

Regional Solid Waste Management Implementation Plan Volume II

Regional Organization Information

Table 1. Organization Information

Name of Council of Government	Permian Basin Regional Planning Commission
Mailing Address	2910 La Force Blvd, Midland, TX 79706
Website	PBRPC.org
Phone Number	(432) 563-1061
Email Address	pbrpc@pbrpc.org

Section I. Geographic Scope

Table I.I. Geographic Scope

<p>I.A. Names of Member Counties in the Entire Planning Region [Ref. 30 TAC §330.643(a)(1)]</p>	<p>Andrews, Borden, Crane, Dawson, Ector, Gaines, Glasscock, Howard, Loving, Martin, Midland, Pecos, Reeves, Terrell, Upton, Ward, Winkler</p>
<p>I.B. Geographic Planning Units Used in the Regional Implementation Plan [Ref. 30 TAC §330.643(a)(1)]</p>	<p><input type="checkbox"/> Small geographic areas such as census tracts or city boundaries for the most detailed data collection and manipulation;</p> <p><input type="checkbox"/> Planning areas to be used for the assessment of concerns and the evaluation of alternatives. These planning areas shall be aggregations of small geographic areas;</p> <p><input type="checkbox"/> County boundaries for the summarization and presentation of key information; or</p> <p><input checked="" type="checkbox"/> The entire planning region</p>

Section II. Planning Periods

[Ref. 30 TAC §330.643(a)(2)]

Table II.I. Planning Periods

<p>II.A.1. Current and Historical Information</p>	<p>Region 9 consists of 17 counties that cover 23,483 square miles. The 2020 regional population is 562,111 people. This was an increase of 15.5% from five years prior. The regional unemployment rate in 2021 was 6.4%. Prior to the COVID-19 pandemic and ensuing drop in the energy sector, the unemployment rate in the Permian Basin Workforce Development Area (WDA) was 2.8%. In May 2020, the unemployment rate peaked at 13.2%. During the COVID pandemic, residents in the region were affected by a shortage of commonly found items at grocery stores and elsewhere; the consumption of fuel dropped since people were not traveling to work; and disposable income was reduced. These factors resulted in fewer collected tons of solid waste materials. In 2020, 884,648 tons of solid waste materials were disposed of in the fifteen certified landfills in Region 9 of the Permian Basin Regional Planning Commission area. By comparison, in 2019 approximately 1,003,304 tons were disposed of. This represents a decrease of 11.8%.</p> <p>Of the fifteen landfills, there are four Type 1, two Type 1AE, six Type 1AE & 4AE, and three 4AE. (See attachment II.A) Of that total collected waste material, 442,894 (50%) tons were classified as municipal and 322,247 (36%) were construction and demolition (C&D). The year 2020 saw a 22.6% increase in the disposal rate when compared to 16.73% in 2016. The increase in the disposal rate over the five-year average is 7.39% and a 16.73% increase over the ten-year average. Of the 2020 disposal volume, on average 0.7% of debris taken to the landfill was diverted. A regional recycler has helped cities remove an average of 1,454 tons annually of cardboard and paper in 2020. The average compaction rate among the fifteen landfills increased by 7% over the five previous years (2015-2020). The Type I landfills only have increased their compaction rate by 27% to 966 pounds per cubic yard. There are three landfills with 50 or more years left of space. There are seven with 25 to 49 years of life. Only one landfill facility has a capacity</p>
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	<p>range of five to 24 years. There are four landfills with less than five years of life. In 2021, a new 100-year landfill will become active in the Howard County. A 101-year landfill has been approved and will be open to replace Ft. Stockton’s existing landfill when it is full. Glasscock County will permit a new landfill to replace their existing landfill. The Type IV-AE will not be replaced in McCamey when it runs out of space. The City of Monahans has begun changing its permit to include more acreage to their current landfill, extending its life by 20 years. There is a 52-year landfill currently in the 2nd year of the permitting process in west Ector County.</p> <p>REGIONAL STRATEGIES:</p> <ul style="list-style-type: none"> • Decrease the current disposal rate of 8.62 lbs./per person/per day to the state average of 6.96 lbs./per person/per day. • Increase current recycling rate of 0.01 lbs./per person/per day to 1 lbs./per person/per day. • Increase the diversion of C&D, brush, and metal from 0.07 lbs./per person/day to 1 lbs./per person/per day. • Develop strategies with communities and business leaders to increase the recycling by 2% a year during this planning period: • Increase the number of landfills using Alternative Daily Cover (ADC). Currently, only six of the 15 area landfills are using some type of ADC. • Increase the compaction rate in daily operations. In 2021, there was one landfill with a compaction rate of 1,628 pounds per cubic yard. • Plan for financial revenues for future landfill expansion and equipment.
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<p>II.A.2. Short-range Planning Period</p>	<p>The five-year Short-range plan includes the years 2022 through 2026. The 2020 regional population is projected to grow from 562,111 to 673,595 during this time; the growth is projected to occur at a rate of almost 4% per year in the Permian Basin region; this figure is higher than the projected annual growth for the remainder of Texas. Solid Waste disposal is expected to increase from 1,020,230 tons to 1,251,006 tons (22.6% increase). The annual growth in the rate of disposal is higher than the population growth rate; thereby pointing to the benefits of encouraging and requiring solid waste recycling efforts. At the rates indicated, a rapid decrease in the life of the current landfills will result. There are four landfills that will run out of available airspace during this timeframe. The following goals are opportunities to help relieve the burden on the landfills.</p> <ul style="list-style-type: none"> • Monitor current remaining airspace in current landfills. • Site, engineer, and build new landfill(s) where landfills are running out of airspace. • Implement financial strategies to build the new landfills. • Conserve airspace in the current landfills by continuing to increase compaction rates. • Work with communities to develop ways to divert more materials from landfill disposal. This may include paper, cardboard, metals, C&D, brush, and other commodities. • Research new technologies for ways to improve use of landfill airspace. • Plan for future financial obligations that will be incurred with the implementation of improvements, such as technology, equipment and recycling. • Decrease the projected disposal rate, in 2027, of 10.18 lbs./per person/per day to the current state average. <p>• Illegal dumping is a well-documented problem throughout the region and PBRPC provides training to communities, counties, and enforcement officials to deal with this issue. Some of the PBRPC’s member agencies have budgeted for and established environmental enforcement divisions to tackle this problem.</p>
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<p>II.A.3. Intermediate Planning Period</p>	<p>The Intermediate Planning Period will include a five-year period beginning in 2027 and ending in 2031. During this period, the population is projected to increase from 673,595 to 789,014 in 2032. Disposal of solid waste is projected to increase from 1,251,006 to 1,533,984 (22.6% increase) by 2032. Evaluation of the success or failure of the previous goals that were set during the Short-Range Planning Period should be a priority for all landfill operators, cities, and counties. Additional considerations for population growth, materials disposed, and technology advancements should be incorporated into current and future plans. Communities with landfills running out of available space should plan for the funding, siting, and permitting of new landfills to replace them. Landfill operators should strive to achieve the following goals:</p> <ul style="list-style-type: none"> • Continue to seek and build partnerships to help recycle more paper, cardboard, and other commodities from the landfills. • Continue to decrease the collected lbs./per person/per day to state averages. • Evaluate financial strategies developed in the previous planning period to ensure they will meet current and future needs. • Site, engineer, permit, and build new landfills. • Incorporate available options for increasing the life of present landfills; this may include increasing the aerial height of the current landfill by amending current permit(s).
<p>II.A.4. Long-range Planning Period</p>	<p>The long-range planning period will encompass the years 2032 through 2042. The regional population is projected to increase from 789,014 to 1,097,063 during this time period. Disposal of solid waste is projected to increase from 1,533,984 to 2,306,446 (50.3% over ten years) by 2042. Recommendations can be extrapolated from a comparison of the previous ten-year projections contained in this report. A re-evaluation of the active landfills available space is an initial step toward determining landfill needs during this time-period.</p> <ul style="list-style-type: none"> • Continue to seek partners to help recycle more paper, cardboard, and other commodities to keep these materials out of landfills. • Implement new technologies to conserve landfill space.
<p><input checked="" type="checkbox"/> Check box if additional details provided in <i>Attachment II.A.</i></p>	

(Texas Demographic Center and TCEQ Annual Reports)

Section III. Plan Content

III.A. Demographic Information

[Ref. 30 TAC §330.643(a)(3)(A)]

In the table, provide population projections, significant commercial and industrial economic activity affecting waste generation and disposal in the area, and recycling activities. Use five-year increments beginning from the base year to the end of the long-range planning period. Refer to Regional Plan Instructions for more information on III.A. Demographic Information.

