

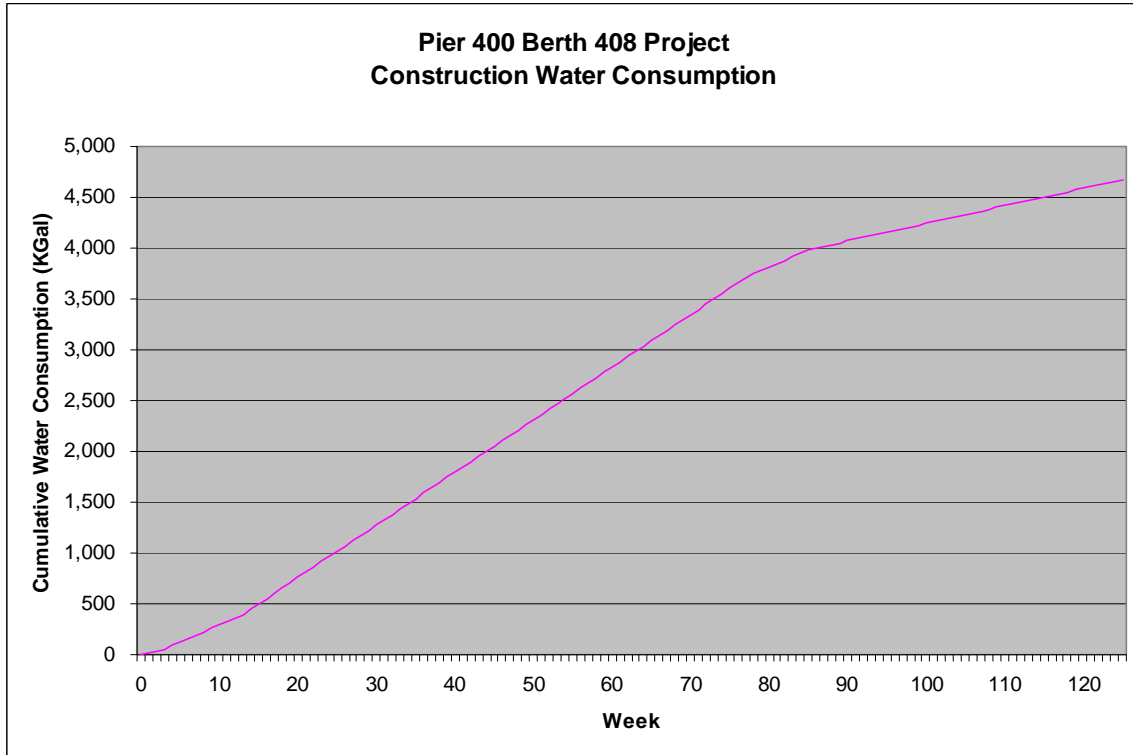
## **APPENDIX S**

---

### **Utilities and Public Services Supplemental Information**



**Pacific L.A. Marine Terminal  
Proposed Pier 400 Berth 408 Project  
Construction Water Consumption**

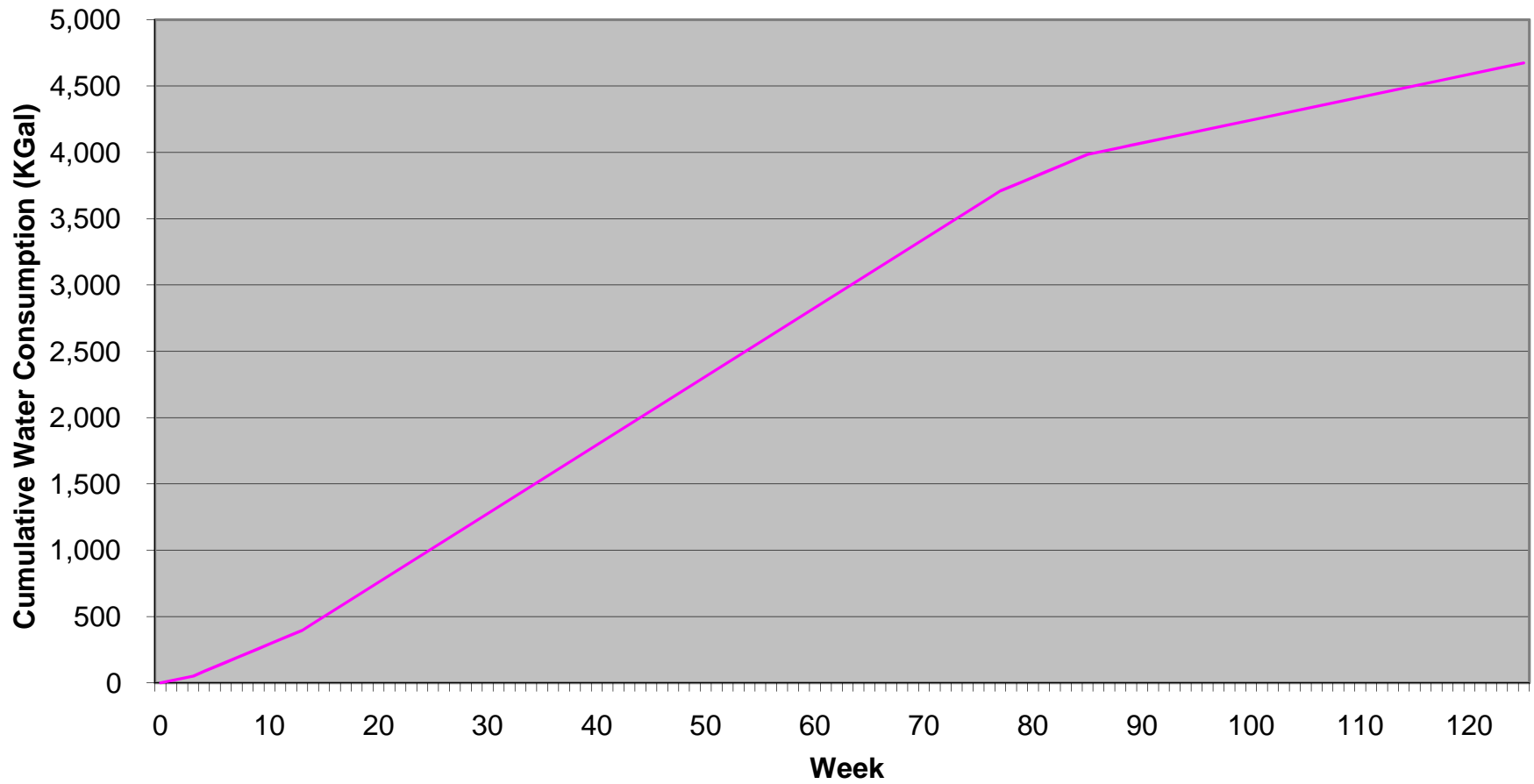


**Assumptions:**

1. Water usage primarily for dust control.
2. Usage based on one water truck per site per day, plus 15% for other users.
3. Water truck capacity – 3,000 gal.
4. Construction Start: Week 1.
5. Site 1, 3 (partial) and Pipelines ready for initial operation -Week 85.
6. Site 3 complete – Week 125.
7. Graph above indicates total cumulative water consumption for the entire project.
8. Water use during the winter months is expected to be less than the projections but use in the summer is expected to be a little higher. For the purpose of estimating the water use we assumed a uniform usage rate

**This page intentionally left blank.**

### Pier 400 Berth 408 Project Construction Water Consumption



**Pacific L.A. Marine Terminal  
Pier 400 Berth 408 Project  
Estimation of Incremental Solid Waste Generation  
Project Construction Activities**

