

SUSTAINABILITY MANAGEMENT PLAN 2014

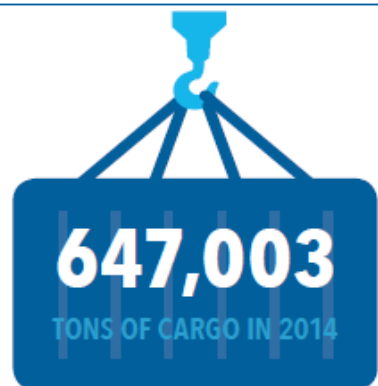






Sustainability Indicators

CARGO



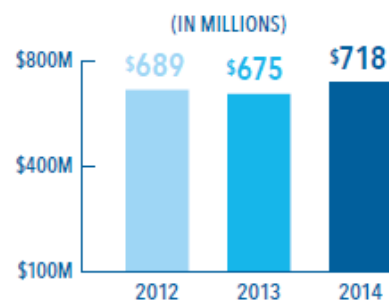
EMPLOYEES



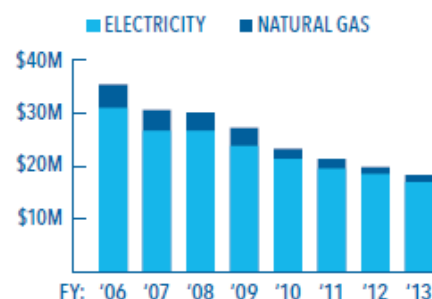
GREENHOUSE GAS EMISSION REDUCTIONS



REVENUES



ENERGY COSTS



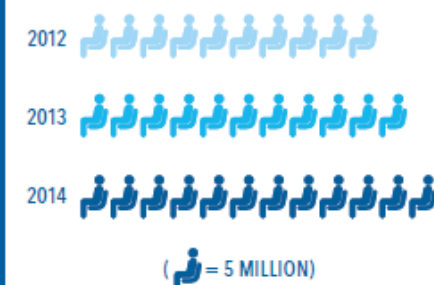
ENERGY SAVINGS (GJ)



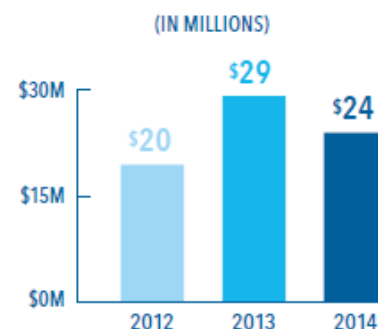
AIRCRAFT OPERATIONS



PASSENGERS



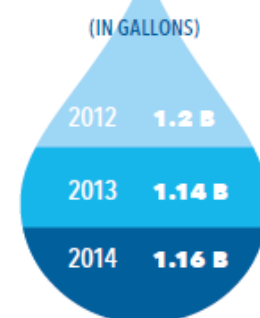
FINANCIAL ASSISTANCE: FEDERAL GRANTS



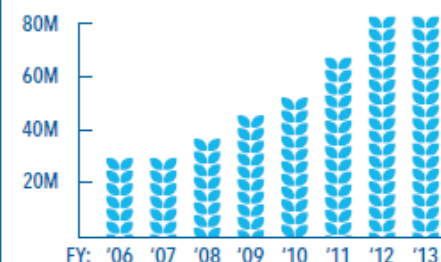
DIRECT ENERGY CONSUMED (GJ)



