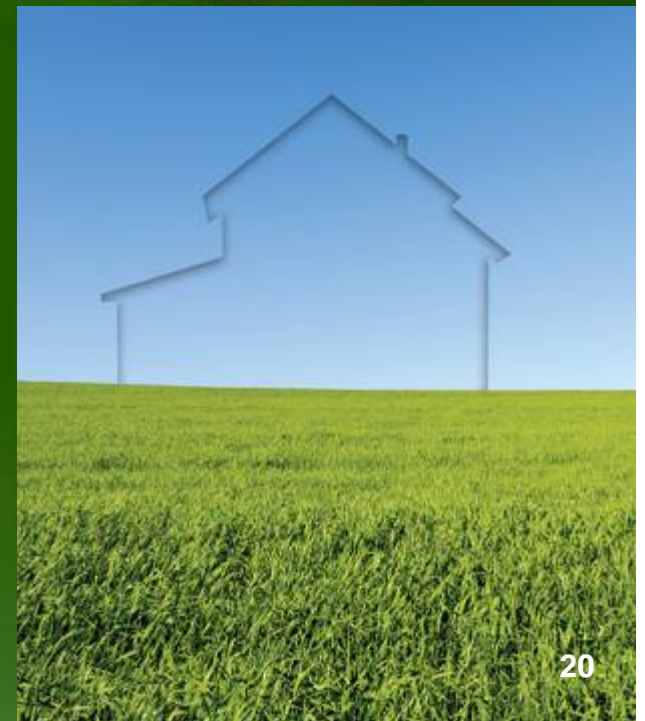
Task Force included homebuilders, developers, environmentalists, and City staff.

Phase I began October 2009 with focus on:

- Energy efficiency
- Water conservation
- Reducing heat island effect through cool roofs

Phase II delayed until October 2012:

- International Green Construction Code to be released in April 2012







Recycling

- Diversion increased by 28% (44,713 tons) last year
- City's goal for participation by Dallas households was 50% by 2011 – a goal exceeded a year early with a FY10 participation rate of 62%
- Sale of recyclables brought in \$3.4 million to the City's General Fund in FY11





Community Gardens and Neighborhood Farmers Markets

- Established 12,000 square foot organic garden on City property at Lake Highlands in 2008
- In February 2011, Council passed amendments to Dallas Development Code to allow for community gardens on tracts of land less than 3 acres by right in all districts
- In October 2010, Council established a permitting process and requirements for neighborhood farmers markets for local farmers/growers and handcrafters to sell or distribute their products directly to consumers





Municipal Setting Designations

- **The MSD Program allows the City to adopt an ordinance restricting ground water use under a property**
- **This restriction reduces clean up costs and expedites the redevelopment of historically contaminated sites**
- **Eighty-two MSDs have been approved by Council since the program began in 2005, leading to millions of dollars in development on properties in the City of Dallas, while protecting human health and the environment**



Opportunities for a Deeper Shade of Green



Electric Vehicles

- **Participating in NCTCOGs “Electric Vehicles North Texas” to prepare the region for the transition to plug-in electric vehicles**
- **City Fleet/Charging Stations**
 - **24 electric vehicles purchased for DWU to use for neighborhood vehicles**
 - **Southside Waste Water Treatment Plant (3 Charging Stations)**
 - **Central Waste Water Treatment Plant (2 Charging Stations)**
 - **TXU Energy donated a Chevy Volt Electric vehicle to City fleet**



Electric Vehicles (cont.)

- **Public Vehicles/Charging Stations**
 - **Number of Electric Vehicles in North Texas (Source: NCTCOG)**
 - Dallas County: 96 electric vehicles**
 - Collin County: 43 electric vehicles**
- **TXU Energy donated charging stations to City of Dallas**
 - **City is currently working with TXU to identify 5 public charging locations**
- **Dallas is one of 18 cities included in Department of Energy sponsored Ecotality EV Project**
 - **City is currently working with Ecotality to identify 3 public charging locations**



Sustainability Plan

- **Sustainability:** The ability to meet the needs of the present generations without compromising the ability of future generations to meet their own needs
- **The Sustainability Plan will expand the City's Environmental Management System to broaden its objectives and targets to incorporate the initiatives that are integrated between the community and the City of Dallas (e.g., forwardDallas! Plan, Dallas Bike Plan, Water Conservation Plan, etc.)**





