NCTCOG Western Region Solid Waste Capacity Study

FEBRUARY 11, 2021

North Central Texas Council of Governments

AZ&B

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Serving Texas Since 1981

Keep Texas RECYCLING

AGENDA

1. Introductions
2. Needs Assessment findings
3. Alternatives Analysis Report

This study was funded through a solid waste management grant provided by TCEQ through NCTCOG. This funding does not necessarily indicate endorsement of the study's findings or recommendations.

Introductions

PROJECT TEAM

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Needs Assessment Results

QUANTIFYING NEEDS & RESOURCES

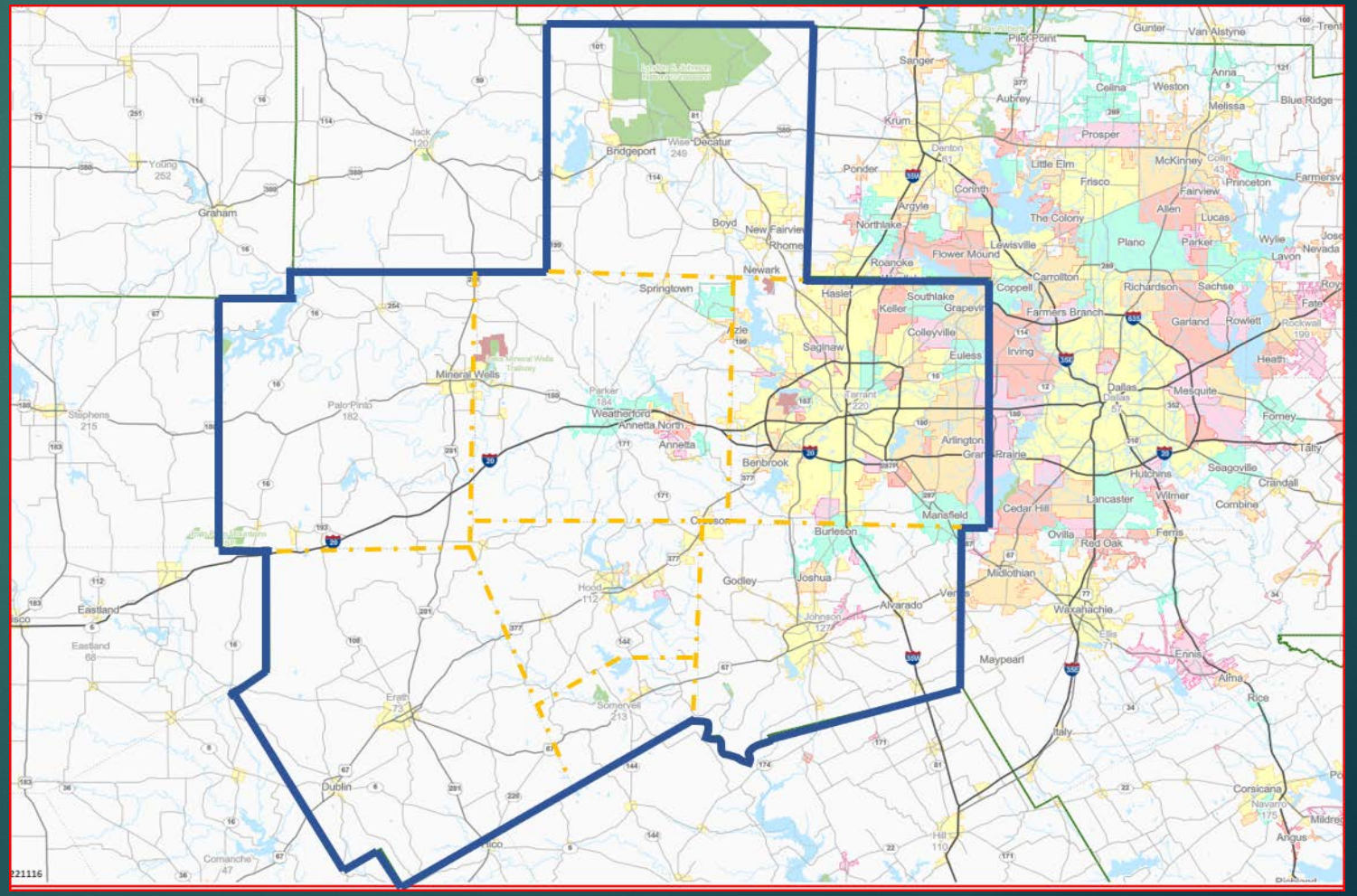
Needs Assessment Purpose

Understand	Understand waste generation patterns in the western region.
Identify	Identify sources of waste and factors that will influence future quantities of waste.
Identify	Identify resources available to the western region for meeting future needs.
Evaluate	Evaluate haul costs and options for more efficient transportation of waste.
Identify	Identify options for consideration.

The Needs Assessment includes a detailed analysis of waste generation and resources in the western region.

The western region covers 7000 square miles – 2.8 million people

- Erath
- Hood
- Johnson
- Palo Pinto
- Parker
- Somervell
- Tarrant
- Wise
- *City of Denton (participant, but not part of Western Region)*



Needs Assessment Report

Background
- Region
- Population
- Economic Activity

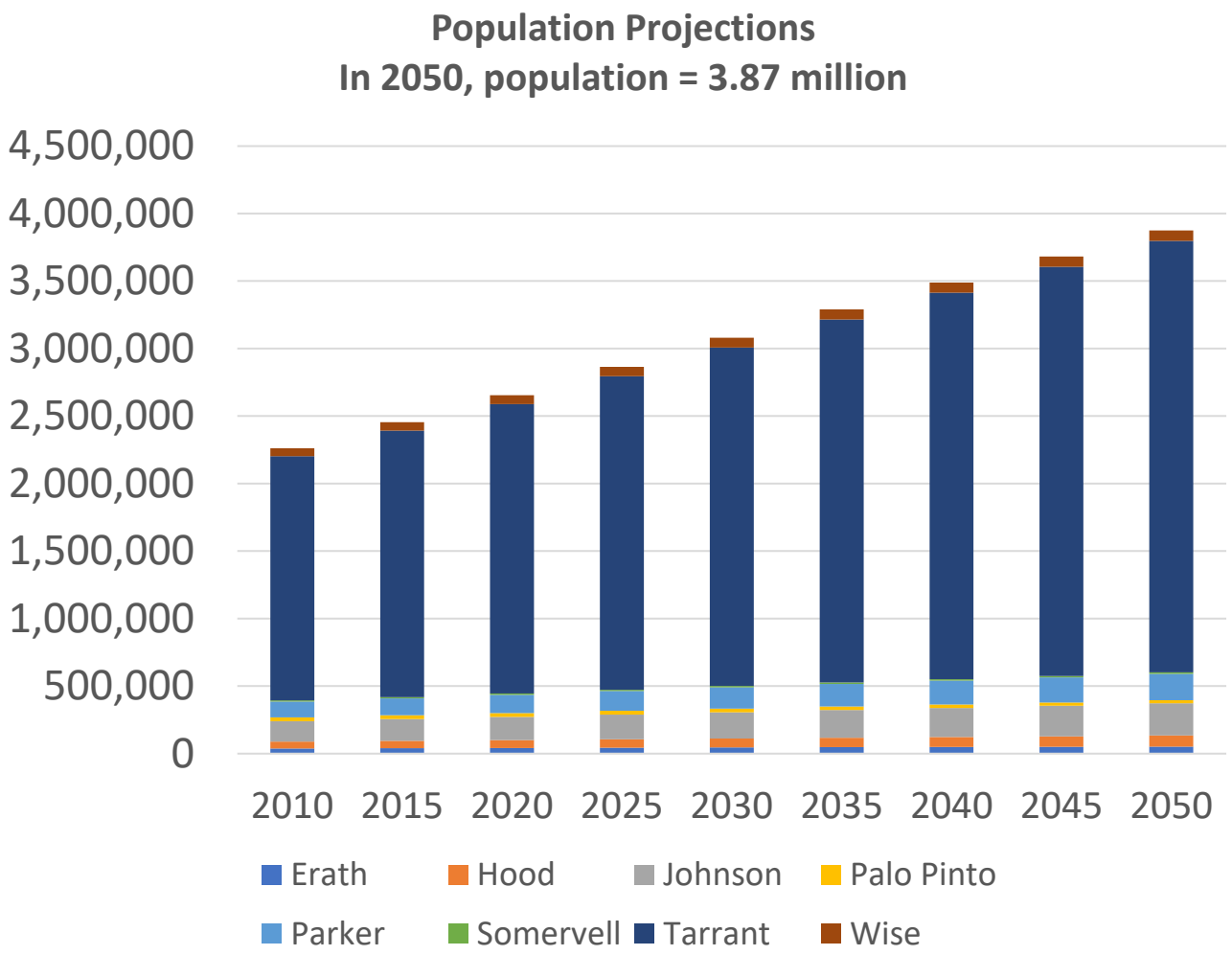
Waste Generation & Projections
- Sources of Waste by County & Sector
- Waste Projections

