

**STATE OF CALIFORNIA CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**  
**Base Year Modification Request Certification**  
**Part 2: Generation Study - Includes Extrapolation of Residential or Non-Residential Diversion Data**

To request a substitution for a previously approved base year used in calculating the diversion rate for your jurisdiction, please complete and sign this form and return it to your Office of Local Assistance (OLA) representative at the address below, along with any additional information requested by OLA staff. When all documentation has been received, your OLA representative will work with you to prepare for your appearance before the Board. If you have any questions about this process, please call (916) 341-6199 to reach your OLA representative.

Mail completed documents to:

**California Integrated Waste Management Board**  
**Office of Local Assistance (MS - 25)**  
**1001 I Street**  
**PO Box 4025 (mailing address)**  
**Sacramento, CA 95812-4025**

**General Instructions:**

Please select the **ONE** choice below that best explains your request to the Board.

1. Use a recent generation-based study to calculate our current reporting year generation amount, but not officially change our existing Board-approved base year.
2. Use a recent generation-based study to officially change our existing Board-approved base year to a new base year.

The shaded cells on these sheets are protected. If you have problems using these sheets, please contact your Office of Local Assistance representative by calling (916) 341-6199

Section 1: Jurisdiction Information and Certification			
All respondents must complete this section.			
I certify under penalty of perjury that the information in this document is true and correct to the best of my knowledge, and that I am authorized to make this certification on behalf of:			
Jurisdiction Name <b>City of South Pasadena</b>		County <b>Los Angeles County</b>	
Authorized Signature <i>Diana Harder</i>		Title <b>Public Works Assistant</b>	
Type/Print Name of Person Signing <b>Diana Harder</b>		Date <b>1/31/02</b>	Phone ( ) Include Area Code <b>(626) 403-7243</b>
Person Completing This Sheet (please print or type) <b>Alyson Burtleigh</b>		Title <b>Aurora Associates</b>	
Affiliation:	Consultant		
Mailing Address	City	State	ZIP Code
<b>1198 E. Hamson Avenue</b>	<b>Salt Lake City</b>	<b>UT</b>	<b>84105</b>
E-Mail Address	<b>auroraone@utah-inter.net</b>		

**Section II: Information for New Generation-Based Study**  
**Attach additional sheets if necessary—reference each response to the appropriate cell number (e.g.,**  
*Note: New base years must be representative of a jurisdiction's disposal and diversion.*

<b>1. Current Board-approved existing base year:</b>	<b>2. Proposed new generation-based study year:</b>
1990	2000

**3. Explain how the proposed generation study year is representative of average annual jurisdiction disposal and diversion:**  
 During the new base year, 2000, no unusual disposal or diversion activities occurred in the City.

**4. Enter diversion rate information below.**

<b>Diversion rate calculated using existing base year</b>	<b>a. 7 %</b>	<b>Diversion rate calculated using new generation-based study</b>	<b>b. 44 %</b>
<b>For existing base year pounds/person/day based on generation</b>	<b>8</b>	<b>For new generation based study pounds/person/day based on generation</b>	<b>10</b>
<b>Residential generation 78 %</b>	<b>Non-Residential generation 22 %</b>	<b>Residential generation 25 %</b>	<b>Non-Residential generation 75 %</b>
<b>Population existing generation-based study</b>	<b>23936</b>	<b>Population new generation-based study</b>	<b>26000</b>

**5. If there is an increase from 4a to 4b, please explain how the new diversion rate is consistent with your current diversion implementation efforts. If the proposed new generation tonnage results in an increase in your pounds/person/day, please explain how this is consistent with your current diversion implementation efforts and provide examples (e.g., change in jurisdiction's demographics).**

The original base year waste generation study (1990) omitted significant tonnages associated with both disposal and diversion activities. With the new base year waste generation study prepared for 2000, the City has attempted to correct the omissions from the original study. Since the original base year, the City, its franchised waste hauler, residents and businesses have implemented a curbside green waste program; implemented a commercial waste MRFing program; grasscycling, backyard and on-site composting/mulching programs; City tree contractor diversion programs; commercial on-site green and wood waste diversion programs; new commercial source reduction and recycling activities; white good collection (dumpster day); and public education/outreach programs. Additionally, landfill salvage and alternative daily cover activities also divert waste