		Quantity						
Waste Stream	Source	Classification	Quant.	Units	Duration	Treatment	Lbs/Month	Total Tons
<b>Terminal Construction</b>								
Wood	Concrete form materials	Non-hazardous	5	cubic yards per month	15 Months	Recycle or waste disposal facility	6,750	50.6
Wood	Dunnage	Non-hazardous	3	cubic yards per month	24 Months	Recycle or waste disposal facility	4,050	48.6
Wood	Pallets for deliveries	Non-hazardous	300	Lbs per month	24 Months	Recycle or waste disposal facility	300	3.6
Steel	Scrap pipe materials	Non-hazardous	1,000	Lbs per month	18 Months	Recycle or waste disposal facility	1,000	9.0
Steel	Scrap structural steel	Non-hazardous	750	Lbs per month	18 Months	Recycle or waste disposal facility	750	6.8
Steel	Scrap reinforcing steel	Non-hazardous	400	Lbs per month	15 Months	Recycle or waste disposal facility	400	3.0
Steel	Scrap conduit	Non-hazardous	500	Lbs per month	15 Months	Recycle or waste disposal facility	500	3.8
Plastic	Commodity wrapping	Non-hazardous	50	Lbs per month	24 Months	Recycle or waste disposal facility	50	0.6
PVC Pipe and conduit	Scrap pipe and conduit	Non-hazardous	100	Lbs per month	18 Months	Recycle or waste disposal facility	100	0.9
Copper	Scrap electrical wire	Non-hazardous	100	Lbs per month	15 Months	Recycle or waste disposal facility	100	0.8
Concrete	Extra from foundation pours	Non-hazardous	3	cubic yards per month	15 Months	Recycle or waste disposal facility	12,150	91.1
Oily rags	Equipment maintenance	Non-hazardous	0.5	55 gallon container per	24 Months	Laundry for reuse or waste disposal facility	129	1.5
Oil	Equipment maintenance	Hazardous	8	Quarts per month	24 Months	Recycle		
Batteries	Equipment maintenance	Hazardous	2	Items per year per year	24 Months	Recycle		
Sanitary Waste	Site construction	Sanitary	250	Gallons per day	24 Months	Transported to WWTP by licensed contractor		
Food containers	Site construction	Non-hazardous	2.0	55 gallon container per	24 Months	Recycle or waste disposal facility	971	11.6
Drink containers	Site construction	Non-hazardous	2.0	55 gallon container per	24 Months	Recycle or waste disposal facility	971	11.6
Paper and Cardboard	Office and Equipment Packing	Non-hazardous	12	cubic yards per month	24 Months	Recycle or waste disposal facility	6,480	77.8
<b>Pipeline Construction</b>								
Wood	Dunnage	Non-hazardous	3	cubic yards per month	15 Months	Recycle or waste disposal facility	4,050	30.4
Wood	Pallets for deliveries	Non-hazardous	150	Lbs per month	15 Months	Recycle or waste disposal facility	150	1.1
Steel	Scrap pipe materials	Non-hazardous	1,000	Lbs per month	15 Months	Recycle or waste disposal facility	1,000	7.5
Steel	Scrap reinforcing steel	Non-hazardous	100	Lbs per month	15 Months	Recycle or waste disposal facility	100	0.8
Plastic	Commodity wrapping	Non-hazardous	25	Lbs per month	15 Months	Recycle or waste disposal facility	25	0.2
PVC Pipe and conduit	Scrap pipe and conduit	Non-hazardous	25	Lbs per month	15 Months	Recycle or waste disposal facility	25	0.2
Copper	Scrap electrical wire	Non-hazardous	100	Lbs per month	15 Months	Recycle or waste disposal facility	100	0.8
Concrete	Extra from foundation pours	Non-hazardous	3	cubic yards per month	15 Months	Recycle or waste disposal facility	12,150	91.1
Concrete	Demo existing paving	Non-hazardous	500	cubic yards per month	15 Months	Recycle or waste disposal facility	675,000	5,062.5
Oily rags	Equipment maintenance	Non-hazardous	1	55 gallon container per	15 Months	Laundry for reuse or waste disposal facility	129	1.0
Oil	Equipment maintenance	Hazardous	8	Quarts per month	15 Months	Recycle		-
Batteries	Equipment maintenance	Hazardous	2	Items per year per year	15 Months	Recycle		-
Sanitary Waste	Site construction	Sanitary	100	Gallons per day	15 Months	Transported to WWTP by licensed contractor		-
Food containers	Site construction	Non-hazardous	1	55 gallon container per	15 Months	Recycle or waste disposal facility	485	3.6
Drink containers	Site construction	Non-hazardous	1	55 gallon container per	15 Months	Recycle or waste disposal facility	485	3.6

Total Tons: 5,524

Notes

- All numbers are approximate
- The construction contractor will typically place several dumpsters or roll-off bins at the construction sites for collection and recycling or disposal of waste material.  
For this project, assume that four 30 cubic yard dumpers (segregated for wood, steel, recycling and trash) are placed at three sites (Site 1, 2 and central pipeline location).  
The bins will be removed and replaced as required.
- Paving demolition material, generated during pipeline construction, will be removed to a recycling or disposal facility by 12 cy dump trucks.

