



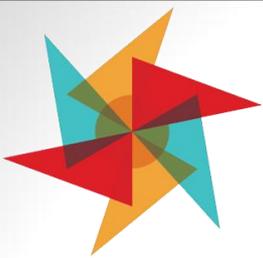
Reimagine Phoenix



Reimagine Phoenix

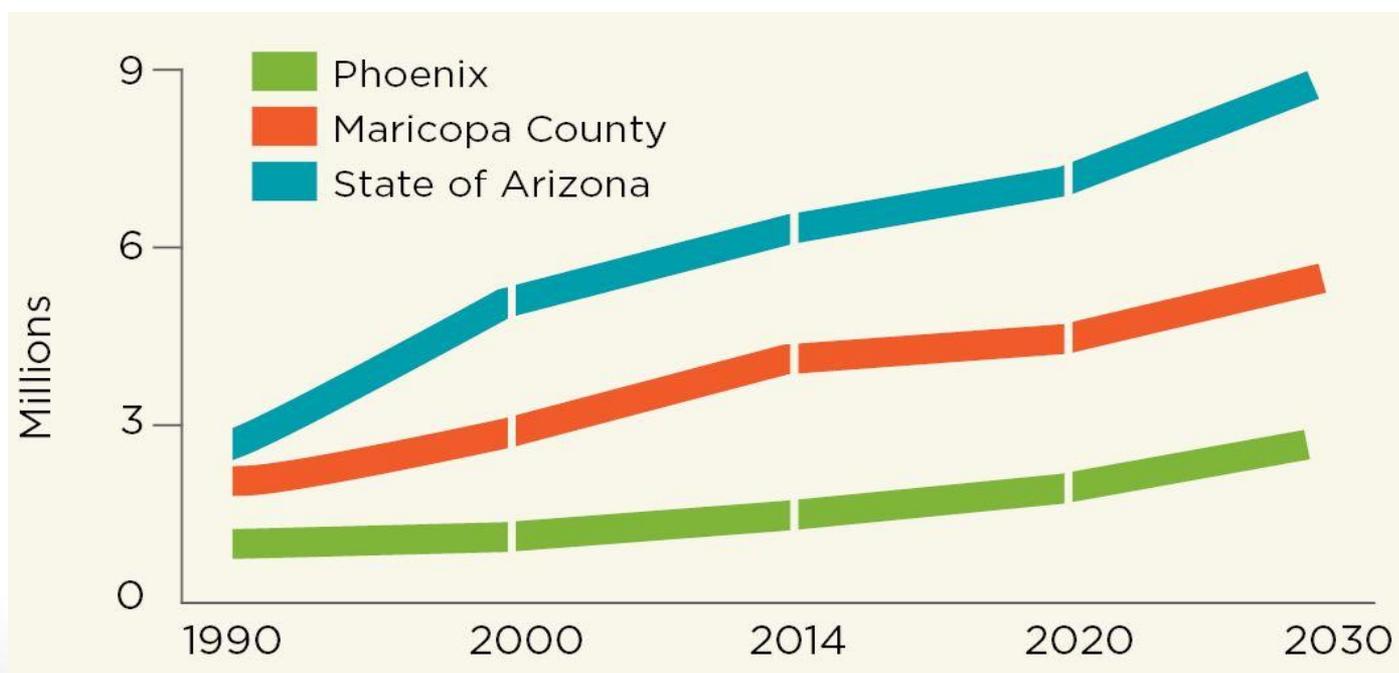
Transforming Trash into Resources

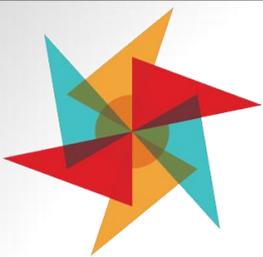
**Chemical Conversion Via Modular Manufacturing:
Distributed, Stranded, and Waste Feedstocks
Charles Hamstra, City of Phoenix Public Works**



Phoenix Demographics

- City of Phoenix population – 1.5 million (50% growth since 1990);
 - **America's #3 Fastest Growing Cities, 2014** (Forbes Magazine)
 - 23% forecasted employment growth by 2020 (AZ Dept. of Economic Security)
- Maricopa County population – 4.0 million (88% growth since 1990)
 - Represents 75% of the state's economy





