APPENDIX G

HOW THE OPTIONS WERE EVALUATED AND SCREENED

APPENDIX G

HOW THE OPTIONS WERE EVALUATED AND SCREENED

The BAS Consultant Team along with the RMAC and ESD staff went through several iterations in screening the over 100 options considered for Phase I of the LRMOSP. The table below summarizes the results of the screening process.

LRMOSP – PHASE I Number of Options Considered During Each Screening Round			
Category	**First Screening Round (see Tables G-1 to G-10)**	**Second Screening Round (see Table G-12)**	**Final Screening Recommended For Phase II**
Zero Waste Programs	58	20	16
Zero Waste Infrastructure	8	8	8
Conversion Technologies	6	6	5
Waste to Energy	1	1	1
Landfill Optimization	7	7	4
Alternative Disposal Options – In and Out of County	25	10	6
Total No of Options	**105**	**52**	**40**

A detailed discussion on how each of the categories and options were evaluated follows.

G.1 ZERO WASTE PROGRAMS

There were almost 60 options in the Zero Waste Programs category that were discussed, screened and ranked in Phase 1. The programs included Source Reduction, Reuse, Recycling, Organics Diversion, and Education as shown on the following table.

Zero Waste Program Options			
Category	**Coding**	**See Table for detailed listing**	**No. of Options Evaluated**
Source Reduction	ZW-SR	G-1	17
Reuse	ZW-RU	G-2	5
Recycle	ZW-RY	G-3	12
Organics Diversion	ZW-OD	G-4	10
Education	ZW-ED	G-5	14
Total No. of Options			**58**

Tables G-1 to G-5 (at the end of this appendix) list each of the zero waste program options that were evaluated along with the scores for each option by the screening criteria category. The options included some programs that were already being implemented by ESD, which are shown with green shading on Tables G-1 to G-5.

How the Zero Waste Options Were Screened

Each of the programs reviewed were ranked using the criteria established for screening. For Financial Viability, options that could be implemented through policy or ordinance changes or initiation of new policies with minimal cost were ranked high. Those requiring moderate equipment purchases, labor and other expenses ranked medium and those with high costs for implementation and/or having high cost impacts on businesses/consumers were ranked low. For Technical Viability, programs that have been successfully been implemented elsewhere or in the city were ranked high; those that have had moderate success elsewhere, or are more difficult to implement, were ranked medium, and those that have not worked well elsewhere or have not been technically feasible to implement were ranked low. For Regional Viability, most options ranked high with the exception of those that would impact local businesses or would be difficult to implement on a regional basis which were ranked medium to low feasibility. For Environmental Viability, most of the options were ranked high, with the exception of those that may create impacts on the environment such as increased odors, air quality, traffic and/or aesthetics impacts, which were ranked medium or low feasibility depending on the degree of potential impact. Nearly

all of the zero waste programs were ranked low for capacity optimization as the diversion volumes are low for most of the options. Those options with measurable or moderate diversion volumes received a medium ranking. For Sustainability, nearly all of the zero waste program options ranked high or medium feasibility based on the degree of highest and best use.

Second Round of Screening for Zero Waste Programs

Subsequent to the presentation of the preliminary rankings to the RMAC on April 30, 2008, the list was compressed and consolidated in response to input from the RMAC members to make the zero waste program list more manageable.

Based on recommendations at the April 30, 2008 RMAC meeting, the Zero Waste Program list was modified as follows: Under the Recycle category "Increase waste hauling fees (franchise/permit fees) to recycling" was deleted. Under Education, "Promote CAMPostables" was deleted. Under the Source Reduction category, "Extended Producer Responsibility" was added.

City staff then took another comprehensive look at the list and screened out those programs that were already being implemented by the City or by others. If the City was already implementing the program, it was placed on the list of Existing Zero Waste Programs – Environmental Services Division – By Category (see Table G-11). If the program was already being implemented by another agency, it went under the heading, "Others Already Doing," and if the program needed to be implemented by another entity, it was moved under "Opportunities for Others."

G.2 ZERO WASTE INFRASTRUCTURE

There were 8 Zero Waste Infrastructure options screened in Phase I as shown on Table G-6. They included household hazardous waste (HHW) collection centers, materials recovery facilities (MRF) for curbside and commercial application, greenwaste facilities, construction and demolition facilities, transfer facilities, and resource recovery parks with industrial or community application. For Financial Viability, most of the options were ranked with medium feasibility due to

moderate costs. The HHW collection center, and construction and demolition facility options were ranked with a high feasibility as their costs were lower, and the commercial MRF was ranked with a low feasibility due to its higher costs.

For Technical Viability, most of the options were ranked with a high feasibility as they have long track records of demonstrated uses. The exceptions are the resource recovery parks (both commercial and community applications) which were ranked with medium feasibility as there are not as many demonstrated uses at needed volumes.

For Regional Viability, the curbside MRF and resource recovery parks ranked high for social acceptability due to their accessibility to the public; the remaining options ranked medium due to their waste diversion capabilities with the exception of transfer facilities which had a low ranking due to their lack of waste diversion or disposal in meeting regional solid waste management needs. For Environmental Viability, most of the options ranked a medium feasibility due to environmental impacts on traffic, air quality, noise, and aesthetics related to new facilities requiring mitigation measures to be implemented. The HHW collection centers, curbside MRF's, and community resource recovery parks were ranked with a high feasibility as the traffic volumes and associated impacts are anticipated to be lower. For Capacity Optimization, the options with potential for higher diversion from landfills were ranked with a high feasibility and those with lower diversion volumes (resource recovery parks) were ranked with a low feasibility. For Sustainability, each of the options ranked high for the best use of material generated by the City's residents and businesses.

The results of the screening analysis for Zero Waste infrastructure are included in Table G-6.