**Pacific L.A. Marine Terminal  
Pier 400 Berth 408 Project  
Estimation of Incremental Solid Waste Generation  
(administration buildings and other operational elements)**

**Basis:**

1. Numerous studies estimate per capita waste generation to be between 4-5 pounds per day. Assuming 33% of total is generated at work, yields 1.3-1.7 pounds per person per day.
2. Specific study of the California Integrated Waste Management Board indicated 1.15 pounds per person per day.

Assume 1.5 pounds of waste per day per person.

**Calculation:**

1. Assume 24/7 operating staff to be: 5 people  
3 Shifts per day  
365 Days per year  
1.50 Pounds per person per day(shift)  
8,213 Pounds per Year

2. Assume average terminal staff to be: 45 people  
1 Shifts per day  
260 Days per year  
1.50 Pounds per person per day(shift)  
17,550 Pounds per Year

3. Assume an additional: 50% for miscellaneous terminal related waste  
12,881 Pounds per Year

**Total Estimated Solid Waste Generation:** 38,643 Pounds per Year  
19.3 Tons per Year

## Estimating Per Capita Residential/Commercial Waste Generation

Ohio EPA Recommendations  
September 4, 2002

\*\*\* DRAFT \*\*\*

### Per Capita Residential/Commercial Waste Generation Projections Based on US EPA Figures

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Per Capita Generation, lbs./person/day (a)</b>	4.64	4.51	4.56	4.60	4.65	4.70	4.74	4.77	4.79	4.82	4.84	4.86

(a) See calculations below for the derivation of these figures

### Recommended Annual Increases in Generation

Ohio EPA recommends projecting changes in residential/commercial waste generation using the per capita annual rate of increase indicated below. Although not as accurate as the first approach, an alternative approach would be to increase the lbs./person/day by the amounts indicated below.

Example: If the SWMD calculates a 3.0 lbs./person/day generation rate in 2000, in order to project waste generation in 2001 Ohio EPA recommends increasing the 3.0 lbs./person/day rate by 1%, resulting in 3.03 lbs./person/day in 2001. This number would then be multiplied by the projected population in 2001. Alternatively, the 3.0 figure could be increased by .04 lbs./person/day, resulting in 3.04 lbs./person/day in 2001.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Recommended Per Capita Annual Rate of Increase</b>	1.00%	1.00%	1.00%	1.00%	1.00%	0.50%	0.50%	0.50%	0.50%	0.50%
<b>Recommended Annual Change, lbs./person/day</b>	0.04	0.05	0.05	0.05	0.05	0.02	0.02	0.02	0.02	0.02

### Calculations

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Total Waste Generation (1)</b>	231,000,000	231,850,000	235,095,900	238,387,243	241,724,664	245,108,809	248,540,333					
<b>Projected Rate of Increase (2)</b>			1.4%	1.4%	1.4%	1.4%	1.4%					
<b>Population (3)</b>	272,691,000	281,422,000	282,547,688	283,677,879	284,812,590	285,951,841	287,095,648					
<b>Projected Rate of Increase (4)</b>			0.4%	0.4%	0.4%	0.4%	0.4%					
<b>Per Capita Generation, lbs./person/day (5)</b>	4.64	4.51	4.56	4.60	4.65	4.70	4.74	4.77	4.79	4.82	4.84	4.86
<b>Calculated or Projected Rate of Increase (6)</b>		-2.75%	1.00%	1.00%	1.00%	1.00%	1.00%	0.50%	0.50%	0.50%	0.50%	0.50%
<b>Annual Change, lbs./person/day (7)</b>		-0.13	0.04	0.05	0.05	0.05	0.05	0.02	0.02	0.02	0.02	0.02

(1) Total Waste Generation for 1999 is from the US EPA report "Municipal Solid Waste in The United States: 1999 Facts and Figures". Year 2000 is from the US EPA report "Municipal Solid Waste in The United States: 2000 Facts and Figures". Later amounts are calculated based on the projected rate of increase identified in (2)

(2) Projected rate of increase in total waste generation is from the US EPA report "Characterization Of Municipal Solid Waste in The United States: 1998 Update".