Available Resources
- Solid Waste Facilities
- Landfill Capacity Analysis

Current Solid Waste Programs
- Survey findings

Haul Cost Analysis
- Comparison of Direct vs Transfer Haul

Conclusions & Next Steps



Population Projections

The region is a mix of urban, suburban and rural areas, each with their own specific waste generation characteristics and needs.

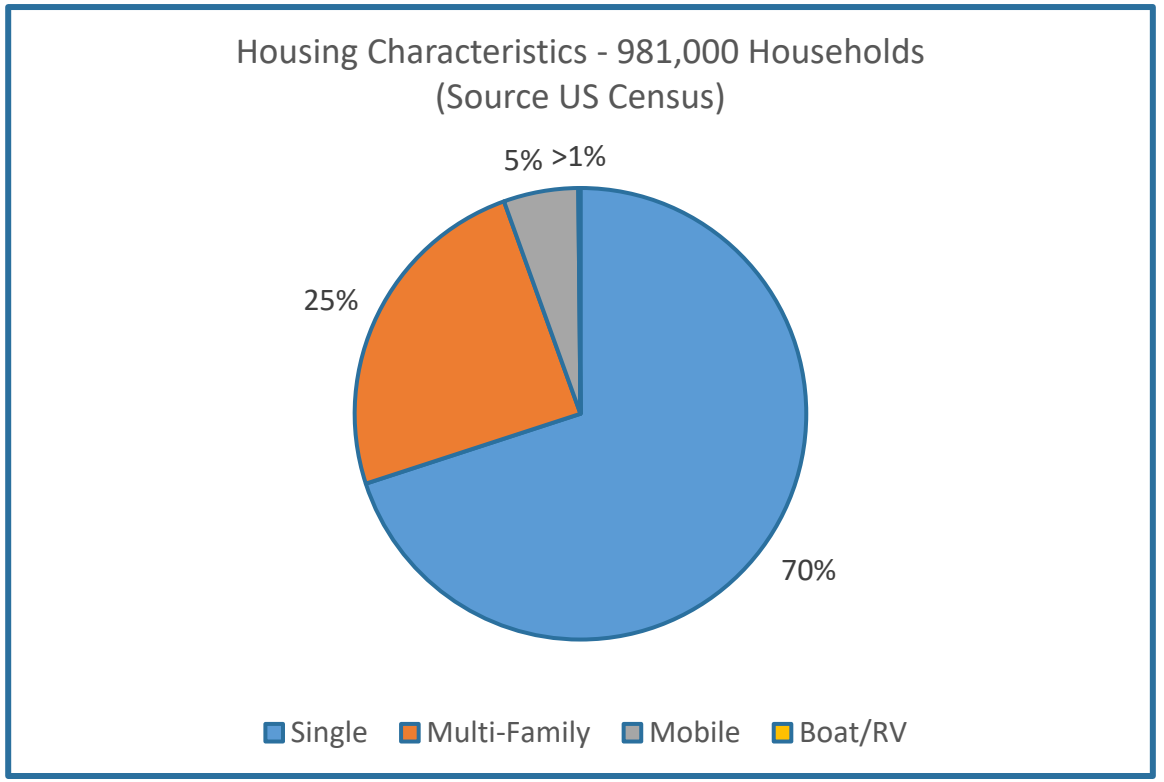
Source: Texas Demographic Center

Residential Waste Generation

Based on the Western Region Local Government Survey data, the region has an average single-family generation rate of 6.6 pounds per household per day (phd).