G.3 CONVERSION TECHNOLOGIES

There were 6 types of conversion technologies screened in Phase I as shown on Table G-7. They included gasification and pyrolysis, anaerobic digestion, hydrolysis, mechanical processing (autoclave), chemical processing (depolymerization), and MSW composting. For Financial Viability, high ranking options were those with tip fees of $40 to $60/ton; medium feasibility options

were those with moderate tip fees of $60 to $85/ton and low ranking options were those with tip fees of $85 to $100/ton. For Technical Viability, medium ranked options were those that have been commercially demonstrated for processing MSW and low ranked options were those that have not yet been demonstrated for processing MSW. There were no high ranked options for Technical Viability as there were no commercially demonstrated options at volumes greater than 1,000 tpd. For Regional Viability, each of the options was ranked with medium feasibility as social acceptance was subject to site-specific determination. The exception was MSW composting which ranked low for social acceptance due to odor issues.

For Environmental Viability, all of the options ranked high since each technology generates electricity and/or fuels; reduces greenhouse gas emissions, and has reported low emissions profiles. For Capacity Optimization, options with higher potential for diversion (80% to 100%) were ranked high, and those with moderate potential for diversion (70% to 80%) were ranked medium. There were no options with low potential for diversion (<70%). For Sustainability, most of the options ranked high since they convert residual MSW, that would otherwise be landfilled, into electricity and/or fuels, aggregate, or other products and have a moderate to high certainty of marketing fuels or non-energy products. The exceptions to this were anaerobic digestion and MSW composting due to the low to moderate certainty of marketing significant volumes of compost for higher uses than alternative daily landfill cover.

The result of the screening analysis for Conversion Technologies is included in Table G-7.

G.4 WASTE TO ENERGY

Waste-to-Energy technology was ranked as a single option in Table G-8. For Financial Viability, waste-to-energy was ranked medium with a moderate tip fee of $60 to $85/ton. Technical Viability was ranked high due to a long track record of commercial use in processing MSW with 87 plants in the United States and 776 plants worldwide that were known at the time of this study.

Regional Viability was ranked low due to Proposition H restrictions within the City, limiting mass-burn facilities to less than 500 tpd. Social acceptability is subject to site-specific determination as the ranking for regional viability could be a higher feasibility ranking if a facility is sited outside City limits. Environmental Viability was ranked as medium feasibility due to the air emissions profile being higher than conversion technologies, although emissions meet established, stringent air emissions limits. Capacity Optimization was ranked medium based on an anticipated moderate diversion rate from landfill disposal of 70% to 75%. Ash residue from waste-to-energy typically requires landfill disposal as there are no demonstrated markets for the residue. Sustainability was ranked medium as this option converts MSW that would otherwise be landfilled, into electricity with a high certainty of marketability. Waste-to-energy reduces greenhouse gas emissions and generates steam and electricity, but has no potential for fuels.

G.5 LANDFILL OPTIMIZATION

There were 7 landfill optimization options screened in Phase I, including options the City is already implementing (compaction and alternative daily cover) or has piloted (steam injection), see Table G-9. For Financial Viability, compaction by soil surcharging and use of the tarp-o-matic machine as alternative daily soil, were ranked as having high financial feasibility since they were already implemented by ESD operations. The use of a new compaction alternative, the Computer-Aided Earth-Moving System (CAES) was originally ranked a 3 for financial viability but after discussions at the RMAC meetings was moved to a 5 for financial viability as the City leases all of its heavy earth-moving equipment and would only need to lease or add this equipment to its lease option. The leachate recirculation and landfill reclamation were both ranked a medium feasibility under financial viability as these two options would be more costly to implement. The bioreactor and steam injection were ranked the lowest under financial viability because of known costs for the bio-reactor landfill and initial costs of the steam injection at the West Miramar Landfill. Because the West Miramar Landfill is known to be very dry, the cost of implementing these two technologies which require substantial amounts of water was estimated to be very high and thus ranked low under financial viability.

Under Technical Viability, the soil surcharging method and tarp-o-matic method were ranked high for the City as staff is very familiar with and has proven adept at implementing these two technologies. Options ranked medium under technical viability were computer-aided earth moving system, landfill reclamation, and bio-reactor because although these options have been implemented and proven by others; they would need to be proven at the City's landfill. These is especially true for landfill reclamation options which will require site specific issues be addressed such as water table levels, depth of refuse, regulatory approvals, and economics. All of these issues will be further examined in Phase II. Steam injection and leachate recirculation were ranked low under technical viability because of known issues with these technologies. Both are less proven than a complete bio-reactor landfill and do not achieve the reported compaction as full-scale bioreactors.

Under Regional Viability, the soil surcharging, tarp-o-matic machines and CAES options were ranked high due to their acceptability with regulatory agencies. The landfill reclamation, leachate recirculation, bio-reactor and steam injection options ranked lower in Regional Viability due to a more extensive regulatory agency approval process.

Under Environmental Viability, ranked high were soil surcharging, the tarp-o-matic machine and the CAES system due to their minimal impacts on the environment. Ranked lower were landfill reclamation, bio-reactor, leachate recirculation, and steam injection due to potential impacts related to odors, gas, generation and groundwater.

Under Capacity Optimization, the only option that was ranked high was landfill reclamation. Soil surcharging was ranked medium as the capacity increases, which can be substantial, and time and volume dependent. All other options were ranked low under capacity optimization primarily because of the time it takes to achieve increased capacity. For example, capacity increases with bioreactors are not realized for several years up to ten years in some instances.

Under Sustainability, four options were ranked high because of their ability to not consume additional resources or use limited resources while being implemented. These were soil surcharging, use of the tarp-o-matic machine, the

CAES system, and landfill reclamation. Other options were ranked medium under this screening criteria primarily because of the need for additional water to implement those options and in addition they help create additional landfill gas which has greenhouse gases.

The results of the screening analysis for Landfill Optimization are included in Table G-9.

G.6 ALTERNATIVE DISPOSAL OPTIONS IN & OUT OF SAN DIEGO COUNTY

There were initially twenty-five (25) landfill options that were evaluated in Phase I, eight (8) in-County sites, and seventeen (17) out of County sites. See Table G-10.

