Memorandum

CITY OF DALLAS

DATE January 7, 2010

TO Honorable Members of the Quality of Life Committee: Pauline Medrano (Chair), Vonciel Jones Hill (Vice Chair), Carolyn R. Davis, Angela Hunt, Sheffie Kadane, David A. Neumann, Steve Salazar

SUBJECT McCommas Bluff Landfill

On Monday, January 11, 2010, you will be briefed on the McCommas Bluff Landfill. The briefing material is attached for your review.

If you have questions or need additional information, please let me know.

Ryan S. Evans
First Assistant City Manager

cc: Honorable Mayor and Members of the City Council
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 Municipal Court
Forest E. Turner, Assistant City Manager
A.C. Gonzalez, Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
David K. Cook, Chief Financial Officer
Frank Librio, Public Information Office
Helena Stevens-Thompson, Assistant to the City Manager

McCommas Bluff Landfill

Briefing for:

Quality of Life Committee

11 January 2010

Ron Smith, SAN Assistant Director

Key Focus Area

Efficient, Effective, Economical Government

McCommas Bluff Landfill

The landfill is a valuable city asset that meets a basic need of our citizens – the **safe** and **efficient** disposal of solid waste.

It is a large, on-going and developing site, well-planned and operated to last for many decades – possibly as long as Dallas needs disposal space.

This briefing will tell the story of how this landfill came to be, how we operate it, and where we’re going in the future with it … starting with a little history of waste disposal.

How We Got Here:

Waste disposal history in the U.S.

1900 1925 1950 1975 2000

> 100 years ago
Rural populations typically disposed waste in a ditch out back on their own property **or** in small community dumps

~ 50 years ago
Industrialization and urbanization forced communities to adopt specific plans for disposal

~ 30 years ago
States (including Texas) passed laws requiring disposal facilities to be engineered, controlled, and monitored.
Federal authorities standardized waste rules nationwide.

~ 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.

How We Got Here:

Waste disposal history *in Dallas*

1900 1925 1950 1975 2000

> 100 years ago
Little known about this period in Dallas' disposal history

~ 50 years ago
City used many small landfills owned by others -- usually with short-term agreements

~ 30 years ago
City recognized need for long-range planning to ensure waste disposal capacity for residents; sought a site suitable for 50-year usage.

Today
McCommas Bluff Landfill, nearing 30 years of operation, is a premiere landfill in the state and nation

How We Got Here:

The McCommas Bluff timeline

1970 1972 1974 1976 1978 1980 1982

Early 1970s: Planning
Long-range planning identifies need for landfill - site to be within Dallas, near highways and rail, large and zoned for use.

1973 - Acquisition
Begin land purchases; prepare first designs

1974-80: Submit and receive PERMITS
- State-issued Solid Waste Operations Permit, and
- Corps-issued Levee Construction Permit

1980: Build it
Complete levee construction. Excavate first waste cell and build liner system; construct roads, drainage features, weigh station. Open for waste acceptance.

1980 – 2009: Operations
Accept up to 2 million tons of waste annually

How We Got Here:

A landfill is not a “dump”

What makes a landfill different ?

Planning:

Landfills require long-range planning (similar to airports and & water supply)

Site selection, zoning, property acquisition are among the tasks requiring 3-10 years