**6. If the difference between the proposed diversion rates in 4a and 4b is greater than 5 percentage points, please explain the specific reasons for the difference. (For example: new/improved curbside diversion programs.)**

In addition to the explanation provided in item #5 above, since the original base year, the City, its franchised waste hauler, residents and businesses have implemented a curbside green waste program; implemented a commercial waste MRFing program; grasscycling, backyard and on-site composting/mulching programs; City tree contractor diversion programs; commercial on-site green and wood waste diversion programs; new commercial source reduction and recycling activities; white good collection (dumpster day); and, public education/outreach programs. Additionally, landfill salvage and alternative daily cover activities also divert waste from disposal. These programs are in addition to programs that existed prior to 1990 such as the residential curbside recycling program.

<b>7. Disposal Tonnage (enter values):</b>	8252	19029	27281
	<b>Residential</b>	<b>Non-Residential</b>	<b>Total</b>

Please select the **ONE** choice below that best explains your disposal data and complete the required tables.

a. All tons claimed are from the Board's Disposal Reporting System (No explanation required. Go to Section 8.)

b. All tons claimed are from a 100 percent audit of hauler and self-haul tonnage. (Please complete Reporting Year Tonnage Modification Request and Certification sheet found at [www.ciwmb.ca.gov/LGCentral/Forms/rytnmdrq.doc](http://www.ciwmb.ca.gov/LGCentral/Forms/rytnmdrq.doc))

c. Some Disposal Reporting System data were corrected. (Please complete Reporting Year Tonnage Modification Request and Certification sheet found at [www.ciwmb.ca.gov/LGCentral/Forms/rytnmdrq.doc](http://www.ciwmb.ca.gov/LGCentral/Forms/rytnmdrq.doc))

8. In the table below, list the summarized diversion activities and diversion data records that support your claim and are available for Board audit. (**Note: the Board expects the jurisdictions to be able to provide all backup documentation, if requested.**) Include type of record and location—for example, weight tickets from transfer stations. This section should capture all diversion tonnage (sheet will perform all addition calculations). If any diversion is from restricted wastes (i.e., agricultural wastes, inert solids [e.g. concrete, asphalt, dirt, etc.], white goods, and scrap metal), please identify those programs/waste types and fill out section 11. **Note: Restricted waste material should not be extrapolated in non-residential waste audits.** Please mark as attachment 8 all copies of survey sheets.

\* Please provide detailed non-residential waste audit information in Section 9.

**Note: The Board has indicated that it will be scrutinizing total source reduction amounts greater than 5% of total generation. Please be prepared to provide additional details substantiating your claim.**

Diversion Activity	Actual Tons	Estimated or Extrapolated Tons	Total Tons	Relative Percent to Total Generation  (A+B)/Total Generation	Specific Material Type(s)  (List programs with multiple materials together)	Specific Conversion Factor Used (if any) and Source	Type of Record and Location of Record
Please use the Board's program types. The program type glossary is online at: <a href="http://www.ciwmb.ca.gov/LGCentral/PARIS/Codes/Reduce.htm">www.ciwmb.ca.gov/LGCentral/PARIS/Codes/Reduce.htm</a>							
<b>Residential Source Reduction Activities</b>							
Backyard Composting							
Grasscycling							
<b>Other Residential Source Reduction (list each program separately)</b>							
Enter program name							
Enter program name							
Enter program name							
Enter program name							
Enter program name							
<b>Subtotal, Res. Source Reduction</b>	0	0	0				
<b>Residential Recycling Activities</b>							
Curbside Recycling	727	N/A	727.29	1.5%	Aluminum cans, tins cans, glass containers, plastic containers (#1 & #2), and newspapers	none	Athens Services' annual summary prepared for the City for 2000, City/Consultant's files
Buyback Centers	298	N/A	298.28	0.6%	Aluminum cans, glass bottles, and plastic containers	none	California Department of Conservation Database, California Department of Conservation, Sacramento, California
Drop-off Centers	0	N/A					
<b>Other Residential Recycling (list each program separately)</b>							
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					