G.6.1 IN COUNTY DISPOSAL OPTIONS

Of the eight original in-County sites that were identified, the only options ranked were: Miramar Height Increase, Sycamore, Otay and Gregory Canyon. Considered but rejected from the in-County list were San Onofre and Las Pulgas because they only accept military waste, and Borrego and Ramona because of their limited ability to take additional waste and their remote locations.

The four remaining in-County sites were screened with the following criteria for Financial Viability: a high ranking was given if the total cost of disposal was under $70/ton, a medium ranking if the cost of disposal were over $70/ton but below $100/ton and a low ranking if the total disposal costs were over $100/ton. Total disposal costs included transportation costs, transfer station costs, and disposal tip fees. The disposal fee included the AB 939 fee and tip fee at all sites and the franchise fees at West Miramar. Sites ranked high under financial viability were the West Miramar, Sycamore and Otay Landfills. Gregory Canyon Landfill was ranked medium.

Under Technical Viability, West Miramar, Sycamore and Otay Landfills were ranked high as these landfills are permitted and operating. Gregory Canyon Landfill was ranked medium as it is not yet operating and will require a double-liner. Under Regional Viability, West Miramar, Sycamore and Otay were ranked

high for similar reasons. Gregory Canyon Landfill was ranked medium as it has not yet obtained all of its operating permits.

For Environmental Viability, West Miramar, Sycamore and Otay were all ranked high as they are operating under compliance with their existing permits, while the Gregory Canyon Landfill was ranked medium as it has not yet demonstrated compliance.

Under Capacity Optimization, the criteria used was three-pronged; the first criteria used was capacity gained. If the capacity gained would provide over five years capacity, the option was ranked high. If the capacity gain was one to five years, it was ranked medium, and if the capacity gain was under one year, it was ranked low. The second criteria was capacity available at the landfill. If it was over 34 million tons, the option was ranked high; if it was 22.6 to 34 million tons it was ranked medium; and if it was under 22.6 million tons, it was ranked low. The third criteria was the daily tons per day (tpd) available. If it was over 2,000 tpd, the option was scored high: If it was 1,500 to 2,000 tpd, the option was a medium score and if it was under 1,500 tpd it was scored low. Therefore, under Capacity Optimization, the West Miramar, Sycamore and Gregory Canyon Landfills were overall ranked medium and Otay Landfill was ranked low.

Under Sustainability, the already operating sites were ranked medium: West Miramar, Otay and Sycamore Landfills and Gregory Canyon Landfill was ranked low because of the resources it will consume to open a new landfill. The results of the in-County alternative disposal options are included in Table G-10.

G.6.2 OUT OF COUNTY DISPOSAL

Seventeen out-of-County disposal sites were originally considered under Phase I. Eleven of the sites were screened out as considered, but rejected. Five of those sites that do not allow out-of County waste disposal are: Lamb Canyon, Badlands Landfill, Mecca Landfill, Desert Center Landfill, and Blythe Landfill. Six sites were rejected because of their limited capacity: Calexico Solid Waste Site, Imperial Solid Waste Site, Niland, Salton, City, Picacho, and the Monofil Facility.

The remaining six out-of-County sites which were analyzed were: El Sobrante Landfill (Riverside County), Prima Deshecha, Frank R. Bowerman and Olinda Alpha Landfill (all in Orange County), Allied Imperial Landfill, and Mesquite Regional Landfill via Rail Haul.

Under Financial Viability and using the costs described earlier for the in-County disposal options, the sites were ranked as follows: Medium Viability: El Sobrante, Prima Deshecha, Frank R. Bowerman and Olinda Alpha Landfills. The Mesquite and Allied Imperial Landfills were ranked low.

Under Technical Viability, the El Sobrante, Prima Deshecha and Frank R. Bowerman Landfills were ranked high because of their easier accessibility. The Olinda Alpha Landfill was ranked medium; and Allied Imperial and Mesquite Regional Landfills were ranked low. The Allied Imperial and Mesquite Landfills are both over 100 miles away.

Under Regional Viability, three options were ranked medium: El Sobrante, Prima, and Frank R. Bowerman Landfills. The other three were ranked low primarily because of the distance from San Diego: (Olinda Alpha, Allied Imperial, and Mesquite Regional Landfills). Under Environmental Viability, El Sobrante, Prima Deshecha and Frank R. Bowerman Landfills were ranked with medium score and Olinda, Allied Imperial and Mesquite Landfills were ranked low.

For Capacity Optimization, El Sobrante and Mesquite Regional Landfills were ranked high because of the capacities available at those sites. Prima Deshecha, Frank R. Bowerman and Olinda Alpha Landfills were ranked medium and Allied Imperial Landfill was ranked low. Under Sustainability, only the El Sobrante Landfill was ranked medium, all other options were ranked low.

G.7 SECOND SCREENING

After each of the options was ranked high, medium or low, the BAS Consultant Team scored each option with 5 for high, 3 for medium and 1 for low. Each options total score was then added and divided by 6 (because there were 6 screening categories) and a Total Ranking Score was developed as an average of all the scores. The options were then sorted by screening score as shown on

Table G-12 and grouped into two categories, Zero Waste Programs and Policies and Infrastructure Options. Options that were ranked above 3.0 were considered for Phase II. Although some options did not meet this score, (e.g., MSW Composting and Gregory Canyon) they were placed on a "watch list" for Phase II.

G.8 FINAL SCREENING

At the final LRMOSP Phase I RMAC meeting on June 18, 2008, 40 options were recommended to be carried into Phase II. These were essentially the options that scored 3.0 or more in the second screening and one additional option added by the RMAC, that allows the inclusion of certain residential food waste in the green can on a bi-weekly basis. The list of 40 options recommended to be evaluated in more detail in Phase II is included in Section 8.0.

