

# Memorandum



CITY OF DALLAS

DATE May 26, 2011

TO Honorable Mayor and Members of the City Council

SUBJECT **The Green Path from Trash to Treasure**

The City of Dallas has made remarkable strides in developing our environmental profile as a leading green city. On June 1, 2011, you will hear the attached briefing on the topic of fully utilizing the city's waste stream as an avenue for expanding our maturing green policies. It will show you how our waste stream can transition from "trash" to "valued resources".

This is one of those rare opportunities to both expand our environmental policy for the long term benefit of the community while garnering immediate benefit from the reuse of our resources. The Dallas waste stream is truly so valuable that it should not be left to others to exploit.

Attached are the briefing materials for your review.

Please let me know if you have any questions.

A handwritten signature in black ink, appearing to read 'Ryan S. Evans'.

Ryan S. Evans  
First Assistant City Manager

Attachment

C: Mary K. Suhm, City Manager  
Deborah A. Watkins, City Secretary  
Thomas P. Perkins, Jr., City Attorney  
Craig D. Kinton, City Auditor  
Judge C. Victor Lander, Administrative Judge  
Jill A. Jordan, P.E., Assistant City Manager  
A.C. Gonzalez, Assistant City Manager  
Forest E. Turner, Assistant City Manager  
Jeanne Chipperfield, Chief Financial Officer  
Mary Nix, Director, Sanitation Services  
Helena Stevens-Thompson, Assistant to the City Manager



# **The Green Path from Trash to Treasure**

**Briefing to City Council**

**June 1, 2011**

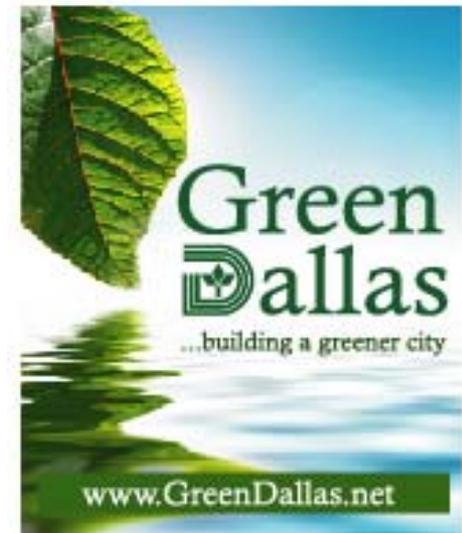
This page intentionally left blank

# Briefing contents

- Dallas' green initiatives
- Broaden our green policies into waste
  - Treating our trash as a *valued resource*
  - Making beneficial use and reuse of our solid waste resources
  - Preparing for new technology to replace landfilling
- Proposed ordinance for Council consideration

# Dallas is a green city

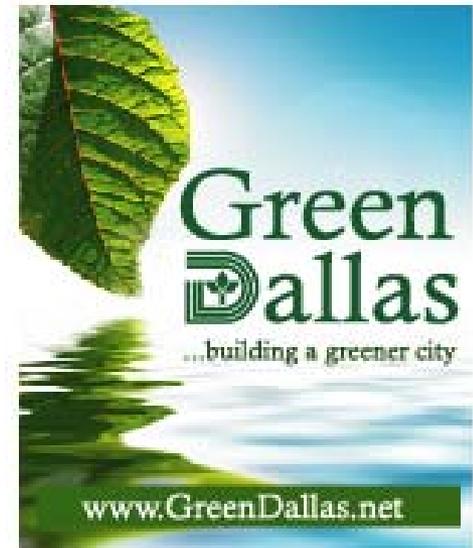
- **Council policies promote sustainability**
- **Our Green Accomplishments**
  - Dallas was the first city in nation with citywide ISO 14001 certification (environmental standards)
  - **We use 40% renewable power**
    - \$5.3m saved in energy costs
  - **Our fleet is 38% alternative-fueled**
  - **Water usage is down 35% since 1998**
  - **Recycling is up 136% since FY07**
    - Revenues of \$2.5m in FY10
  - **Landfill gas fuels 25,000 homes each year**
    - Over \$1.6m in royalties annually



# Dallas is a green city

## **Value gained** by maintaining sustainable focus

- **Cleaner environment**
- **Dallas as recognized leader**
- **People and businesses want to be here**
- **New revenue sources ... and savings**
- **Prudent resource management**



# The Evolving Story of Waste: The Past

1900

1925

1950

1975

2000

2025



**~ 20 years ago**

EPA modified federal regulations via Subtitle D (**1991**) of the Resource Conservation and Recovery Act of 1976 – creating standards still in place today.

