VICTOR VALLEY MATERIALS AND RESOURCE STRATEGY

Characterizing for Increased Recycling and Composting

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Zone Works
December 5, 2012

The JPA

- Adelanto, Apple Valley, Barstow, Big Bear Lake, Needles, San Bernardino County, Twenty Palms, Victorville, Yucca Valley
- Since 1992
- 15,000 square miles
- 381,331 people
- Board and Technical Committee
- Financed and manage Victor Valley MRF operations contract

MOJAVE DESERT & MOUNTAIN RECYCLING

Integrated Waste Management Joint Powers Authority

- Opened in 1995
- Managed by the JPA
- Designed and operated by Burrtec
- $6.2 million revenue bond
- $2.5 million expansion in 2006

Materials and Resource Strategy

- In September 2008, the JPA contracted with Gershman, Brickner & Bratton, Inc., (GBB), in association with RRT Design & Construction, (RRT), to identify increased recycling system performance opportunities

GBB
SOLID WASTE
MANAGEMENT
CONSULTANTS

RRT®

Project Goals

- Maximum feasible recycling and composting
- Greenhouse gas reduction
- Materials management system based on reduction, reuse, recycling, composting and energy recovery
- Assess program performance
- Enhanced collection, MRF processing and marketing

Project Tasks

- Generators
- Source Reduction
- Collection
- Pre-processing
- Characterization
- MRF Operations Assessment
- Energy Recovery
- Residue Handling (Landfill)

Victor Valley Materials and Resource Management Strategy

Prepared for:

MOJAVE DESERT & MOUNTAIN RECYCLING
Integrated Waste Management Joint Powers Authority

Prepared by:
GERSHMAN, BRICKNER & BRATTON, INC.
and
RRT Design & Construction, Inc.
April 27, 2009

Recovery Characterization (Chapter 5)

- Characterize and identify types and quantities of landfilled waste
- Present estimated materials quantities and types available for diversion based on characterization results

Recovery Characterization

- A five-day visual characterization performed at Victorville Landfill by the GBB team during the week of September 29, 2008
- 265 “controllable” (i.e., franchised) loads analyzed
- Front and side loaders, transfer trailers

Recovery Characterization

- Analyzed residential and commercial waste loads received from:
  - Victorville
  - Apple Valley
  - Adelanto
  - Unincorporated San Bernardino County
  - Victor Valley MRF

Recovery Characterization

- The visual waste characterization developed estimates of recoverable loads content
- Used as the basis for a conceptual design of additional recycling programs and the pre-processing system

Waste Characterization Methodology

The following data was collected for each load of material:

- Date
- Time of day unloaded
- Hauler Name
- Vehicle Type
- Vehicle Load Number
- Load Type Identification: Residential (R), Commercial (C) or Other (O)
- Load Net Weight (per Scale Report – obtained after the field work was concluded)
- Determination of whether the load is a candidate for processing
- Estimated volumetric percentage of recoverable and non-recoverable materials
- Load Grade (on the following basis):
    - Grade "A" included loads that contained by volume 50 percent or greater recoverable materials.
    - Grade "B" included loads that contained by volume 25 to 50 percent recoverable materials.
    - Grade "C" included loads that contained by volume 10 to 25 percent recoverable materials.
    - Grade "D" included loads that contained by volume less than 10 percent recoverable materials.

Table 5-1 - Loads Analyzed by Source from Sep

SOURCE	Number of Loads		
	9/29	9/30	10/1
Victorville Residential	13	14	11
Victorville Commercial	18	11	14
Apple Valley Residential	14	4	9
Apple Valley Commercial	10	8	7
Adelanto Residential	5	2	4
Adelanto Commercial	3	3	2
Unincorp. SBC Res/Comm	6	9	6
Victorville MRF Residue	3	5	4
TOTAL BY DAY	72	56	57