<b>Subtotal, Residential Recycling</b>	<b>1026</b>		<b>1025.57</b>	<b>2.1%</b>			
<b>Residential Composting Activities</b>							
Green Waste Drop-off Curbside Green Waste	2693	N/A	2693.09	5.5%	Yard Waste	none	Athens Services' annual summary prepared for the City for 2000, City/Consultant's files
Christmas Tree Program	74	N/A	73.71	0.2%	Yard Waste	100 lbs./tree	2000-2001 Christmas Tree Recycling Program summary letter dated February 28, 2001, County Sanitation Districts of Los Angeles, City/Consultant's files
<b>Other Residential Composting (list each program separately)</b>							
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
<b>Subtotal, Residential Composting</b>	<b>2767</b>		<b>2766.8</b>	<b>5.6%</b>			
<b>Subtotal, Residential Diversion</b>	<b>3792</b>	<b>0</b>	<b>3792.37</b>	<b>7.7%</b>			
<b>Non-Residential Source Reduction Activities</b>							
Non-Residential Waste Audits*	963	1874	2837.2	5.8%	See Section 9	See Section 9	See Section 9
<b>Other Non-Residential Source Reduction (list each program separately)</b>							
Grasscycling	64	N/A	64	0.1%	Yard Waste	8 tons/acre/year, CIWMB reports	Parks Department estimate of 8 acres of athletic fields and other grass areas that are grasscycled.
Backyard & On-Site Composting/Mulching	120	N/A	120	0.2%	Yard Waste	Wood Chips, Shredded - 500 lbs./cu.yd. , Conducting a Diversion Study--A Guide for California Jurisdictions, April 2001, Appendix J Conversion Factor Sources	Parks Department estimate of number of cu.yds. Of material that is mulched and used on City trails.
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
<b>Subtotal, Non-Residential Source Reduction</b>	<b>1147</b>	<b>1874.01</b>	<b>3021.2</b>	<b>6.2%</b>			
<b>Non-Residential Recycling Activities</b>							
Non-Residential Waste Audits*	3	4783	4785.41	9.8%	See Section 9	See Section 9	See Section 9
<b>Other Non-Residential Recycling (list each program separately)</b>							
Commercial Self-Haul Greenwaste	378	N/A	378.09	0.8%	Yard Waste	none	City tree maintenance contractor, West Coast Arborists reports to the City, City/Consultant's files
MRF	2754	N/A	2753.69	5.6%	Office Paper, Mixed Paper, Newspaper, Corrugated Cardboard, Glass Containers, Ferrous Metals, Aluminum Cans, Plastics, Yard Waste and Concrete	none	Athens Services' annual summary prepared for the City for 2000, City/Consultant's files
Enter program name		N/A					
Enter program name		N/A					

Enter program name		N/A					
<b>Subtotal Non-Residential Recycling</b>	<b>3135</b>	<b>4782.59</b>	<b>7917.19</b>	<b>16.2%</b>			
<b>Non-Residential Composting Activities</b>							
Non-Residential Waste Audits*	4095	169	4264.14	8.7%	See Section 9	See Section 9	See Section 9
<b>Other Non-Residential Composting (list each program separately)</b>							
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
Enter program name		N/A					
<b>Subtotal Non-Residential Composting</b>	<b>4095</b>	<b>168.88</b>	<b>4264.14</b>	<b>8.7%</b>			
<b>Subtotal Non-Residential Diversion</b>	<b>8377</b>	<b>6825.48</b>	<b>15202.53</b>	<b>31.0%</b>			
<b>Residential/Non-Residential Diversion Activities</b>							
<b>ADC</b>							Los Angeles County Quarterly Disposal Reports (less Residential Curbside Yard Waste and Christmas Tree program amounts) and Orange County Quarterly Green Waste Exempt reports, City/Consultant's records
	2061	N/A	2061.35	4.2%	Yard Waste	none	
<b>Sludge</b>		N/A					
<b>Scrap Metal</b>		N/A					
<b>Construction and Demolition</b>		N/A					
<b>Landfill salvage</b>							
	672	N/A	672.48	1.4%	Inert Materials	none	Los Angeles County Quarterly Disposal Reports, City/Consultant's records
<b>Subtotal Residential/Non-Residential Diversion</b>	<b>2734</b>		<b>2733.83</b>	<b>5.6%</b>			
<b>Total Res/Non-Res Source Reduction Tons</b>	<b>1147</b>	<b>1874</b>	<b>3021</b>	<b>6.2%</b>			
<b>Total Diversion Tons</b>	<b>14903</b>	<b>6825.48</b>	<b>21728.73</b>	<b>44%</b>			
<b>Total Disposal Tons from Sec.7</b>	<b>27281</b>		<b>27281</b>	<b>55.7%</b>			
<b>Total Generation (Div+Dis)</b>	<b>42184</b>	<b>6825.48</b>	<b>49009.73</b>				
<b>Diversion Rate</b>				<b>44%</b>			