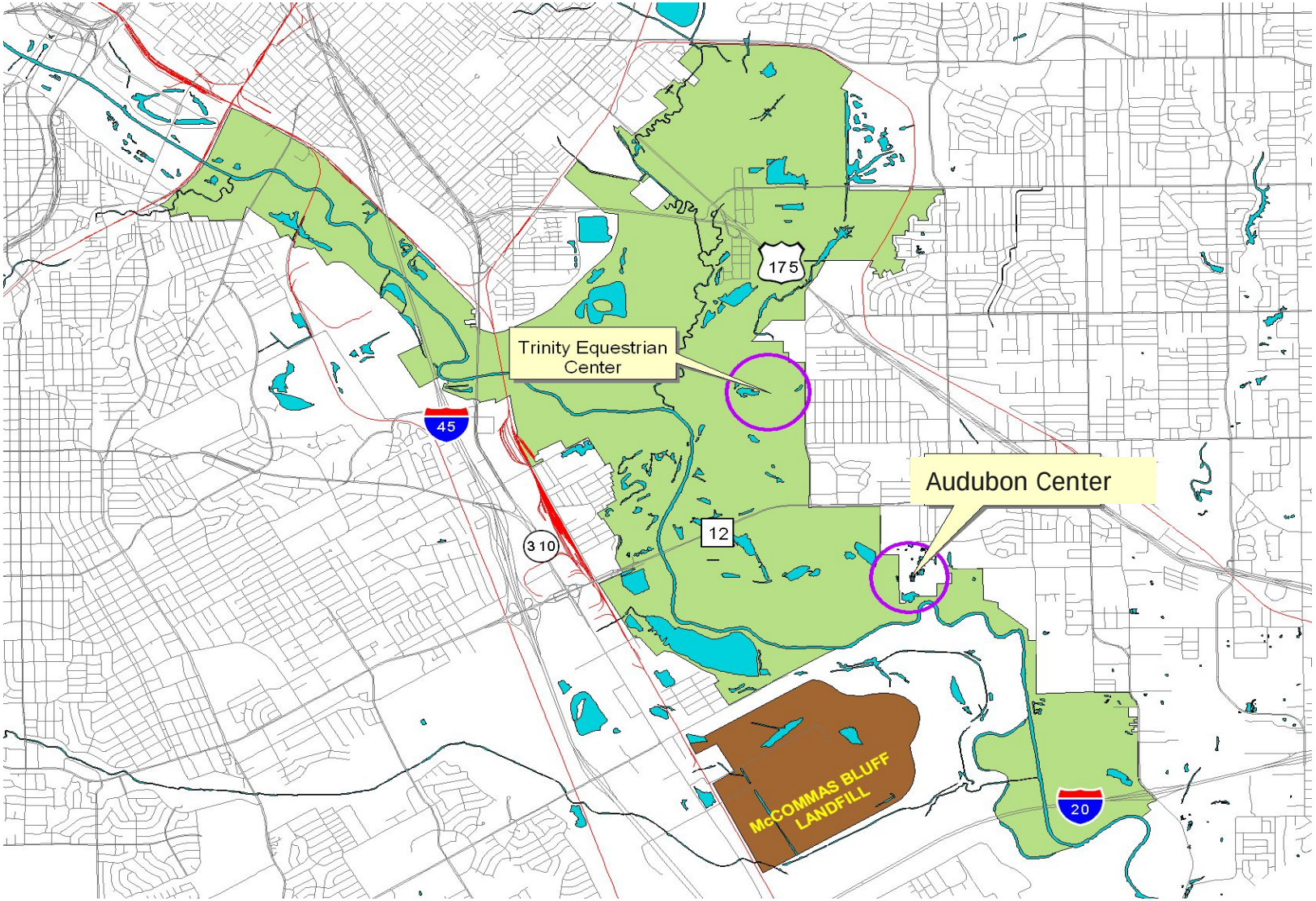
Engineering:

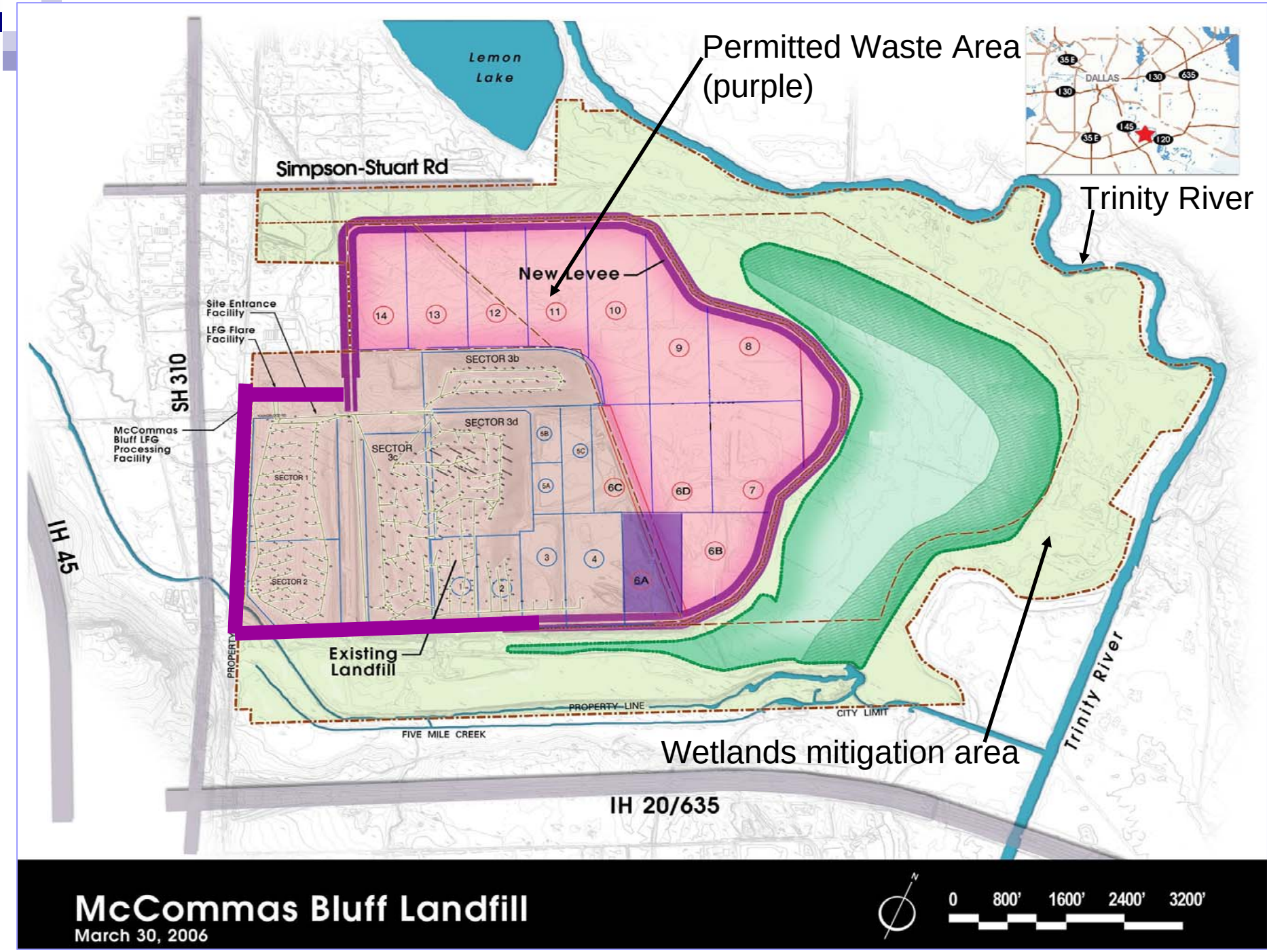
A landfill is an engineered facility – essentially, it’s one large Public Works project that spans decades of design, construction and operations … building a series of waste cells, roads, drainage features, slopes and berms, pump systems, and so on

Rules:

Landfills must adhere to strict federal, state, and local solid waste rules and protocols; must conduct rigorous environmental monitoring tasks to maintain compliance, must pay significant fees to state agencies who verify proper operations

McCommas Bluff Landfill in the Trinity Corridor




Permitted Waste Area (purple)
Trinity River
Lemon Lake
Simpson-Stuart Rd
New Levee
Site Entrance Facility
LFG Flare Facility
McCommas Bluff LFG Processing Facility
SH 310
IH 45
SECTOR 3b
SECTOR 3d
SECTOR 3c
SECTOR 1
SECTOR 2
Existing Landfill
PROPERTY
PROPERTY LINE
CITY LIMIT
FIVE MILE CREEK
Wetlands mitigation area
Trinity River
IH 20/635
DALLAS
McCommas Bluff Landfill
March 30, 2006
0 800' 1600' 2400' 3200'

What We Do Here:

Waste Disposal for our Residents

The <u>primary</u> <u>purpose</u> is to serve the disposal needs of Dallas residents:

- Residents generate about 600,000 tons of waste annually
- Landfill capacity can serve just that need for **120 years**
- New technologies should replace landfills within 50 years
- McCommas' surplus capacity can provide much needed disposal capacity for commercial customers
- So … we use what we can and sell the rest !

What We Do Here:

Waste Disposal for Others

The <u>secondary</u> <u>purpose</u> is to serve any other disposal needs, as a business venture

- Commercial waste haulers need landfill disposal space
- Dallas fulfills commercial demand with surplus capacity

- FY09 usage from commercial haulers: 1.1M tons
- City balances commercial usage with residential needs – using an annual capacity review and evaluation
- Landfill revenues contribute to Dallas' financial stability
- Everybody wins!

What We Do Here:

Reuse and Recycle

Waste Diversion: Recycle it !