**~ 30 years ago**

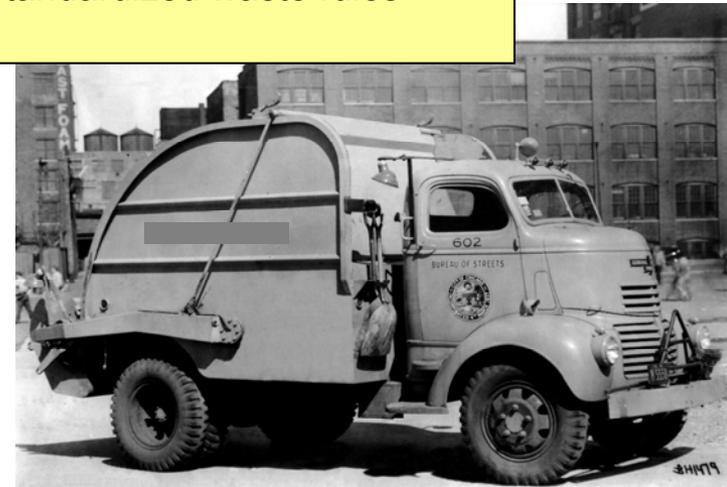
States passed laws requiring disposal facilities to be engineered, controlled, and monitored. Federal authorities standardized waste rules nationwide.

**~ 50 years ago**

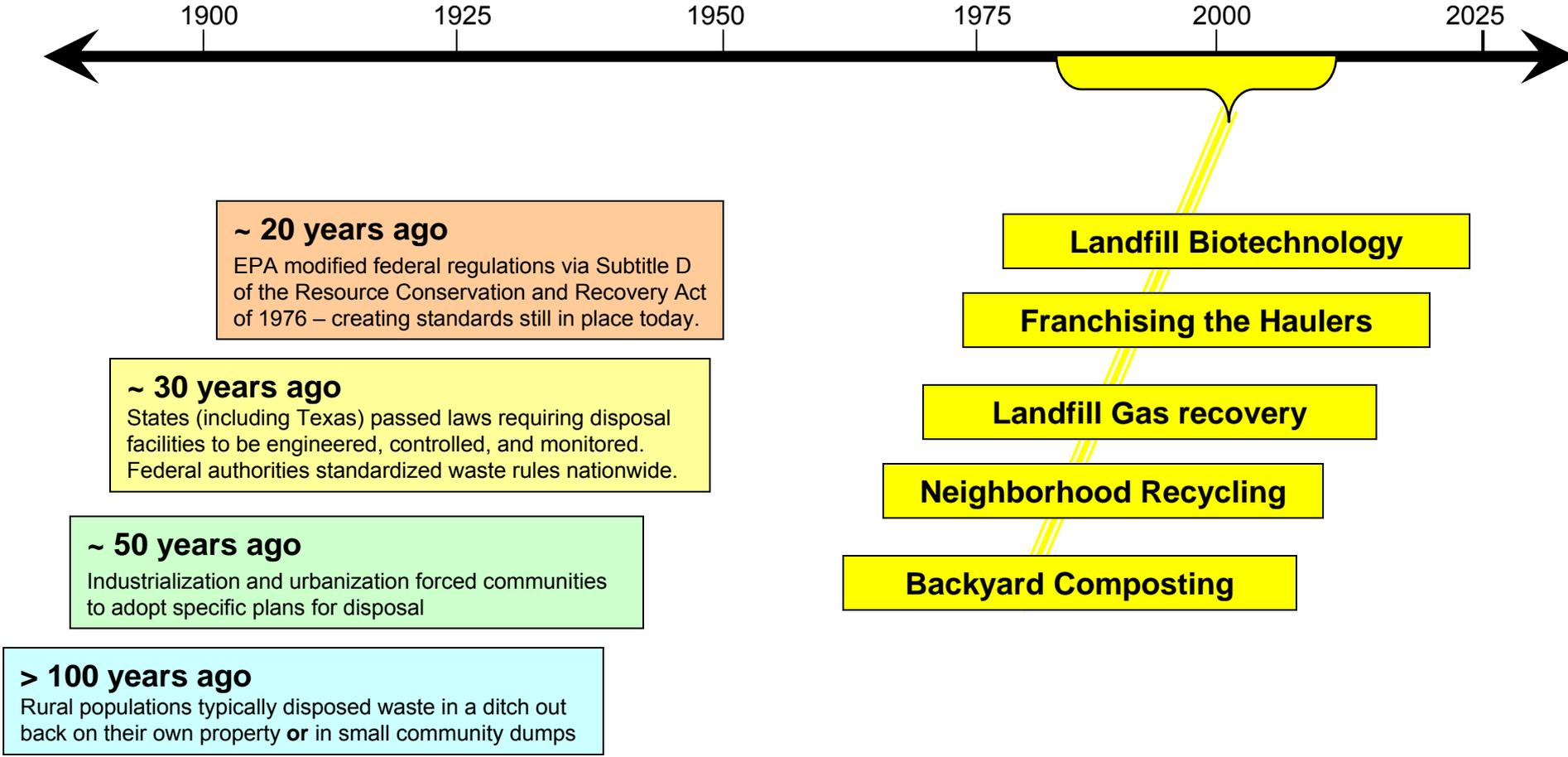
Industrialization and urbanization forced communities to adopt specific plans for disposal