**9. Specific Non-Residential Sector Waste Audits--Top 10 Non-Residential Generators**

Please complete this table for the top 10 non-residential generators that were surveyed. List each non-residential generator separately from the largest to smallest, based on total diversion tons. The audit reference number should correspond to the number given your survey sheet.

**(Table will perform all calculations).**

Include an attachment, marked "Attachment 9", which includes a summary of all the generators surveyed and all extrapolation calculations used to estimate the diversion rate:

- Include copies of survey sheet(s) used.
- Include for each generator (use type of generator in lieu of specific generator name e.g., grocery store) each specific diversion activity and material type (e.g. cardboard recycling) and the associated tonnage for each diversion activity/material type, and applicable conversion factors/source.
- If using the number of employees for your extrapolation method, include this information for each generator surveyed.
- Please order the non-residential generators, largest to smallest, based on total diversion tons.

generators.

being used for the extrapolation calculation. For each non-residential generator, the disposal must be broken out by cubic yard, and roll-off or compactor weights. If disposal was estimated for either disposal-based or employment-based extrapolation methods, please include conversion factor(s) for disposal and the source for conversion factor(s). Please provide an explanation as to how the conversion factor(s) is (are) appropriate for your jurisdiction e.g., "Study was conducted to determine average weights using hauler weight tickets."

Type of Non-Residential Generator	Audit Reference Number	Specific Diversion Activities Including Material Type (e.g. paper recycling, grasscycling). (List activities on one line)	Number of Employees	Source Reduction Tons	Recycling Tons	Composting Tons	Total Diversion Tons	Percent of Total Generation (Total Diversion Tons/Total Generation in Section 9)	Survey Method Phone (P) Mail (M) On-site (O) Other ___
Stables	01	Composts horse manure and wood shavings	n/a	0	0	4095	4095.26		O
Church & School	02	Reuses OCC, plastic and food (donation)+C24; recycles beverage containers, newspapers and toner cartridges; reduced paper and plastic use; and, grasscycles	76	963	3	0	966.01		O
Grocery Store	06	Recycles OCC, paper and toner cartridges and reuses OCC	50	1	835	0	835.5		O
Grocery Store	13	Recycles OCC, plastic, toner cartridges, grease and fat scraps; reuses pallets, food (donation); and, composts produce	n/a	230	512	37	778.1		O
Grocery Store	14	Recycles OCC, plastic, toner cartridges, grease and fat scraps; reuses pallets, food (donation); and, composts produce	n/a	184	410	29	623.2		O
Grocery Store	15	Recycles OCC, plastic, toner cartridges, grease and fat scraps; reuses pallets, food (donation); and, composts produce	n/a	161	359	26	545.5		O

Grocery Store	108	Recycles OCC, toner cartridges and grease, and reuses pallets and food (donation)	150	163	72	0	235.15	0
Retail Store/Distribution	109	Reuses food (donation)	15	206	0	0	206	0
Retail Store	3	Recycles OCC	n/a	0	125	0	125	0
Retail Store	71	Recycles OCC and reuses pallets	45	16	91	0	106.6	0
<b>Totals</b>			<b>336</b>	<b>1923</b>	<b>2407</b>	<b>4186</b>	<b>8516</b>	<b>0</b>

Summarize the non-residential diversion activities for the top 10 generators quantification methodology and applicable conversion factors and sources (e.g., cardboard recycling: quantified by monthly tonnage receipts provided by the contact person at the business).