- **Concrete:** diverted, crushed, and reused **(25,000 tons per year)**
  - *Reuse as gravel substitute for landfill haul roads*
- **Brush:** diverted, ground, and reused **(15,000 tons per year)**
  - *Reuse as slope protection and wet-weather platform base*
- **Old Tires**: diverted to vendor **(500 tons per year)**
  - *Reuse as aggregate for biotech fluid dispersion system*
- **Glass, Plastic, Metals:** diverted to processor **(100 tons per year)**

Beneficial Reuse: Use it a second time !

- **Asphalt:** from street re-surfacing projects **(7,000 tons per year)**
  - *Reuse as gravel substitute for landfill haul roads*
- **Clean Soil:** from various contractor sources **(16,000 tons per year)**
  - *Reuse as soil cover, berms, haul road base*

What We Do Here:

Energy Recovery

Landfill Gas as a Renewable Energy

Dec 1994: City signs 30-year lease with EcoGas

Mid-1996: Initial gas wells installed, flare utilized

(well-field and flare cost: $2.0M)

Jun 1998: Gas plant constructed to process gas

(plant financed using private funds at $14.0M)

Today's Status

- *Dallas Clean Energy* is current lessee
- **5 million cubic feet** of landfill gas collected each day
  - Plans to triple that volume by 2014
- Gas plant "cleans" the gas and sells at market – a quantity that could heat 35,000 homes annually
- Dallas receives royalty on sales - $1.2M annually, starting Dec 2008

What It Costs/Earns:

Landfill's FY10 Budget Summary

Expenses

Item	Expense
Labor	$5.6 M
Equipment & Supplies	$7.5 M
Utilities, Fees, etc.	$4.6 M
Total:	**$17.7 M**

Revenues

Source	Revenue
Commercial Hauler Fees	$23.5 M
Commercial Hauler Franchises	$2.5 M
Residents' Monthly Bills	**$5.8 M**
Landfill Gas Sales	$1.2 M
Total:	**$33.0 M**

Net Contribution to General Fund

$15.3 M

Portion of the residents' monthly Sanitation fee allocated to dispose of residential waste

What It Costs/*Earns*:

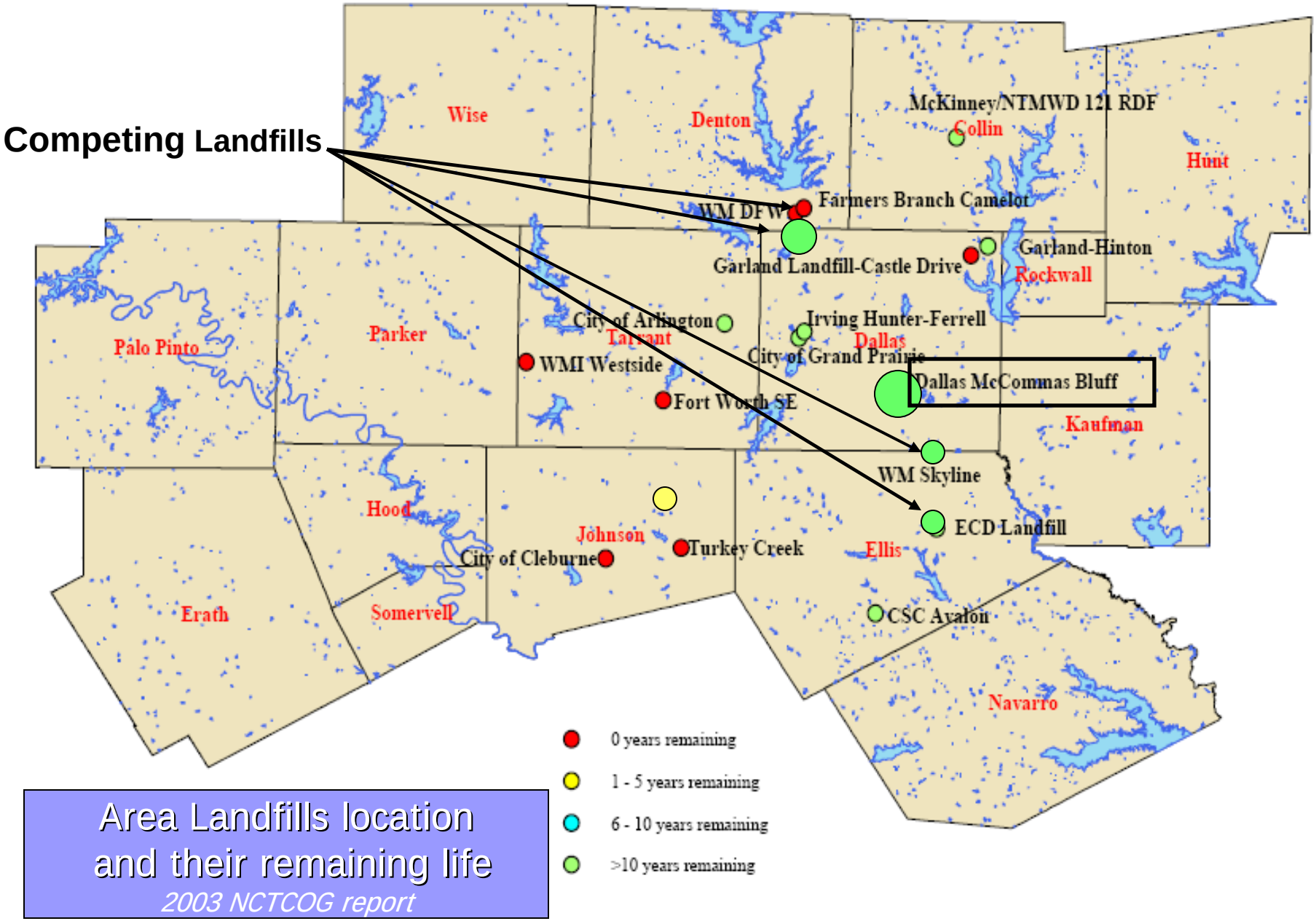
Landfill Market Analysis

- McCommas Bluff's ***secondary*** purpose – meet the needs of Dallas' commercial haulers, as a business venture
- Price the commodity (landfill waste space) based on market analysis
- Recognize that DFW area has ample waste capacity for the next 10 years – then dwindling capacity thereafter

Landfills with Competitive Range

Site	Operator	Fee * (per ton)	Annual Tons	Est'd Life (years)
McCommas Bluff	City of Dallas	$ 21.00	1,750,000	47
Skyline	Waste Mgmt	$ 29.73	1,000,000	25
DFW Lewisville	Waste Mgmt	$ 23.50	1,400,000	11
Farmers Branch	Republic Waste	$ 25.50	350,000	14
121 Regional	Republic Waste	$ 31.00	650,000	102
Hinton	City of Garland	$ 35.00	450,000	39
Grand Prairie	City of Grand Prairie	$ 36.00	200,000	35
Hunter Ferrell	City of Irving	$ 40.00	175,000	44
ECD (Ellis County)	Republic Waste	$ 24.00	130,000	230

* Highlighted fees indicate that Operator offers discounts (up to 30%)