**> 100 years ago**

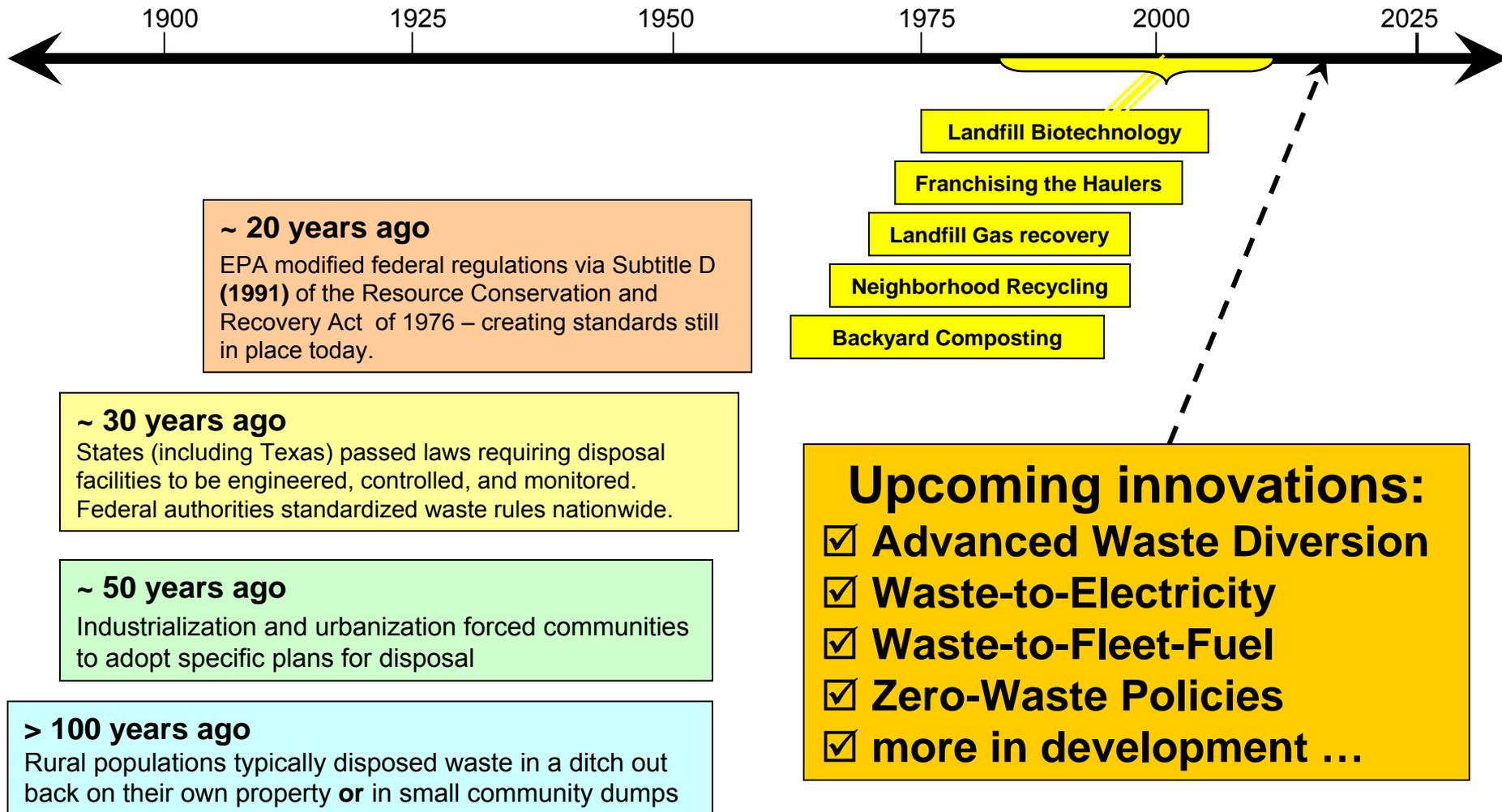
Rural populations typically disposed waste in a ditch out back on their own property **or** in small community dumps