Table 5-5 - Waste Characterization Study Results - Victorville Commercial

DATE	UNLOAD TIME	VEHICLE DECAL NO.	VEHICLE VOL. (cu. yd.)	SOURCE	RES / COM / OTHER	VEHICLE TYPE	LOAD NET WT. (T)	LOAD GRADE VALIDATION			ESTIMATED VOLUMETRIC COMPOSITION PERCENTAGES													OBSERVED MOISTURE CONTENT
								FIELD OBSER.	DRY RECOV. & RECYC.	ORGANICS & COMPOSTABLES	OCC	PAPER	CONTAINERS	WOOD	FILM	YARD WASTE	FOOD / ORG.	ALL OTHER	BULKY WASTE	TIRES	FOAM	FABRIC / CARPET	OTHER	
9/29	9:04	39159	40	Victorville	COMM	F/L	10.41	C	B	B	15%	5%	20%	2%	1%	0%	45%	12%	1%	1%	0%	10%	0%	5%
9/29	9:15	25388	40	Victorville	COMM	F/L	9.21	B	A	B	10%	0%	5%	10%	40%	5%	25%	5%	5%	0%	0%	0%	0%	50%
9/29	9:28	26460	32	Victorville	COMM	S/L	7.05	B	B	B	25%	5%	5%	5%	0%	0%	35%	25%	25%	0%	0%	0%	0%	50%
9/29	9:35	33402	40	Victorville	COMM	F/L	0.91	C	B	D	5%	0%	0%	35%	0%	0%	0%	60%	40%	0%	0%	20%	0%	5%
9/29	10:37	37925	40	Victorville	COMM	F/L	7.97	B	B	B	15%	1%	7%	0%	25%	20%	30%	2%	1%	0%	0%	1%	0%	15%
9/29	10:52	26460	40	Costco	COMM	F/L	7.23	A	A	C	45%	1%	2%	2%	33%	0%	15%	2%	2%	0%	0%	0%	0%	18%
9/29	10:54	35078	40	Victorville	COMM	F/L	11.02	C	B	A	10%	0%	4%	0%	25%	10%	50%	1%	1%	0%	0%	0%	0%	35%
9/29	11:19	39037	40	Victorville	COMM	F/L	11.68	B	A	B	8%	0%	6%	0%	45%	13%	25%	3%	0%	1%	0%	2%	0%	25%
9/29	1:38	25388	40	Victorville	COMM	F/L	6.88	B	B	B	15%	4%	4%	4%	20%	15%	30%	9%	2%	0%	0%	7%	0%	18%
9/29	2:45	39159	40	Victorville	COMM	F/L	6.63	B	A	C	25%	15%	10%	0%	35%	10%	5%	0%	0%	0%	0%	0%	0%	13%
9/29	2:55	37925	40	Victorville	COMM	F/L	7.05	B	A	B	18%	3%	7%	4%	23%	15%	25%	5%	2%	0%	0%	3%	0%	18%