(3) Population in 1999 is from the US EPA report "Municipal Solid Waste in The United States: 1999 Facts and Figures". Year 2000 is from the US EPA report "Municipal Solid Waste in The United States: 2000 Facts and Figures". Later population numbers are calculated based on the projected increases identified in (4)

(4) Projected rate of population increase is based on the US EPA report "Characterization Of Municipal Solid Waste in The United States: 1998 Update".

(5) Per capita generation for 1999 is from the US EPA report "Municipal Solid Waste in The United States: 1999 Facts and Figures". Year 2000 is from the US EPA report "Municipal Solid Waste in The United States: 2000 Facts and Figures". 2001 through 2005 figures are calculated based on the projected total waste generation (1) and population (3) amounts. 2006 through 2010 figures are calculated by increasing per capita generation by .5% each year.

(6) Annual Rate of Change in Per Capita Generation rate is calculated for years 2000 through 2005 based on the change in the lbs./person/day (5) from the previous year. The rate is projected to increase at .5% for the years 2006 through 2010

(7) Annual Change in lbs./person/day is calculated based on the change in the lbs./person/day (5) from the previous year. Figures may not add to lbs./person/day in (5) due to rounding



Historic Comparison

	1990	1994	1995	1996*	1997	1998	1999	2000
Per Capita Generation	4.5	4.51	4.4	4.45	4.49	4.52	4.64	4.51
Annual Amount of Change			-0.11	0.05	0.04	0.03	0.12	-0.13
Annual Percent of Change			-2.4%	1.1%	0.9%	0.7%	2.7%	-2.8%

\*estimated

% Increase      Average Annual % Increase

- 3.1% □
- 2.9% □
- 5.5% □
- 5.1% □
- 7.7% □
- 0.3%
- 0.5%
- 1.2%
- 1.0%
- 0.8%

- Time Period
- Percent Increase, 1990 - 1999
  - Percent Increase, 1994 - 1999
  - Percent Increase, 1995 - 1999
  - Projected Increase, 2000 - 2005
  - Projected Increase, 2000 - 2010

[California Home](#)[Integrated Waste Management Board](#)[Search](#)[Index](#)[Contact Us](#)[Help](#)**Business Waste Reduction**[Business  
Waste  
Reduction  
Home](#)[Office  
Paper  
Reduction  
Home](#)[Campaign](#)[Collection  
and  
Recycling](#)[Prevention  
and Reuse](#)[Promotional  
Materials](#)[Quick Tips](#)[Recycled  
Paper  
Purchasing](#)[Reducing  
Unsolicited  
Mail](#)[Resources](#)[Office  
Paper  
Reduction  
Index](#)

## Sample Waste Prevention Action Plan

Offices can use this In-House Waste Prevention Action Plan developed by the California Integrated Waste Management Board as a sample for creating their own waste prevention action plans. A plan will establish waste reduction goals and implementation measures that will save money, promote efficiency, conserve resources, and reduce pollution.

### California Integrated Waste Management Board In-House Waste Prevention Action Plan

#### [I. Purpose](#)

#### [II. Introduction](#)

##### [A. Background](#)

##### [B. Definition of Waste Prevention](#)

##### [C. Waste Generation at the Board](#)

#### [III. Goals and Implementation Steps](#)

#### I. Purpose

The purpose of the In-house Waste Prevention Action Plan is to create a model waste prevention program at the California Integrated Waste Management Board (Board) to provide leadership through example and save money through more efficient use of supplies and equipment.

