

City Council Presentation

Regional Solid Waste Planning Study The City of Alpine, Texas

Alpine City Hall
100 North 13th Street, Alpine, Texas
May 20, 2008

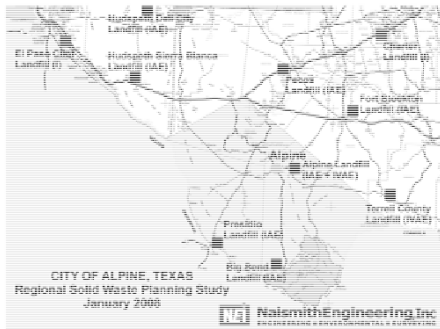
Administrative Items

- Project Contacts - Naismith Engineering
 - Mr. Grant A. Jackson, P.E., Project Principal
 - Mr. Adam M. Luke, P.E., Project Engineer
- Funding Sources - \$90,000
 - Border Environment Cooperation Commission (BECC) Technical Assistance Program - \$45,000
 - U.S. Environmental Protection Agency (EPA) Border 2012 Program - \$45,000
- Project Website:
<http://www.neionline.com/Alpine-MSW.files/Alpine-MSW.htm>

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Project Area



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Scope of Work

- Facility Planning (Waste generation)
- Current Practices Analysis
- Alternatives Analysis
- Land Requirements, Site Analysis and Conceptual Design
- Management Analysis
- Determination of Permitting Rqmts.
- Preliminary Financial Analysis
- Public Participation

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Public Participation

- Project Kick-off Meeting (Dec. 2007)
- Steering Committee Meetings – Monthly Since January 2008 (Members Appointed by Council)
- Meetings with Public Entities & Regional Partners
- City Council Meetings
 - Updates/Presentations
 - Public Hearings (Adoption & Expend.)

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Data Collection Activities

- Survey Forms
 - Kick-off Meeting
 - Via Fax/E-mail
- TCEQ Files
- COGs
- Follow-up Meetings
 - City of Fort Stockton
 - Jeff Davis County
 - City of Marfa
 - City of Presidio
 - Presidio County
 - Town of Pecos City
 - Terrell County

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Regulatory Requirements

- Arid Exempt Landfills
 - Special Exception to TCEQ/EPA Rules
 - < 20 Tons Per Day (TPD) of Garbage (MSW)
 - < 20 TPD Brush & Construction/Demolition Debris (B&CD)
 - “No feasible alternative”
 - No constructed liners or groundwater monitor.
- Other (Type I) Landfills
 - Constructed Liners & GW Mon. (\$300k/Ac)
 - No limit on waste acceptance
- Landfills Must Conform to Regional Solid Waste Plan by COG

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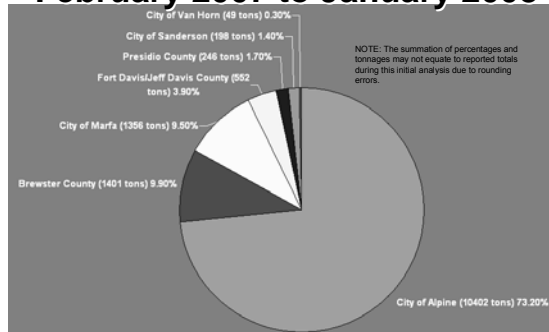
Constraints

- Waste Acceptance Limits
 - < 20 TPD Total, unless approval from TCEQ
 - < 20 (MSW) + 20 TPD (B&CD) with approval (Final Approval to Alpine in early 2007)
 - Applies to “Disposal” – addn. waste can be received, if not disposed
 - Requires other alternative(s) when waste generation > acceptance limit
- Distance (One Way!)
 - Charter LF – Odessa - 143 mi.
 - Clint LF – El Paso – 198 mi.
- Other Existing AE’s (Based on 2006 Data!)
 - Planning Area - 70 T-Yrs (7 Years @ 10 TPD)
 - PA+Adj. - 219 T-Yrs (21.9 Yrs. @ 10 TPD)