Trash or Resource? 800,000 tons/year





Solid Waste Programs

Contained Collection



Uncontained Collection



Recycling



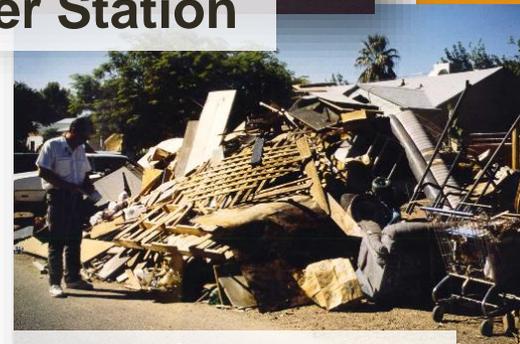
Transfer Station



Household Hazardous Waste Program



Illegal Dumping



Landfill





Curbside Recycling

78.9%
CURBSIDE RECYCLE
80,435 Tons



4.3%
ALL COMPOSTABLES
4,272 Tons

Because of these materials that should **NOT** be in the blue recycling bin, the city pays nearly \$1 million in excess processing fees and excess contamination charges.

5.7%
OTHER RECOVERABLE
5,829 Tons

11.1%
NON-RECOVERABLE
11,346 Tons



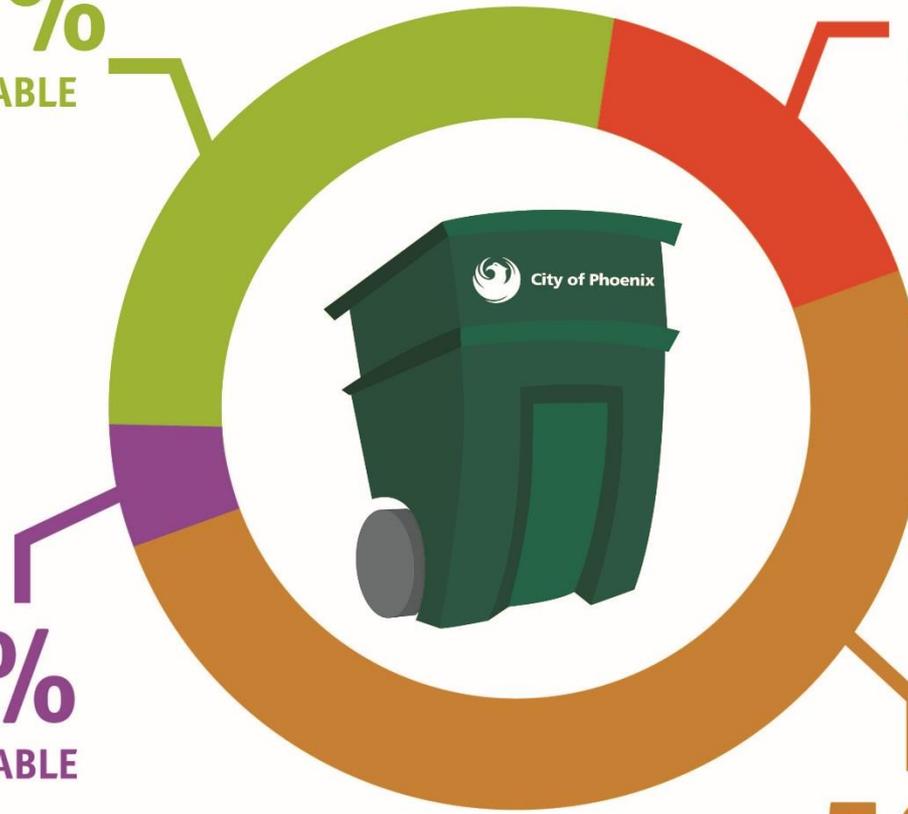
Curbside Garbage Collection

24.4%
NON-RECOVERABLE
95,434 Tons

14.7%
CURBSIDE RECYCLE
57,493 Tons

10.3%
OTHER RECOVERABLE
40,123 Tons

50.6%
ALL COMPOSTABLES
197,497 Tons



In Phoenix, 14.7 percent, or 57,493 tons, of what is thrown away in the trash can actually be recycled and should be placed in the blue recycling container. This amount of recyclable materials thrown in the trash equates to a potential loss of \$4.5 million in revenue for the city.