Please see attached description.

10. On a separate sheet of paper, "marked Attachment 10," provide the following information for each diversion program listed in Section 8 that was extrapolated from representative sampling.

**Note:** *Do not include non-respondents in extrapolation because there is no data from the non-respondents. Extrapolate from survey respondents.*

**A. Describe sampling method, including:**

- Type of sampling method (for either stratified or cluster sampling, provide detailed information on how strata and clusters were collected)
- Total number of samples included in the survey
- Number of non-respondents and respondents
- Total population
- Source for identifying population (e.g., city business licenses, commercial database, resident's addresses, etc)
  
- Relation of sample size to total population
- Survey data collection tool(s) and approaches
- Confidence level and margin of error for the sampled population
- Unusual outliers and exceptional anomalies describe in detail.

**Note:** *Outliers (specific generators which fall significantly above or below others) should be removed from base amount prior to extrapolation)*

**B. Describe the methods used to prevent double-counting between the surveys and the reported tonnages from haulers, recyclers, materials recycling facilities and composters.**

**C. Describe extrapolation method, including:**

- Basis of extrapolation
- Why this extrapolation method is appropriate
- Sources of information used for extrapolation, such as disposal or employment
- Include all calculations

11. For each restricted waste type (i.e., agricultural waste, inert solids [e.g., concrete, asphalt, dirt etc.] scrap metals, and white goods [PRC section 41781.2]) and associated program, please provide the following information:

a. If the diversion program started on or after January 1, 1990, complete the following table.

**Note:** program name refers to one specific diversion program for that waste type (e.g., "diversion conducted by city public waste department.")

Restricted Waste Type	Specific Program Name	Year Started	Tonnage
Scrap Metal	Franchsied Waste Hauler - MRF	1997	405
Inert Solids	Franchsied Waste Hauler - MRF	1997	83
Inert Solids	Recycled at Permitted Landfills	<1995	672
Pull Down for Waste Types			
Pull Down for Waste Types			
Pull Down for Waste Types			

b. If the diversion program started before January 1, 1990 - and if documentation on the program and waste type has not been approved by the Board - on a separate sheet marked "Attachment 11b,"give the program and waste type, and provide documentation that indicates:

- How the diversion was the result of a local action taken by the jurisdiction, which specifically resulted in the diversion (PRC sec. 41781.2 [c] [1]).
- That the amount of that waste type diverted from the jurisdiction in 1990 was less than or equal to the amount of that waste type disposed at a permitted disposal facility by the jurisdiction in any year before 1990. **Note:** this criterion is applicable to the entire jurisdiction, not to individual programs (PRC sec. 41781.2 [c] [2]). Please include documentation.
- The jurisdiction is implementing, and will continue to implement, the diversion programs in its Source Reduction and Recycling Element.

**Note:** If documentation for a waste type and program has already been approved by the Board, you do not have to provide an attachment 11b for that waste type and program.

Instead, please provide date of Board approval of previous submitted information.) \_\_\_\_\_ (Date)

If documentation is not available, go to 11d.

c. If the diversion program started before January 1, 1990, and the documentation requested in 11b is available (but not yet approved by the Board), complete the table below for each program claimed:

Restricted Waste Type	Specific Program Name	New Base Year or Reporting Year Diversion Tonnage
Pull Down for Waste Types		
Pull Down for Waste Types		
Pull Down for Waste Types		
Pull Down for Waste Types		
Pull Down for Waste Types		
Pull Down for Waste Types		

d. If the diversion program started before January 1, 1990, and the documentation requested in 11b is not available, please complete the table below for each program claimed. **Note:** Only the difference between the new base year/reporting year and 1990 can be counted in the diversion rate calculation.