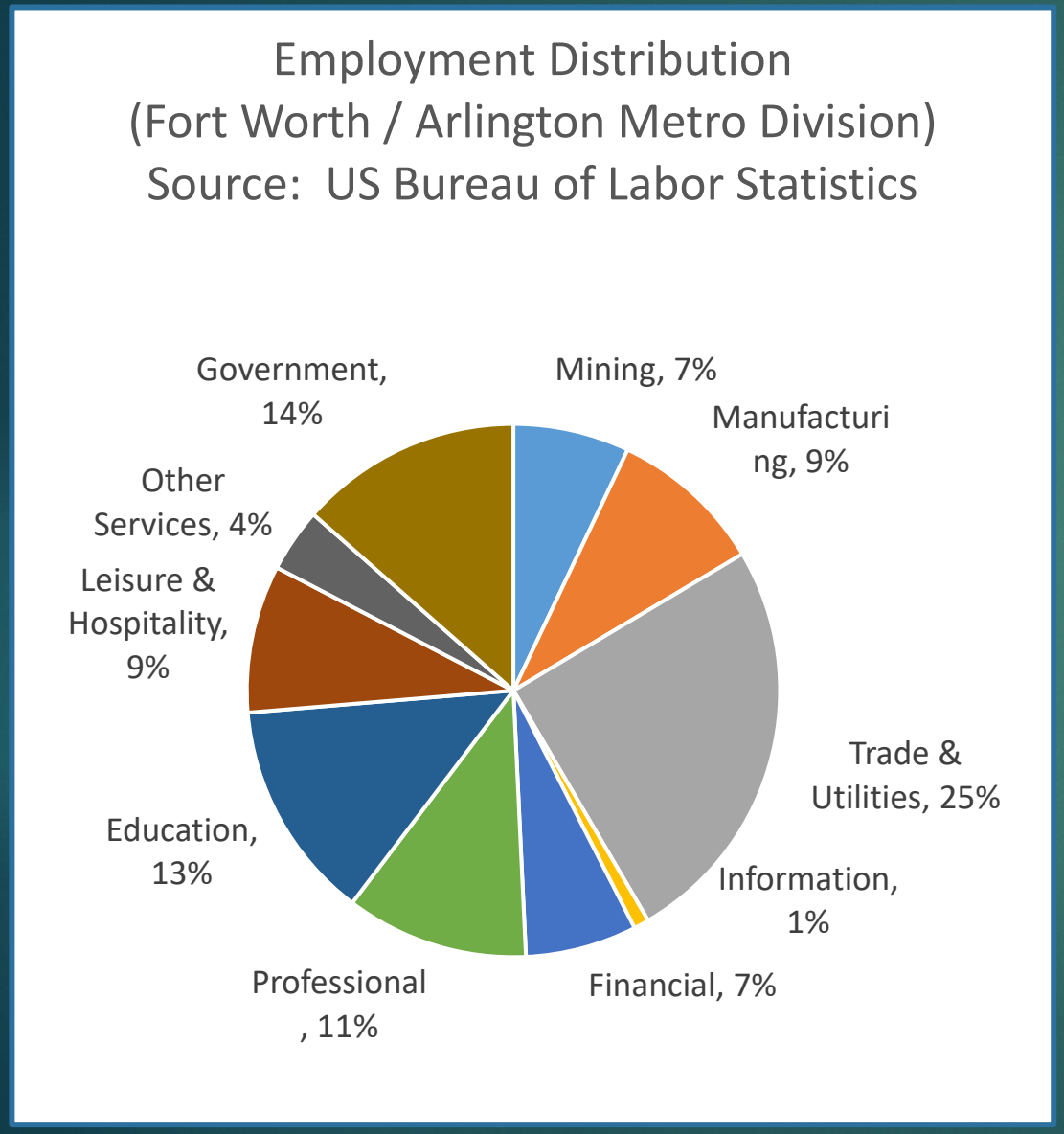
Using Fort Worth Plan sources, multi-family households have a 4.0 phd*

Total residential generation was 981,000 tons in 2019. 68% is from single-family households.



Source: CalRecyle Waste Characterization Study (Source: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates).

Commercial & Institutional Waste Generation



- Employment is 1.07 million (US Bureau of Labor Statistics Fall 2019).
- 84% of individuals are employed in commercial, institutional, government, finance trades or other professional fields.
- 16% of employees are in construction or manufacturing.
- Employment projected by NCTCOG to increase at a rate of 1.06% per year between 2005 and 2045.

Employer	Employees	Sector	City
Dallas Fort Worth International Airport	14,000	Retail Trade	Grapevine*
Naval Air Station Joint Reserve Base Fort Worth	10,500	Public Administration	Fort Worth
Lockheed Martin Aeronautics Company	10,500	Manufacturing	Fort Worth
L3 Technologies Aerospace Systems	6,500	Manufacturing	Greenville
University of Texas Arlington	5,300	Educational Services	Arlington
Burlington Northern Santa Fe Railway	4,900	Retail Trade	Fort Worth
John Peter Smith Hospital	4,600	Health Care & Social Assistance	Fort Worth
Alcon Laboratories	4,500	Manufacturing	Fort Worth
Arlington Assembly Plant General Motors	4,484	Manufacturing	Arlington
Texas Health Harris Methodist Fort Worth	4,100	Health Care & Social Assistance	Fort Worth
Texas Health Resources	4,063	Health Care & Social Assistance	Arlington
Bell Technical Services Inc.	4,000	Manufacturing	Fort Worth
AMR Corporation	4,000	Retail Trade	Fort Worth
Wise Regional Health System East Campus	1,400	Health Care	Decatur
Luminant	1,200	Utilities	Glen Rose
Tarleton State University	1,055	Educational Services	Stephenville

In 2019, commercial / institutional waste generation was 2.0 million tons. This represented 2/3 of total waste generation in the western region.

Major employers should be key stakeholders in the implementation of any solid waste management program

Source: NCTCOG, http://data-nctcoggis.opendata.arcgis.com/datasets/employers (*) Includes all of DFW International Airport