Table 12. Citywide Garbage Summary Composition,
2003 vs. 2014

Material	Citywide			
	2014 Composition	2014 Est. Tons	2003 Composition	2003 Est. Tons
Paper	12.6%	49,132	18.3%	79,412
Newspaper	0.95%	3,698.6	2.70%	11,729.5
Unwaxed OCC / Kraft paper	1.38%	5,380.3	2.90%	12,596.7
Other recyclable paper	4.36%	17,036.9	6.70%	29,151.5
Compostable paper	5.43%	21,200.1	4.53%	19,681.8
Other paper	0.47%	1,816.3	1.44%	6,252.9
Plastic	9.8%	38,127	8.3%	36,176
PET (#1) plastic	1.09%	4,245.0	0.70%	3,040.6
HDPE (#2) plastic	0.53%	2,068.5	0.67%	2,930.7
Clean plastic film (grocery sacks)	1.40%	5,468.9	0.90%	3,909.4
Other plastic film	2.61%	10,181.4	2.47%	10,742.3
Expanded polystyrene	0.72%	2,814.2	0.47%	2,061.3
Other plastic	3.42%	13,349.5	3.10%	13,491.1
Glass	1.9%	7,250	2.5%	10,693
Recyclable glass	1.18%	4,591.4	2.21%	9,616.3
Other glass	0.68%	2,658.5	0.25%	1,076.4
Metal	2.7%	10,352	4.4%	18,994
Aluminum cans	0.26%	1,026.7	0.47%	2,052.2
Tin/steel food cans	0.60%	2,328.5	1.02%	4,414.2
Other recyclable metals	0.88%	3,444.1	1.24%	5,382.0
Other metals	0.91%	3,552.4	1.64%	7,145.5
Organic	44.6%	174,172	44.9%	195,176
Compostable yard waste	29.91%	116,821.3	28.12%	122,257.9
Food waste	14.68%	57,350.5	16.77%	72,918.5
Construction and demolition waste	5.9%	23,227	7.3%	31,614
Household hazardous waste	0.7%	2,566	0.4%	1,683
Other materials	21.9%	85,722	14.0%	61,035
Subtotal Curbside Recycle	11.2%	43,820	18.6%	80,914
Subtotal All Compostable	50.0%	195,372	49.4%	214,858
Total	100%	390,548	100%	434,783

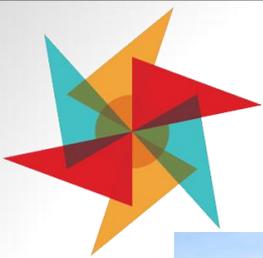
Key: Curbside Recycle Compostable
 Other Recoverable Non-recoverable

Due to rounding in the tables, sums may not exactly match subtotals and totals shown.