APPENDIX G - TABLES

TABLE G-1
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE PROGRAMS - SOURCE REDUCTION (17 OPTIONS)

	ZERO WASTE PROGRAMS OPTIONS UPSTREAM - SOURCE REDUCTION (17)	Zero Waste Programs - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	Support Green Building Initiative*	5			5			5			5					1	5			4.33
	Reduces energy/water usage and environmental impact																			
	Limited to City bldgs, to include construction																			
2	Implement plastic bag recycling program at residential homes	5			5			5			5					1	5			4.33
	Program in force in San Juan Capistrano, Orange County																			
3	Implement rigid plastic at curbside	5			5			5			5					1	5			4.33
4	Expand Junk Mail Reduction Campaign*		3			3		5			5					1	5			3.67
	Food Service containers/service ware																			
5	○ Prohibit non-recyclable plastic*		3			3			3		5					1		3		3.00
6	○ Ban single use polystyrene food containers	5			5			5			5					1	5			4.33
7	○ Allow biodegradable/compostable polystyrene foam (EP-3)*		3			3		5			5					1		3		3.33
8	Ban plastic bags in stores with over $1 million revenue/year			1		3				1	5					1		3		2.33
9	Provide business tax credits/incentives for certified Green Businesses			1	5			5			5					1		3		3.33
	City Procurement Policies																			
10	○ Return wasteful packaging to vendor			1		3			3			3				1		3		2.33
11	○ Reduce packaging/buy in larger units (EP-3) *	5			5			5			5					1		3		4.00
12	○ Use reusable shipping containers		3		5				3		5					1		3		3.33
13	○ Buy durables using life cycle cost analysis (EP-3) *		3			3			3		5					1		3		3.00
14	○ Purchase less toxic products (EP-3) *		3			3			3		5					1	5			3.33
15	Ban/require business to take back non-recyclable packaging		3				1			1	5					1		3		2.33
16	Create Litter Enforcement Officer program to handle illegal dumping*			1		3				1	5					1			1	2.00
17	Producer/Manufacturer Responsibility	5			5			5			5					1	5			4.33

*City of San Diego already implementing or has piloted

TABLE G-2
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE PROGRAMS - REUSE (5 OPTIONS)

	ZERO WASTE PROGRAMS OPTIONS DOWNSTREAM - REUSE (6)	Zero Waste Programs - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	Encourage deconstruction, salvage and reuse of C&D project materials	5			5			5			5					1	5			4.33
2	Encourage use of Thrift Store Network	5			5			5			5					1	5			4.33
3	Recycle plastic bags using blue bins	5			5			5			5					1		3		4.00
4	Encourage supermarkets/large chains to provide rebates to customers for			1	5					1	5					1		3		2.67
5	Encourage rebate incentives to marginally economic materials		3			3			3			3				1		3		2.67

*City of San Diego already implementing or has piloted

TABLE G-3
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE PROGRAMS - RECYCLE (12 OPTIONS)

	ZERO WASTE PROGRAMS OPTIONS DOWNSTREAM - RECYCLE (12)	Zero Waste Programs - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	Require residents/businesses to source separate designated items*		3		5			5			5				3		5			4.33
2	Launch satellite battery collection sites throughout the community (e.g. City of LA has 28 Jiffy Lube stores collect & recycle household		3		5			5			5					1	5			4.00
3	Establish future "MRF First": Require all MSW to be processed through a MRF when established		3		5			5			5					1	5			4.00
4	Require greater waste diversion of permitted recyclers/ franchisees		3			3		5			5					1	5			3.67
5	Implement multi-family curbside recycling* Black-garbage; blue-recyclables - Recycling to pay for itself		3		5			5			5					1		3		3.67
6	Coordinate large retailer drop-off locations for specific wastes		3		5				3			3				1		3		3.00
7	Establish cooking oil/grease drop-off recycling centers		3			3			3			3				1		3		2.67
8	Place blue bins in public locations		3		5				3		5					1		3		3.33
9	Establish on-call bulky item pick-up for single, multi-family and businesses		3		5			5				3				1		3		3.33
10	Support landfill surcharges and bond issues to: Fund low-interest loans and/or grants - Develop needed urban area recycling/composting infrastructure		3			3			3		5					1		3		3.00
11	Modify Zoning Code to allow Zero Waste infrastructure (MRFs, Transfer	5				3				1		3				1		3		2.67
12	Require commercial businesses to separate/recycle cardboard at the source		3			3			3			3				1		3		2.67

*City of San Diego already implementing or has piloted

TABLE G-4
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE PROGRAMS - ORGANICS DIVERSION (10 OPTIONS)

	ZERO WASTE PROGRAMS OPTIONS DOWNSTREAM - ORGANICS DIVERSION (10)	Zero Waste Programs - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	Develop markets* Restores health of soils Reduces use of fertilizers, pesticides and irrigation water City market study	5				3				1	5			5			5			4.00
2	Increase greenwaste pickup from bi-weekly to weekly		3		5			5			5					1	5			4.00
3	Create a cost incentive for business participation in the Food Scraps	5				3			3		5					1	5			3.67
4	Develop/encourage a supermarket produce collection and composting		3		5				3		5					1	5			3.67
5	Establish restaurant foodwaste collection and composting requirements		3		5				3		5					1	5			3.67
6	Support elimination of state "credit" to count ADC as diversion as markets Stimulates development of composting facilities Focus on increasing focus on composting food scraps		3			3			3		5					1		3		3.00
7	Initiate an organics collection program for selected businesses as markets		3			3			3		5					1		3		3.00
8	Develop residential & commercial Greenwaste collection & composting		3			3			3		5					1		3		3.00
9	Ban organics from landfills		3				1		3		5					1		3		2.67
10	Allow inclusion of certain residential foodwaste in the green can (bi-weekly)		3				1		3				1			1		3		2.00

*City of San Diego already implementing or has piloted

TABLE G-5
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE PROGRAMS - EDUCATION (15 OPTIONS)

