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**Subject: Zero Waste System Design – Diversion Strategies**

Dear Mark:

R3 Consulting Group (R3) was engaged by the City of Oakland (City) to provide technical assistance to aid the City in completing its Zero Waste System Design, Modeling, Testing and Procurement project. This Memorandum (Memo) is for Task 1.3 of the Scope of Services.

## Introduction

Task 1.3 provides that: "The Contractor will work with the City to develop diversion strategies to meet or exceed the City's Zero Waste Goals." This Memo describes the 68 program options the City can consider as identified in the Diversion Strategies Attributes Matrix (page 14) and Schedule A of the Scope of Services. These strategies will be further examined as part of the Task 2 Zero Waste System Design Scenarios.

The Zero Waste Strategy calls for an approximate 40 percent reduction in annual tons sent to landfills from the 2006 disposal figure of 390,000 tons per year by 2020. In other words, the overriding purpose of the Diversion Strategies outlined in this Memo is to help the City develop a comprehensive strategy to reach the 40,000 disposal goal by 2020. Table 1 below provides a summary of the current disposal trend.

<b>TABLE 1</b>						
<b>City of Oakland's 2004 – 2008 Landfill Disposal</b>						
<b>Year</b>	<b>Franchised</b>		<b>Non-Franchised</b>		<b>Total</b>	
	<b>Tons</b>	<b>%</b>	<b>Tons</b>	<b>%</b>	<b>Tons</b>	<b>%</b>
2005	238,417	57%	178,417	43%	416,823	100%
2006	235,925	60%	159,442	40%	395,367	100%
2007	227,765	58%	163,384	42%	391,149	100%
2008	228,448	70%	98,918	30%	327,366	100%

An important note regarding Table 1 is the number of total tons disposed that are originating from franchised and non-franchised sources. Even if 100 percent of the current franchised tonnage is diverted from landfill by 2020, the City will still fall short of its goal of 40,000 tons disposed. Considering the lack of data available and regulatory oversight of the non-franchised

sources, this Memo includes regulatory options that will assist the City in gaining some control of the non-franchised source of tonnage. Without doing so the 40,000 ton goal by 2020 will be unachievable.

Opportunities for diversion and waste prevention exist in all waste generating sectors and are identified in this Memo. In addition to describing potential program or enhancements, in some cases potential benefits and drawbacks of the strategy are identified. Data used for this analysis included franchise agreements, industry research, web research, and waste composition data from StopWaste.Org's 2008 Alameda County Waste Characterization Study (Study) conducted by R.W. Beck. This Memo focuses not only on enhancing programs available to the single family, multi-family and commercial sectors, but also targeting the materials disposed through roll-off and self-haul operations. For the purpose of this document, "residential" includes single family and multi-family dwellings, and "commercial" includes roll-off unless otherwise noted.

## Rate Structures

Rate structures comprise the pricing matrices that garbage haulers charge customers for varying levels of service. Different kinds of rate structures can be constructed in order to influence waste reduction and diversion incentives for the haulers and customers.

The two primary elements in a rate structure are the container size and the frequency of collection. The relationship between these service elements and their financial impacts influence customers' subscription service level behavior. The following is a list of potential rate structures the City may wish to consider both for residential and commercial sectors:

1. Flat Rates: This provides an equal unit charge as frequency or container size increases. It is the simplest rate structure. Benefits include that it is simple, but it does not provide any incentive to reduce or divert waste.
2. Progressive Rate Structures: A progressive structure increases the relative unit cost per service as either service element increases. From the franchise agreement with California Waste Solutions (CWS), the recycling container size is set at 64 gallons. If other container sizes are offered (smaller and larger), the residents using the smaller container should be charged less to reinforce the reduced waste generation. The rate structure would need to not make it beneficial for a person to have a large solid waste container and a small recycling/organics container. Benefits include greater financial incentives to reduce waste and it provides a visual reminder of the waste generated and can reinforce positive behaviors. A drawback is that the greater progressive rate structure may unfairly burden residential accounts with more household members. Depending on the rates, there may be an increase in illegal dumping or use of commercial dumpsters rather than people increasing their service levels.

For the commercial sector, a progressive rate structure could be used that is tied to diversion. For example, in order for a business to begin realizing the financial cost savings in a progressive structure, they may have to achieve 50 percent diversion. Once they reach 50 percent, they begin to realize cost savings. A benefit is providing the same incentive as a standard progressive rate structure, but with a raised benchmark level for customers to strive for first. A drawback is the increased burden of tracking and administering rate savings.