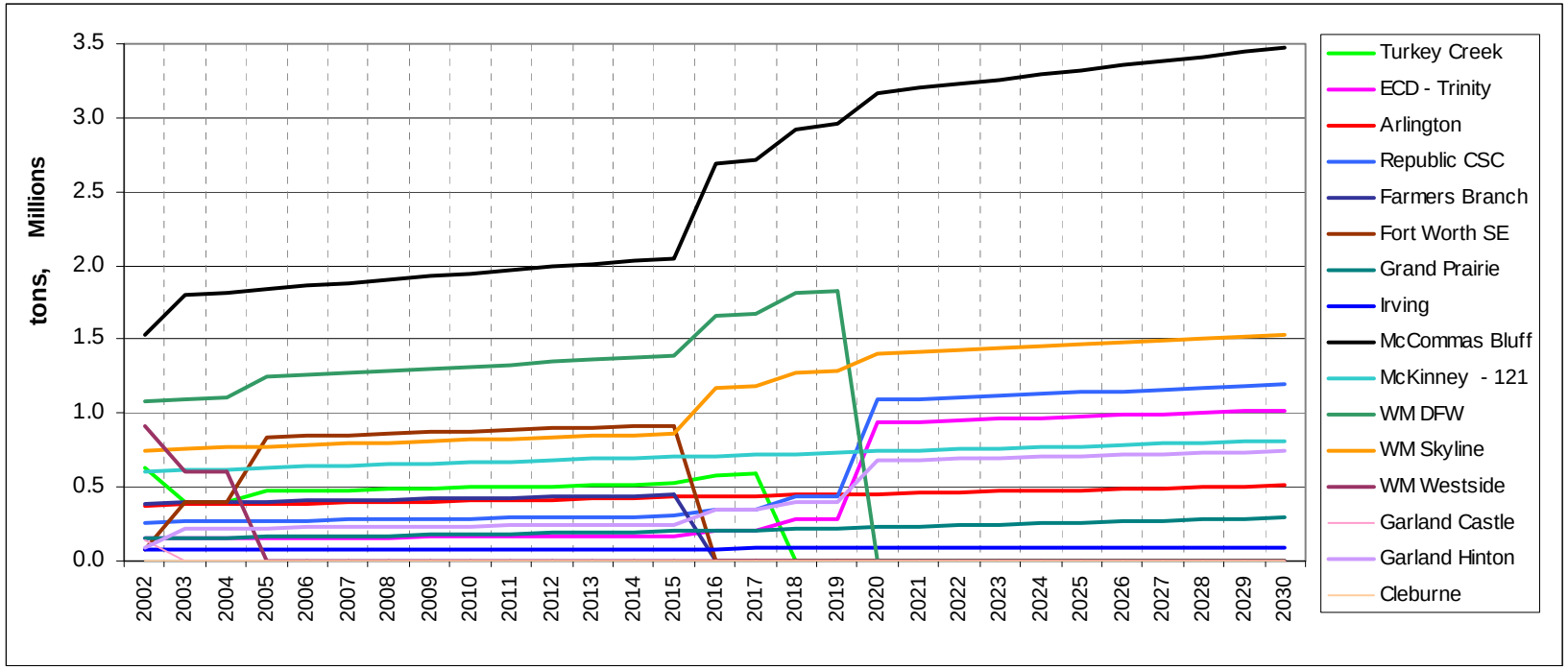


Area Landfills location and their remaining life

2003 NCTCOG report

What It Costs/Earns:

Landfill Market Analysis



According to a NCTCOG study conducted in 2003, McCommas' capacity will be essential to meet the DFW area's waste disposal needs for the long-term.

What It Costs/***Earns***:

Landfill Revenues

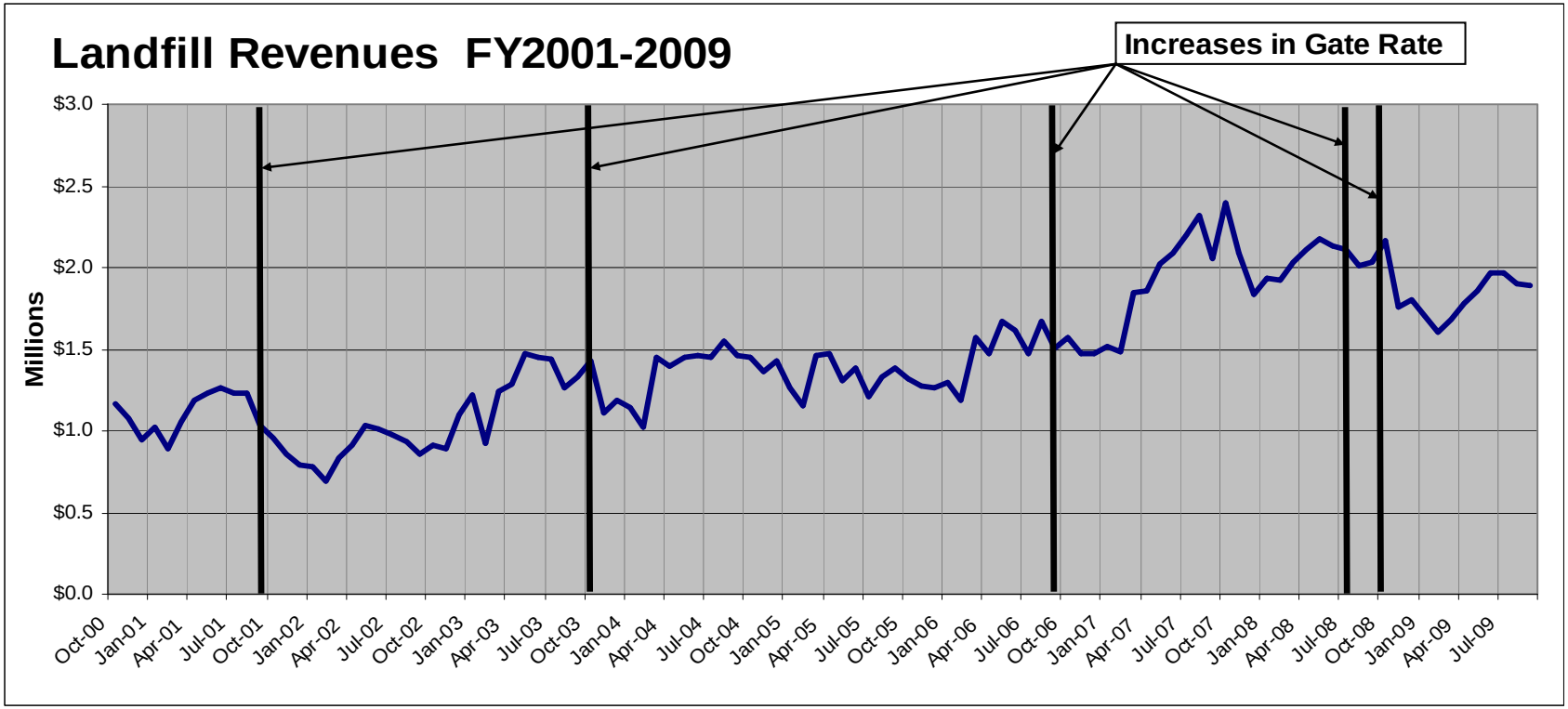
- Dallas area disposal rates: $15 and above
  - Most cities raise the fee to conserve landfill capacity
  - Some rates up to $40/ton