# The Evolving Story of Waste: The Present



# The Evolving Story of Waste: The Future



# How Dallas manages its waste

- **Waste service is a fundamental City function**
  - Protection of public health and environment are paramount
- **Staying at the forefront of industry practices**
- **City's facility (McCommas Bluff) at cutting edge**
  - nationally-recognized for green initiatives
  - harvesting gas for re-use
  - alternate-fueled vehicles
  - diverting re-usable items



# How Dallas manages its waste

## **There are alternatives to our waste service practices**

### **– Keep all services in-house and city-operated**

- City could collect BOTH residential and business
- City could own and operate landfill and transfer sites
- City could manage recycling, composting facilities, and special wastes

### **– Privatize some or all services above**

### **– Preserve facility space**

- Use single-stream recycling in carts, bag, bins, drop-off sites
- Exclude non-Dallas waste from the landfill
- Utilize waste-compaction equipment; employ biotechnology practices

### **– Franchise waste haulers**

- Allow only one franchisee for all of city waste collection
- Issue multiple franchises, as open market policy

# How Dallas manages its waste

## Approaches that Dallas has explored:

### – Privatize the waste collection ?

- City collects all single-family residences
  - Tried privatizing in late 1980's – failed to meet customers' needs
  - City service ranks in "Top 5" in the **2009 Dallas Community Survey**
  - In case of contractor failure (i.e., poor service, contract dispute), City must rapidly rebuild staff and equipment to meet its obligations
- All business (including multi-family) are privatized, currently
- 189 private solid waste haulers are franchised
- Considered issuing just one "exclusive" franchise
  - Harmful to the open market – eliminates 188 Dallas hauling firms

# How Dallas manages its waste

## Alternatives that Dallas has considered:

### – Privatize the landfill, **NO!**

- Huge city asset
  - Secure, stable depository for decades to come
  - Value is more than \$1billion over its life – and increasing
- Privatize certain functions, **Yes!**
  - Equipment repair, construction projects, environmental monitoring

# How Dallas manages its waste

## **Alternatives that Dallas has considered:**

### **– Recycle select materials – or all**

- Selected “single-stream” recycling in blue roll carts
- Privatized the sorting and processing
- Progressively adding more to the “recyclable” list
- Expanded E-wastes and “household hazardous” materials
- Multi-family recycling through drop-off and pilot programs

**Dallas’ choices for managing the waste stream look beyond the immediate benefits and consider the long-term value to the community**

# The future

- More changes coming – and fast
- Stronger focus on **sustainability**
- Trash is seen as a valued **resource**
- Emerging technologies are creating alternative uses
  - Energy
  - Fuels
  - Reusable products
- Each waste item has value
- Landfills become obsolete



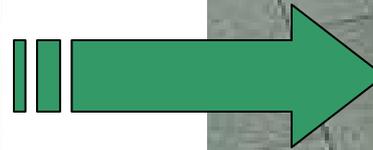
# We're ready

- Already keeping pace with progressive practices
- Here's three ways .....