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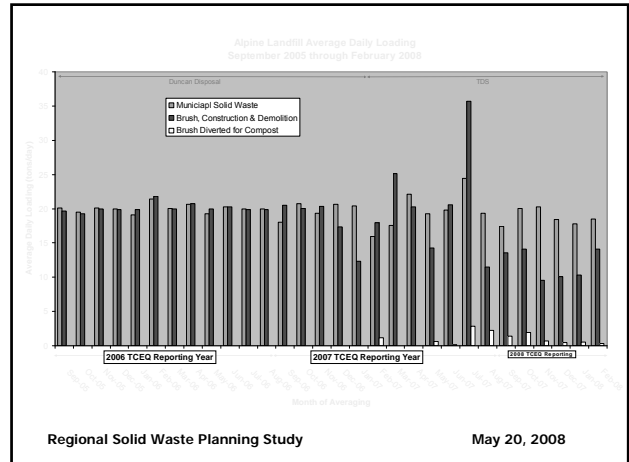
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Origin of Waste to Alpine Landfill February 2007 to January 2008



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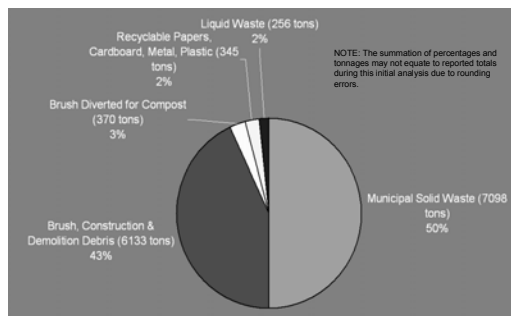
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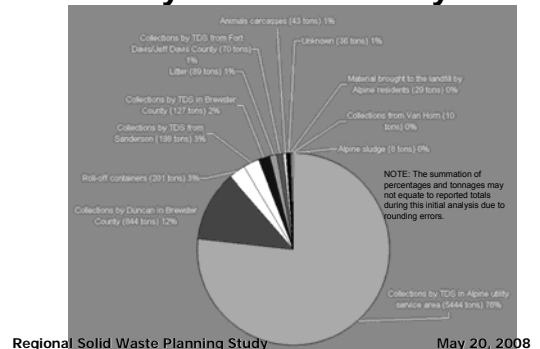
Waste Characterization February 2007 to January 2008



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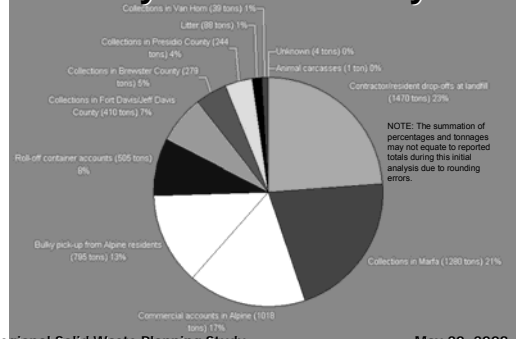
MSW Collection Source February 2007 to January 2008



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Brush, Constr./Demo. Debris February 2007 to January 2008



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Basis for Comparison

- Residential Rates:
 - 2007 Residential collections: 5,433 tons
 - 2007 Res. revenue: \$690,000 = \$127.00/t
 - 2007 pop.: 6162 pers. = 5.48#/pers./day
 - 2.6 pers./acct. => 427 #/acct-month
 - \$26.63/ (427#/2000#/t) = \$124.73/t
- Commercial Rates:
 - 2007 Commercial collections: 2,317 t
 - 2007 Comm. Revenue: \$450,000 = \$194.22
 - Average Billing: \$6.41/cy-pickup
 - With Utilization @ 50% & weight = 300#/cy, Rate Is: \$6.41/((450/2000)x0.75) = \$85.46/t

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Alternatives

- **Alternative 1:** Send excess waste to other facilities using collection trucks
- **Alternative 2:** Implement an aggressive recycling program
- **Alternative 3:** Build a transfer station at the Alpine landfill and transport excess waste to other facilities
- **Alternative 4:** Upgrade existing landfill to Type I with No Waste Limit
- **Alternative 5:** Construct new Type IVAE landfill

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Alternative 1: Excess Waste to Other Facilities Using Collection Trucks

- Once limits of 20 tpd MSW & 20 tpd B&CD exceeded, excess waste transported to other facilities in collection vehicles
- Transport Cost:
 - Fuel: \$4.50/gallon
 - Vehicle Operation: \$1.34/mile
 - Tipping Fee: \$30.00/ton

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Alternative 2: Implement an Aggressive Recycling Program

- Reduce disposal rates into existing landfills by reusing or recycling certain materials.
 - Cardboard, paper, plastics, metals.
- Target recycle ratio: 50%
- Up-front Costs:
 - Recycling containers: \$400,000
 - Additional Truck: \$200,000
 - Recycling center expansion: \$125,000
- Operating Costs:
 - Three additional employees
 - Recycling container replacement
 - Public education campaign