3. Regressive Rate Structure: A regressive rate structure works in the opposite manner of a progressive rate structure. As either service element increases, the relative per unit cost decreases. This may seem counterintuitive to Zero Waste Goals, but should the City decide that it prefers larger container size over increased frequency, then a rate structure regressing on the container size service element would be useful. A benefit is prioritizing container size over frequency or the other way around. A drawback is that it is counterintuitive to waste reduction.
4. RecycleBank: RecycleBank® is a rewards program that is intended to motivate people to recycle. Participants are rewarded points based on the weight of the material recycled (by truck route or individual household) that can be used through discounts or other financial incentives at hundreds of local and national rewards partners. A benefit is providing a financial incentive for residents to increase recycling. It also would not need the rate structure to be designed. A drawback is that it does not address waste reduction and a program would need to be designed and implemented.

The City could implement a simplified, similar concept rebating some amount of money or other compensation (e.g., local business coupons) to residents based on the amount of the residential waste stream recycled. This would not involve any of the cost associated with weighing containers or tracking participation. It would prevent rewards to be based on specific account diversion but would rather be based on diversion for the residential sector as a whole. In addition, program administration could also require additional City resources to develop the program, track diversion and contamination, dissemination of rewards, and recruiting business participants if the RecycleBank program is emulated in the City. Residents would also need to be educated on the program and any procedures to enable their participation.

5. Weight-Based Rate Structure: While variable can rates provide incentives to reduce waste generation and increase diversion, they do not directly address the weight of material generated. The technology exists for trucks to weigh each container that is collected. Benefits include that it takes into account material weights, rather than the volumes, and information can be fed back to households. If tracking is accurate, service charges could fluctuate like electricity and water bills and provide a tangible measure for customers as well as a financial incentive. In addition, cart exchanges would not be necessary. Drawbacks are that while the general technology exists to weigh and track solid waste, recycling and yard waste containers, R3 is not aware of any jurisdictions that are currently tracking and charging solid waste customers on the basis of weight. If such a program was implemented, it could require the retrofitting of trucks for software and anti-scales. Customer containers would need to be retrofitted with RFID tags or replaced with RFID tags built in (unless new technology becomes available).
6. Base and Variable Rate Structure: This would involve charging accounts a base service rate intended to cover all or a portion of fixed costs and then variable rate based on cart size, cart/bin content, and frequency of service. The intent is for the "base" rate to cover fixed costs associated with billing, administration, vehicle and container capital costs, labor, public education, etc., and the variable portion tied to the cost/value of the specific type of material collected. This is similar to item 8 below-Fixed Base and Tiered Rate Structure. A benefit is that it provides an accurate measure of incremental benefits to diversion and waste reduction. A drawback is that it is difficult to measure the variable portion with increase frequency of collection.

7. Variable Can Rate Structure: Variable residential rate structure similar to the commercial structure with charges for recycling and yard waste containers, but incentives for size reduction to promote waste reduction / reuse. A benefit is that it provides a financial incentive to reduce waste and maximize diversion. A drawback is that this system could be complicated to implement because there are two haulers providing these services. This system would require the re-education of residents, and tracking of containers used and service levels may be cumbersome.
8. Fixed Base and Tiered Variable Structure: Similar to that of many water utility billing structures, the cost per unit increases as service increases within specified tiers or volumes. The price increases between tiers must be significant enough to encourage waste reduction. An example could be a 25 percent increase to the per unit rate after the customer reaches a certain level of service in a month and a 50 percent increase after the customer exceeds the next benchmark during the same month. This could be done on a total volume base for all material types collected or each material type could be tiered. A benefit is that it allows customers to see clear benchmarks in pricing which can result in increased awareness and waste reduction behavior. A drawback is that it may unfairly punish larger generators (e.g., retail outlets, supermarkets, etc.).
9. Offer City-Subsidized "Recycling Coupons" The City may wish to consider offering "recycling coupons" to businesses to encourage recycling. The City of Boulder, CO pays the local hauler for the first three (3) months of recycling service for businesses signing up for one year of new service. Precluding the mandatory commercial recycling ordinance to be implemented in 2012 which would render recycling coupons irrelevant, this may prove sufficient incentive to get otherwise reluctant commercial businesses to begin recycling in the meantime.
10. Self-Haul Fee at Disposal Facilities: Because self-haul generators cannot be regulated in the same way that other sectors can, the primary way of affecting self-hauler behavior would be at the point of disposal (i.e. landfill or transfer station). The County of Sacramento is considering a self-haul fee to be imposed on non-source separated loads brought to County-owned facilities. By imposing a fee, the haulers will have financial incentives to maximize the diversion of materials. If a self-haul load is taken to a recycling facility, no charge will be imposed, but if a load of mixed Construction and Demolition (C&D) materials go to a facility, it will be charged. A benefit is that it is a financial incentive for self-haul loads to source separate materials, increase diversion, and creates an equal playing field with the franchised haulers. A drawback is that self-haulers may decide to take material out of the City which would not increase diversion.
11. "Free" Recycling Collection: Offers recycling services for no additional cost. A benefit is that it provides an incentive to recycle. A drawback is that the service is not truly free as costs are assumed by solid waste rates and does not promote waste reduction.
12. "Free" Organic Collection: Offers organics services for no additional cost. A benefit is that it provides an incentive to divert organics. A drawback is that the service is not truly free as costs are assumed by solid waste rates and does not promote waste reduction.