WATER RESOURCES

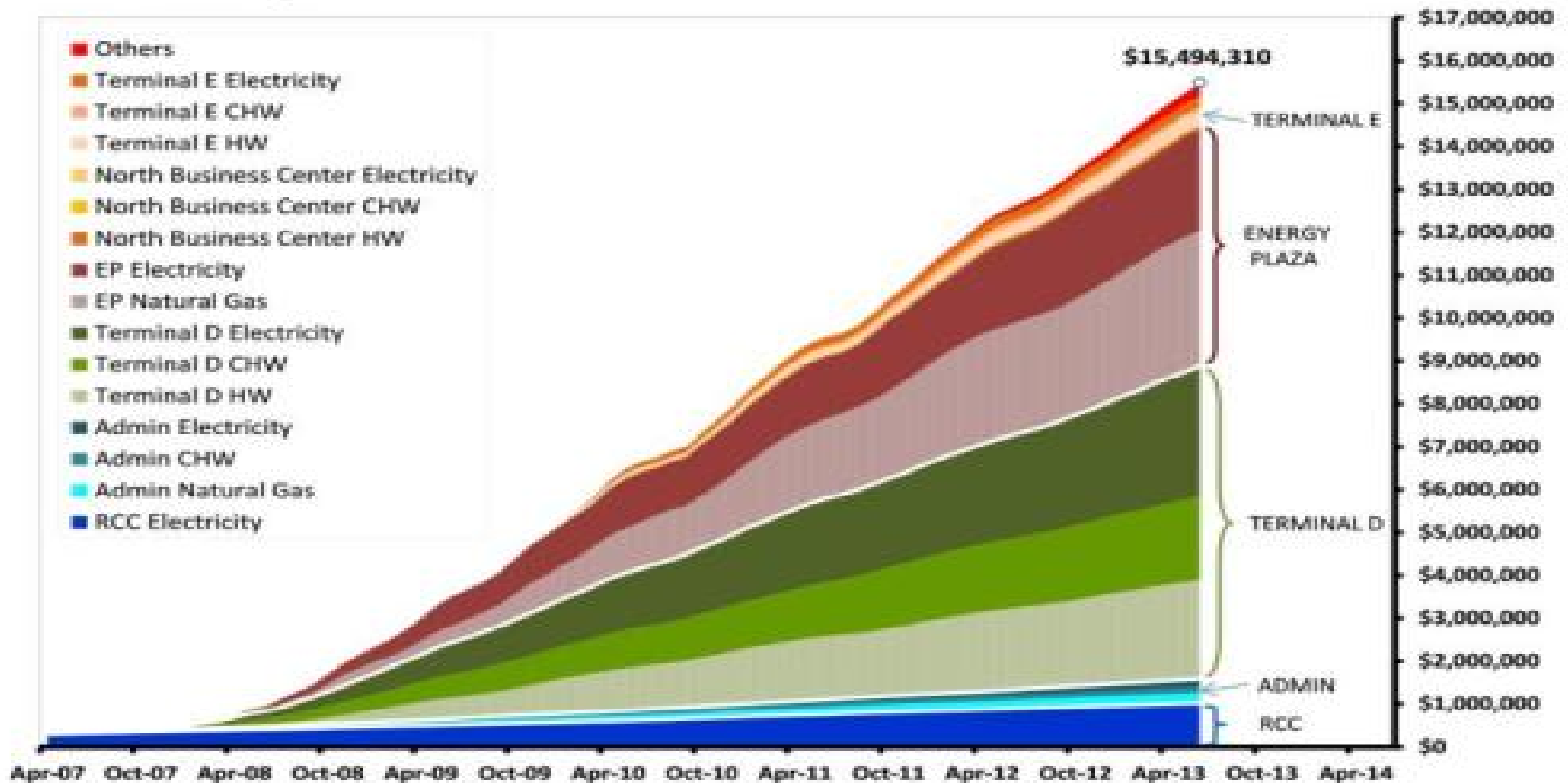


RENEWABLE ENERGY CONSUMPTION (kWh)



Continuous Commissioning[®]

DFW International Airport Cumulative Savings



Lighting Retrofits

- Terminal Buildings
 - Replace T12 with T8 lamps
 - Install electronic ballasts
 - Install occupancy sensors
- Install light harvesting sensors and ballasts (dim artificial light when natural light conditions are sufficient)