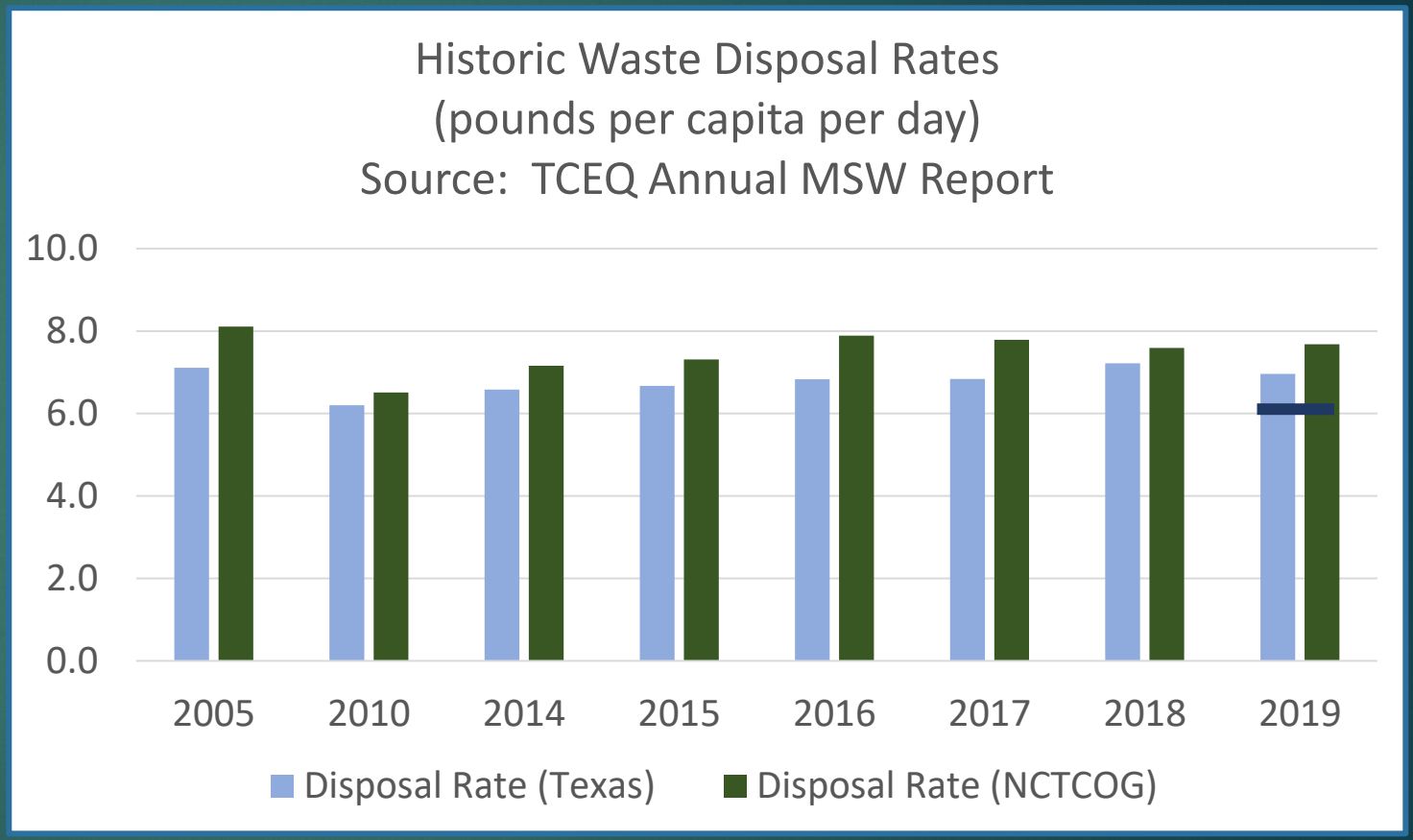
Sources of Waste Generation

Source: Needs Assessment Technical Report

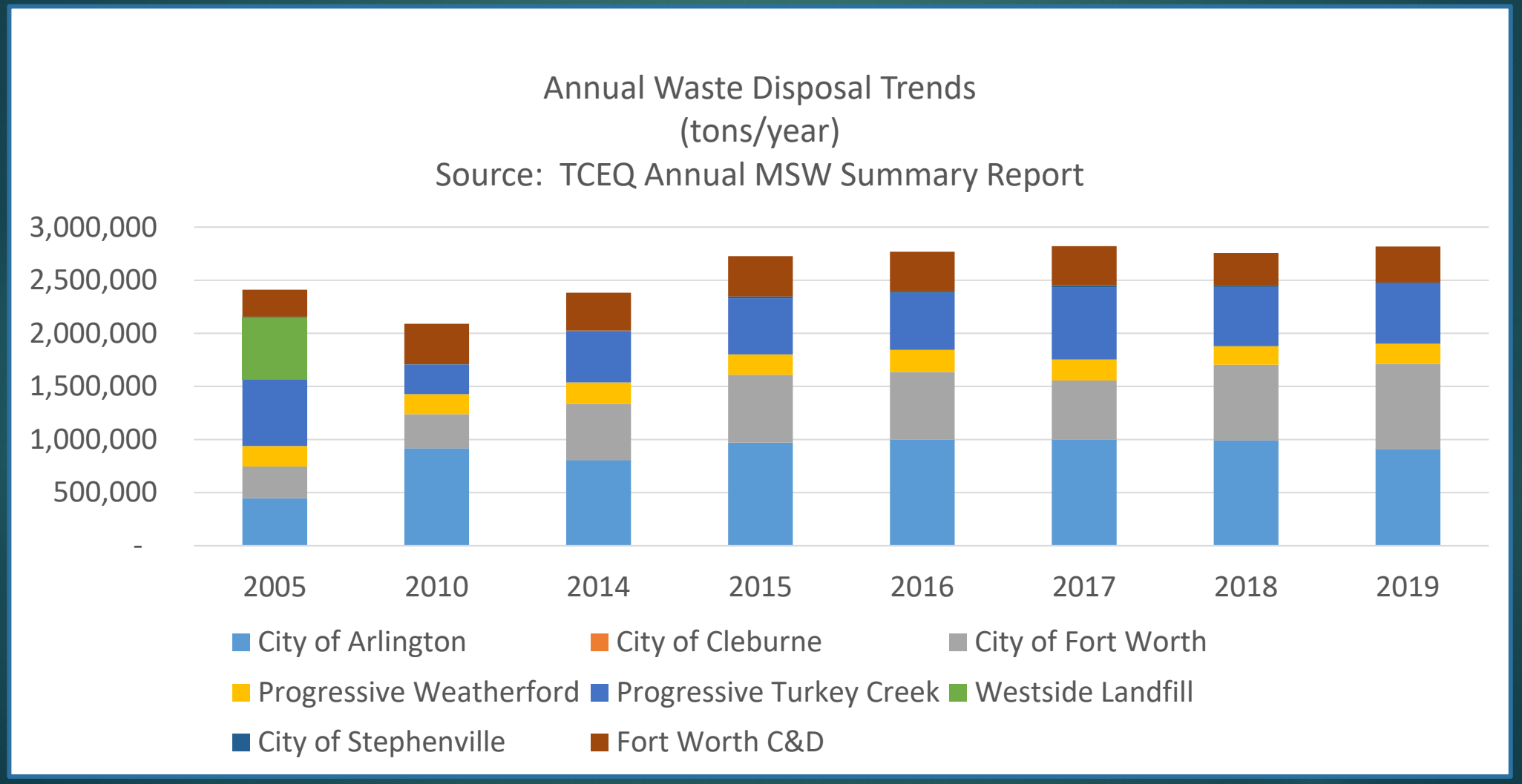
- Why it is important to know:
  - Targeting future waste reduction & recycling programs.
  - Existing contractual arrangements with sources will be a factor in any regional effort.
  - Local governments in Texas have a regulatory responsibility to assure proper management of waste within their jurisdictions. This is done either through contracts or regulations.

Disposal rates have remained constant. NCTCOG's regional rate has historically been higher than Texas' statewide rate.

Western region rate is 6.45.



Disposal quantities have remained constant over past 5 years



Managing MSW is a complex system requiring a variety of facilities

Landfill capacity in the western region is 63 million tons

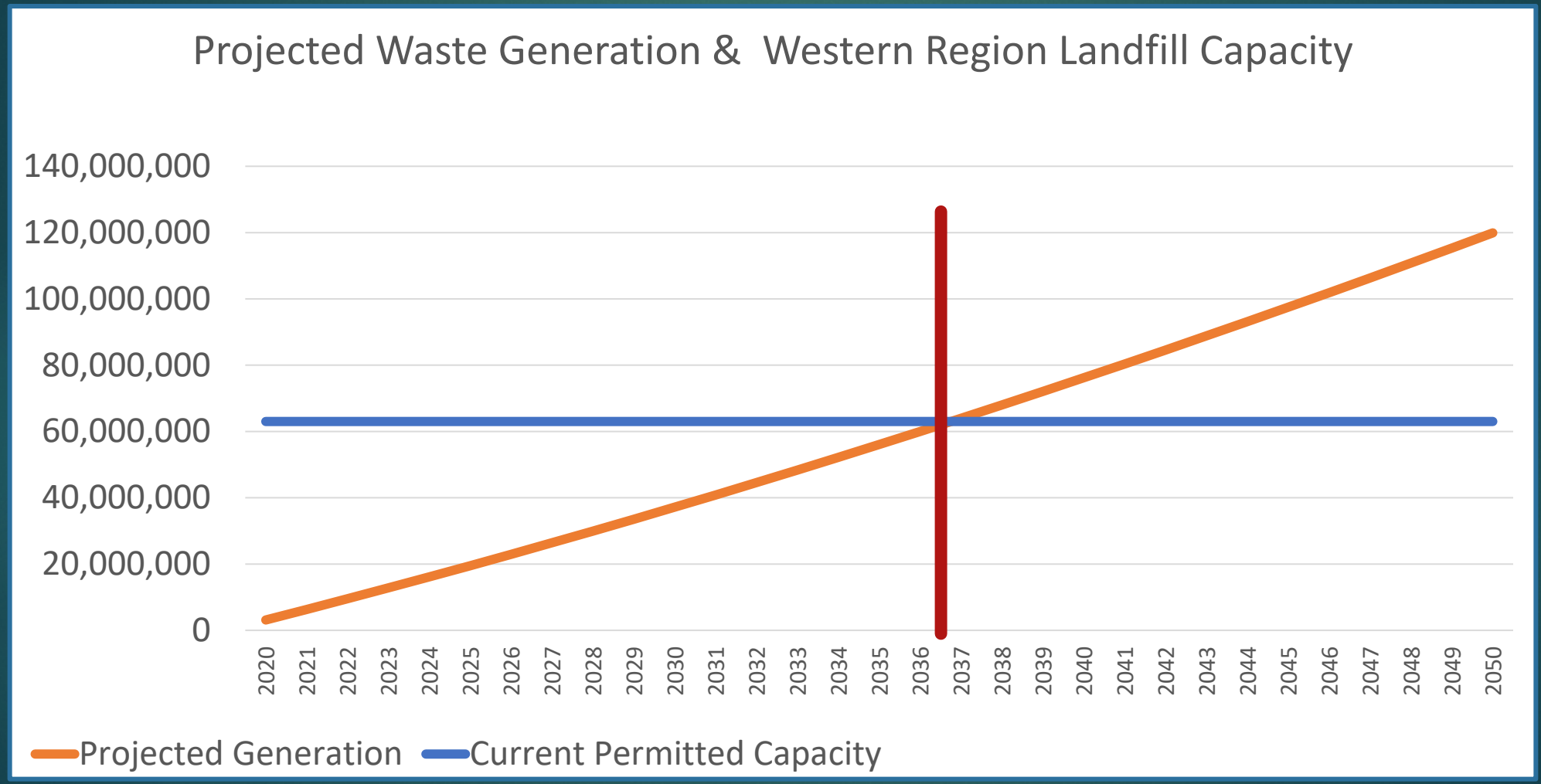
The western region has a total of 63 million tons of capacity.