Restricted Waste Type	Specific Program Name	New Base Year or Reporting Year Tonnage	1990 Diversion Tonnage	Difference
Pull Down for Waste Types				
Pull Down for Waste Types				
Pull Down for Waste Types				
Pull Down for Waste Types				
Pull Down for Waste Types				
Pull Down for Waste Types				









<p>#01 Stables <b>Horse Manure and Wood Shavings Composting</b> 2-40 yard bins/week = 2 x 95 cu.yds. x 52 weeks x 828.5 lbs./cu.yd. / 2000 lbs. = 4095.26 TPY [assumed half horse manure (1252 lbs./cu.yd.) and half wood shavings (405 lbs./cu.yd.)</p>
<p>#02 Church and School <b>OCC Reuse</b> 300 boxes/week = 300 x 52 wks. x 1.1 lbs./2000 lbs. = 8.58 TPY <b>Plastic Reuse</b> 300 bags/week = 300 x 52 wks. x 0.77 lbs./100 bags/2000 lbs. = 0.0601 TPY <b>Beverage Container Recycling</b> 7-8 lg. plastic bags/month = 7.5 x 12 x 33 gals. X 65 lbs./cu.yd. / 202 / 2000 lbs. = 0.4778 TPY* <b>Newspaper Recycling</b> 17' van-full/year = 12'x5'x5'/27 x 400lbs./cu.yd. / 2000 lbs. = 2.222 TPY <b>Paper Reduction</b> (school) 50% double-sided copies x 680 reams/year = 680 x 50% x 5 lbs./2000 lbs. = 0.85 TPY <b>Paper Reduction</b> (church) 50% double-sided copies x 1M images/year = 1M / 500 sheets/ream x 50% x 5 lbs./2000 lbs.=2.5 TPY** <b>Paper Reduction</b> 10 reams/year = 10 x 5 lbs./2000 lbs. = 0.025 TPY** <b>Toner Cartridge Recycling</b> 10 medium boxes worth/year = 10 x 10 x 2.5 lbs./2000 lbs. = 0.125 TPY <b>Plastic Reduction</b> (Changed from disposable to reusable service ware for 325 children; cafeteria open 184 days/year) = 325 x 184 x 0.0372 lbs./2000 lbs. = 1.1123 TPY <b>Grasscycling</b> 12,850 sq.ft. = 12,850/43,560 x 8 T/ac./yr. = 2.36 TPY <b>Food Reuse (Donation, including collection from local restaurants)</b> 600-750 grocery bags/week = 675 x 52 x 3 cu.ft. x 18 lbs./2000 lbs. = 947.7 TPY *Previous calculation did not multiply by 12 months. **Did not calculate and include in original figures.</p>
<p>#96 Grocery Store <b>OCC Recycling</b> 20 bales/week @ 3'x4'x4' = 20 x 52 x 3'x'4'x4'/27 x 900lbs./2000 lbs. = 832 TPY <b>OCC Reuse</b> 10 med. boxes/week = 10 x 52 wks. x 2.2 lbs./2000 lbs. = 0.572 TPY <b>Paper Recycling</b> 2 med. boxes of paper/week x 52 wks. x 12 reams/box x 5 lbs./2000 lbs. = 3.12 TPY <b>Toner Cartridge Recycling</b> 1 cartridge/2 mos. = 1 x 6 x 2.5 lbs./2000 lbs. = 0.0075 TPY <b>Food Reuse/Donation (did not get figures)</b></p>
<p>#13 Grocery Store <b>OCC Recycling</b> 1 bale/day, 7 days/week @ 5'x4'x4' = 1 x 365 x 5'x'4'x4'/27 x 900lbs./2000 lbs. = 486.7 TPY <b>Pallet Reuse</b> 30/day = 30 x 360 days x 40 lbs./2000 = 216 TPY <b>Plastic Recycling</b> 200 lbs./week = 200 x 52 wks. / 2000 lbs. = 5.2 TPY <b>Toner Cartridge Recycling</b> 3 cartridges/mo. = 3 x 12 x 2.5 lbs./2000 lbs. = 0.045 TPY <b>Food Reuse (Donation)</b> 75 lbs./day = 75 x 365 days / 2000 lbs. = 13.69 TPY <b>Grease Recycling</b> 55 gal./mo. = 55 x 12 x 7.45 lbs. / 2000 lbs. = 2.46 TPY <b>Meat Fat Scrap Recycling</b> 30 gal. Cans 3x/week = 30 x 3 x 52 x 0.1337 gal./cu.ft. x 57 lbs./cu.ft. / 2000 lbs. = 17.832 TPY <b>Produce Composting</b> 200 lbs./day = 200 x 365 /2000 = 36.5 TPY</p>
<p>#14 Grocery Store</p>