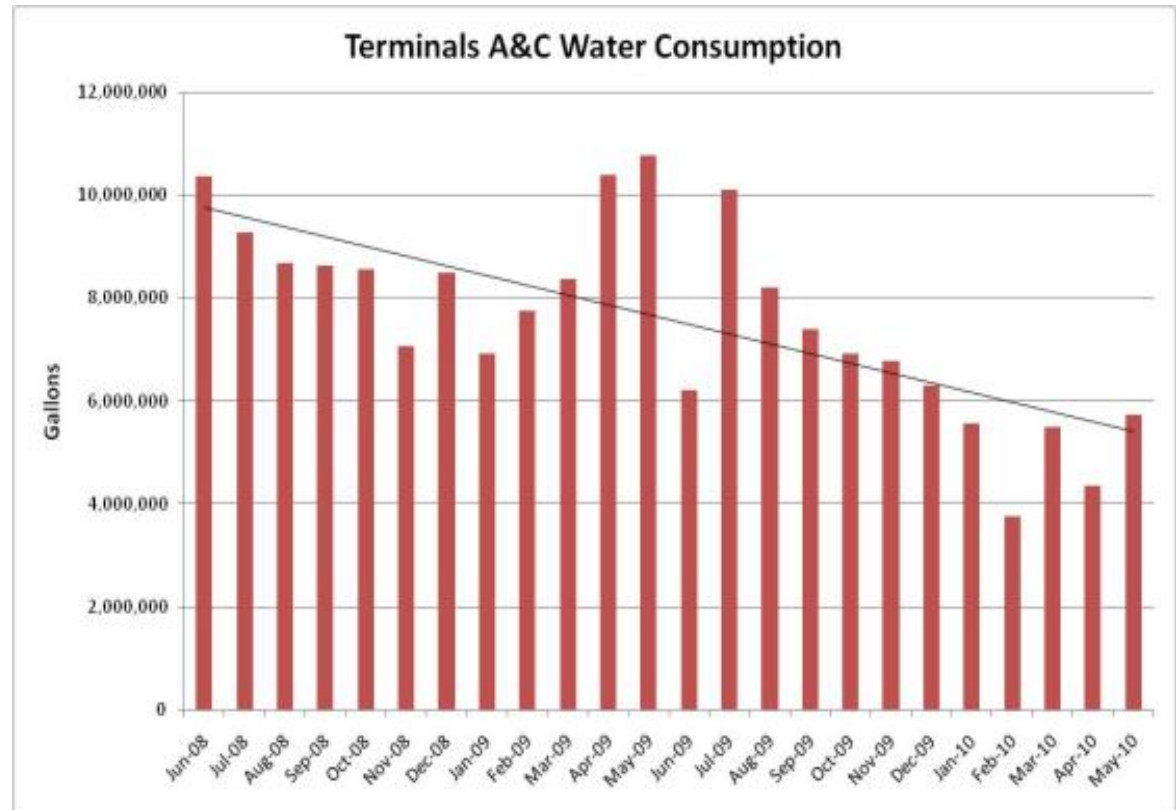
Renewable Energy

- 30% of DFW's annual electric energy (~87 million kWh per year) is wind-generated with zero emissions
- The U.S. EPA Green Power Partnership
- DFW ranks 9th on the most recent list