	ZERO WASTE PROGRAMS OPTIONS DOWNSTREAM - EDUCATION (15)	Zero Waste Programs - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
	Initiate/encourage a School Recycling and Waste Reduction Program:*																			
1	○ Composting at schools		3		5				3			3				1	5			3.33
2	○ Recycling at schools		3		5			5			5					1	5			4.00
3	○ Tours of city landfill and Resource Recovery Park*		3			3		5			5					1		3		3.33
4	○ Classroom presentations		3			3		5			5					1		3		3.33
5	○ Teacher resource library		3			3		5			5					1		3		3.33
6	○ Develop/promote e-newsletters to schools		3			3		5			5					1		3		3.33
7	Promote City website*	5			5			5			5					1	5			4.33
8	Celebrate America Recycles Day every year*		3		5			5			5					1		3		3.67
9	Develop/promote industry education programs for products to be		3			3		5			5					1	5			3.67
10	Train City building and facility managers about waste reduction		3			3		5			5					1	5			3.67
11	Provide funding for on-going programs to educate residents, businesses,		3			3		5			5					1	5			3.67
12	Sponsor "Smart Shopping" seminars		3			3		5			5					1	5			3.67
13	Sponsor an annual Resource Conservation Fair* Provides information about drop-off reusables, recyclables &		3			3		5			5					1		3		3.33
14	Establish Re-Create Art Contest and Exhibition for youth		3			3		5			5					1		3		3.33

*City of San Diego already implementing or has piloted

TABLE G-6
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ZERO WASTE INFRASTRUCTURE - (8 FACILITIES)

	ZERO WASTE INFRASTRUCTURE OPTIONS (8)	Zero Waste Infrastructure - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	Household Hazardous Waste Collection Center*	5			5				3		5			5			5			4.67
2	Material Recovery Facilities - Curbside*		3		5			5			5			5			5			4.67
3	Material Recovery Facilities - Commercial			1	5				3			3		5			5			3.67
4	Greenwaste Facilities*		3		5				3			3		5			5			4.00
5	Construction & Demolition Facilities	5			5				3			3			3		5			4.00
6	Transfer Facilities**		3		5					1		3		5			5			3.67
7	Resource Recovery Parks (RRP) - Industrial ○ Future Resource Recovery Park at Miramar ○ Not demonstrated at needed volumes ○ Cooperative with industry		3			3		5				3			3		5			3.67
8	Resource Recovery Parks - Community (Convenience drop-off) ○ Not demonstrated at needed volumes ○ Low tonnage		3			3		5			5					1	5			3.67

**City has gone thru Program EIR process.

*City of San Diego already implementing or has piloted

TABLE G-7
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - CONVERSION TECHNOLOGIES - (6 TECHNOLOGIES)

	CONVERSION TECHNOLOGY OPTIONS (6)	Conversion Technology - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	**Gasification & Pyrolysis** Moderate to High tipping : $60 - 100/ton; outside vendor covers capital cost - Commercial overseas for MSW in over 20 applications; capacities up to 600 tpd - Viable option but social acceptability subject to site-specifics - Depends on value of land - Generates electricity and/or fuels; reduces greenhouse gas emissions - Low air emissions profile associated with pre-cleaning synthesis gas prior - Potential for high diversion from landfill disposal (85% to 100%) - Converts residual MSW otherwise landfilled into electricity, fuels, aggregate, Moderate high certainty of marketing non-energy products		3			3			3		5			5			5			4.00
2	**Anaerobic Digestion** Tipping fee competitive: $40 - 60/ton; outside vendor covers capital cost - Commercial overseas for MSW in over 10 applications; capacities up to 900 tpd - Viable option but social acceptability subject to site-specifics - Generates electricity and/or fuels; reduces greenhouse gas emissions - Low air emissions profile associated combusting methane-based biogas - Potential for moderate to high diversion f/ landfill disposal (70- 85%) - Recovers recyclables and converts residual MSW otherwise landfilled into Low to moderate certainty of marketing compost for higher uses than alternative - Requires composting of digester residuals	5				3			3		5				3			3		3.67
3	**Hydrolysis** Moderate tipping fee: $65 to $75/ton; outside vendor covers capital cost - Not yet commercially demonstrated for processing MSW - Viable option but social acceptability subject to site specific determination - Generates fuel-grade ethanol (a vehicle fuel) and electricity - Reduces greenhouse gas emissions - Low air emissions profile associated with gasification of lignin (a side process) - Potential for high diversion from landfill disposal (90%) - Recovers recyclables & converts residual MSW otherwise landfilled into fuels & Moderate to high certainty of marketing non-energy products (gypsum)		3				1		3	1	5				3		5			3.50

TABLE G-7
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - CONVERSION TECHNOLOGIES - (6 TECHNOLOGIES)

	CONVERSION TECHNOLOGY OPTIONS (cont'd)	Conversion Technology - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
4	**Mechanical Processing (Autoclave)** Tipping fee not yet established; outside vendor covers capital cost - Lack of long-term commercial demonstration - Small scale limited to ~ 2 tons/batch - Material very good for best & highest use - Financial viability not yet determined - May function as front-end feedstock prep for fuel/energy - Throughput: up to 500 tpd		3				1		3		5				3	1	5			3.50
5	**Chemical Processing (Depolymerization)** Tipping fee competitive: $50 - 90/ton; outside vendor covers capital cost - Not yet commercially demonstrated for processing MSW - Viable option but social acceptability subject to site-specific determination - Generates a synthetic diesel fuel and a byproduct carbon fuel - Reduces greenhouse gas emissions - Low air emissions profile expected for auxiliary boiler used to generate process Potential for high diversion from landfill disposal (90%) - Recovers recyclables and converts residual MSW otherwise landfilled into fuels - Moderate to high certainty of marketing fuels			1			1		3		5				3		5			3.00
6	**MSW Composting** Tipping fee: $40 - 75/ton; outside vendor covers capital cost - Limited ability to market final compost product - Mixed results in commercial demonstrations - Some environmental issues (mostly odor) - Product best & highest use questionable - Throughput: 50 - 250 tpd		3			3				1		3			3			3		2.67