9/29	3:18	35078	40	Victorville	COMM	F/L	5.21	B	B	B	13%	8%	6%	8%	10%	25%	20%	10%	2%	0%	0%	8%	0%	18%
9/29	3:45	39037	40	Victorville	COMM	F/L	10.29	C	A	B	18%	2%	1%	15%	25%	15%	20%	4%	2%	0%	0%	2%	0%	30%
9/29	4:05	35224	40	Victorville	COMM	F/L	6.11	B	B	B	15%	5%	7%	2%	20%	15%	15%	21%	6%	0%	0%	15%	0%	13%
9/30	9:13	35379	20	Victorville	Other	R/O	3.49	D	C	C	0%	0%	0%	20%	0%	15%	0%	65%	25%	0%	0%	0%	40%	5%
9/30	10:05	39159	40	Victorville	COMM	F/L	10.18	B	A	C	20%	10%	4%	3%	30%	5%	20%	8%	2%	0%	2%	4%	0%	20%
9/30	10:07	26460	20	Dog Food Co	COMM	R/O	7.57	B	B	A	25%	0%	0%	0%	15%	0%	55%	5%	0%	0%	0%	5%	0%	18%
9/30	10:29	27541	40	Victorville	COMM	F/L	6.90	C	A	B	20%	10%	5%	5%	20%	30%	10%	7%	2%	0%	0%	5%	0%	20%
9/30	11:20	39037	40	Victorville	COMM	F/L	10.12	C	A	C	20%	10%	5%	7%	20%	10%	15%	16%	0%	0%	5%	1%	10%	18%
9/30	11:36	37925	40	Victorville	COMM	F/L	8.11	C	A	B	15%	5%	7%	7%	18%	15%	15%	20%	8%	0%	2%	10%	0%	13%
9/30	1:58	25386	40	Victorville	COMM	F/L	11.90	C	A	B	20%	15%	5%	0%	25%	10%	20%	5%	0%	0%	5%	0%	0%	23%
9/30	4:00	39037	40	Victorville	COMM	F/L	6.40	C	A	B	15%	10%	5%	10%	15%	25%	15%	6%	2%	0%	2%	2%	0%	25%
9/30	4:00	27541	40	Victorville	COMM	F/L	4.84	B	A	C	12%	10%	3%	7%	25%	15%	7%	18%	0%	0%	7%	2%	9%	13%
9/30	4:03	39159	40	Victorville	COMM	F/L	7.07	B	A	B	25%	10%	5%	5%	20%	20%	10%	7%	2%	0%	2%	3%	0%	20%
9/30	4:16	37925	40	Victorville	COMM	F/L	3.99	C	A	B	10%	20%	7%	2%	15%	10%	20%	14%	10%	0%	2%	2%	0%	18%
10/1	9:46	35078	40	Victorville	COMM	F/L	11.07	C	B	B	10%	10%	5%	7%	15%	18%	18%	17%	15%	1%	0%	0%	1%	25%
10/1	10:03	39159	40	Victorville	COMM	F/L	8.46	C	A	B	25%	10%	5%	1%	20%	10%	20%	6%	1%	0%	0%	0%	5%	25%