Water Conservation

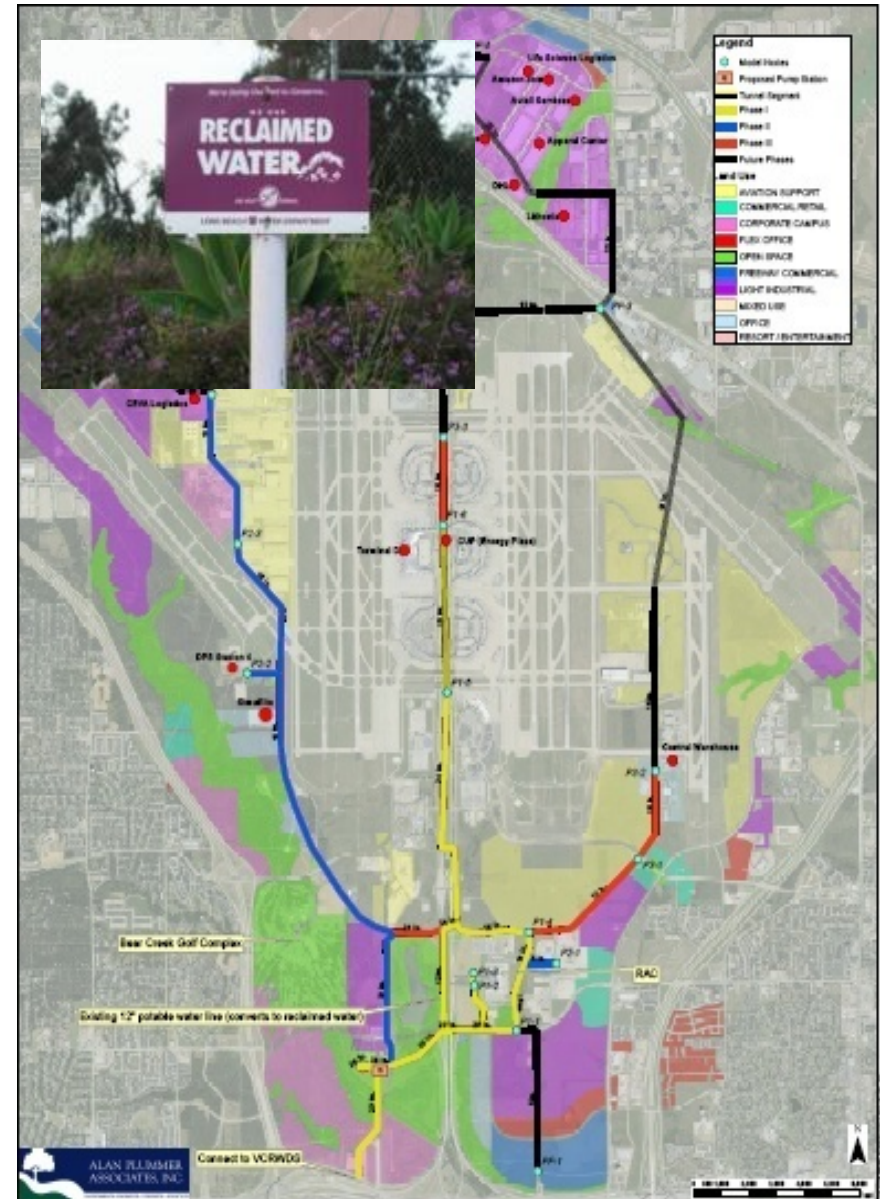
- 52% reduction in water use in Terminals A, C
- 60 MG/year saved (all Terminals)
- Low incremental cost of high efficiency fixtures
- First airport to become an EPA WaterSense partner



Reclaimed Water

- Reclaimed water loop for irrigation
- Future opportunities
 - NG Development
 - Central Utilities Plant
- Potential to reduce potable water consumption by over 300 million gallons annually.

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Landscaping

- Smart Landscaping Criteria
 - Utilizes native and adapted species to reduce water and maintenance requirements
 - Applicable to Airport development including commercial properties
 - Model installation at Founders' Plaza



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Fleet: Alternative Fuels

- Vehicle Fuels
 - Compressed Natural Gas (CNG)
 - Biodiesel
 - Hybrid

- Bus Fleet
 - CNG – 2.25 million DGE annually (100% of our Bus Fleet)
 - Available, economical (\$1.50 DGE) (\$2.25 DGE – applies to apples)

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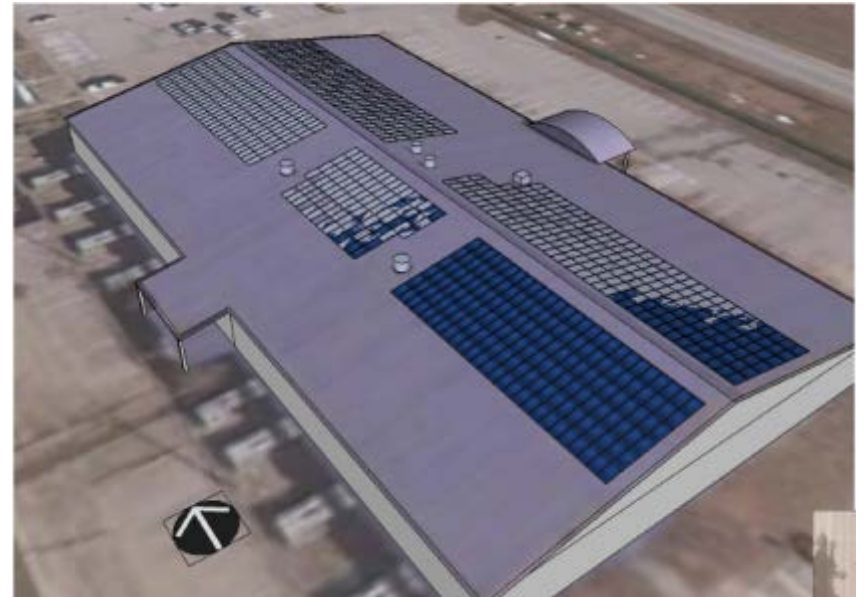
Thermal Energy Storage