Annual disposal quantities are 2.8 million tons.

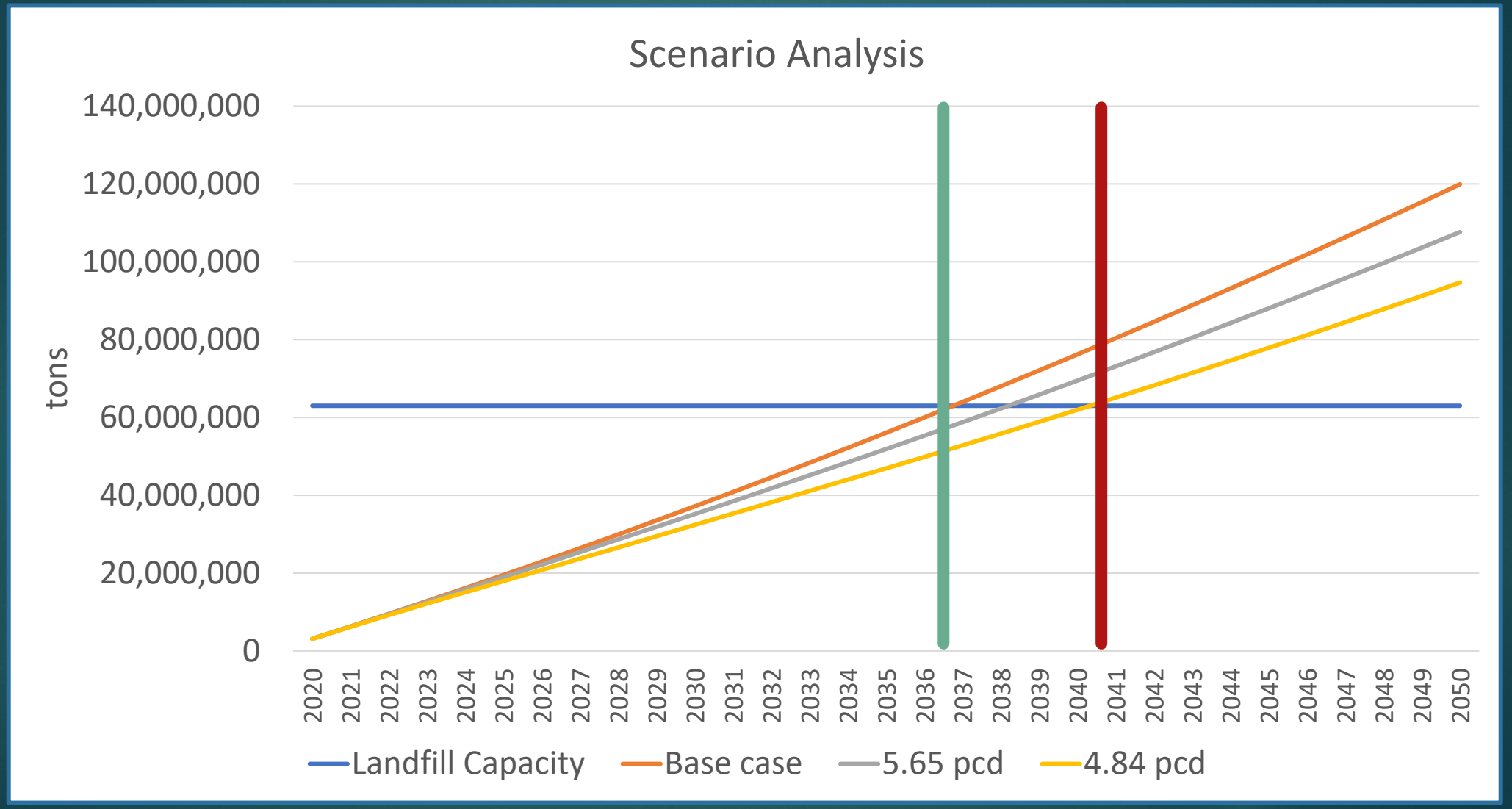
Regional waste generation is anticipated to increase with increases in population and economic activity.