## Structure of Franchised Contracts

13. Exclusive Franchised Hauler (Minimum Diversion Requirements): Setting a diversion rate for the franchised hauler would incentivize the hauler to increase diversion, whether by additional recycling programs, alternative facility use, increased public education, etc.
14. Disposal Capacity Caps: This would limit the amount of material that a hauler would be allowed to dispose of as part of its collection operations.
15. Non-Exclusive Hauler Minimum Diversion Requirements: As with a minimum diversion rate for the franchised hauler, setting a diversion rate for non-exclusive haulers would incentivize increased diversion in whichever way the hauler saw fit to reach the compliance level.
16. 4R Hierarchy on Bulky Waste: The R's stand for reduce, reuse, repair, and recycle. Waste Management of Manhattan Beach collects bulky items from the curb which is reported on the website as being "inspected for reuse as is, disassembly for reuse or recycling, or recycled." The City may wish to require the franchised hauler to do the same in Oakland.
17. Integrated Street Sweeping: This involves integrating the street sweeping operations into a contract with a private service provider. This may lower the cost of the service, because it is folded into a larger agreement. It is also easier to coordinate with curbside collection (e.g., have street sweeping follow collections).
18. Integrated Illegal Waste Clean-up: This involves integrating the illegal waste clean-up operations into a contract with a private service provider. This may lower the cost of the service, because it is folded into a larger agreement. The City has the right to include illegal dumping clean-up in the solid waste collection contract. The collection volume specified in the contract can be an open or fixed.
19. Adopt Non-Exclusive Franchise Or Permit System For Self-Haul: This would provide the City with greater oversight over the sector and be able to promote Zero Waste Goals.
20. Separate Disposal/Transfer Contract: The purpose of decoupling the disposal/transfer contract from the collection agreement is to set the stage for a more competitive procurement process, which will benefit the City with lower rates and improved quality of service.
21. Separate Contracts for MSW, Recycling, Organics, C&D/Temp., Or Variation: Similar to the recyclables collection contract that California Waste Solutions holds in the north and western parts of the City. Separate contracts may allow specialized service providers to compete for their own service.
22. Public Ownership Of Facilities: By building or purchasing solid waste facilities, the City will be able to dictate the costs, flow of material, and standards for diversion of the solid waste management system.
23. More Than One Exclusive Franchise Area: Splitting the jurisdiction in multiple territories with separate contracts may increase competition, thereby reducing rates and improving quality of service.

## Franchised/Contracted Collection Programs

24. Micro-Can Service: There is currently no lower solid waste service level option or rate incentive for the current residential accounts subscribing to the 20-gallon rate. The cities of Albany, CA and Seattle, WA both have micro-can options for those residents that would like to lower their bill by reducing waste capacity each week. A benefit is that it provides a financial incentive to reduce waste generation for those customers who are currently not using full capacity of 20-gallon containers and for those who would reduce waste generation in order to minimize costs. It also provides a visual reminder of the waste generated and can reinforce positive behaviors. A drawback could be the cost of purchasing and distributing new containers. Also, there is the potential that people may use other City or commercial bins to dispose of excess waste or contaminate recycling/organics containers.
25. Bi-Weekly Solid Waste Collection Option: Since putrescible waste is collected in the yard trimmings and food waste cart, the City may wish to implement bi-weekly solid waste collection at a reduced rate for qualifying accounts.<sup>1</sup> A benefit is that it provides financial incentive to reduce waste generation for those customers who are currently not using full capacity of 20-gallon containers and for those who would reduce waste generation in order to minimize costs. This would also lessen garbage truck fuel usage and emissions. A drawback is that it can potentially be difficult to track which accounts are serviced which week and avoiding free-riding of services if a customer sets out their container on a non-collection week.
26. Traditional "3-Cart/Bin" System: Containers provided for solid waste, recycling and yard waste service.
27. Wet-Dry Collection: One way of increasing diversion is to have the franchised haulers develop a wet and dry materials collection route. This means that the routes are designed to pick up mostly dry loads (e.g., paper, glass) in one truck to avoid contamination that could occur if a restaurant's material was also placed in the same truck. Conversely, the businesses that generate wet loads (e.g., food, grass) would have their contents emptied into the same truck.
28. One Cart/Bin System: All materials are placed into a single container. The waste stream is then sorted at a "Dirty" Material Recovery Facility (MRF) to separate recyclables. A benefit is that it is convenient for customers. A potential drawback is contamination of materials.
29. Split-Body Collection Trucks: By using split-body collection trucks, collection vehicles can reduce the impact on surface streets and be more efficient about collecting multiple waste streams in a single pass.