Table III.A.I. Residential Waste Generation

Year	Growth Rate per Year	Current Population/Population Projection	Landfill Disposal (Tons)	Disposal Rate (lbs./Person/Day)	Recycling (Tons)	Recycling Rate (lbs./Person/Day)	Residential Waste Generation (Tons)
Current	N/A	562,111	884,648	8.62	7,626	0.07	442,894
2022	2.99%	578,922	1,020,260	9.66	7,855	0.07	522,731
2027	3.27%	673,595	1,251,006	10.18	9,034	0.04	611,595
2032	3.42%	789,014	1,533,984	10.65	10,389	0.07	715,566
2037	3.54%	928,851	1,880,971	11.10	11,947	0.03	837,213
2042	3.62%	1,097,063	2,306,446	11.52	13,739	0.07	979,538

(TCEQ Annual Reports and Texas Demographic Center)

Table III.A.II. Commercial Waste Generation

Year	Description of significant commercial activities affecting waste generation and disposal in the area.	Expected increase or decrease to Commercial Waste Generation
2022	Retail stores make up a large portion of commercial businesses in the Region. Most receive shipment of goods that are packaged in cardboard boxes. Industrial businesses receive goods in cardboard boxes and wooden pallets due to their bulkier and heavier shipments. Restaurants receive most of their goods packaged in cardboard boxes and plastic containers. Local, State, and Federal legislation is having an impact on how products are shipped, leading to more sustainable processes.	An increasing trend towards disposable products is resulting in an increase of waste being disposed of in landfills. Economic and environmental factors are encouraging manufacturers to utilize recyclable materials. A tremendous opportunity exists to reduce waste by recycling shipping containers. Currently, some “Big Box” stores recycle in-house, and ship recycled materials back to the hub company or the original manufacturer for reuse.

<p>2027</p>	<p>Consumer demands for commercial goods will continue to grow as the population continues to increase in the region. The oil and gas industry is cyclical, and has a direct and discernible effect on the nation and the PBRPC region especially during economic downturn cycles. In 2015, President Obama lifted the prohibition of the sale of US generated oil, gas, and associated by-products to foreign markets. This act opened previously unavailable trading partners for US energy products. Concurrently, the energy sector and specifically oil and gas exploration and production have seen significant technology advances such that producers can remain active at an approximate oil price of \$40 per barrel. This allows for an economic return in the region’s economy. Many energy sector jobs are high paying. This includes executives, operators, trucking and transportation companies, manufacturing of pipe, and chemical production. More high paying jobs result in additional disposable income and increased demand for products whether they be produced locally or outside of the region. With additional purchasing power, this region experiences a higher rate of consumption and therefore disposal as well. The energy sector is not the only economic driver but it is the predominant one. Jobs, people, and energy sector related businesses come and go based on the price of oil. This is not a new trend in the industry. Federal, State, and local legislation can have an effect on what is kept out of typical landfills through the use of recycling and re-use. The Texas Railroad Commission regulates mining waste associated with the oil and gas industry. The general waste is regulated by the landfills by use of Texas Commission on Environmental Quality (TCEQ) rules and regulations. The PBRPC region contains hundreds of permitted waste and produced water collection sites known as Salt Water Disposal (SWD) wells. Although these facilities generate a lot of truck traffic and associated industrial waste material, the SWDs are not part of this solid waste plan.</p>	<p>Commercial waste generation is expected to increase during this time-period as the oil and gas industry and other energy sources return to more normal conditions following the impact of COVID-19.</p>
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2032	As the population increases, so will consumer demand for products. A controlled reduction of disposable materials will have a direct effect on the life of the landfills.	Companies and end-users, along with government and privately operated landfills, will need to continue to identify more strategies to recycle used product.
2037	During this five-year window of time from 2032-2037 the regional population is expected to grow at a rate of 3.54% per year; this rate is much faster than the projected state average of 1.6%	A population growth rate of 3.54% will require construction of homes, businesses, public buildings, and more. This will generate tons of construction related waste materials including demolition materials from existing buildings. Wind and solar generation equipment may have outlived their useful life and will also need to be considered for recycling or delivery to landfill sites.
2042	Commercial waste during this time period of 2037-2042 will continue to rise due to the anticipated population increase. A population growth rate of 1.56% per year is anticipated statewide; however, the PBRPC region is expected to grow at a much faster rate of 3.62%. The region’s population growth rate will reach its peak during this five-year time frame. The last year of the planning period for this study is 2042; faster rates of population growth may continue beyond the planning period.	During this period, it is anticipated that commercial waste generation will increase. As pointed out in previous five- year incremental periods, a reduction in the volume of materials sent to the region’s landfills will need to occur through education, recycling, and governmental involvement.

(Texas Demographic Center)

Table III.A.III. Industrial Waste Generation

Year	Description of significant industrial waste activities affecting waste generation and disposal in the area.	Expected increase or decrease to Industrial Waste Generation
2022	Class 1, 2, and 3 Hazardous Industrial Waste can only be disposed of in one landfill in the region. There were approximately 41,874 tons disposed in 2020.	More landfills /processing centers are being constructed in the region to deal specifically with the residuals (not including sludge and produced water) from the mining of oil.
2027	No new industrial activities are foreseen that will affect Industrial Waste Generation in the region.	The amount of industrial waste may decrease when additional landfill /processing centers are opened.

<p>2032</p>	<p>According to the US Energy Information Administrative (EIA) <i>Annual Energy Outlook 2021</i> report “As coal and nuclear generating capacity retires, new capacity additions come largely from natural gas and renewable technologies.” In addition, the agency states in its report containing projections through the year 2050 that “renewable electricity generation increases more rapidly than overall electricity demand.” These trendlines result in more jobs and economic stability within the Permian Basin Region. Currently, many counties within the region have energy creating facilities through wind power generation. Additionally, solar power generation is becoming more widespread for businesses, individuals, and governmental entities. As an example, a portion of the total energy requirements for the Andrews County ISD is derived from solar power generation. The US Energy Information Administration (EIA) also reports that “Demand for energy delivered to the four U.S. end-use sectors (residential, commercial, transportation, and industrial) decreased to 90% of its 2019 level in 2020...” The agency predicts that U.S. energy demand takes until 2029 to return to 2019 levels.” With oil prices hovering over \$70-80 per barrel in the fall of 2021, exploration is expected to continue. A Reuters news service article on July 16, 2021 indicated that the “market is currently tight but likely to see significantly more output in the near future.” In this long-term window of time, it is difficult to predict how the domestic and world energy consumption markets will manage growth. Electricity demand in the region and the required generation will become a larger component of the region’s economic strength. This trend will likely result in additional jobs in the region; however, with an anticipated increase in the number of electric vehicles and “work from home” opportunities, a reduction in domestic oil and gas consumption may be expected.</p>	<p>Industrial waste generation is likely to increase during this time period, largely due to the increased demand for energy for local and regional supply and for distribution outside of the region.</p>
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2037	<p>It is anticipated that energy sector and agricultural sector technology advances will continue in the region. World demand for food and energy will continue as populations grow. The Permian Basin region is a major producer of both energy and agricultural products. According to the EIA, “for industrial uses, petroleum remains the primary fuel for refining processes and for agriculture” Additionally, “the industrial sector becomes the largest consumer of natural gas starting in the early 2020s...” and lasting through 2050.</p>	<p>Energy consumption is predicted to continue to decline according to the EIA in its report published in 2021. “The U.S. economy becomes steadily less energy-intensive, although the rate of decrease is slower...” A diversification of energy generation and related technology in the region will result in additional industrial waste generation.</p>
2042	<p>During this last five years of the planning period, it is anticipated that the Permian Basin region will continue to experience an increase in population at a steady pace as it continues to supply agricultural and energy related products to the U.S. and the rest of the world. As previously stated, energy consumption will likely decrease due to greater efficiencies and reduced demand given that lifestyle trends and workplace requirements may change. Workers may experience a reduction of hours in the workplace and more opportunities to work remotely.</p>	<p>Industrial waste is anticipated to increase during this time period as the region’s agricultural, energy, and industrial sectors continue to grow to meet worldwide demand for food and energy products.</p>