- Chilled Water Thermal Energy Storage System
 - 6 million gallon volume
 - 90,000 ton-hours energy storage
 - Ability to shift energy plant peak electrical demand over 18 MW off-peak



Photovoltaic Array

- 185 kW grid-tied photovoltaic array on roof of ADE building
- 693 Panels, 14,484 sq. ft., 200,000 kWh/year
- 20% of building electricity needs
- Real-time monitoring of power output



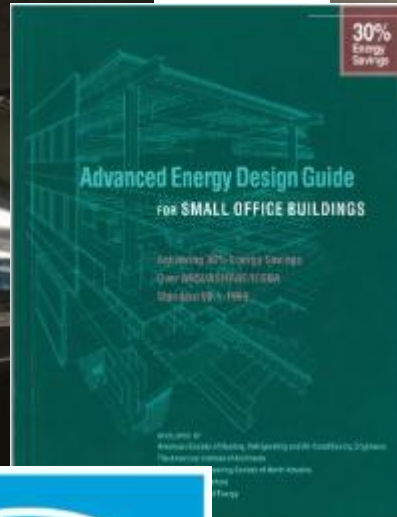
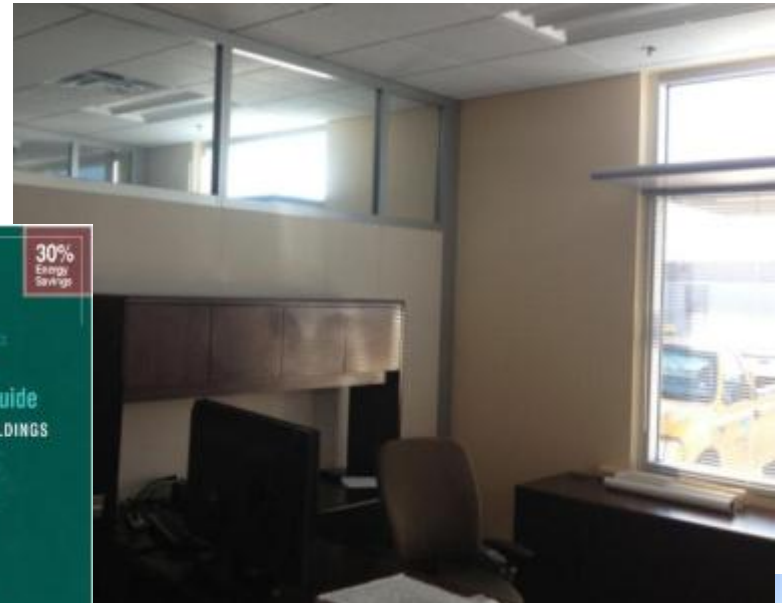
DPS 6: LEED Gold

- Provides Fire and Medical services to northernmost property at DFW, as well as neighboring communities
- Solar Tubes for daylight
- Solar Thermal system
- Low-water landscape
- Cool Roof Technology

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EAD Building: Energy Star



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9,600 ft² Environmental Affairs Department Building
Constructed and commissioned in 2009, occupied in April 2010

Terminal Renewal & Improvement Program (TRIP)

- Replace aging infrastructure in Terminals A, B, C, E
 - Electrical, Plumbing, HVAC
 - Integrated Building Automation and Controls
 - Enables Intelligent Building & Microgrid strategies
 - Optimized terminal energy performance through Continuous Commissioning®
 - Environmentally responsible material selections
 - Materials recycling and reuse



Reverse Osmosis

- Remediation of Spent Aircraft Deicing Fluid (SADF)
- Reduce glycol levels from 80,000 ppm to 250 ppm
- Process rate over 200,000 gallons per day
- 5 year ROI due to avoided disposal costs



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Recycling

- DFW provides recycling services for Terminals, Tenants and DFW operated facilities
- Recycling programs focus on cardboard, paper, and metal
- Collect approximately 40,000 tons per year
 - 30% Diversion Rate

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SUSTAINABILITY MANAGEMENT PLAN DEVELOPMENT PROCESS





A word cloud centered around the theme of corporate responsibility and sustainability. The words are arranged in a dense, overlapping manner, with some words being significantly larger than others. The colors of the words are primarily blue, green, and white. The words include:

- RECYCLE
- RENEWABLE
- EFFICIENT
- ENVIRONMENTAL
- RESPONSIBILITY
- RESILIENCY
- PLANNING
- PROFIT
- STEWARDSHIP
- INVESTING
- OPERATIONAL
- EARTH
- REUSE
- DURABILITY
- RESOURCES
- CONSERVE
- PLANET
- HEALTHY
- CONTINUOUS
- FINANCIAL
- ECONOMICAL
- REPURPOSE
- SUPPORTABLE
- PEOPLE
- GREEN
- JUSTIFIABLE
- LONG-TERM
- LASTING
- MEASURABLE
- TOMORROW
- ACCOUNTABILITY
- ENERGY-EFFICIENCY
- HOLISTIC
- AFFORDABLE
- PROFICIENCY
- ALTERNATIVE-ENERGY
- PRACTICAL
- BALANCE
- HARMONY
- MAINTAINABLE
- COST-EFFECTIVE
- PRESERVING
- COMMUNITY
- SOCIAL
- REUSE



FOCUS AREA DEFINITIONS

OPERATIONAL EXCELLENCE

PROCUREMENT



Enhance DFW's green procurement program and evaluate the supply chain for opportunities to reduce environmental, social and economic impacts

SUSTAINABLE INFRASTRUCTURE AND RESILIENCY



Advance the Green Building Standards, develop a sustainable infrastructure program for non-building projects and evaluate and improve infrastructure for climate change impacts

CUSTOMER SATISFACTION

COMMUNITY PARTNERSHIPS



Document and optimize DFW's contributions to community programs and quality of life

COMMUNICATION AND EDUCATION



Tell DFW's sustainability story, including their vision and achievements, and provide information to assist customers and employees to improve their sustainability thinking

EMPLOYEE ENGAGEMENT

EMPLOYEE PARTICIPATION



Facilitate employees becoming more active in identifying and implementing sustainability initiatives

LEADERSHIP



Continue to provide leadership in the area of sustainability by sharing lessons learned, participating in innovative technology development, and providing opportunities for employees to transfer their knowledge in global, national and local forums

COST COMPETITIVE

ASSET OPTIMIZATION



Explore how to increase the useful life and decrease lifecycle costs for equipment, specifically the fleet

ENERGY AND AIR



Investigate additional opportunities to reduce energy demand and optimize energy supply to bring DFW's energy program to the next level

BIODIVERSITY AND NATURAL ENVIRONMENT



Reduce impacts to natural areas and watersheds and promote biodiversity and preservation of protected lands

WATER



Decrease water use and improve and protect stormwater quality and control quantity

WASTE



Better understand recycling and waste reduction activities and identify opportunities for improvement

Four Key Results of the Strategic Plan



SUSTAINABILITY GOALS

[illegible]

GOAL: Optimize efficiency of fleet operations

KPI	Metric(s)	Baseline	Target
Fuel Efficiency	Miles Per Gallon (by department)	Admin = 17 mpg ETAM/ADE = 10.3 mpg DPS = 13.4 mpg OPS = 11.8 mpg Parking (bus) = 4.7 mpg Parking (admin) = 22.4 mpg	Admin = 25 mpg by 2015 ETAM/ADE = 15 mpg by 2015 DPS = 15 mpg by 2015 OPS = 13 mpg by 2015 Parking (bus) = 7 mpg by 2015 Parking (admin) = 25 mpg by 2015
	Cents/mile	Admin = \$0.14 ETAM/ADE = \$0.23 DPS = \$0.31 OPS = \$0.28 Parking (bus) = \$0.35 Parking (admin) = \$0.11	Admin = \$0.12/mile by 2018 ETAM/ADE = \$0.19/mile by 2018 DPS = \$0.27/mile by 2018 OPS = \$0.24/mile by 2018 Parking (bus) = \$0.30/mile by 2018 Parking (admin) = \$0.10/mile by 2018

Fleet Usage Baseline Data (2013)