**OCC Recycling** 1 bale/day, 7 days/week @ 5'x4'x4' = 1 x 365 x 5'x'4'x4'/27 x 900lbs./2000 lbs. = 486.7 TPY x 80% = 389.36 TPY  
**Pallet Reuse** 30/day = 30 x 360 days x 40 lbs./2000 = 216 TPY x 80% = 172.8 TPY  
**Plastic Recycling** 200 lbs./week = 200 x 52 wks. / 2000 lbs. = 5.2 TPY x 80% = 4.16 TPY  
**Toner Cartridge Recycling** 3 cartridges/mo. = 2 x 12 x 2.5 lbs./2000 lbs. = 0.045 TPY x 80% = 0.036 TPY  
**Food Reuse (Donation)** 75 lbs./day = 75 x 365 days / 2000 lbs. = 13.69 TPY x 80% = 10.952 TPY  
**Grease Recycling** 55 gal./mo. = 55 x 12 x 7.45 lbs. / 2000 lbs. = 2.46 TPY x 80% = 1.968 TPY  
**Meat Fat Scrap Recycling** 30 gal. Cans 3x/week = 30 x 3 x 52 x 0.1337 gal/cu.ft. x 57 / 2000 lbs. = 17.832 TPY x 80% = 14.2656 TPY  
**Produce Composting** 200 lbs./day = 200 x 365 /2000 = 36.5 TPY x 80% = 29.2 TPY

#15 Grocery Store

**OCC Recycling** 1 bale/day, 7 days/week @ 5'x4'x4' = 1 x 365 x 5'x'4'x4'/27 x 900lbs./2000 lbs. = 486.7 TPY x 70% = 340.69 TPY  
**Pallet Reuse** 30/day = 30 x 360 days x 40 lbs./2000 = 216 TPY x 70% = 151.2 TPY  
**Plastic Recycling** 200 lbs./week = 200 x 52 wks. / 2000 lbs. = 5.2 TPY x 70% = 3.64 TPY  
**Toner Cartridge Recycling** 3 cartridges/mo. = 2 x 12 x 2.5 lbs./2000 lbs. = 0.045 TPY x 70% = 0.0315 TPY  
**Food Reuse (Donation)** 75 lbs./day = 75 x 365 days / 2000 lbs. = 13.69 TPY x 70% = 9.58 TPY  
**Grease Recycling** 55 gal./mo. = 55 x 12 x 7.45 lbs. / 2000 lbs. = 2.46 TPY x 70% = 1.722 TPY  
**Meat Fat Scrap Recycling** 30 gal. Cans 3x/week = 30 x 3 x 52 x 0.1337 gal/cu.ft. x 57 / 2000 lbs. = 17.832 TPY x 70% = 12.4824 TPY  
**Produce Composting** 200 lbs./day = 200 x 365 /2000 = 36.5 TPY x 70% = 25.55 TPY

#108 Grocery Store

**OCC Recycling** 6 bales @ 400 lbs. each per week = 6 x 400 x 52 / 2000 lbs. = 62.4 TPY  
**Pallet Reuse** 25-30/day = 25 x 312 days x 40 lbs./2000 lbs. = 156 TPY  
**Toner Cartridge Recycling** 3 cartridges/mo. = 2 x 12 x 2.5 lbs./2000 lbs. = 0.045 TPY  
**Food Reuse (Donation)** 1 shopping cart/week = 1 x 52 weeks x 15 cu.ft. x 18 lbs./cu.ft. / 2000 lbs. = 7.02 TPY  
**Grease Recycling** 100 gal./2 wks. = 100 x 104 x 7.45 lbs. / 2000 lbs. = 38.74 TPY

#109 Retail Store

**Food Reuse (Donation)** 100 lg. trash bags/week = 100 x 52 weeks x 33 gals x 18 lbs./cu.ft. x 27/202 / 2000 lbs. = 206.43 TPY