#### II. Introduction

##### A. Background

The Board's integrated waste management approach is multidimensional. This approach includes waste prevention, market development, buying recycled, recycling, composting, and safe disposal. Although the law places waste prevention as the highest priority in California's integrated waste management hierarchy (Public Resources Code Section 40051(a)), it is commonly overlooked.

To forward waste prevention, the Board adopted the Statewide Waste Prevention Plan which identified 16 priority activities. One of these activities called for the creation of a committee to develop a comprehensive in-house waste prevention program by using the following key steps:

- Identify "wasteful practices" and alternative less wasteful practices:
- Select waste prevention practices to implement:
- Create educational and promotional materials:
- Measure impact of waste prevention practices and modify program as needed.
- Document results and use to promote similar programs elsewhere.

The In-house Waste Prevention Committee was formed by asking each division to appoint a representative and then all interested Board staff were invited to participate. The committee includes support staff, technical staff, and management from various divisions throughout the Board as well as Board advisor representation. The committee is also coordinating with the Board's in-house recycling program and the Information

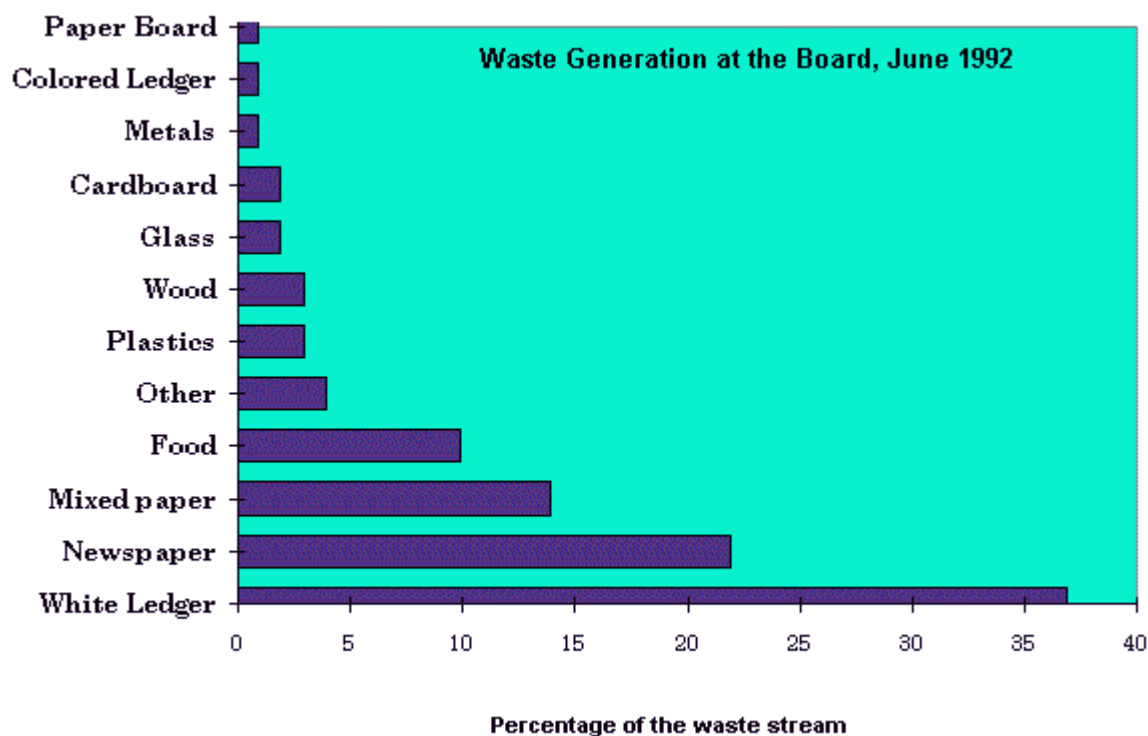
Technology Advisory Council (ITAC), which works to promote efficient and effective use of the Board's computer services.

## B. Definition of Waste Prevention

"Any action undertaken by an individual or organization to eliminate or reduce the amount or toxicity of materials before they enter the municipal solid waste stream. This action is intended to conserve resources, promote efficiency, and reduce pollution."