(U.S. Energy Information Administration)

III.B. Estimates of Current and Future Solid Waste Amounts by Type

[Ref. 30 TAC §330.643(a)(3)(B)]

In the table, provide the current and project solid waste amounts by type that will be generated and managed within the region. Use five-year increments beginning from the base year to the end of the long-range planning period. Refer to Regional Plan Instructions for more information on III.B. Estimates of Current and Future Solid Waste Amounts by Type.

Table III.B.1. Current and Future Solid Waste Amounts by Type

Waste Type	Number of Landfills Accepting Waste Type	Percent of Total Tons Disposed	Current Year (tons)	5-year Projection (tons)	10-year Projection (tons)	15-year Projection (tons)	20-year Projection (tons)
Municipal	12	50.06%	442,894	611,595	715,566	837,213	979,538
Brush	7	0.13%	1,171	1,656	2,031	2,490	3,054
Construction or Demolition	13	36.43%	322,247	455,699	558,778	685,173	840,160
Litter	0	0.0%	0	0	0	0	0
Class 1 Non-hazardous	1	0.70%	6,230	8,810	10,803	13,246	16,243
Classes 2 and 3 Non-hazardous	1	4.03%	35,644	50,405	61,807	75,788	92,931
Incinerator Ash	0	0.0%	0	0	0	0	0
Treated Medical Waste	0	0.0%	0	0	0	0	0
Municipal Hazardous Waste from CESQGs	0	0.0%	0	0	0	0	0
Regulated Asbestos-containing Material (RACM)	1	0.06%	505	714	876	1,074	1,317

Waste Type	Number of Landfills Accepting Waste Type	Percent of Total Tons Disposed	Current Year (tons)	5-year Projection (tons)	10-year Projection (tons)	15-year Projection (tons)	20-year Projection (tons)
Non-RACM	2	0.06%	552	780	957	1,173	1,439
Dead Animals	7	0.06%	561	794	974	1,194	1,464
Sludge	6	3.70%	32,716	46,264	56,729	69,561	85,296
Grease Trap Waste	2	0.01%	98	138	169	208	255
Septage	0	0.0%	0	0	0	0	0
Contaminated soil	1	2.53%	22,346	31,600	38,748	47,513	58,260
Tires (split, quartered, shredded)	1	0.09%	754	1,066	1,307	1,603	1,966
Pesticides	0	0.0%	0	0	0	0	0
Used Oil Filter	0	0.0%	0	0	0	0	0
Other (identify other types reported as Attachment III.B.)	3	2.14%	18,931	26,770	32,826	40,251	49,356
Total		100%	884,648	1,236,293	1,481,570	1,776,487	2,131,276
<input type="checkbox"/> Check box if additional details provided in Attachment III.B.							

(TCEQ Annual Reports)

III.C. Description of Current and Planned Solid Waste Management Activities

[Ref. 30 TAC §330.643(a)(3)(C)]

In the tables, provide the current and planned solid waste management activities in the region with a description. Solid waste management activities should focus on data, activities, and resources within the planning area. Refer to Regional Plan Instructions for more information on III.C. Description of Current and Planned Solid Waste Management Activities in the Region.

Table III.C.I. Current Solid Waste Management Activities in the Region

Activity	Description
Generation	<p>The Texas Demographic Center projects a regional population increase of more than 95% over the life of the planning time period. This will require additional resources to manage solid waste. This increase in population is projected to result in an increase of disposed solid waste by over 160 % increase over the planning period. This increase in population included not only permanent residents, but transient workers who were following the oil field jobs.</p> <p>Of the responses received from the government survey, 72.7% stated that litter and illegal dumping were major issues in their area. Surveys were available in English as well as Spanish. As previously noted, cities and counties are finding it necessary to create and fund staff positions and manage any related grants to tackle the issue. Clean-up requires labor and funds to pay for disposal. Additionally, illegal dumping clean-up efforts may well be remedying a portion of the problem, but the funds needed for this function are not typically calculated into an agency’s rate of fill calculations or budgets.</p>
Source Separation	<p>Source separation is performed by the residents and businesses that recycle. There is minimum separation performed at local recycling centers and landfills.</p>
Collection	<p>The collection of solid waste is performed by either city staff or commercial haulers. Most of the cities use 1½ to 3 cubic yard metal sideload containers for residential pick-up. There are some cities that have parts of their residential garbage collected in 92-gallon carts by retro-fitted side loader trucks and automated trucks. The use of metal containers versus carts is constantly changing due to fluctuating plastic/material cost. Nine cities have their own collection services, although residents in the county utilize private haulers. Eleven cities and their respective counties utilize private hauler services exclusively. Approximately five private hauler service companies have been identified in the region and both sideload and frontload vehicles are</p>

Activity	Description
	utilized. Some companies utilize high compaction vehicles, allowing for maximum solid waste collection capacity.
Handling	Collection vehicles collect all solid waste with the exception of large items which are collected for citizens on a periodic basis. These large items typically include appliances, furniture and other items that may not fit into a residential dumpster. A large item collection program is offered at various times during the year by many cities.
Storage	There are no storage facilities in this region.
Transportation	All solid waste is transported to a landfill the day it is collected.
Processing	N/A
Treatment	N/A
Resource Recovery	Recycling in the region is on a voluntary basis and participants must take their recyclables to a drop off location. The main household recycled products are cardboard, assorted papers, and plastic. In some areas, local metal recyclers offer market rates for recyclable metals. Commercial businesses recycle cardboard, paper, and shredded paper. Currently, the market for recycled glass is limited.
Disposal of Solid Waste	Collected waste is disposed of in one of twelve landfills in the region currently accepting municipal solid waste. Once unloaded, it is spread and compacted at a rate of 966 pounds per cubic yard by landfill equipment operators. Six landfills utilize alternative daily cover, while the remaining six cover with the required six inches of dirt per day (Type I).

Table III.C.II. Planned Solid Waste Management Activities in the Region

Activity	Description
Generation	Increase citizen educational programs to promote the economic and environmental benefits of buying in bulk and buying items that can be recycled or reused.
Source Separation	Provide opportunities and resources for citizens and businesses to separate recyclables allowing for source separation.
Collection	Some cities are utilizing 92-gallon carts for service in favor of 3 cubic yard metal containers, however this constantly changes due to fluctuating container production costs.
Handling	N/A
Storage	N/A
Transportation	Currently there are no plans for significant changes in solid waste transportation.
Processing	N/A
Treatment	N/A
Resource Recovery	Increase the tonnage of diverted material at the landfill.
Disposal of Solid Waste	Increase in the compaction rate and use of alternative daily cover.
<input type="checkbox"/> Check box if additional information of solid waste management activities is provided as <i>Attachment III.C.</i>	

III.D. Description and Assessment of the Adequacy of Existing Solid Waste Management Facilities & Practices, and Household Hazardous Waste Programs

[Ref. 30 TAC §330.643(a)(3)(D)]

In the table, identify if specific waste management facilities, practices, and programs are adequate in the region. Provide an assessment and description of activities that are inadequate in Attachment III.D. Refer to Regional Plan Instructions for more information on III.D. Description and Assessment of the Adequacy of Existing Solid Waste Management Facilities and Practice, and Household Hazardous Waste Programs.