10/1	10:08	25388	40	Victorville	COMM	F/L	7.53	C	B	B	10%	5%	7%	4%	15%	10%	30%	12%	5%	2%	3%	2%	0%	28%
10/1	11:00	37925	40	Victorville	COMM	F/L	6.95	C	B	B	5%	5%	5%	2%	30%	5%	40%	9%	2%	0%	2%	5%	0%	25%
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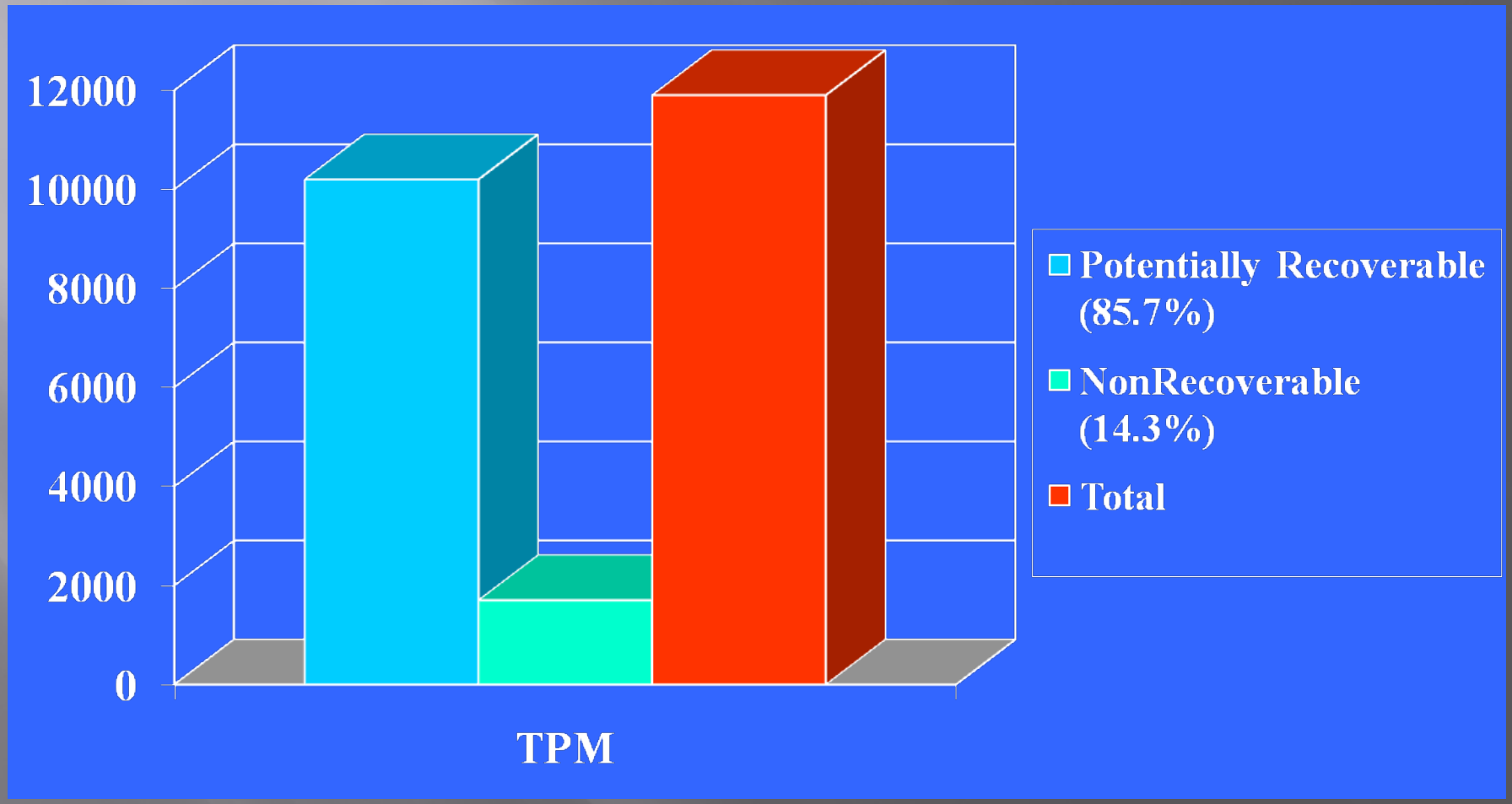
10/1	2:01	33510	20	Victorville	COMM	R/O	2.72	B	A	B	35%	0%	0%	2%	20%	0%	40%	2%	0%	0%	0%	0%	2%	0%
10/1	2:25	33518	20	Victorville	COMM	R/O	2.05	B	A	D	2%	0%	0%	60%	15%	0%	0%	32%	15%	0%	7%	0%	10%	8%
10/1	3:00	33510	20	Victorville	COMM	R/O	2.36	B	A	B	50%	0%	0%	20%	15%	0%	30%	0%	0%	0%	0%	0%	0%	10%
10/1	3:34	39178	40	Victorville	COMM	F/L	8.46	C	A	B	15%	15%	7%	0%	20%	15%	15%	22%	0%	0%	7%	0%	15%	18%
10/1	3:57	39037	40	Victorville	COMM	F/L	7.04	C	B	B	10%	15%	3%	0%	20%	10%	20%	25%	0%	0%	15%	0%	10%	25%
10/1	4:08	35078	40	Victorville	COMM	F/L	6.18	C	C	B	5%	2%	1%	0%	3%	5%	25%	68%	15%	0%	0%	3%	50%	
10/1	4:18	22262	40	Victorville	COMM	F/L	3.15	C	B	B	10%	7%	3%	7%	7%	30%	5%	35%	5%	0%	0%	0%	30%	13%
10/1	4:20	37925	40	Victorville	COMM	F/L	6.37	C	B	B	5%	5%	6%	5%	25%	15%	25%	14%	5%	0%	4%	5%	0%	17%
10/2	9:40	26460	20	Toys R Us	COMM	R/O	3.47	B	A	D	15%	10%	3%	0%	70%	0%	0%	7%	0%	0%	7%	0%	0%	8%
10/2	9:59	35078	40	Victorville	COMM	F/L	5.99	C	A	C	13%	15%	5%	0%	30%	10%	15%	12%	0%	0%	5%	0%	7%	17%
10/2	10:39	25388	40	Victorville	COMM	F/L	8.62	C	B	B	5%	5%	6%	4%	15%	5%	40%	20%	5%	2%	5%	8%	0%	30%
10/2	11:20	37925	40	Victorville	COMM	F/L	6.54	C	B	B	10%	5%	5%	2%	15%	10%	38%	15%	5%	0%	5%	5%	0%	23%
10/2	11:44	39037	40	Victorville	COMM	F/L	10.09	D	B	B	10%	5%	5%	2%	13%	17%	17%	31%	2%	0%	0%	4%	25%	25%