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Alternative 2 (Cont'd)

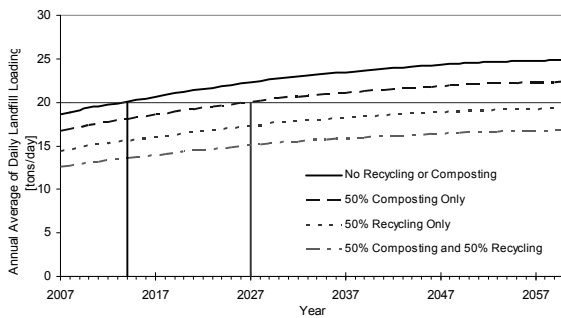
- Introduce City-Wide Residential Recycling Program



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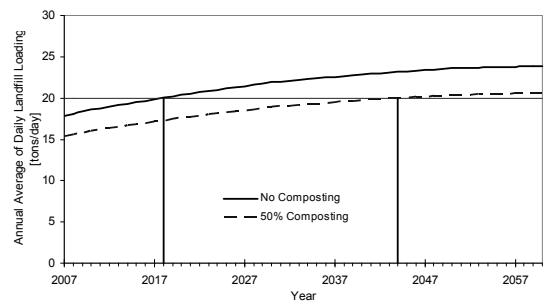
Alternative 2: MSW Waste Stream with 50% Recycling and 50% Composting



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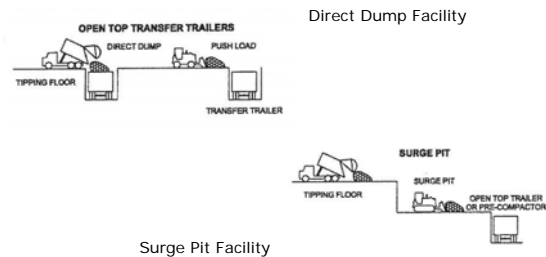
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Alternative 2: BCD Waste Stream with 50% Composting



Alternative 3: Transfer Station

- Construct a transfer station at the existing Alpine landfill facility.



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Alternative 3: Transfer Station Up-Front Costs

- Construction: \$900,000
- Additional Equipment: \$400,000
- Legal, Permitting, Engineering: \$150,000
- Contingency: \$110,000
- TOTAL: ~\$1,500,000

Alternative 4: Upgrade Existing Landfill

- Upgrade to Type I: fewer restrictions but significantly higher costs
- Will require TCEQ authorization and permitting (location restrictions apply)
- Significant Construction Costs:
 - Permitting: \$500,000
 - Clay Liner: \$20,000,000
 - Groundwater Monitoring: \$100,000 Significant Construction
- Annual Operating Costs
 - Groundwater Monitoring
 - Leachate Collection
 - Methane Gas Monitoring

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Alternative 5: Construct New Type IAE Landfill

- TCEQ Stated Policy:
 - Same entity cannot have 2 AE LFs
 - 2 AE LFs cannot be located adjacent (even if separate ownership)
 - Will carefully review "feasibility"
- Required to Permit
 - Siting Requirements
 - Land acquisition
 - Regular permitting

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Siting Requirements for New Landfill Units

- TCEQ General Requirements:
 - 6 miles from end of airport runways
 - Outside of 100-year floodplain
 - Outside of identified wetlands
 - ½ mile from known geologic faults
 - Isolated from underground aquifers (if Class 1 industrial waste accepted)
- Additional for Type I
 - Away from seismic impact zones or design to accommodate (addn. \$\$\$ & may preclude use of existing site)
- Review Location Restriction Maps

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Updated Preliminary Cost Comparison 20-year Average

Alternative	Base Cost	Incr. Cost.	Total Cost.
1 Off-site Res Com	\$127.00 \$194.22	\$3.01	\$130.01 \$197.23
2 Recycle Res Com	\$127.00 \$194.22	\$22.48	\$149.48 \$216.70
3 Transfer Res Com	\$127.00 \$194.22	\$99.38	\$226.38 \$293.60
4 Upgrade Res Com	\$127.00 \$194.22	\$127.31	\$254.31 \$321.53
5 New Res Com	\$127.00 \$194.22	\$81.26	\$208.26 \$275.48

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Comparisons

Service	Alpine	West TX Comp	Other TX Comp.
Residential	\$127.00	\$113-\$150	\$80-125
Commercial	\$6.41/cy-pu	\$3-\$8	\$3-10

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Questions



- Naismith Engineering
- Grant A. Jackson, P.E.
(gjackson@naismith-engineering.com)

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