## Promotes recycling and reuse of "resources"

1

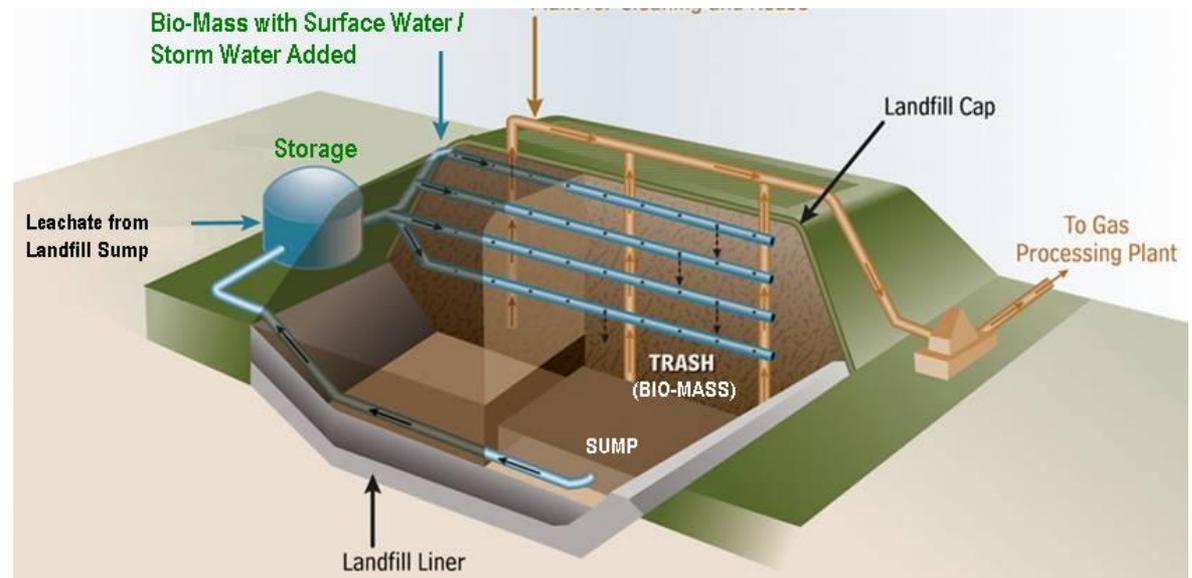
- 136,250 tons diverted FY10
- Old pavement
- Tree limbs & brush
- Scrap tires



# We're ready

- Already keeping pace with progressive practices
  - Applies biotechnology practices
    - Accelerates trash decomposition
    - Creates additional waste space

2



# We're ready

- **Already keeping pace with progressive practices**
  - **Generates “green energy” from landfill gas**
    - Protective of air quality
    - Provides fuel – sufficient to heat 25,000 homes each year
    - FY10 royalty of \$1.6m

3



# Preparing for the future

## Landfill has an ample capacity

- Current life is **45 years** remaining
- Additional **47 years\*** available bringing the total to 92years

**Technology** (now and future) **will make good use of the resource stream – and leave landfill space unused**

- \* **Biotechnology = 10 years**  
**New landfill space = 37 years**



# Landfill will take on new meaning

- Become “**Resource Recovery Facilities**”
  - Materials arrive are sorted, and baled
  - Baled materials marketed and sold
  - Some items will be processed in the facility to become a renewable energy source

# Preparing for the future

- **Use facility as a *storage vault***
  - Today's "wastes" are future resources
  - Capture and store these resources ***now***
  - ***Later***, recover and use ...as new technologies evolve
  - Future value may be quite extraordinary



# Preparing for the future

## Make good use of the “vault”

- Stockpile today’s resources – we have the space
- Hold for future uses, such as:
  - Waste-to-electricity projects
  - Waste-to-fuel facilities
  - Advanced recycling / re-use opportunities

## Simple to do:

- Half of Dallas’ resource stream is flowing OUT of the city – don’t let it go !
- Use ordinance authority to direct all Dallas waste resources to McCommas Bluff/Bachman Transfer Station