Table III.D.I. Adequacy of Existing Facilities and Practices

Program	Facility Adequacy	Practices Adequacy
Resource Recovery	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Storage	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> N/A
Transportation	<input checked="" type="checkbox"/> Yes, the cities and private collection companies have adequate equipment to move the solid waste.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Treatment	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> N/A
Disposal	<input checked="" type="checkbox"/> Yes. There are twelve Type I and Type IAE landfills in the region. There are also three Type IVAE landfills. There are four landfills with less than five years of life. Of these four, one is a Type IVAE and two Type IVAE and one Type I. The Type I landfill has built a new 100-year landfill for when the current one runs out.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Household Hazardous Waste Collection	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> No
Household Hazardous Waste Disposal	<input checked="" type="checkbox"/> Yes. Residential HHW is disposed in the citizen’s dumpsters.	<input checked="" type="checkbox"/> No

Program	Facility Adequacy	Practices Adequacy
	<input checked="" type="checkbox"/> No, description of facility inadequacy provided in Attachment III. D.	<input checked="" type="checkbox"/> No, description of practice inadequacy provided in Attachment III. D.

III.E. Assessment of Current Source Reduction and Waste Minimization Efforts, Including Sludge, and Efforts to Reuse or Recycle Waste

[Ref. 30 TAC §330.643(a)(3)(E)]

Refer to Regional Plan Instructions for more information on III.E. Assessment of Current Source Reduction and Waste Minimization Efforts, Including Sludge, and Efforts to Reuse or Recycle Waste.

- Assessment of current source reduction and minimization efforts, including activities to reduce sludge, and efforts to reuse or recycle waste is provided as **Attachment III.E.**

III.F. Identification of Additional Opportunities for Source Reduction and Waste Minimization, and Reuse or Recycling of Waste

[Ref. 30 TAC §330.643(a)(3)(F)]

In the table, identify new and additional opportunities for source reduction and waste minimization, including waste reuse or recycling programs. Add or remove rows as needed. Refer to Regional Plan Instructions for more information on III.F. Identification of Additional Opportunities for Source Reduction and Waste Minimization, and Reuse or Recycling of Waste.

Table III.F.I Additional Opportunities for Source Reduction and Waste Minimization, Reuse and Recycling of Waste

Category of Activity (Source Reduction and Waste Minimization, Reuse or Recycling of Waste)	Opportunity Name	Brief Description
Recycling	Electronics Recycling	A growing number of communities are holding annual events to dispose of electronics while others are opting to hold an event every two or three years, contingent upon funding.
Recycling	Tires	Some communities collect and recycle tires year-round, while others hold events to collect when funding is available.
Minimization	Reusable Bags	Most of the region has utilized educational programs to encourage the use of reusable shopping bags, in lieu of store-provided plastic bags.
Reuse	Composting	Non-profit agencies have engaged schools to develop competitive composting programs to augment school gardens and flower beds.
<input type="checkbox"/> Check box if additional information of opportunities and source reduction and waste minimization, reuse and recycling of waste is provided in <i>Attachment III. F.</i>		

III.G. Recommendations for Encouraging and Achieving a Greater Degree of Source Reduction and Waste Minimization, and Reuse or Recycling of Waste

[Ref. 30 TAC §330.643(a)(3)(G)]

In the table, provide a list of recommendations for encouraging and achieving a great degree or source reduction and waste minimization, and reuse and recycling of waste in the planning region. Add or remove rows as needed.

Table III.G.I. Recommendations for Greater Source Reduction and Waste Minimization, and Reuse or Recycling of Waste

Enter a description of the recommendation. Number the recommendations starting with #1 in this row.
1. Communities will benefit from the addition of more recycling collection stations.
2. The donation of reusables should be highly encouraged.
3. The expansion of recycling awareness and educational programs is highly recommended.
4. Increase opportunities and resources for the separation and collection of recyclables.
5. Recruit recyclers into the region to reduce waste and increase landfill longevity.
6. Research the recyclables market to identify and encourage the use of environmentally friendly manufacturing materials.
7. Provide additional locations and resources for proper disposal of waste materials i.e. strategically located trash containers in high traffic locations.
8. Increase awareness of proper disposal of Household Hazardous Waste.
<input type="checkbox"/> Check box if additional details are provided in <i>Attachment III.G.</i>

III.H. Identification of Public and Private Management Agencies and Responsibilities

[Ref. 30 TAC §330.643(a)(3)(H)]

- A list of public and private solid waste management agencies and their responsibilities that affect and impact solid waste management in the planning region is provided as **Attachment III.H.**

III.I. Identification of Solid Waste Management Concerns and Establishment of Priorities for Addressing Those Concerns

[Ref. 30 TAC §330.643(a)(3)(I)]

In the table, list solid waste management concerns for the planning area and the priorities to address those concerns. Add or remove rows as needed.

Table III.I Solid Waste Management Concerns and Priorities

Solid Waste Management Concern	Priorities to Address the Concern
Population Growth	Plan and fund future landfill sites
Compaction rate at landfills	Increase compaction rates at landfills
Disposal rates per person	Educate citizens, businesses on how to reduce disposal rates
Recycling	Increase opportunities and resources for recycling
Employee hiring, retention, and training.	Develop and implement incentives to hire and retain employees
Regional strength and weakness of the oil and gas industry	Seek TCEQ waivers on AE 20 tons per day permit limits
Address the regional amount of illegal dumping	Continue and expand education and enforcement programs to reduce illegal dumping
<input type="checkbox"/> Check box if additional details are provided in <i>Attachment III.I</i>	

III.J. Planning Areas and Agencies with Common Solid Waste Management Concerns that Could be Addressed Through Joint Action

[Ref. 30 TAC §330.643(a)(3)(J)]

In the table below, list planning areas and agencies that may provide solutions and support to the established priorities for the concerns identified in III. I. Add or remove rows as needed.

Table III.J.I Planning Areas and Agencies with Common Solid Waste Management Concerns

Solid Waste Management Concern	Names of Planning Areas and Agencies that Could Address the Concern via Joint Action(s)
Population Growth	Permian Basin Regional Planning Commission
Compaction rates	Landfill owners
Disposal rates per person	Cities, communities, counties, and non-profits
Recycling	All citizens, cities, businesses, organizations, and recyclers in the region
Illegal dumping	All citizens, cities, businesses, counties, and organizations in the region

III.K. Identification of Incentives and Barriers for Source Reduction and Waste Minimization, and Resource Recovery, Including Identification of Potential Markets

[Ref. 30 TAC §330.643(a)(3)(K)]

In the table, identify incentives and barriers for source reduction and waste minimization and resource recovery including potential markets and strategies. Describe incentives and barriers impacting source reduction and waste minimization, and resource recovery. Identify public and private incentives and markets available to assist in meeting goals and objectives. Add or remove rows as needed for each section. Refer to Regional Plan Instructions for more information on III.K. Identification of Incentives and Barriers for Source Reduction and Waste Minimization, and Resource Recovery, Including Identification of Potential Markets.

Table III.K.I Incentives and Barriers for Source Reduction and Waste Minimization, and Resource Recovery

Source Reduction and Waste Minimization	
Citizen drop off centers	Allow citizens and businesses to separate yard waste, metals, large items, and recycling.
Reuse	Reuse allows for products to have a longer life, resulting in a reduced need for new replacement products. – an example is reused cardboard and paper products for consumer packaging and reused pallets for shipping. This practice will save natural resources and landfill space.
Resource Recovery	
Recycling	Reduces waste and prolongs the life of the landfill space.
Potential Markets	
Recyclers	Recyclers will be able to return products back to be remanufactured into new products.
Identify end markets	Find end users to make local markets more viable.

III.L. Regional Goals and Objectives, Including Waste Reduction Goals

[Ref. 30 TAC §330.643(a)(3)(L)]

In the table, list the regional goals and corresponding objectives for the proper management of solid waste in the planning region. Identify the timetable for achieving each goal and objective using the established planning periods. Add rows as needed. The regional goals and objectives listed should match the goals and objectives provided in Volume I, per 30 TAC §330.635(A)(2)(A).