User Group (Department)	Total Vehicle	Average Vehicle Age	Average Fuel Economy (MPG GGE)	Average Fuel Economy (Weighted) (MPG GGE)	Fuel Economy Optimization (FEO) Score	Total Miles 2013	Average Miles Per Vehicle 2013	Total Fuel Cost 2013	Total Maintenance Cost 2013	Total Fuel & Maint. Cost 2013	Average Maint. Cost Per Vehicle 2013	Average Fuel Cost Per Mile 2013	Average Maint. Cost Per Mile 2013	Average Fuel & Maint. Cost Per Mile 2013
OPERATIONS	18	4.4	12.3	11.8	44	457,797	25,433	\$ 128,198	\$ 64,652	\$ 192,850	\$ 3,592	\$ 0.28	\$ 0.14	\$ 0.42
CUSTOMER SVS	5	7.4	17.0	13.7	28	8,237	1,647	\$ 1,250	\$ 1,953	\$ 3,203	\$ 391	\$ 0.15	\$ 0.24	\$ 0.39
PUBLIC AFFAIRS	2	11.0	9.2	7.9	27	4,726	2,363	\$ 754	\$ 850	\$ 1,605	\$ 425	\$ 0.16	\$ 0.18	\$ 0.34
DPS	87	4.2	16.9	14.0	36	1,562,698	17,962	\$ 367,534	\$ 157,580	\$ 525,114	\$ 1,811	\$ 0.24	\$ 0.10	\$ 0.34
AIRPORT DEV	35	7.7	11.9	11.1	41	157,465	4,499	\$ 38,085	\$ 13,468	\$ 51,553	\$ 385	\$ 0.24	\$ 0.09	\$ 0.33
ASSET MGMT	12	9.8	13.7	11.9	39	47,489	3,957	\$ 6,870	\$ 7,600	\$ 14,470	\$ 633	\$ 0.14	\$ 0.16	\$ 0.30
HR	2	6.5	16.3	19.8	79	20,097	10,049	\$ 3,378	\$ 2,365	\$ 5,743	\$ 1,182	\$ 0.17	\$ 0.12	\$ 0.29
ETM	4	11.3	15.3	12.2	35	10,442	2,611	\$ 1,061	\$ 1,707	\$ 2,768	\$ 427	\$ 0.10	\$ 0.16	\$ 0.27
ADMIN	1	3.0	14.5	14.5	50	170	170	\$ 40	\$ -	\$ 40	\$ -	\$ 0.24	\$ -	\$ 0.24
PARKING	31	5.7	24.4	21.4	38	459,491	14,822	\$ 47,266	\$ 38,250	\$ 85,516	\$ 1,234	\$ 0.10	\$ 0.08	\$ 0.19
ENVIRONMENTAL	1	12.0	27.6	27.6	50	2,529	2,529	\$ 114	\$ 352	\$ 466	\$ 352	\$ 0.04	\$ 0.14	\$ 0.18
ITS	10	10.0	21.0	22.0	54	39,581	3,958	\$ 2,913	\$ 4,180	\$ 7,093	\$ 418	\$ 0.07	\$ 0.11	\$ 0.18
PROCUREMENT	1	11.0	28.2	28.2	50	1,819	1,819	\$ 80	\$ 90	\$ 169	\$ 90	\$ 0.04	\$ 0.05	\$ 0.09
Total	209	6.0	16.8	14.2	44	2,772,541	13,266	\$ 597,542	\$ 291,048	\$ 890,590	\$ 1,402	\$ 0.22	\$ 0.11	\$ 0.32

**So what lies
ahead?**



Lessons Learned

- Designate Decision Maker(s)
- Agreed Upon Roadmap
- Pre-work is Important (existing initiatives, data)
- Be Flexible (Change can be hard, but good)
- Establish KPI's prior to baseline
- Record baseline processes
- Don't underestimate Stakeholder engagement
- Engage the 'Doers'





A PATH FORWARD

Together with extensive stakeholder contributions, DFW evaluated the vision, goals, baseline, KPIs, and targets and looked at the entire sustainability program from a holistic viewpoint. Building on a solid foundation of sustainability planning and past progress, DFW selected near-term, medium-term and long-term initiatives and practices to achieve the goals and targets. A summary of the baseline data, targets and selected initiatives are shown below for each goal.

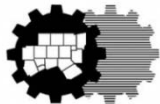
Partner Collaboration



American Airlines



City of Dallas



North Central Texas
Council of Governments



Thank You!



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