TABLE G-8
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN

PHASE I SCREENING - WASTE-TO-ENERGY - (1 OPTION)

WASTE TO ENERGY OPTIONS (1)	Waste to Energy Options - Screening Criteria																		Total Ranking
	Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
500-tpd Mass-Burn Municipal Waste Combustor		3		5					1		3			3			3		3.00
Moderate tipping fee: $60 - $85/ton; outside vendor covers capital cost																			
- Commercial in US for processing MSW (87 plants) and worldwide (780 plants)																			
- Potential viable option subject to application of Proposition H conditions at																			
- Social acceptability subject to site-specific determination																			
- Generates steam and electricity, but no potential for fuels																			
- Reduces greenhouse gas emissions																			
Meets established, stringent, air emission limits																			
- Higher air emission profile expected compared to conversion technologies																			
- Potential for moderate diversion from landfill disposal (70% to 75%)																			
- Converts residual MSW otherwise landfilled into electricity,																			
- Potential to recover ferrous metal																			
- Ash residue typically requires landfill disposal																			
- May become a higher ranking option in Phase 2 if a plant feasible on Navy land																			
- Reduction in greenhouse gas emissions may be a higher ranking criteria in Phase 2																			

TABLE G-9
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - LANDFILL OPTIMIZATION - (7 OPTIONS)

	LANDFILL OPTIMIZATION OPTIONS (7)	Landfill Optimization - Screening Criteria																		Total Ranking
		Financial Viability			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	**Compaction***	5			5			5			5				3		5			4.67
	Continue using soil surcharge method City already has equipment and staff for this alternative																			
2	**Alternative Daily Cover - Tarpomatic***	5			5			5			5					1	5			4.33
	Continue to use tarpomatic, City has equipment and staff City reports cost of machine recovered in 17 days Estimated 89,000 cy of landfill capacity saved annually w/ tarpomatic Estimated cost savings of over $2 Million annually. ($22.47/cy)																			
3	**Compaction-Computer Aided Earth Moving System**	5				3		5			5					1	5			4.00
	Cost of equipment requires long-term commitment to recover capital Cost of equipment requires long term use to recover capital expenditure City leases heavy equipment with full maintenance included																			
4	**Landfill Reclamation of North Miramar**		3			3			3			3		5			5			3.67
	Regulatory agencies approval needed (SDAPCD, LEA, CIWMB, etc) Potential feedstock for conversion technology Could create new landfill airspace to be lined Recyclable market variability North Training Center reclaiming 350,000 tons (112 tons MSW) at cost North Miramar estimated to have 9.7 Million tons of MSW																			
5	**Leachate Recirculation**		3				1		3			3				1		3		2.33
	Landfill must be lined, piping network needs to be developed Approval by regulatory agencies needed Large volumes of water needed																			
6	**Bio-Cell - Bioreactor**			1		3				1		3				1		3		2.00
	15% capacity increases over 10 years Yolo County: 10 acres- Capital costs $1.1 M, Annual O&M $485K 10 acres, depth 50 ft, waste inflow 500 TPD (approx. 3 years landfill Requires double liner and substantial water																			
7	**Steam Injection***			1			1			1			1			1		3		1.33
	Technology needs to be improved for So. Cal dry landfills Large volumes of water needed																			

*City of San Diego already implementing or has piloted

TABLE G-10
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ALTERNATIVE DISPOSAL OPTIONS - (25 LANDFILLS)

	ALTERNATIVE DISPOSAL OPTIONS IN-COUNTY DISPOSAL (8) (Distance to W. Miramar)	Alternative Disposal / In-County - Screening Criteria																		Total Ranking
		Financial Viability*			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization **			Sustainability			
		H	M	L	H	M		H	M	L	H	M	L	H	M	L	H	M	L	
1	Miramar Height Increase (0 miles) Cost per ton (disposal fee) - $43.00 - Includes tip fee $28, franchise fee $8.00, & AB 939 fee $7.00 8,000 tpd permitted "Revised" Permitted @ 51.8m tons; 26.5 tons "remaining" Estimated closure 2017 (w/ height increase) 2012 without	5			5			5			5				3			3		4.33
2	Sycamore Landfill (8 miles) Cost per ton [transfer - $0, transport.- $0 & disposal fee - $31.40 ($24.40 tip fee + $7.00 AB 939 fee)] 3,965 tpd permitted Permitted @ 28.3m tons; 27.9m tons remaining (2006) Permitted closure 2031 Expansion planned, DEIR in progress	5			5			5			5				3			3		4.33
3	Otay Landfill (20 miles) Cost per ton [transfer - $0, transport - $0 & disposal fee - $31.40 ($24.40 tip fee + $7.00 AB 939 fee)] 5,830 tpd permitted Permitted @ 36.8m tons; 19.5m tons remaining (2006) Permitted closure 2021	5			5			5			5					1		3		4.00
4	Gregory Canyon Landfill (41 miles) - **CURRENTLY NOT PERMITTED** Cost per ton - $74.29 (transfer - $16.32, transport - $ 17.97 & disposal fee - $40.00) Transfer facility needed Proposed landfill Estimated/proposed capacity 31m tons, Estimated life - 30 years		3			3			3			3			3				1	2.67
	IN COUNTY CONSIDERED BUT REJECTED (4)																			
5	San Onofre Landfill (military waste only)																			
6	Las Pulgas Landfill (military waste only)																			
7	Borrego Landfill (capacity too small)																			
8	Ramona Landfill (capacity too small)																			

*Financial Criteria: H - <$70; M - $70-100; L - >$100
** Capacity Criteria: Capacity Gained: over 5 years=-H, 1-5 years= M, under 1 yr = L, Capacity Available: H over 34 Million tons, M = 22.6 to 34 M tons, L = under 22.6 M tons, Daily TPD: H = over 2,000 TPD, M = 1,500 to 2,000 TPD, L = less than 1,500 TPD