Table III.L.I Regional Goals and Objectives

Goal #1 Reduce the rate of annual landfill airspace used	Objective 1.A. Increase compaction rate. Objective 1.B. Use Alternative Daily cover. Objective 1.C. Divert/Recycle
Goal #2 Recycling	Objective 2.A. Convenient collection sites. Objective 2.B. Increase education and awareness Objective 2.C. Increased resources and opportunities
Goal #3 Insure adequate landfills for future	Objective 3.A. Plan and develop additional landfills Objective 3.B. Encourage legislation for State financial assistance to help develop landfill Objective 3.C. Coordinate with oil industry for future landfill sites

III.M. Advantages and Disadvantages of Alternative Actions

[Ref. 30 TAC §330.643(a)(3)(M)]

Are alternative actions being considered in this plan for the regional area?	<input type="checkbox"/> Yes. Provide details in <i>Attachment III.M.</i> <input checked="" type="checkbox"/> No. No further action required.
--	--

III.N. Recommended Plan of Action and Associated Timetable for Achieving Specific Goals and Objectives

[Ref. 30 TAC §330.643(a)(3)(N)]

In the table, provide the plan of action and anticipated timetable for achieving the goals and objectives identified in Section III.L. Identify and describe action plans, the corresponding timetables and, where available, implementation milestones. Include brief descriptions of action plans, timetables, and milestones. Milestone dates may include specific years or planning periods; short-term planning period (1-5 years), intermediate planning period (6-10 years), and/or long-range planning period (11-20 years or longer). Refer to Regional Plan Instructions for more information on III.N. Recommended Plan of Action and Timetable for Achieving Regional Goals and Objectives, Including Specified Goals and Objectives.

Table III.N.I Plan of Action and Timetable for Achieving Specific Goals and Objectives

Goal/Objective	Plan of Action	Milestone Dates
Waste Reduction	Educate all citizens on the importance of reducing the amount of waste they dispose of.	Short-term
Composting Programs for Yard Wastes and Related Organic Wastes	Create programs to encourage composting of yard and proper organic waste.	Short-term
Household Hazardous Waste Collection and Disposal Programs	Provide annual events to help provide proper disposal of HHW.	Intermediate
Public Education Programs	Education programs should be on going for all aspects of the solid waste industry.	Short-term
The Need for New or Expanded Facilities and Practices	As the region grows, expansion of new and existing facilities will be required. Researching and adopting best practices is advised.	Short-term
Continue education and encouragement of enforcement regarding illegal dumping	Illegal dumping and the costs associated with clean-up have been a serious problem in the region. PBRPC and similar agencies should continue to educate member agencies and enforcement staff on this topic.	Short-term
<input type="checkbox"/> Check box if additional details are provided in <i>Attachment III.N.</i>		

III.O. Identification of the Process that Will be Used to Evaluate Whether a Proposed Municipal Solid Waste Facility Application Will be in Conformance with the Regional Plan

[Ref. 30 TAC §330.643(a)(3)(O)]

- The process that will be used to evaluate whether a proposed municipal solid waste facility application will be in conformance with the regional plan is identified in **Attachment III.O.**

Section IV. Required Approvals

Table IV.I Required Approvals

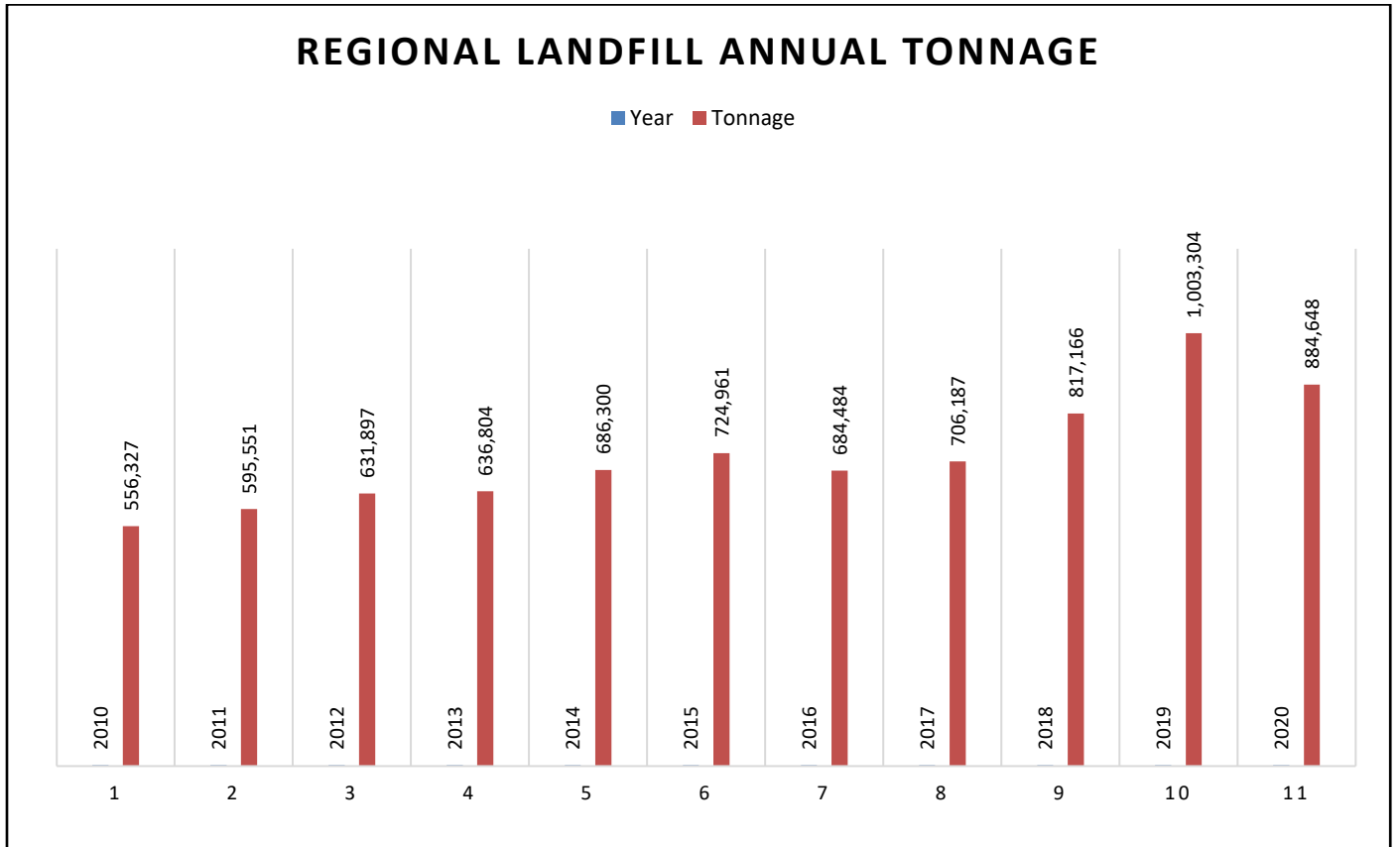
Solid Waste Advisory Committee	Enter approval date by the Solid Waste Advisory Committee.
Public Meeting Dates	Enter dates of public meetings.
Executive Committee	Enter approval date by the Executive Committee.