- McCommas' Gate Rate: **$21 / ton**
  - Ample capacity at this site
  - Competing landfills charge $15-$28
  - Dallas offers volume discounts via **disposal contracts**
    - Discount based on quantity and contract period
    - Rates range from $17.**16** to $18.**43** under contracts
    - Keeps revenue stream more predictable
    - 29% of commercial tonnage under contract

What It Costs/***Earns***:

Landfill Revenues

- Changing the landfill fee
  - Highly competitive marketplace
  - Four landfills within 30 miles of McCommas
  - Haulers switch from one site to another easily
  - McCommas advantages:
    - Readily accessible location
    - Well-managed site
    - Broad hours of operation
- Sensitivity of rate changes
  - McCommas acts as pricing anchor
  - Rate increase sets off loss of customer
  - Other sites adjust prices upward, subsequently
  - **Market-share recovery requires 6 months or so**



Notes:

1) Following a gate rate increase, landfill revenues fall for 4-6 months. Recovery to the previous revenue level requires as much as a year, depending on the local economy.

2) Other landfills respond to McCommas' rate increases by attracting commercial haulers with unchanged rates, and seek extended agreements to keep the revenue stream.

3) The City should secure more the commercial waste stream through disposal contracts (now at 29%) before hiking the gate rate.

Franchise Fees as a Revenue Source

- Prior to the franchise system the city utilized individual vehicle and container permits.
  - Proved to be labor intensive
  - Very time consuming to manage
- Transitioned to a Franchise system for all solid waste haulers January 2007
  - More efficient
  - More revenue

Franchise Fees

- Background
  - Change from “permit system” to “franchises” for efficiency, better oversight of haulers, and increased revenue
  - Solid waste haulers operating in Dallas must have a franchise, effective 2007. Council awards individual franchises, with a term of 20 years plus four 5-year extensions (up to 40 years total)
- First franchises awarded in Jan 2007
  - 180 haulers now franchised; additional haulers awarded when identified and educated on the requirement
  - **$2.5M** in annual fees collected in FY09 (vs. $1.6M using permit system)
  - Many smaller haulers resisted the requirement
    - New system – needed to adjust bookkeeping and rates
    - Concerned about remaining competitive
- SAN arranged for Auditor to audit franchisees, beginning *after* the first year’s reports from haulers

Franchise Fees, cont'd

- Auditor followed up, as planned
  - Audited nine waste haulers
  - Representing 85% of revenue stream
- Auditor found:
  - Haulers tried to follow ordinance properly for reporting and paying fees
  - Seven underpaid; two overpaid
  - Discrepancies were resolved – and SAN invoiced and collected the unpaid balances
  - SAN and Auditor to continue audits to ensure accuracy of hauler payments to city

What the Future Holds:

Continuous improvement . . .

- Continue good stewardship of this valuable city resource
- Continue protecting the environment with prudent waste management

Innovate . . .