iSWM

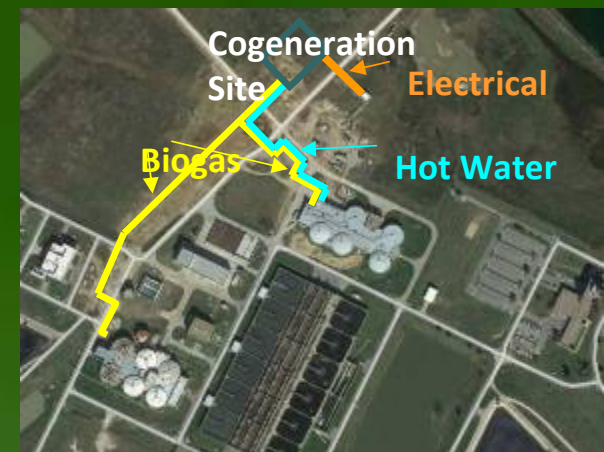
- **Integrated Storm Water Management (iSWM): Merging approaches to water quality and quantity protection into design and construction**
- **In late 2009, Dallas City Council authorized adoption of an iSWM Manual for voluntary use**
- **Phase II of the iSWM program is now underway**
 - **Report to Council on Phase I effectiveness**
 - **Recommend amendments to City Codes**
 - **Develop standard street design details with beneficial storm water practices (coordinate with Complete Streets)**





Additional Energy Generation

- On October 10, 2011 Dallas City Council approved a contract to provide engineering services associated with solids handling improvements at the Central Wastewater Treatment Plant and the Southside Wastewater Treatment Plant
 - One key component is maximizing the amount of methane produced for use in the Cogeneration facility
 - Study possible construction of a grease digestion facility to increase methane production and/or biodiesel





Resource Recovery System

- Synchronized set of facilities to accept waste and recover all usable material – replacing existing waste transfer stations and the landfill
- Waste to...
 - Energy - conversion of waste to gas or electricity
 - Fuel - conversion of waste to synthetic fuels
 - Reuse - sorting of waste into many more recyclable products
- Further examine range of technologies suitable for full-scale Resource Recovery operations
- Issue requests for qualifications in FY12 and proposals to partner with City in designing and implementing





Green Supplies

- **Partner with our office supply partner, OfficeMax, to:**
 - **Reduce paper usage**
 - **Increase % of recycled products used**
 - **Decrease the number of deliveries made to City locations**



Solar Farms

- **Texas has 16 utility-scale projects operating; 90 under construction; and, 390 under development**
- **San Antonio has the largest in Texas**
 - **214,500 panels**
 - **14-megawatts**
- **Opportunity for not only energy savings, but economic development**



Summary

- **These environmental initiatives lead to improvements in public health, ecological benefits for the Trinity River, cost savings, and efficiencies for City operations**
- **The City continues to evaluate, monitor and push its environmental sustainability programs by partnering with other Cities, state and federal agencies, and local citizen environmental groups**



For More Information...

Questions?

City of Dallas environmental web site:
www.GreenDallas.net



Appendix

Departmental Objectives & Targets – FY11-12

Department	Objective	Target
Aviation	Reduce Water Consumption	Implement a water reuse program by 2014
	Wildlife Hazard Assessment Completion and Wildlife Management Plan as necessary	Completion of Wildlife Hazard Assessment Report.
	Development of a Noise Monitor Replacement Plan and Upgrade of Noise Monitoring System	Installation of upgraded monitors at 40% of the current noise monitor locations. Upgrade of the Noise Evaluation system to include the use of Virtual Monitors in appropriate places.
	Increase Recycling	5% increase in recycling through 2014 and incorporation of increased recycling with the LFMP Concourse Construction
	Test and promote clean fleet and emission reduction in Aviation Department	Evaluate new technology for emission reduction, evaluate suggestions from NCTCOG on emission reductions for aviation
	Maintain Environmental Compliance	Zero Administrative Notices of Violations or Enforcements
Code Compliance	Alternate Fuel	To reduce the department's dependency on gas and diesel-fueled vehicles by 30%
Convention & Event Services	Evaluate green options with the DCC catering company	Options identified by December 2011
CIS - Radio Shop	Reduce amount of waste generated from use of lead based solder	Reduce purchases of lead based solder by 10% per year for next 4 years using fy 06-07 purchases of 58 rolls as baseline
	Decrease the amount of waste wire produced as a result of daily radio operations	Increase percentage of waste wire being recycled by 10% per year for next 4 years using fy10-11 as baseline
Dallas Marshal's Office	Increase paper recycling from Detention Center	Increase shredded paper recycling by 5%
	Decrease the number of petroleum based spills caused by City operations	Reduce the number of petroleum based spills