# Here's where our resources go now

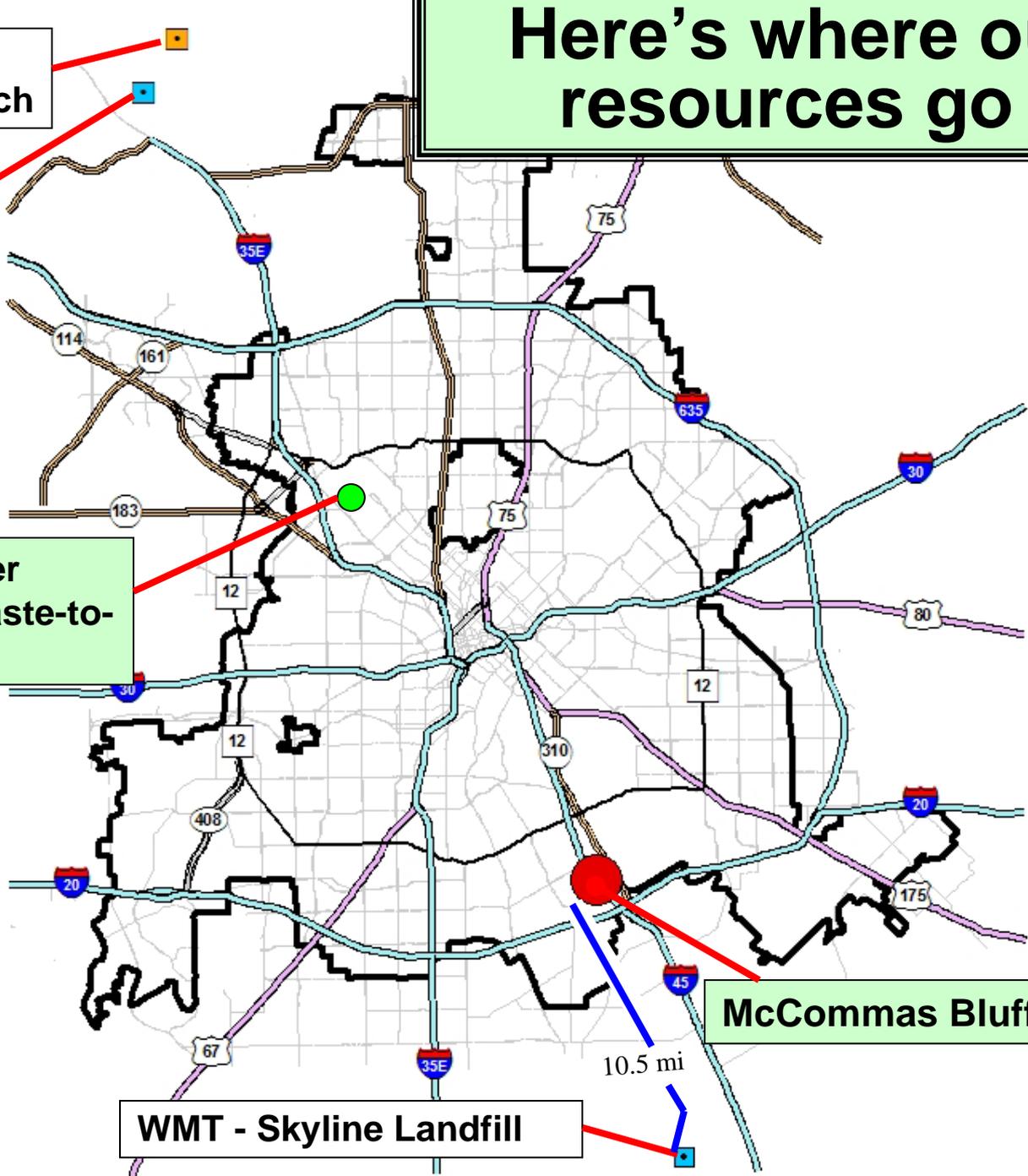
Republic –  
Farmers Branch

WMT –  
DFW Landfill

Bachman Transfer  
Station/future Waste-to-  
Energy Facility

McCommas Bluff Landfill

WMT - Skyline Landfill



# New Resource Control Ordinance

also called “*waste flow control*” ordinance

- Adopting a Resource Control ordinance means that all who collect waste within Dallas must use city facilities (i.e., McCommas Bluff landfill, transfer sites)
- About half of these **resources** are going to landfills OUTSIDE of Dallas
- New ordinance redirects the **resources** from haulers – from 1.0m tons per year to 1.9m tons/year
- **We have the obligation** to manage our solid waste materials
  - Protecting the public health and the environment
  - Maximizing all city assets to community benefit – getting the recycling and energy value from the waste resource
- **U.S. Supreme Court** reinforced this in a 2007 decision



# Financial Impacts

- **Operational**
  - **\$5m** in first year, decreasing to \$3m per year thereafter
  - Needed for:
    - equipment, manpower, infrastructure improvements, environmental monitoring, TCEQ permit changes, legal
- **Revenue**
  - 850,000 more tons annually – nearly double current rate
  - Equates to **\$18m** in additional annual revenue  
(or **\$15m** – with a Jan 2012 start date)
- **Net financial impact = \$13m to \$15m annually**