- Accelerate landfill gas production using Biotechnology techniques
- Increase recycling and diversion to retain surplus waste capacity for sale to commercial market
- Implement composting as additional diversion option
- Propose landfill capacity increase – for longer-term benefits to community

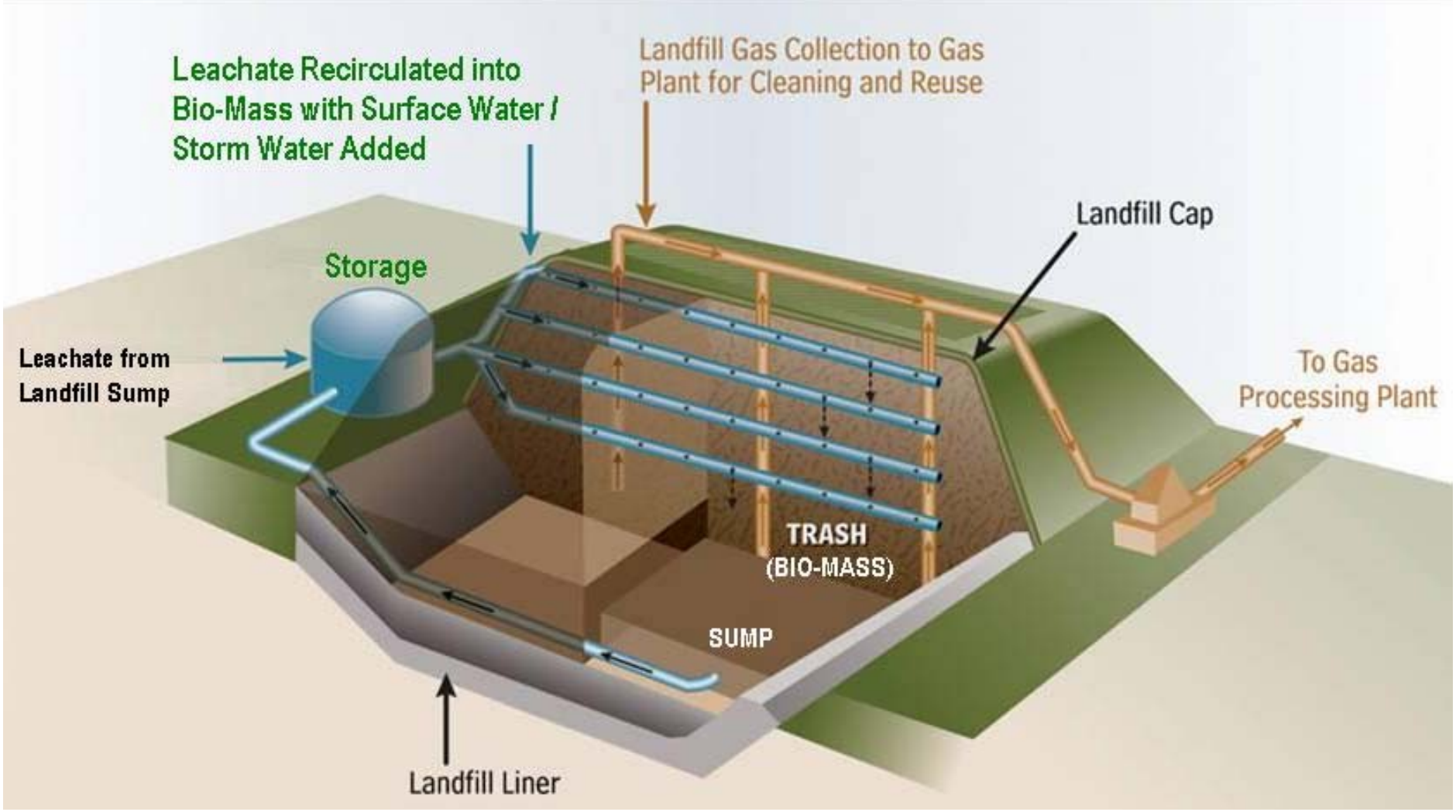
What the Future Holds:

Innovation……

Landfill Biotechnology

- A means to optimize landfill capacity and gas production
  - First in the state of Texas
  - Add liquids to the waste to accelerate decomposition
  - Results in faster settlement
    - Can re-use the same waste space
    - Reduces need for new cell construction ($4M every 2-3 years)
  - Accelerates gas production, generates gas royalties sooner
  - Becoming a model site for industry, researchers and regulators to gather and share information nationwide

What does Landfill Biotechnology look like?



Summary

- Landfill is a valuable asset because of its size, location and disposal capacity
- Landfill produces positive net revenue to General Fund of about $10M -15M annually
  - Revenue is primarily from commercial haulers who pay market-based rate
- New technology is generating “green energy” and valuable reclaimed capacity