Landfill expansion amendments are in the works for Turkey Creek, Fort Worth

Projected Waste Generation

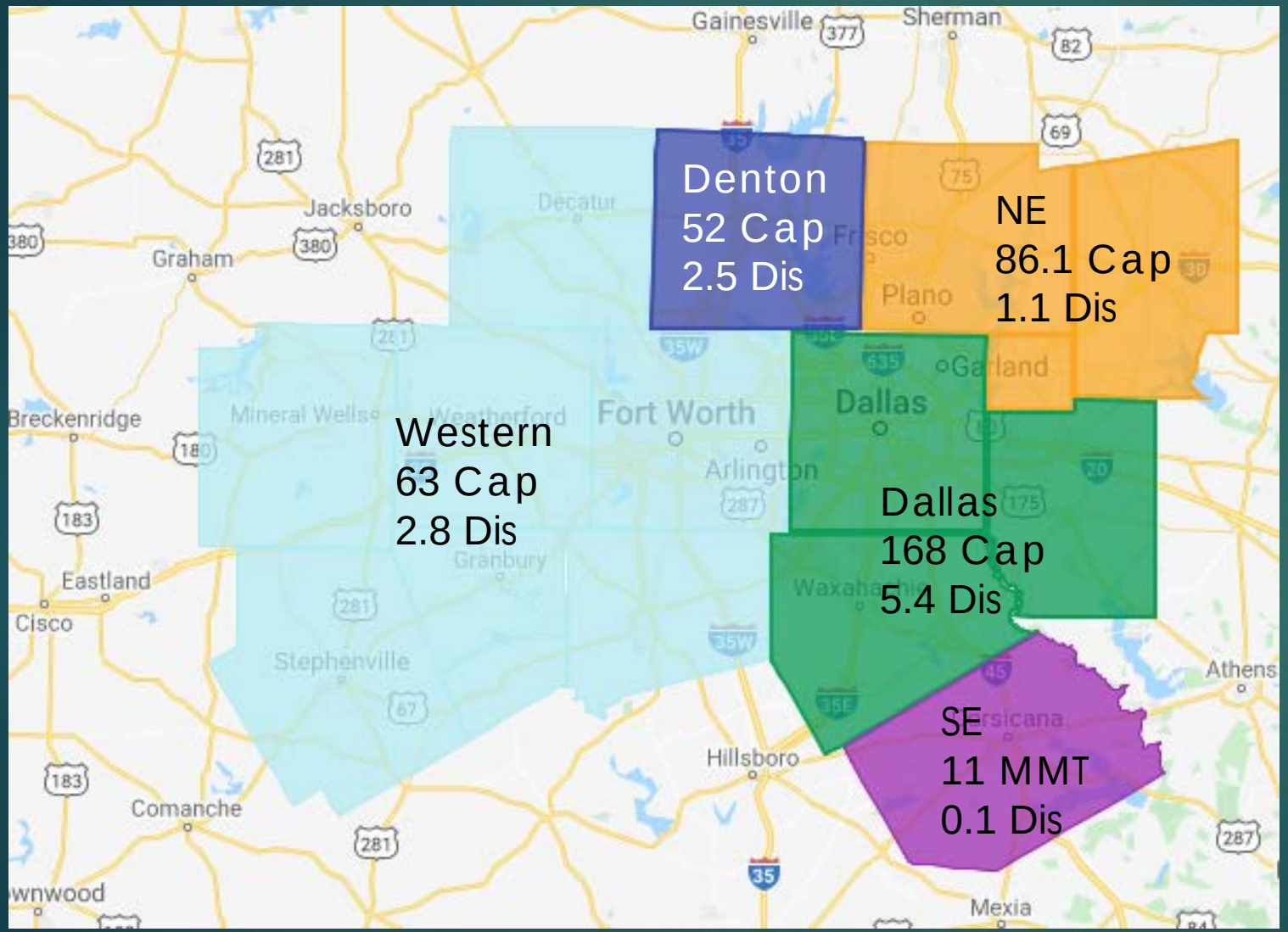


Waste Generation Scenarios



PCD – pounds per capita per day

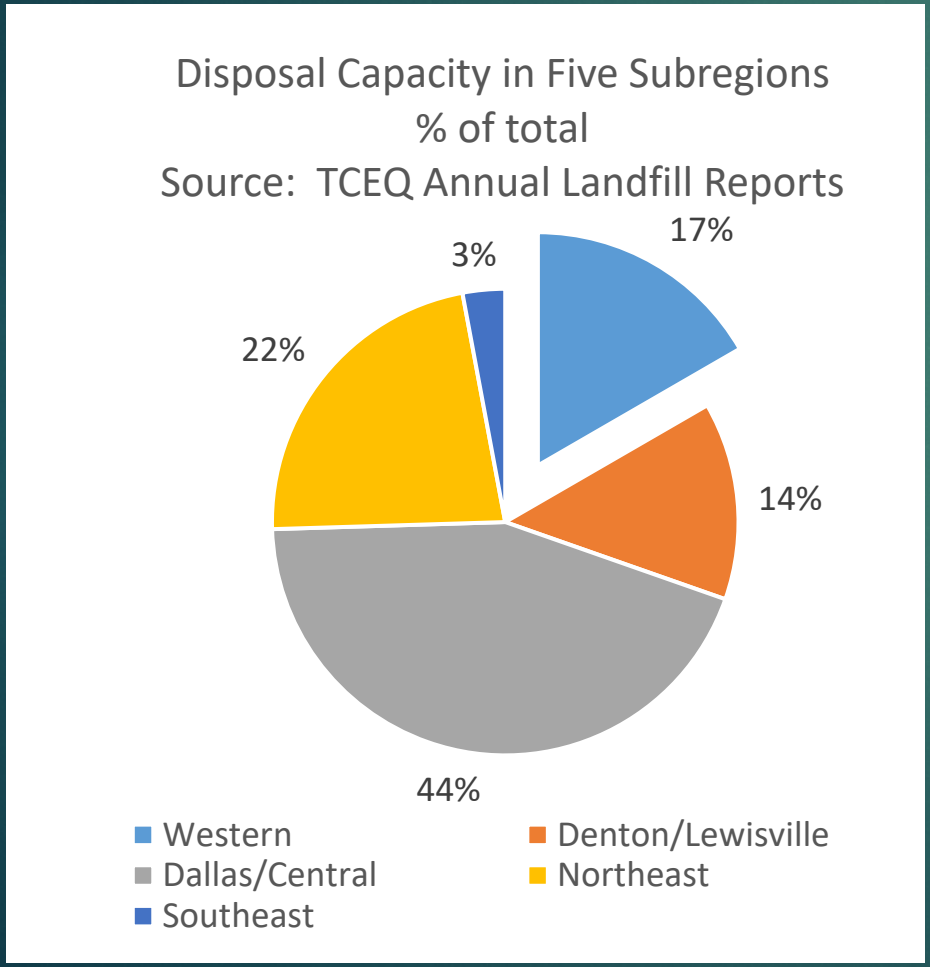
Market Subregions were evaluated

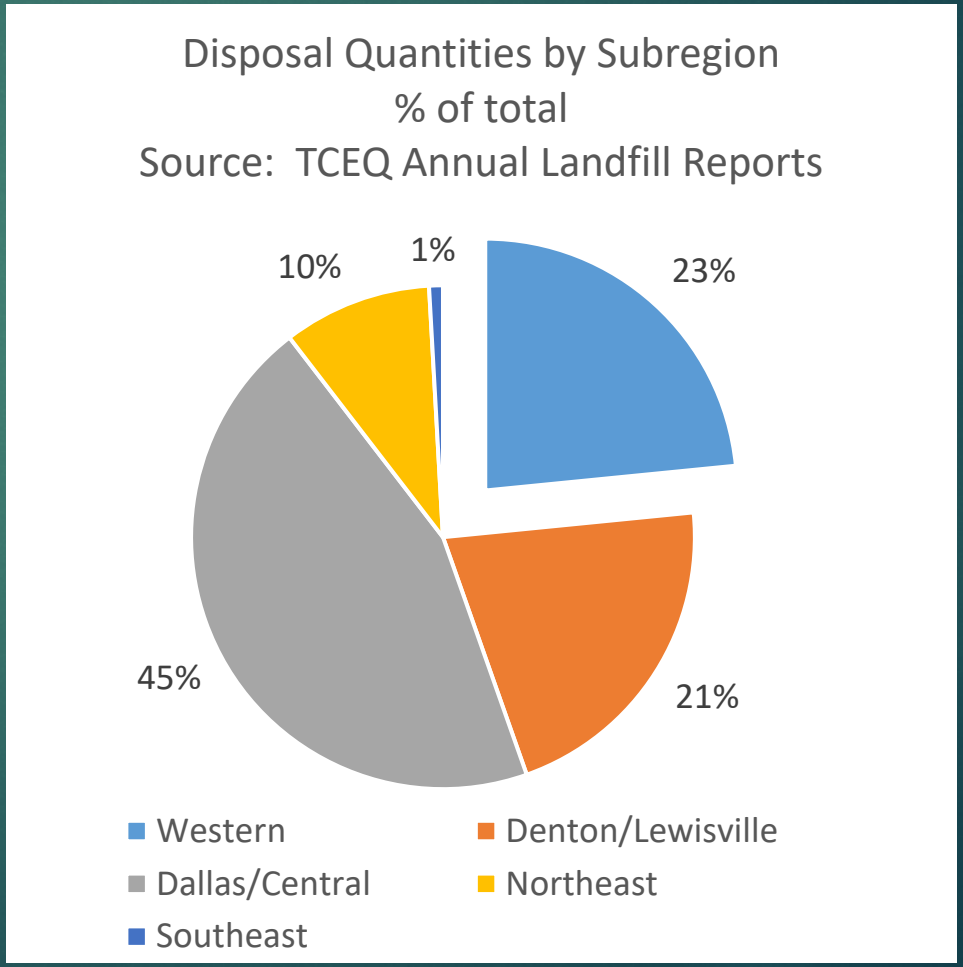


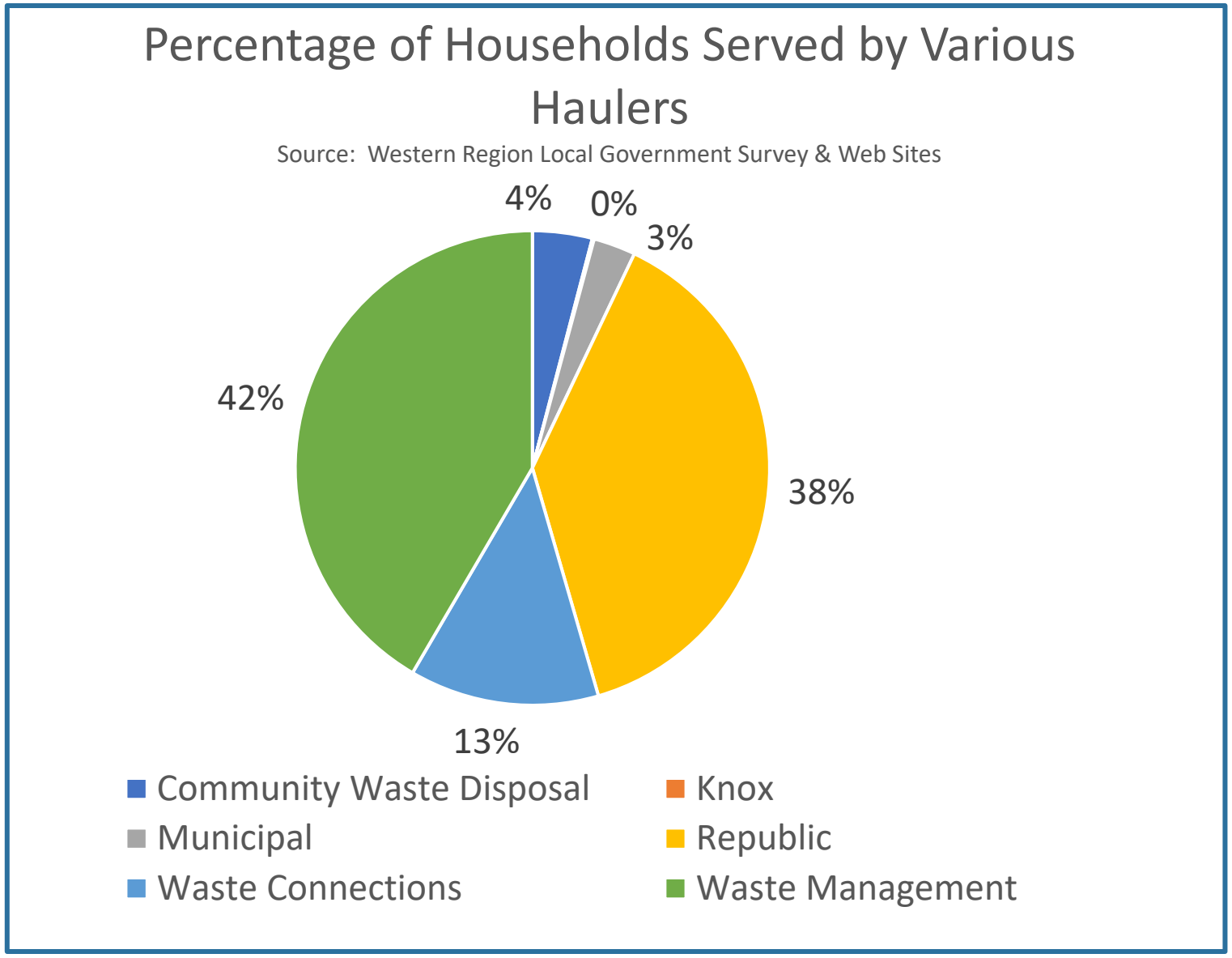
Total NCTCOG Region has 381 million tons of capacity and disposes approximately 12 million tons per year

Values in million tons. Cap – Capacity, Dis – Annual disposal quantities

NCTCOG region has 382 million tons of capacity – approximately 30 years







Majority of waste is collected by private sector.

All commercial waste is collected by the private haulers.

Flow control will be a critical issue.

Why is flow control important?

Why?

- Knowledge of waste flow critical to facility sizing.
- Waste flows and associated tipping fees are critical to facility economics.

How?

- City establishes franchise that requires waste directed to a specific facility (i.e. Plano and other cities in NTMWD region).
- City contracts for waste management services for residential waste with contract term requiring where waste is to be delivered.