## C. Waste Generation at the Board

During one week in June 1992, the Board collected, sorted, and categorized materials from disposal and recycling streams. Staff conducting the waste audit determined that Board staff generate 1.15 pounds of waste per person per day. This study provided the committee with information about the type and quantity of waste generated.



Source: Draft Waste Audit Summary Report, prepared by Terry Brennan, CIWMB staff.

The committee used this information to help determine which waste categories to target. White ledger paper comprised 37 percent of waste generated and is the largest category. There is ample opportunity to reduce paper use and save money by using it less wastefully (e.g., print double-sided copies, find uses for scrap paper printed on one side only, print fewer copies). Other major categories were newspaper (22 percent), mixed paper (14 percent), and food waste (10 percent).

Of the materials being targeted in this plan, only landscape waste was not included in the waste generation study. This waste is handled by a landscape contractor hired by building management rather than the Board. The committee believes landscaping waste should be part of the plan because, if it were included in a waste generation study, it

would likely be significant.

[Top](#)

### III. Goals and Implementation Steps

The following goals and implementation steps are intended to be phased in over time. This will allow the committee to (1) introduce new procedures one at a time so staff are not overloaded and (2) begin with practices that are likely to offer the greatest impact. Criteria for determining greatest impact include:

- Material's contribution to the waste stream:
- Ease of implementation:
- Ability to support other waste prevention efforts underway at the Board.

Because the plan is phased, only the first three goals and implementation steps have been detailed. The remaining goals and steps will be enumerated after the first steps have been evaluated so staff can incorporate experience gained.

Following adoption of the plan, the committee will develop timelines, assign responsibilities, and modify the implementation steps as necessary to develop a model program for other State agencies, local governments, and other office settings. The committee will closely monitor the implementation of all plan strategies and evaluate their effectiveness in changing employee behavior to conserve resources, promoting efficiency, reducing pollution, and reducing costs.

#### **Goal 1. Request that the Board adopt the In-House Waste Prevention Resolution.**

#### **Goal 2. Implement a 10 percent reduction in white office paper use.**

**Step 1:** Establish a baseline of white paper usage.

- A. Quantify and track paper use at specified locations.
- Estimate percentage of single versus double sided printing and copying.
- Establish a process for assessing progress.
- Quantify cost savings.

**Step 2:** Identify staff who will volunteer as "Waste Prevention Pros" to help educate and work with staff.

**Step 3:** Hold a contest among divisions to encourage paper reduction.

- Develop the contest.
- Kick off contest.
- Remeasure paper use at end of contest period.
- Award prizes.

**Step 4:** Provide ongoing encouragement for double-sided printing.

- Direct Waste Prevention Pros to work with staff on setting up and using double-sided printing feature.

- Provide e-mail instructions for double-sided printing.
- Post instructions for double-sided printing next to printers.
- Direct Waste Prevention Pros to follow up with staff within two weeks after sending out instructions. Assist as needed.
- Address concerns that arise with double-sided printing.

## [Top](#)

**Step 5:** Provide ongoing encouragement for double-sided copying.

- Post reminders next to copy machines to remind people to copy double-sided.
- Direct Waste Prevention Pros to remind people to copy double-sided.
- Evaluate existing copiers for double-sided performance and make recommendations for improvement/replacement.

**Step 6:** Encourage single-sided paper reuse.

- Encourage staff to collect single-sided paper at their desks and use for drafts and scratch pads.
- Place collection boxes at copiers and printers for collection of single-sided sheets. Establish collection and reuse system for this paper.
- Investigate if mail room can make scratch pads and initiate a process for making scratch pads.
- Look into designating certain printers/copiers with draft paper trays, including determination of whether warranties would be void if such a practice were implemented.

**Step 7:** Reduce excess printing and copying.

- Define and implement procedures that save paper, such as previewing documents on computer before printing, verifying the number of copies needed, and formatting to avoid excessive white space and blank pages.
- Evaluate extent of overruns and develop strategies for reducing them.
- Evaluate mailing lists: remove duplicate names and determine if recipients still want Board mailings.