# How other cities direct the waste

- **Two primary methods** - each has benefits and challenges that may appeal or deter various communities
  - **Waste flow control ordinance**
  - **Exclusive franchise agreement**

# How other cities direct the waste

## ***Waste Control ordinance:***

**In Texas: El Paso passed ordinance in 2010 to be implemented in FY13**

### **Nationally:**

- Jacksonville, FL
- Seattle, WA
- Palm Beach Co, FL
- Snomish County, WA
- San Jose, CA
- Urbana, IL,
- Portland, OR (metro)
- Lancaster County, PA.
- Franklin Co, OH

## ***Exclusive franchise agreements:***

- Arlington, Grand Prairie, NTMWD, College Station
- Allows only one hauler – eliminating all others
- In meetings with staff, haulers voice strong opposition with this concept

# Options to consider

## Continue with current approach

- Others capitalize on Dallas' resources
- City then less able to implement new technologies

## Take control of our useful resources

- By pursuing an exclusive franchise
  - Does gain control over resources
  - Eliminates 188 waste haulers in Dallas' open market

## OR

- Adopt new Resource Control ordinance

# Summary

- “Waste” is a valuable resource
- Great opportunities emerging to turn trash into energy and fuel
- City can capitalize on the resources – for both immediate and long-term benefit
- Or leave it to others to utilize them



# Recommendation

- **Proceed with:**
  - Completing *resource control* ordinance for Council review
  - Anticipate a 2012 implementation date
- **Prepare the affected community**
  - Continue meeting with solid waste haulers and stakeholders
  - Collaborate to resolve concerns
- **Prepare facility to accept new resources**

# APPENDIX

## Supplementary Information

# *Resource Control Ordinance:* Basic Points

- All solid waste generated within city limits must be disposed at city owned or operated facilities
- Director has the authority to designate disposal sites
  - **Includes landfill and transfer stations**
- Haulers commit offense if they deposit anywhere else
- City (via SAN director) may curtail, temporarily suspend, or permanently halt any disposal violators of the ordinance
- Effective date of ordinance will allow for haulers to resolve contract matters with customers

# Industry's view of the future

## April 2011 Green Brainstorms conference

*Fortune* teamed up with its program partners—The Nature Conservancy, NRDC, and the Environmental Defense Fund—to gather "the smartest people we know" in sustainability from business, government, and NGOs. This session focused on the key emerging environmental trends as well as innovative ways that companies can drive sustainability-based transformational change initiatives.

- **LAGUNA NIGUEL, CALIF.** - At the Fortune: GREEN Brainstorm kickoff Monday, Waste Management **(WM) CEO David Steiner** brought an intriguing case to light: Increasingly, **waste companies are finding more and more valuable uses for our garbage**. Steiner says that with the additional value that WM is able to pull from ordinary household trash over its competitors, one day consumers may just get paid for their waste. **"If we can extract \$100 to \$200 of value out of a ton of material, we can start paying the customers,"** he says. "It is a once-in-a-lifetime opportunity. Four years ago years ago, you wouldn't have heard those words come out of my mouth"
- Hear all of the conference on: <http://www.fortuneconferences.com/brainstormgreen/>

# Industry's view of the future

From the ***New York Times***, April 12, 2010:

## **Europe Finds Clean Energy in Trash, but U.S. Lags**

“...With all these innovations, Denmark now regards garbage as a clean alternative fuel rather than a smelly, unsightly problem. And the incinerators, known as waste-to-energy plants, have acquired considerable cachet as communities like Horsholm vie to have them built...”

# Industry's view of the future

*MSW Management magazine* – June 2006

## **“The Time Has Come For Conversion Technologies”**

For as long as civilizations have generated solid wastes, the accepted disposal method has been landfilling—despite advancements in technology and environmental impacts to air and water. In Europe and Japan, new processes for treating MSW, called “conversion technologies,” are being widely implemented. Many of these facilities are in operation, and others are under construction. Conversion technologies use advanced thermal, biological, or chemical processes to convert the carbon-based portion of the MSW stream into useful products, including electricity, renewable or “green” fuels, or chemicals.