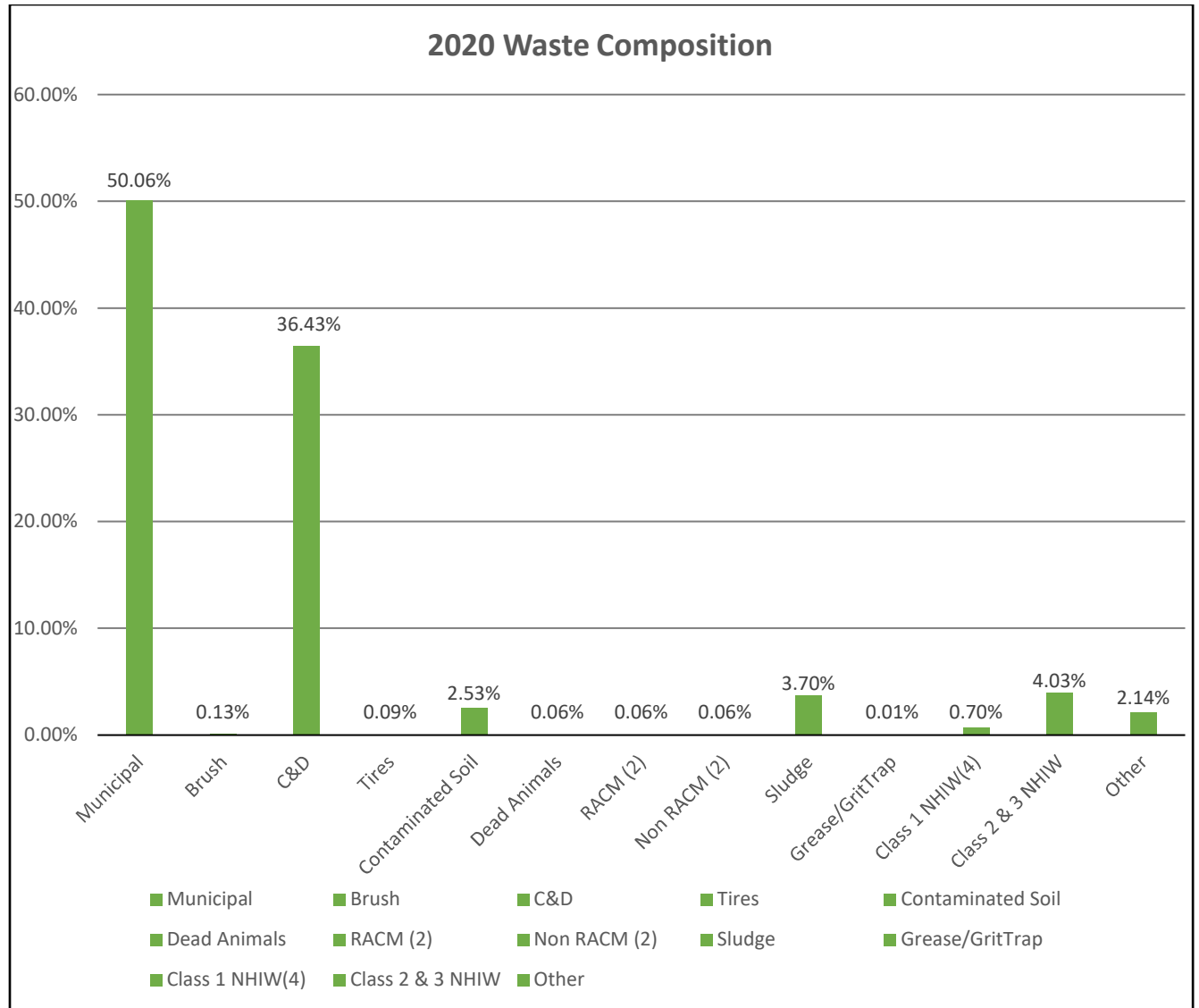
- Check box if local government and jurisdiction resolutions, and letters of support are included in **Attachment IV.A.**
- Public notice, agenda, public comments, and the transcript of the required public meeting are included as **Attachment IV.B.**

ATTACHMENT II.A

County	Landfill Name	Permit	Type	Rem Yr
Andrews	City of Andrews Landfill	171	1AE & 4AE	31.6
Crane	City of Crane Landfill	2345	1AE & 4AE	446
Dawson	City of Lamesa Landfill	517A	1	51.3
Ector	Charter Waste Landfill	2158	1	26
Gaines	City of Seminole Landfill	39	1AE & 4AE	49
Glasscock	Glasscock County Landfill	2154	1AE	3.9
Howard	City of Big Spring Landfill	288A	1	1.7
Howard	City of Big Spring Landfill	2395	1	106
Martin	City of Stanton Landfill	2189	1AE	28
Midland	City of Midland Lanfill	1605B	1	58.9
Pecos	City of Fort Stockton	976	1AE & 4AE	2
Reeves	City of Pecos Landfill	2120A	1AE & 4AE	43
Terrell	Terrell County Landfill	673	4AE	35
Upton	City of McCamey Landfill	566	4AE	4
Upton	Upton County Rankin Landfill	691	4AE	28
Ward	City of Monahans Landfill	772	1AE & 4AE	21.5
Future Landfills				
County	Landfill Name	Permit	Type	Yr
Pecos	City of Fort Stockton	2402	1AE & 4AE	101
Proposed Landfills				
County	Landfill Name	Permit	Type	Yr
Ector	Diamondback	2404	1 & 4	62
Glasscock	Glasscock County Landfill	2392	1AE	130
Reeves	West Sun Tex LLC	2410	1	100
Ward	City of Monahans Landfill	772	1AE & 4AE	20

ATTACHMENT III.B.2





Attachment III.D.

Resource Recovery – The region has multiple metal recycle facilities for the recycling of metal. 8 of the 23 cities responding to the survey said they had some form of recycling. Most of the recycling in the region consist of cardboard, paper, plastic, and some electronics. There is one major commercial recycling business in the Region, Butt’s Recycling. They also operate a commercial paper shredding business, that also recycles the paper. 7 of the landfills currently divert and recycle brush, while 3 other landfills take brush but do not recycle it.

Storage – There are currently no facilities to store solid waste.

Treatment - There are currently no facilities to treat solid waste.

Disposal – Landfills need to increase their compaction rates to 1000 lbs. per cubic yard.

HHW Collection – Currently Odessa Recycle Center is the only entity that collects Household Hazardous Waste.

HHW Disposal – Collected HHW is transported out of the region. Odessa Recycle Center is located in Odessa.

Attachment III.E.

III.E. Assessment of Current Source Reduction and Waste Minimization Efforts, Including Sludge, and Efforts to Reuse or Recycle Waste

There are limited areas to recycle in the region. There are for profit, non-profits and government entities attempting to increase recycling in the area. This effort is limited due to the funding required to hold these events. The efforts include cardboard, paper, and electronics.

There is no mention of any efforts to reduce sludge or to reuse/recycle waste.

Attachment III.H.

III.H. Identification of Public and Private Management Agencies and Responsibilities

City of Ackerly	Town of Pecos City	Andrews County
City of Andrews	City of Pyote	Borden County
City of Balmorhea	City of Rankin	Crane County
City of Barstow	City of Seagraves	Dawson County
City of Big Spring	City of Seminole	Ector County
City of Coahoma	City of Stanton	Gaines County
City of Crane	City of Thorntonville	Glasscock County
City of Forsan	City of Toyah	Howard County
City of Fort Stockton	City of Wickett	Loving County
City of Goldsmith	City of Wink	Martin County
City of Grandfalls	Keep Andrews Beautiful	Midland County
City of Iraan	Keep Big Spring Beautiful	Pecos County
City of Kermit	Keep Fort Stockton Beautiful	Reeves County
City of Lamesa	Keep Midland Beautiful	Terrell County
City of Los Ybanez	Keep Odessa Beautiful	Upton County
City of McCamey	Keep McCamey Beautiful	Ward County
City of Midland	Butts Recycling	Winkler County
City of Monahans	Time Machine	
City of Odessa	Permian Basin Regional Planning Commission	

Attachment III.O.

Conformance Guide for Proposed Municipal Solid Waste Facility Application

This form can be used to review proposed new landfills for compliance with Permian Basin Regional Planning Commission, Region 9’s 20-year municipal solid waste plan. Important, this is not a regulatory review of the application, as the regional organization does have the authority to not approve or deny permit applications.

A possible score of 100 can be achieved.

Applicants Score _____

	Yes	Points
Landfill Type		
<small>(8 points for Type I and Type I AE. 4 points for Type IV and Type IV AE)</small>		
Type I	_____	_____
Type IV	_____	_____
Type I AE	_____	_____
Type IV AE	_____	_____
		Total points _____

Landfill Longevity:

(2 points for A. 4 points for B. 6 points for C. 8 points for D.)