Bulk Trash Load





Green Organics loads





Landscaper Yard Trimmings

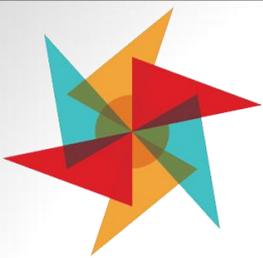




Contaminated Loads

Charged gate
rate of
\$38.25 per ton





Wood Wastes





DIVERSION

Grocery Food Scrap Program

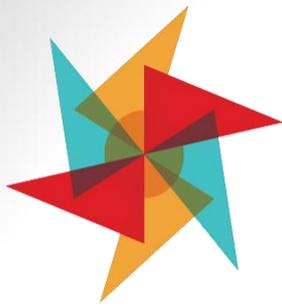




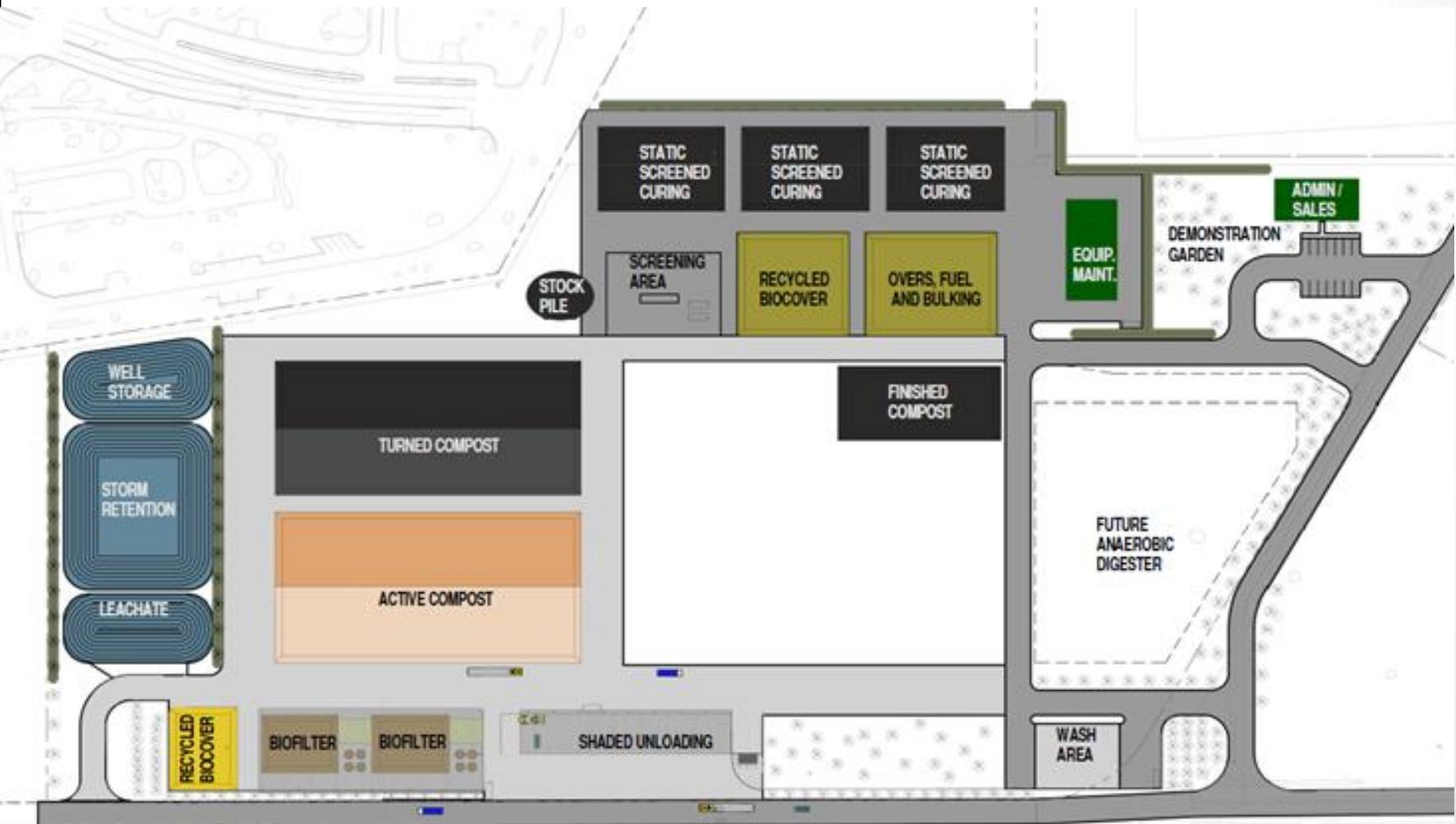
Resource Innovation Campus

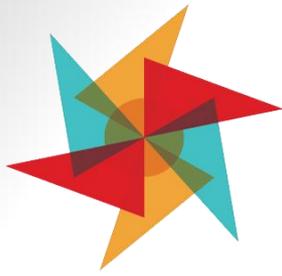


27th Avenue & Lower Buckeye Road



Conceptual Composting Facility





RISN Office Conceptual Design