### **Conversion Technologies 101**

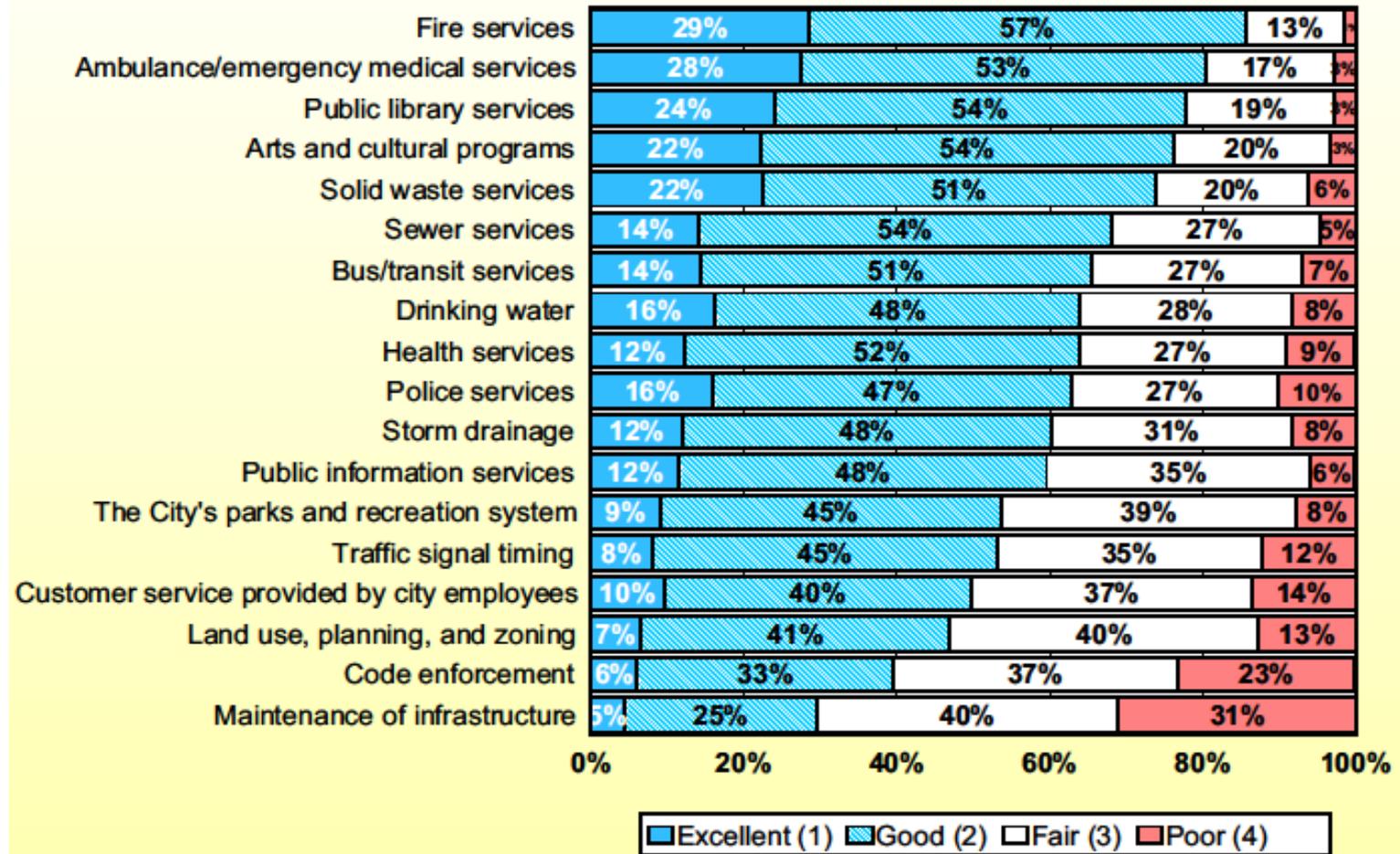
Conversion technologies (CTs) include a wide range of processes that can be categorized into thermal, biological, and chemical technologies (some approaches involve combinations of these). Thermal CTs are well developed overseas, and include gasification, pyrolysis, and subsets of these, such as plasma gasification and processes that combine gasification and pyrolysis.

**Pyrolysis** is the thermal degradation of organic materials, using an indirect source of heat at 750-1,650 degrees F in the absence of oxygen, to produce a synthetic gas, leaving behind a carbon char.

**Gasification** is the thermal conversion of organic materials, using direct heat at 1,400-2,500 degrees F with a limited supply of oxygen, producing a syngas.

## Q7. Ratings of Major Categories of City Services

by percentage of respondents who rated the item as a 1 to 4 on a 4-point scale (excluding don't knows)



Source: ETC Institute (February 2009)

ETC Insitute (2009)