Haul Analysis

There are two options for delivering waste to a landfill – Direct Haul and Transfer Haul

Collection

Equipment, Labor fuel & O&M

Landfill

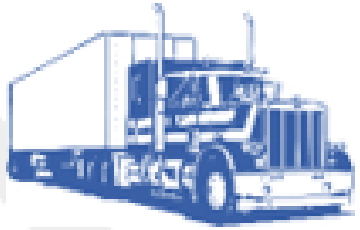
Tip Fees

Collection

Equipment, Labor, fuel & O&M

Transfer station

Debt, labor & O&M

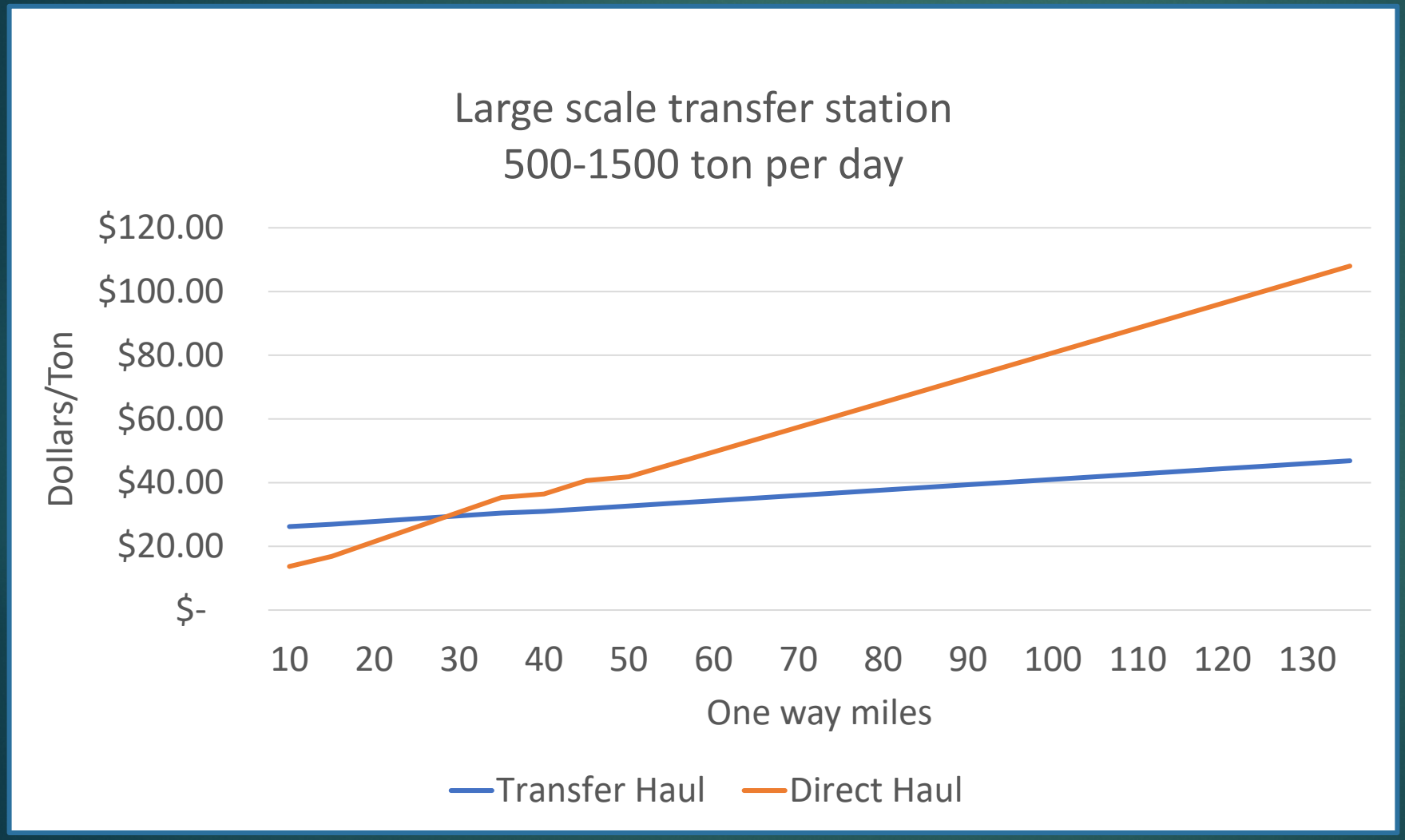


Landfill

Tip Fees

Transfer Station

Figure 6-1 Custer Road Transfer Station
Aerial Source: DFWmaps; NCTCOG



Approximately 30 miles from collection route to landfill is when transfer stations become cost effective.

Actual costs will vary from case to case based on transfer station design & operations.

Investment in transfer stations is complicated in the western region.

- Private Sector control over majority of waste collection makes it difficult to determine return on investment. Municipal investment in transfer station will require realized long-term reduced collection fees to justify investment.
- Future landfill locations will determine where transfer stations will be needed.
- Potential conflicts with private sector transfer stations.

Comments & Discussion

Regional Opportunities and Alternatives

Factors determining alternatives…

- Based on Needs Assessment
- Western region local government survey
- Input from local government officials
- Opportunities to change based on input from the PAG

Issues evaluated in Alternatives Analysis Report

- Organizational Structure
- Technical, Legal & Regulatory
- Cost Benefits Analysis and Funding Options
- Transportation Impacts
- Environmental Impacts

Key Questions for PAG

- Are these alternatives worth further consideration?
- What are major concerns associated with each of the alternatives?
- What are major opportunities?
- Are there other regional alternatives or approaches that should be considered?

Alternative 1 – Regional Public Information Programs

31 of 38 communities surveyed indicated interest in a regional public Information program.

Focus of program needs to be determined.

Alternative 2 – Cooperative Collection Program

Inter-local agreements for collection of either MSW or recyclables.

Majority of communities interested in examining cooperative collection strategies.

Timing of contracts and scoping will be major issues.

Alternative 3 – Cooperative material marketing

- Opportunities to collaborate and increase revenues through cooperation.
- Existing examples of these programs in place.
- Existing collection contracts may have an impact on ability to undertake such programs.

Alternative 4 – Increase composting capacity

- There are private sector facilities in operation, but minimal capacity for biosolids (sludge) management.
- Weatherford Landfill was disposal site for regional biosolid generators.
- Fort Worth will have to relocate its mulching operation in short-term due to landfill development.

Alternative 5 – Increase number of citizen drop-off centers

- Increased access to citizen drop-off programs can help reduce illegal dumping in the western region.
- Provides an additional service for residents to dispose of wastes, especially bulky wastes.
- Provides an additional opportunity for recycling, especially for residents of multi-family households who don't have access to single-family residential recycling.

Alternative 6 – Regional Transfer Stations

- There are existing private facilities and facilities that have been permitted but not operating.
- Haul distances in western region will increase due to closure of Weatherford Landfill in short-term and Fort Worth and Turkey Creek in the mid-term.
- Collection system will make this complicated option for local governments.

Alternative 7 – Increase Landfill Capacity

- Disposal capacity in the region is approximately 16 years.
- Private sector has no regulatory responsibility to build facilities.
- Securing new capacity could take 10-15 years and cost approximately $20 - $30 million.

Alternative 8 – Cooperative Disaster Debris Management

- Shared resources for disaster debris management will provide quicker response times in times of emergency.

- Regional disaster debris management plan, approved by FEMA can generate more relief dollars.

Western Region Solid Waste Management Agency Inc.

- Establish a regional agency as a local government corporation.
- Purpose is to assist local governments implement regional projects.
- Variety of funding options.
- Models exist for this type of agency.
- Powers and funding to be determined by local governments.

BVSWMA
BRAZOS VALLEY SOLID WASTE MANAGEMENT AGENCY

NORTH TEXAS MUNICIPAL WATER DISTRICT

Other alternatives or ideas?

Next Steps...

- Continue to have one-on-one meetings to discuss alternatives.
- Present Needs Assessment Report to the RCC.
- Issue DRAFT Alternatives Analysis Report to PAG.
- PAG to review options and make recommendations on moving forward with specific recommendations.
- PAG to continue to meet to address implementation of recommendations.