A - 25 yrs.	_____	_____
B - 26 – 50 yrs	_____	_____
C - 51 -75 yrs	_____	_____
D - 75 yrs +	_____	_____
		Total points _____

Waste Accepted

(2 points for each yes)

Municipal	_____	_____
Brush	_____	_____
Construction or Demolition	_____	_____
Litter	_____	_____
Class 1 Non-Hazardous	_____	_____
Class 2 and 3 Non-Hazardous	_____	_____
Incinerator Ash	_____	_____
Treated Medical Waste	_____	_____
Municipal Hazardous Waste		
From CESOGs	_____	_____
Regulated Asbestos		
Containing Material	_____	_____
Non-RACM	_____	_____
Dead Animals	_____	_____
Sludge	_____	_____
Grease Trap Waste	_____	_____
Septage	_____	_____
Contaminate Soil	_____	_____
Tires (split, quartered, or shredded)	_____	_____
Empty Pesticide Containers	_____	_____
Used Oil Filters	_____	_____
Other	_____	_____
		Total _____

Landfill diversion:

(2 points for each Yes)

Wood	_____	_____
Yard Waste	_____	_____
Metals	_____	_____
White Goods	_____	_____
Electronics	_____	_____
Cardboard	_____	_____
Paper	_____	_____
Other	_____	_____
		Total Points _____

Recycling

(2 points for yes)

Is there plans to work with a recycler to coordinate this diversion?	_____	_____
		Total points _____

Alternative Daily Cover:

(8 points for yes)

Check for Yes	Points
_____	_____
	Total Points _____

Compaction Rate:

(2 points for A. 4 points for B. 68 points for C. 8 points for D)

	Check for Yes	Points
A - 1 lbs. – 500 lbs.	_____	_____
B - 501 lbs. – 1000 lbs.	_____	_____
C - 1001 lbs. – 1500 lbs.	_____	_____
D - 1500 lbs. – up	_____	_____
		Total Points _____

Recycling Education Programs:

(1 points for each yes)

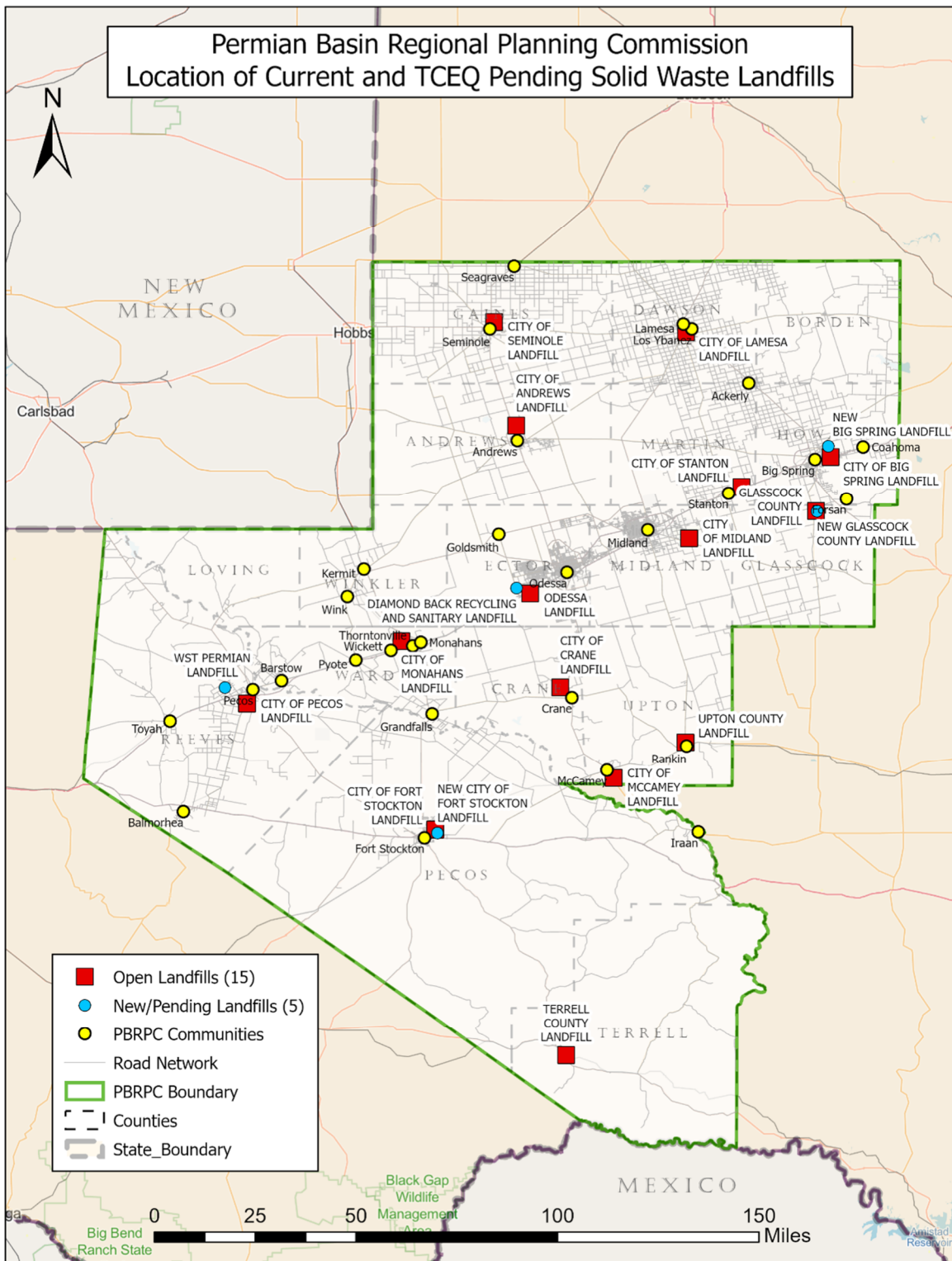
Public	_____	_____
Staff	_____	_____
		Total points _____

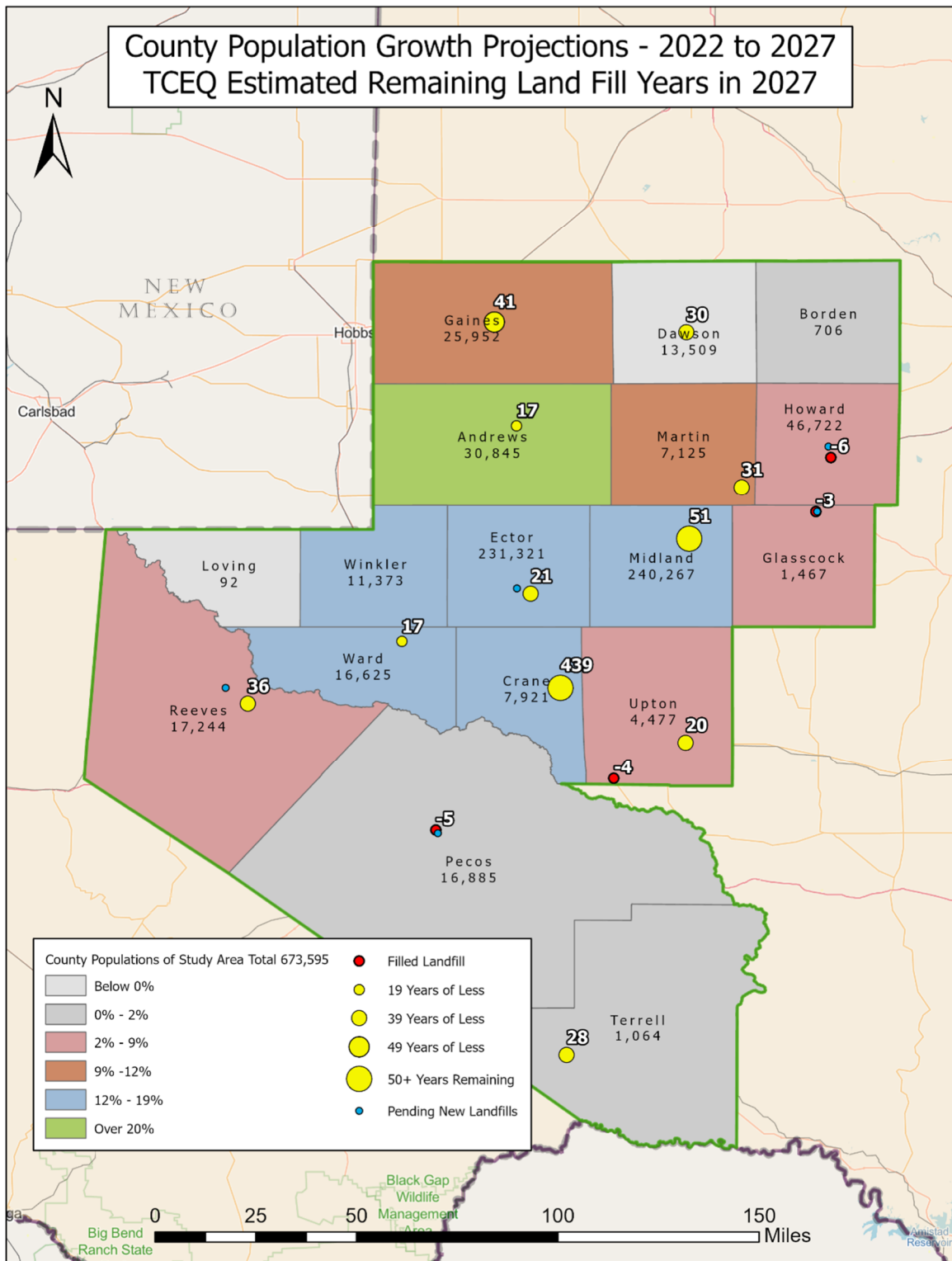
Employee Training:

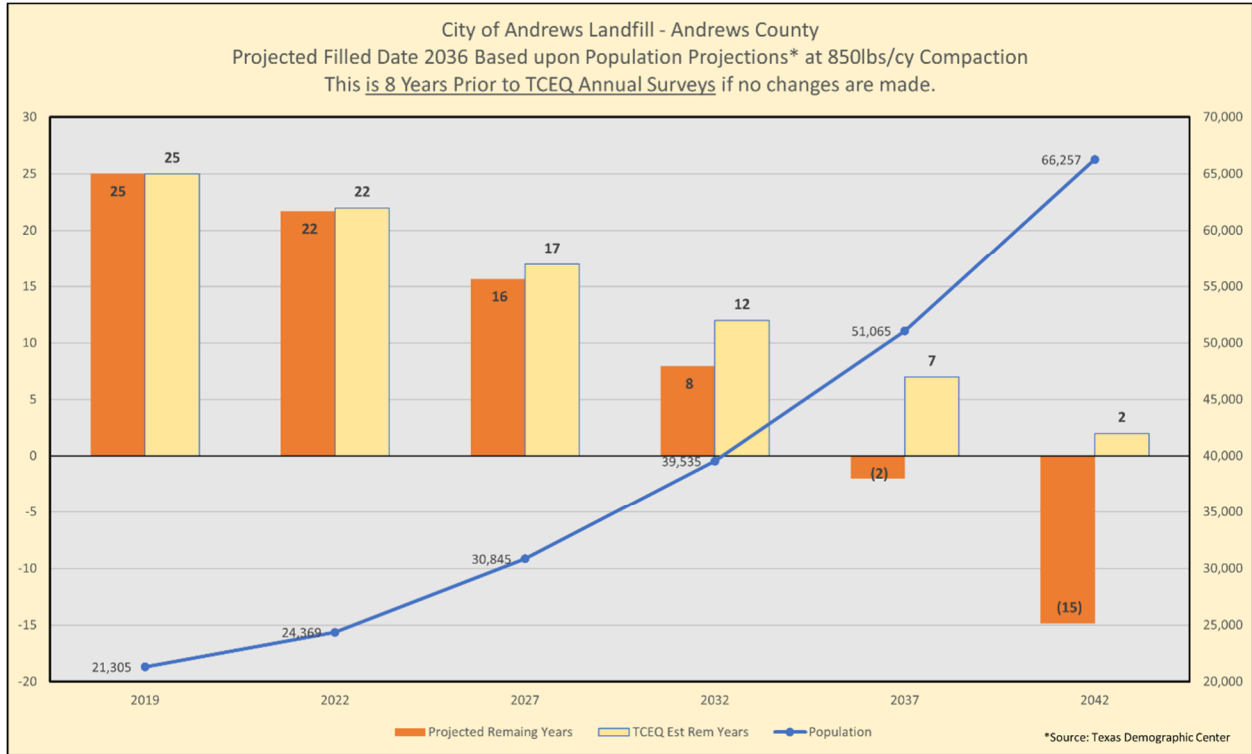
(2 points for each yes)

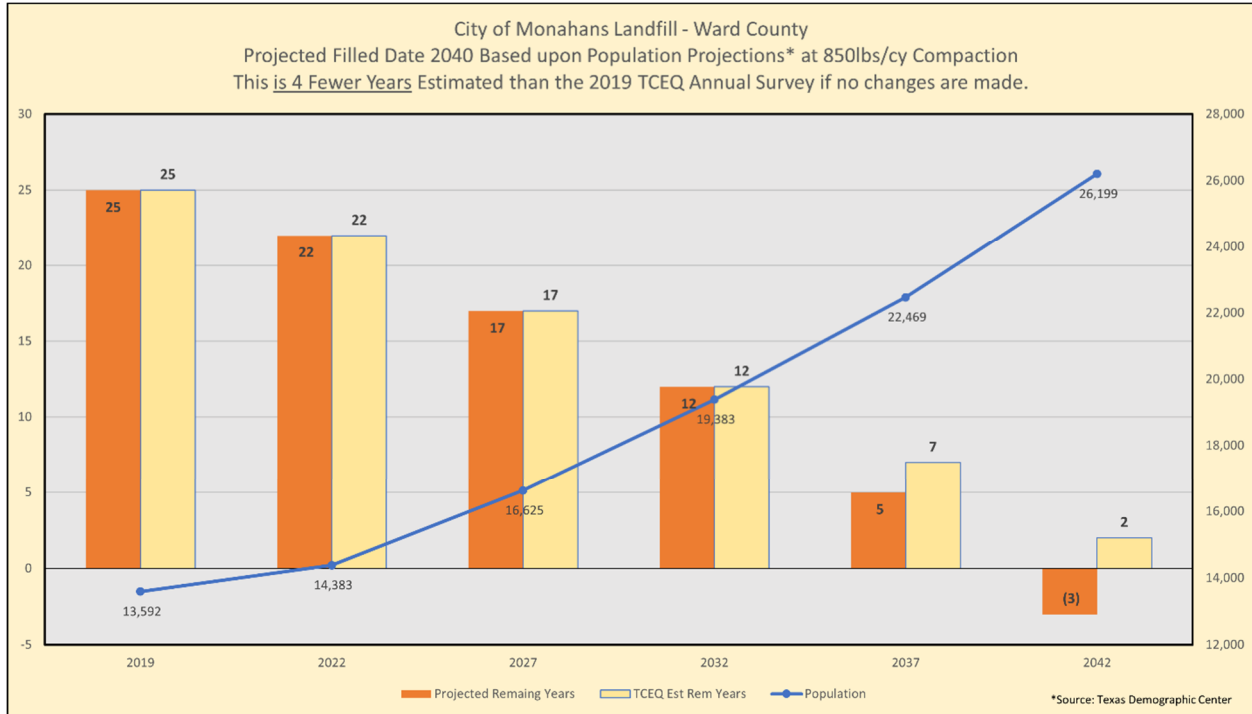
TCEQ approved	_____	_____
Other	_____	_____
		Total points _____

ATTACHMENT III.O









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