**Step 8:** Encourage reduction of paper generation through e-mail.

- Support ITAC efforts to get standardized forms on e-mail.
- Use bulletin board for announcements of general interest items.
- Educate Board employees about saving messages and documents on computer rather than printing them out.

**Step 9:** Continue efforts to find new and innovative ways to conserve paper.

**Step 10:** Evaluate progress according to process established in Step 1C.

**Step 11:** Publicize results.

## [Top](#)

**Goal 3. Encourage staff to reduce food and related waste.**

**Step 1:** Establish a baseline of waste generation.

- Estimate amount of food and packaging waste from non-cafeteria sources.
- Estimate cafeteria waste.
- Establish a process for assessing progress.

**Step 2:** Reduce non-cafeteria food and packaging waste.

- Work with In-House Recycling Program to initiate worm bin project.
- Encourage use of reusable dishware, lunch bags, and carry-out bags through contests, Waste Prevention Pros, etc.
- Approach eating establishments frequented by Board employees to see what possibilities exist to reduce take-out food waste.

**Step 3:** Reduce cafeteria waste.

- Work with cafeteria operator to develop waste prevention practices.
- Implement waste prevention measures in cafeteria.

**Step 4:** Reduce waste at special events.

- Work with the building management company about events they sponsor (such as receptions, holiday parties).
- Develop waste prevention procedures for Board-sponsored events.
- Establish a collection of reusable dishware for informal Board gatherings (e.g., pot lucks).

**Step 5:** Evaluate the feasibility of purchasing a dishwasher.

**Step 6:** Evaluate progress according to process established in Step 1C.

**Step 7:** Publicize results.

[Top](#)

**Goal 4. Actively work with building management to reduce waste.**

**Step 1:** Establish a baseline of waste generation.

- Estimate amount of custodial waste generated.
- Estimate amount of landscape waste generated.
- Establish a process for assessing progress.

**Step 2.** Educate building management about benefits of waste prevention.

**Step 3:** Work with building management company to reduce landscape waste.

- Evaluate grasscycling pilot.

- Implement full scale grasscycling
- Reduce frequency of landscape plantings.
- Explore usage of compost from vermicomposting for on site landscaping.
- Explore means to use other landscape waste on site.

**Step 4:** Work with management company to establish waste preventative custodial practices.

**Step 5:** Evaluate progress according to process established in Step 1D.

**Step 6:** Publicize results.

As previously noted, the following goals will be detailed after the above goals are implemented.

### [Top](#)

#### **Goal 5. Implement waste prevention practices in procurement.**

**Step 1:** Establish a procurement baseline and evaluation process.

**Step 2:** Determine procurement practices and products to target.

**Step 3:** Buy durable, reusable, and repairable products.

**Step 4:** Buy recycled and recyclable (important compliments to waste prevention).

**Step 5:** Reduce packaging.

**Step 6:** Promote reusable transportation packaging.

**Step 7:** Evaluate progress according to process established in Step 1.

**Step 8:** Publicize results.

#### **Goal 6. Persuade Board employees to conserve other resources.**

**Step 1:** Establish a baseline of waste generation & evaluation process.

**Step 2:** Reduce newspaper generation (e.g., reduce subscriptions, utilize electronic news services).

**Step 3:** Reduce use of mixed paper (e.g., reduce packaging waste, buy reuse labels and reuse envelopes).

**Step 4:** Determine and implement other waste prevention measures

**Step 5:** Evaluate progress according to process established in Step 1.

**Step 6:** Publicize results.

Do you have questions, or some ideas of your own we could share with others?

[bzassist@ciwmb.ca.gov](mailto:bzassist@ciwmb.ca.gov)

[Top](#) | [Office Paper Home](#) | [Business Waste Reduction Home](#)

Last updated: December 29, 2006

---

Business Resource Efficiency & Waste Reduction <http://www.ciwmb.ca.gov/BizWaste/>  
Business Assistance: [bzassist@ciwmb.ca.gov](mailto:bzassist@ciwmb.ca.gov) (916) 341-6363  
©1995, 2007 California Integrated Waste Management Board. All rights reserved.  
[Terms of Use/Privacy](#)