Departmental Objectives & Targets – FY11-12

Department	Objective	Target
Dallas Police Department	Research anti-idling technology for possible future installation Department wide	Install anti-idling technology on one test vehicle to determine the hours of idling reduced, cost savings, costs to operate equipment and potential reduction in emissions per vehicle
	Increase worker awareness about EMS	Provide training for approx. 2800 employees in FY 11-12 to encourage development and implementation of departmental EMS as well as increase awareness of different environmental issues within the scope of DPD's EMS
	Reduce energy use Department wide	A 2% department wide reduction in energy use
	Increase paper recycling department wide	A 2% increase in paper recycling
Dallas Water Utilities	Evaluate the installation of hydropower turbines between Tawakoni Balancing Reservoir and East Side WTP	Analysis and study, Target date December 2011
	Reduce the chlorine discharge environmental impact from flushing the potable water system	Use dechlorination tablets on flushing activities on flows greater than 600 gallons per minute
	Reduce the amount of water leaks within the potable water system through leak detection programs	Assess 2,000 miles of main line annually
	Construct batch lime system at EFWTP	Prevent chemical (lime) pollution to the environment by constructing a closed system
	Construct batch lime system at ESWTP	Prevent chemical (lime) pollution to the environment by constructing a closed system
	Increase the amount of highly treated wastewater effluent for reuse purposes	5 mgd by end of FY13-14
	Optimize DWU Recycling Program	Increase scrap metal recycled by 100% of FY06-07 baseline, and increase in-house recycling by 10% (Big Blue Program)
	Reduce the average per capita water demand over the next five-year planning horizon as outlined in the water conservation strategic plan update	Average 1.5% per capita FY10-11 - 14-15
	Reduce average electrical use per MG treated at Wastewater Treatment Plants	15% (262 KWH/MG) from FY08-09 baseline by 2013

Departmental Objectives & Targets – FY11-12

Department	Objective	Target
Equipment and Building Services	Increase the recycling of light bulbs/lamps and ballasts	10% by September 2013
	Decrease NOx, VOC, PM and CO2 emissions from On-Road and Off-Road Vehicles	5% for each pollutant (Ongoing)
	Increase the quantity of less toxic/non-hazardous chemical products	Increase the Product Substitution Program by 4% by September 2013
	Develop and implement a fuel conservation program	10 % fuel conservation by 2014
Office of Environmental Quality	Reduce greenhouse gas emissions for City operations.	Reduce greenhouse gas emissions for City operations by 5% in 2012 from baseline year of 2005
	Reduce Municipal Climate Change Impacts and VMTs reduced by 10% from previous year	Increase CO2 emissions reduced and VMTs reduced by 10% from previous year
Park and Recreation	Evaluate golf course practices and Audubon Cooperative Sanctuary Program - Tenison Golf Course	Evaluate Audubon program and complete certification program
	Evaluate Park sites to determine if they are suitable locations for electric vehicle charging stations	Provide information to EV charging station vendor
	Implement a Golf IPM Program based on department guidelines and achieve a reduction in the use of toxic pesticides by golf operations	Reduce the use of toxic pesticides within golf operations by 2% per year to aid in achieving department target for similar Objective
	Develop an integrated pest management program	Reduce the use of pesticides Department-wide by 25% by September 2012
Public Works and Transportation	Develop and implement an integrated pest management program	Develop IPM to improve handling of pesticides and herbicides and reduce impacts on storm water quality
	SWM will conduct routine storm water compliance inspections of city owned/operated "industrial facilities"	SWM will inspect four city owned facilities in FY 11/12
	Use SWM outreach programs to educate and inform city employees, contractors, industries, and the residents of the city on methods and techniques to reduce storm water pollution	Total of 150 outreach presentations in FY 11/12
	Inspect and investigate regulated sources of air pollution in the City of Dallas	300 source investigations in FY11/12
	Reduce the environmental impact of construction of City projects	Provide outreach to city contractors using printed materials and other outreach methods. Develop two pamphlets or other documents for training. Distribute to at least ten contractors.
	Construct Green Buildings according to LEED	Establish tracking for construction of new buildings greater than 20,000 square feet to meet minimum Silver Leeds certification

Departmental Objectives & Targets – FY11-12

Department	Objective	Target
Sanitation	Increase the amount of beneficial re-use items (dirt, concrete, asphalt, saw dust) to increase landfill air space	3% increase
	Reduce pollutant load at the landfill	5% reduction in stormwater pollutant
	Replace gasoline/diesel fleet with alternative fuel powered vehicles to improve air quality	15% replacement
	Improve air quality by reducing fuel consumption (recycling, refuse and brush)	1% reduction in fuel use
	Increase citizen waste diversion through citywide recycling program	30% increase in tons recycled
Streets	Recycle Shopping Carts picked up	Track the number of calls received by CRMS for abandoned shopping carts
	Recycle Damaged Guardrails	Track the number of damaged guardrails received by CRMS requesting replacement
	Replace AC powered school zone flashers with solar powered	Replace 75 school zone flashers from AC powered to solar powered
	Recycle All Available Concrete Spoils	Determine how much landfill space is saved by recycling concrete spoils
	Recycle All Available Asphalt millings and asphalt related to the in place recycling restoration program	Determine how much landfill space is saved by recycling asphalt spoils
	Pollution Prevention	Determine the number of safety and environmental inspections conducted that passed and failed.
	Identify how many employees participate in a Home Recycling Program	How many employees participate?
	Increase Employees Participation in GreenRide for Ozone reporting	Identify number of employees participating in web-based GreenRide commuter tracking system during the ozone season
	Report Spills by Contractors Working on the Levee System	Number of spills reported by Contractors working on the levee
	Train All Contractors working on the levee.	Ensure that all contractors receive spill training