Table 5-3 - Estimated Potential Quantities That Could Be Diverted from Landfill for Recycling

(By Source and Material Type, Tons per Month)

	ESTIMATED TONS PER MONTH DIVERTED FROM LANDFILL										
MATERIAL TYPE	VICTORVILLE RESIDENTIAL	VICTORVILLE COMMERCIAL	APPLE VALLEY RESIDENTIAL	APPLE VALLEY COMMERCIAL	ADELANTO RESIDENTIAL	ADELANTO COMMERCIAL	UNINCORP. SBC RES/COMM	VICTORVILLE MRF RESIDUE	TOTAL TPM	TOTAL TPD	COMP. %
OCC	45.7	84.9	33.9	58.1	9.4	16.6	29.0	8.3	285.8	12.7	2.4%
PAPER	185.8	209.9	139.7	157.6	53.3	25.7	103.2	430.3	1305.5	58.0	11.0%
CONTAINERS	31.7	37.5	29.3	27.6	10.4	4.5	13.3	6.6	160.9	7.1	1.4%
WOOD	39.0	124.1	36.4	112.2	19.4	45.5	78.3	7.8	462.7	20.6	3.9%
FILM	2.5	2.4	1.5	1.5	0.6	0.3	10.9	16.6	36.3	1.6	0.3%
YARD WASTE	552.5	363.0	507.2	339.4	137.2	50.7	256.6	45.5	2252.1	100.1	18.9%
FOOD/ORGANICS	1245.9	1453.4	855.2	792.2	296.1	235.2	478.8	337.9	5694.7	253.1	47.9%
SUBTOTAL RECOVERABLES	2103.1	2275.3	1603.3	1488.5	526.3	378.5	970.0	852.9	10198.0	453.2	85.7%
BULKY WASTE	43.6	94.9	29.1	50.1	18.0	19.8	39.0	7.4	301.9	13.4	2.5%
TIRES	5.9	23.7	3.0	3.0	5.2	0.1	3.0	0.0	43.8	1.9	0.4%
FOAM	6.7	11.8	1.6	6.0	1.8	1.6	1.5	4.9	36.0	1.6	0.3%
CARPET	24.3	22.1	14.4	29.5	13.3	11.9	1.5	12.4	129.4	5.8	1.1%
OTHER	216.3	322.1	48.7	192.8	45.4	38.2	104.9	222.4	1190.9	52.9	10.0%
SUBTOTAL NON-RECOVERABLES	296.9	474.7	96.7	281.5	83.7	71.5	150.0	247.1	1702.0	75.6	14.3%
TOTAL	2400.0	2750.0	1700.0	1770.0	610.0	450.0	1120.0	1100.0	11900.0	528.9	100.0%