TABLE G-10
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ALTERNATIVE DISPOSAL OPTIONS - (25 LANDFILLS)

	ALTERNATIVE DISPOSAL OPTIONS OUT-OF-COUNTY DISPOSAL (17) (Distance to W. Miramar)	Alternative Disposal / Out-of-County - Screening Criteria																		Total Ranking
		Financial Viability*			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
1	El Sobrante Landfill (82 miles) Cost per ton - $84.78 Transfer - $16.32, transportation - $35.50 and tip fee - $32.96 10,000 tpd permitted Permitted @ 109.1m tons; 93.2m tons remaining (2006) Permitted closure 2030		3		5				3			3		5				3		3.67
2	Prima Deshecha Landfill (62 miles) Cost per ton - $77.49 Transfer $16.32, transportation $27.17 and tip fee - $34.00 4,000 tpd permitted Permitted @ 102m tons; 51.3m tons remaining (2005) Permitted closure 2067 Transfer facility needed County plans to cease out of County import in 2015		3		5				3			3			3				1	3.00
3	Frank R Bowerman Landfill (78 miles) Cost per ton - $84.50 Transfer - $16.32, transportation - $34.18 and tip fee - $34.00 8,500 tpd permitted Permitted @ 74.9m tons; 34.8m tons remaining (2006) Permitted closure 2022 (2053 with approved expansion) Transfer facility needed County plans to cease out of County import in 2015		3		5				3			3			3				1	3.00
4	Olinda Alpha Landfill (90 miles) Cost per ton - $89.76 Transfer - $16.32, transportation - $39.44 and tip fee - $34.00 8,000 tpd permitted Permitted @ 44.1m tons; 22.4m tons remaining (2005) Permitted closure 2013 (2021 with approved expansion) County may cease out of County import in 2015		3			3				1			1		3				1	2.00
5	Allied Imperial Landfill (124 miles) Cost per ton - $113.67 1,135 tpd permitted Permitted @ 2.5m tons; 1.2m tons remaining (2006) Permitted closure 2013			1			1			1			1			1			1	1.00
6	Rail Haul - Mesquite Regional Landfill (142 miles) Cost per ton (transfer, transportation and tip fee) - TBD Proposed landfill; 20,000 tpd Transfer station needed Estimated capacity 600 M tons Estimated life - 100 years Intermodal / rail lines extension needed			1			1			1			1	5					1	1.67

*Financial Criteria: H - <$70; M - $70-100; L - >$100
** Capacity Criteria: Capacity Gained: over 5 years=-H, 1-5 years= M, under 1 yr = L, Capacity Available: H over 34 Million tons, M = 22.6 to 34 M tons, L = under 22.6 M tons,
Daily TPD: H over 2,000 TPD, M= 1,500 to 2,000 TPD, L= less than 1,500 TPD

TABLE G-10
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
PHASE I SCREENING - ALTERNATIVE DISPOSAL OPTIONS - (25 LANDFILLS)

	ALTERNATIVE DISPOSAL OPTIONS OUT-OF-COUNTY DISPOSAL - CONSIDERED BUT REJECTED (11)	Alternative Disposal / Out-of-County - Screening Criteria																		Total Ranking
		Financial Viability*			Technical Viability			Regional Viability			Environmental Viability			Capacity Optimization			Sustainability			
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
	DO NOT ALLOW OUT-OF-COUNTY IMPORT (5)																			
7	Lamb Canyon Landfill (85 miles)*may consider allowing in future																			
8	Badlands Landfill (92 miles)																			
9	Mesa Landfill II (152 miles)																			
10	Desert Center Landfill (205 miles)																			
11	Blythe Landfill (228 miles)																			
	INSUFFICIENT CAPACITY AT RECEIVING LANDFILL (6)																			
12	[illegible]																			
13																				
14																				
15																				
16																				
17																				

TABLE G-11
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN

EXISTING ZERO WASTE PROGRAMS - ENVIRONMENTAL SERVICES DEPARTMENT - BY CATEGORY
(42 POLICIES AND PROGRAMS)

	COUNCIL POLICIES/ADMINISTRATIVE REGULATIONS
1	Environmentally Preferable Purchasing Policy (EP3) - Will be implemented as Administrative Regulation
2	Recycled Products Procurement (Council Policy 100-14) - Purchase of recycled content products
3	Sustainable Building (Council Policy 900-14) - LEED Silver Certification for new City facilities and fast track permitting for private LEED projects
4	Energy Efficient Products Policy (Council Policy 900-18) - Purchase of Energy Star equipment
5	Energy Conservation and Management (Council Policy 900-02) - Adherence to energy conservation guidelines
	DOWNSTREAM - RECYCLING
1	Require residents/businesses to source separate designated items*
2	Implement multi-family curbside recycling*
	- Black-garbage; blue-recyclables
	- Recycling to pay for itself
	ORGANICS DIVERSION
1	Effort with commercial sector
2	Effort to double size of Miramar Greenery composting facility and upgrade permit
3	Foodwaste partnership with Sea World, Petco park, SDSU, PLNU
4	Backyard Composting Bin Events that have been held
5	Compost Bin Demonstrations Gardens in partnership with Zoo, Wild Animal Park, and Sea World, and own site at Ridgehaven Green Building
6	Backyard Composting workshops and informational booths at community events
7	Vermicomposting in schools partnership with Solana Center (siting vermicomposting bins at schools)
8	Master Composter training
9	Develop markets for organics
	- Restores health of soils
	- Reduces use of fertilizers, pesticides and irrigation water
	- City market study
	OUTREACH AND EDUCATION
1	Unwanted mail reduction
2	Holiday Waste Reduction
3	Recycle Or Else
4	Other educational initiatives such as environmental workshops, tours, etc.
5	Commercial and multi-family technical assistance and annual award recognition for top waste reducers
6	Zero Waste Earth Day Event in Balboa Park
7	Support of Zero Waste at San Diego County Fair and Del Mar Fairgrounds
8	Ridgehaven Green Building / Xeriscape Demonstration Project
9	Composting at schools
10	Recycling and waste reduction at schools
11	Tours of city landfill and Resource Recovery Park*
12	Classroom presentations
13	Teacher resource library
14	Promote City website*
15	Celebrate America Recycles Day every year*
16	Train City building and facility managers about waste reduction programs*
17	Provide funding for on-going programs to educate residents, businesses, visitors*
18	Sponsor an annual Resource Conservation Fair*
	LEGISLATIVE INITIATIVES SUPPORTED AT STATE LEVEL
1	E-waste
2	Clopyralid
3	Participate in legislative activities to promote producer responsibilities
4	Non-Profit/charity oversight - to encourage reuse, allow charities free disposal of residue, but must have at least 50% diversion
5	Economic Incentive of $18 or $19 per ton for source-separating recycling
6	Resource Recovery at Miramar Landfill
7	Salvage operation (currently in operation
8	CEQA review for C&D facility and other future resource recovery facilities currently underway
	OPPORTUNITIES FOR OTHERS
	Sponsor "Smart Shopping" seminars
	OTHERS ALREADY DOING
	Encourage supermarkets/large chains to provide rebates to customers for bringing their own reusable bag (State of CA)