#3 Retail Stores

**OCC Recycling** 4 bales/week @ 4'x3'x3' = 4 x 52 x 4'x3'x3'/27 x 900 lbs./2000 lbs. = 124.8 TPY

#71 Retail Store

**OCC Recycling** 2 bales @ 3'x3.5'x5' per week = 2 x 3x3.5x5/27 x 52 x 900 lbs. / 2000 lbs. = 91 TPY  
**Pallet Reuse** 15/week = 15 x 52 weeks x 40 lbs./2000 lbs. = 15.6 TPY

**Conversion Factors and Sources**

	<b>Item</b>	<b>Conversion Factor</b>	<b>Source</b>
A	Pallets	40 lbs./pallet	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
B	Grasscycling	8T/acre/year	Hartin, Janet, and J. Michael Henry, <i>Reusing Turfgrass Clippings to Improve Turfgrass Health and Performance</i> , University of California Cooperative Extension, ND.
C	Aluminum cans, uncrushed	65 lbs./cu.yd. 5.61 lbs./33 gals.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
D	Hanger, adult	0.14 lbs. each	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
E	Styrofoam Kernels	6.27 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
F	Old Corrugated Cardboard (OCC) Small-Sized Boxes	1.1 lbs./box	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
G	Old Corrugated Cardboard (OCC) Medium-Sized Boxes	2.2 lbs./box	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
H	Old Corrugated Cardboard (OCC) Large-Sized Boxes	4.0 lbs./box	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
I	Baled OCC	900 lbs./cu.yd.	Measuring Recycling, A Guide for State and Local Governments, U.S. EPA, September 1997.
J	Plastic Trays	0.3 lbs. each	Estimated weight
K	Toner Cartridges	2.5 lbs./cartridge	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
L	Newspaper	35 lbs./12" stack	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
M	Office Paper (white, color, CPO, junk mail)	0.77 lbs./gallon	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
N	White Ledger #20 Paper	1 ream=5.0 lbs.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
O	Fats, Solid/Liquid (cooking oil)	7.45 lbs./gallon	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
P	Fat	57 lbs./cu.ft.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
Q	Produce Waste, mixed loose	1,443 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
R	Bread, bulk	18 lbs./cu.ft.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
S	Paper Cup	0.014 lbs. each	CIWMB, <i>Conversion Factors</i> , March 1999.
T	Plastic, Grocery Bag	0.77 lbs./100 bags	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
U	Metal Scrap	226.5 lbs./55 gals.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
V	Plastic, Bubble wrap	3 lbs./33 gals.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.

**Conversion Factors and Sources  
(continued)**

Board Meeting  
March 19, 2003

Agenda Item  
Attachment 2A

W	Grass and Leaves	325 lbs./3 cu.yds.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
X	Wood Scrap, loose	329.5 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
Y	Sawdust, loose	375 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
Z	OCC, uncompacted	100 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
AA	Film Plastic/Mixed, loose	22.55 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
BB	Magazines, 8.5" x 11"	3 lbs./10 units	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
CC	Manure, Horse	1,252 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
DD	Wood, Shavings	405 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
EE	White Ledger w/o CPO, loose	363.51 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
FF	Shredded Paper	8 lbs./33 gals.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
GG	Personal Computer	26 lbs. each	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
HH	Computer Monitor	30 lbs. each	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
II	Aluminum Cans, uncrushed	1.5 lbs./full grocery bag	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
JJ	Used Clothing, mixed, loose	225 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
KK	Newspapers, loose	400 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
LL	Single-use Food Service	0.0372 lbs. each	<i>Business Users' Guide for Measuring Source Reduction</i> , November 1996.
MM	Glass Containers	~450 lbs./cu.yd.	CalRecovery, Inc., <i>Conversion Factors for Individual Material Types</i> , December 1991.
NN	Soil/sandy loam, loose	2,392 lbs./cu.yd.	CIWMB, <i>Conducting a Diversion Study – A Guide for California Jurisdictions</i> , April 2001.
AW	Actual Weight	N/A	Provided by business.
EW	Estimated Weight	N/A	Provided by business.