Total Processing Tons Per Month



Recoverable Materials

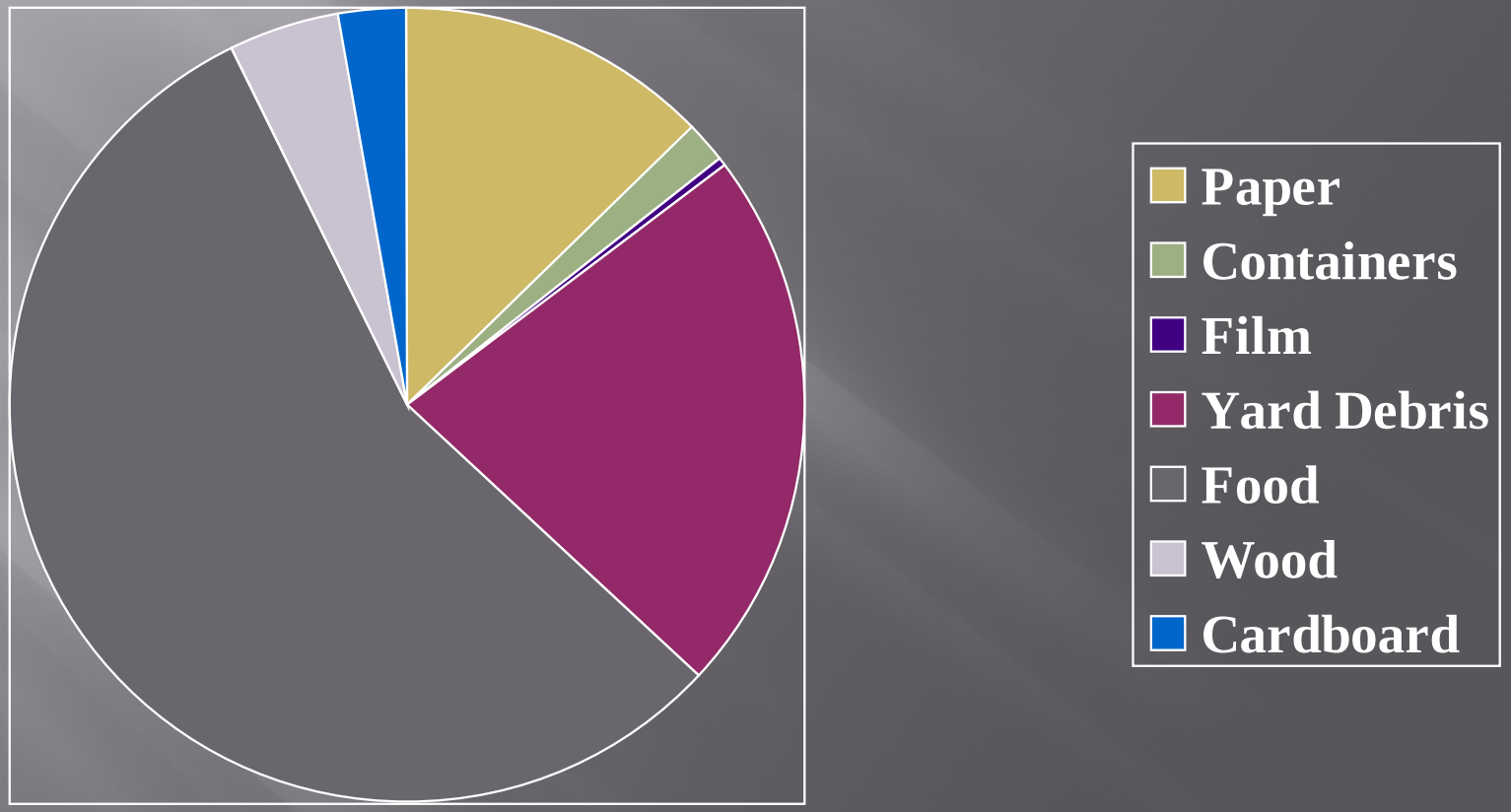


Figure 5-1 - Residential Recovery Chart

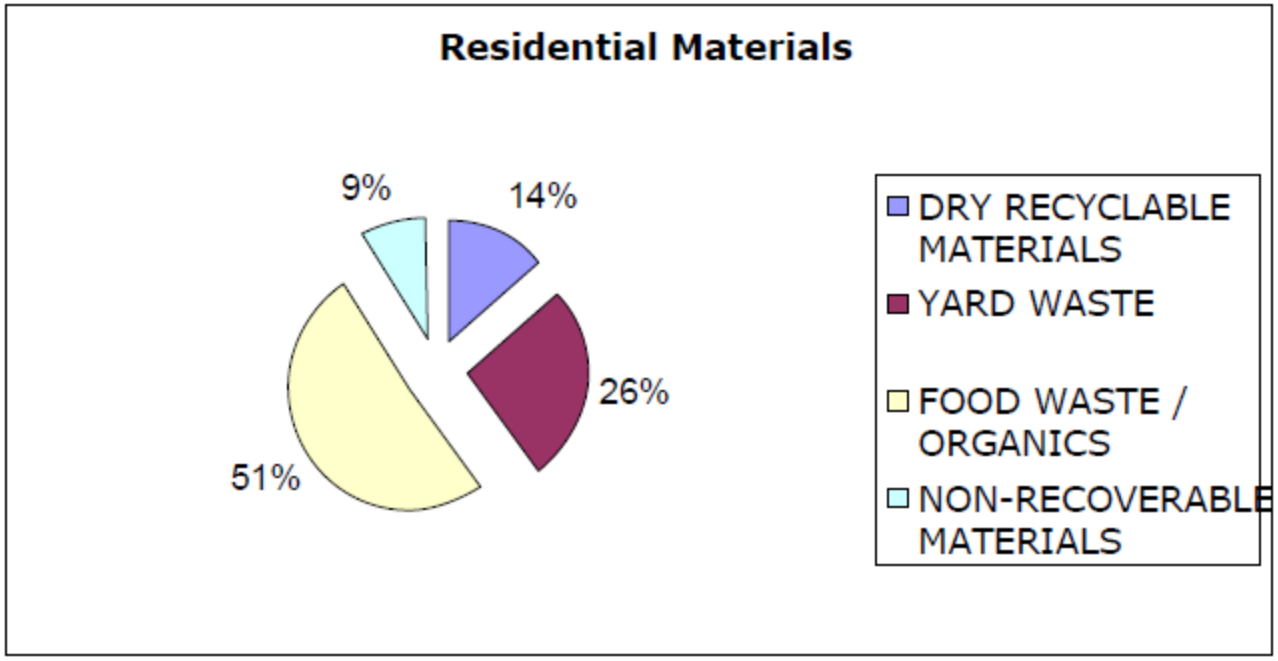
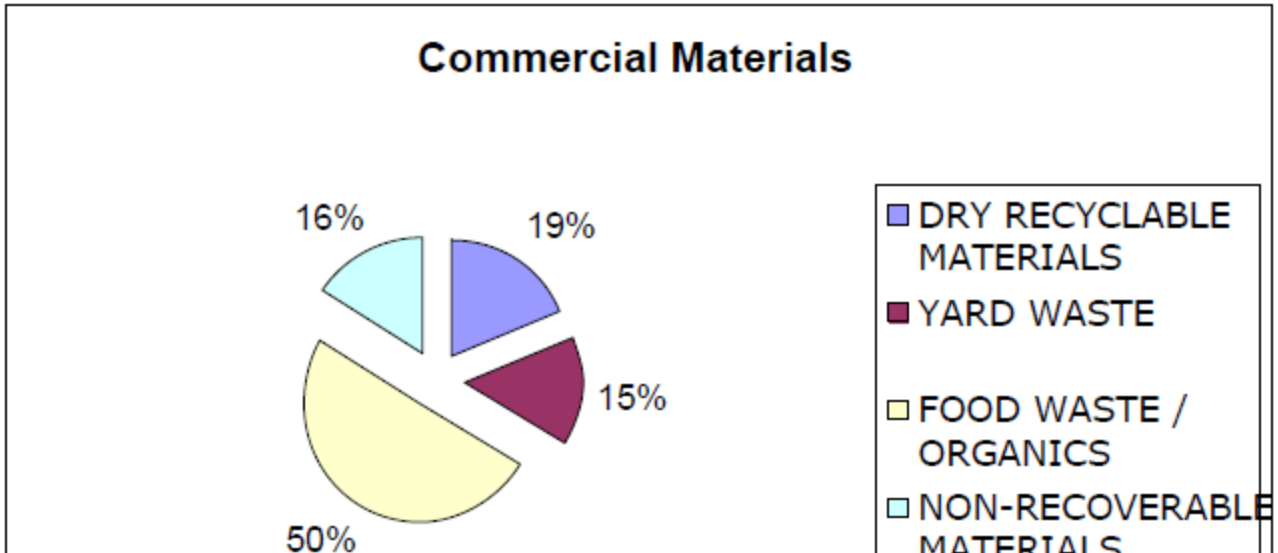


Figure 5-2 - Commercial Recovery Chart



Final Report

www.urecycle.org/resources

MOJAVE DESERT
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RECYCLING
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