TABLE G-12
CITY OF SAN DIEGO LONG-TERM RESOURCE MANAGEMENT OPTIONS STRATEGIC PLAN
COMPOSITE SCORING OF ALL OPTIONS
June 18, 2008

NO.	CODE	OPTION DESCRIPTION	Screening Score
		ZERO WASTE PROGRAMS AND POLICY OPTIONS	
1	ZW-SR-2	Implement rigid plastic recycling at curbside	4.33
2	ZW-SR-3	Ban single use polystyrene food containers	4.33
3	ZW-SR-9	Extended Producer/Manufacturer Responsibility	4.33
4	ZW-RU-3	Recycle plastic bags using blue bins	4.00
5	ZW-RY-2	Establish future "MRF First" - Require MSW to be processed through a MRF if available	4.00
6	ZW-OD-1	Increase greenwaste pickup from bi-weekly to weekly	4.00
7	ZW-OD-2	Create a cost incentive for business participation in a food disgards program as markets become available	3.67
8	ZW-OD-4	Establish restaurant foodwaste collection and composting requirements as markets become available	3.67
9	ZW-SR-5	Provide business tax credits/incentives for certified Green Businesses	3.33
10	ZW-SR-7	City Procurement Policy - Return usable shipping containers	3.33
11	ZW-RY-7	Establish on-call bulky item pick-up for single, multi-family and businesses	3.33
12	ZW-ED-1	Develop/promote e-newsletters to schools	3.33
13	ZW-ED-2	Educate Restaurants about source reduction	3.33
14	ZW-ED-5	Establish Re-Create Art Contest and Exhibition for youth	3.33
15	ZW-RY-4	Coordinate large retailer drop-off locations for specific wastes	3.00
16	ZW-RU-5	Encourage rebate incentives for marginally economic materials (e.g., carpet recycling leasing)	2.67
17	ZW-RY-9	Modify Zoning Code to allow Zero Waste infrastructure (MRFs, Transfer Stations, Convenience Centers)	2.67
18	ZW-SR-4	Ban plastic bags in stores with over $1 million revenue/year	2.33
19	ZW-SR-8	Require businesses to take back non-recyclable packaging	2.33
20	ZW-OD-9	Allow inclusion of certain residential foodwaste in the green can (bi-weekly)	2.00
		INFRASTRUCTURE OPTIONS	
1	ZWI-1	Household Hazardous Waste Collection Center*	4.67
2	ZWI-2	Material Recovery Facilities - Curbside*	4.67
3	LO1	Compaction*	4.67
4	LO2	Alternative Daily Cover - Tarpomatic*	4.33
5	DIN1	Miramar Height Increase* (0 miles)	4.33
6	DIN2	Sycamore Landfill (8 miles)	4.33
7	ZWI-4	Greenwaste Facilities*	4.00
8	ZWI-5	Construction & Demolition Facilities	4.00
9	CT1	Gasification & Pyrolysis	4.00
10	LO3	Landfill Reclamation of North Miramar	4.00
11	DIN3	Otay Landfill (20 miles)	4.00
12	ZWI-3	Material Recovery Facilities - Commercial	3.67
13	ZWI-6	Transfer Facilities	3.67
14	ZWI-7	Resource Recovery Parks (RRP)- Industrial	3.67
15	ZWI-8	Resource Recovery Parks - Community (Convenience drop-off)	3.67
16	CT2	Anaerobic Digestion	3.67
17	LO4	Alternative Daily Cover-Computer Aided Earth Moving System	3.67
18	DOUT1	El Sobrante Landfill (82 miles)	3.67
19	CT3	Hydrolysis	3.33
20	CT4	Mechanical Processing (Autoclave)	3.33
21	CT5	Chemical Processing (Depolymerization)	3.00
22	WTE1	500-tpd Mass-Burn Municipal Waste Combustor	3.00
23	DOUT2	Prima Deshecha Landfill (62 miles)	3.00
24	DOUT3	Frank R Bowerman Landfill (78 miles)	3.00
25	CT6	MSW Composting	2.67
26	DIN4	Gregory Canyon Landfill (41 mil)	2.67
27	LO5	Leachate Recirculation	2.33
28	LO6	Bio-Cell - Bioreactor	2.00
29	DOUT4	Olinda Alpha Landfill (90 miles)	2.00
30	DOUT6	Rail Haul - Mesquite Regional Landfill (142 miles)	1.67
31	LO7	Steam Injection*	1.33
32	DOUT5	Allied Imperial Landfill (124 miles)	1.00

*Program City is already implementing or has piloted