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<sup>1</sup> The Town of San Anselmo has an "Intensive Recycling Program" that permits refuse pickup every other week. The program is intended to acknowledge and reward intensive recycling efforts. Intensive recyclers limit their garbage to one 20-gallon can every two (2) weeks. To qualify for the program, customers are asked to complete a questionnaire regarding the disposal of recyclable materials. The questionnaire includes questions about how applicants dispose of various items, such as packaging peanuts, plastic jugs, light bulbs, concrete, plastic flower pots and aerosol cans. In addition, applicants are asked how they would reach the goal of 20-gallons of non-recyclables every two weeks (Source: San Anselmo News; August 25, 2006).

30. Offer Split Containers to Commercial and Multi-Family Customers: Paper and plastic are both materials that are currently collected in the commercial recycling programs, but still represent a combined 41.0 percent of materials disposed from the commercial sector. The City could elect to utilize split containers to service accounts with space limitations. Split containers have recently been developed that automatically lock one compartment and require minimal effort on the part of the driver.

### **Expanded Recyclable Materials Collected**

Residents and businesses in the City are not provided with curbside collection services of some recyclable items. Recyclable items that are currently not collected in the curbside recycling program, according to 2008 Alameda County Waste Characterization Study by R.W. Beck, include: Styrofoam # 6, latex paint, cell phones; and compact fluorescent lamps (CFLs).

31. Styrofoam # 6: The Cities of Piedmont and Fremont both collect Styrofoam #6 in their curbside collection programs. A benefit is that this is convenient for residents. A drawback is that there are extra costs for processing.
32. Latex Paint: Though proper disposal options are available as drop-offs to paint stores or hazardous waste facilities, many residents and businesses may find this inconvenient. Collecting latex paint in a curbside program could make proper disposal more convenient. A benefit is that this is convenient for residents and paint can be reused to solve graffiti issues. A drawback is that there are extra costs for processing and administration.

Marion County, OR provides curbside collection and uses collected paint in citywide effort to "gray over graffiti tags". The County of Marion's eight franchised haulers all collect latex paint at the curb. Residents are allowed to leave up to two gallons of paint at the curb, which is collected and then stored at each haulers' main office. Every two months, the Marion County Juvenile Department's Alternative Program picks up the paint from the haulers' main offices, other paint stores and mixes all the reusable paint into giant vats where it is mixed into grayish paint, thus giving the program the name "Paint into Gray". The police and sheriffs department then distribute the paint free-of-charge to property owners who have been victimized by graffiti. Paint at the Incorporated Portland Metro is even sorted by color and sold at discounted prices to willing buyers.

33. Cell Phones: The City could require the hauler to provide curbside collection of cell phones in conjunction with the newly implemented battery curbside recycling service. Union City has adopted such a program, where batteries and cell phones can be commingled in clear plastic bags that are placed on top of a garbage cart. The City of Piedmont provides a similar service. A benefit is that it can be easily added to existing curbside battery collection service. A drawback could be the extra costs for processing the material.
34. Compact Fluorescent Lamps: The County of San Mateo provides for curbside collection of CFLs. Residents are instructed to place CFLs in a separate, clear, plastic ziplock-type bag, labeled appropriately and to put the bag on top of lid of recycle cart for collection. This is very similar to the City's collection program for batteries and cell phones. A benefit is that it is the most convenient option for customers. Also, collectors and recyclers have a centralized pickup rather than multiple drop-off locations. Drawbacks

include that the CFLs could break during collection or transport. Also, extra time and adaptations to trucks may be needed to collect and handle CFLs.

## Regulatory

35. Ban Household Self-Haul: Since household self-haul as a waste stream is difficult to ensure diversion of materials, banning the delivery method would redirect the waste to alternative methods of handling, such as through a franchised or non-exclusive hauler. A benefit is that alternative methods of delivery are easier for the City to exert influence on and promote its Zero Waste Goals. A drawback is that it may be difficult to regulate if self-haulers deliver their waste to disposal sites outside of the jurisdiction.
36. Ban Commercial Self-Haul: Commercial establishments would no longer be allowed to self-haul materials, redirecting waste streams to alternative methods of delivery. A benefit is that alternative methods of delivery are easier for the City to exert influence on and promote its Zero Waste Goals. A drawback is that it may be difficult to regulate if self-haulers deliver their waste to disposal sites outside of the jurisdiction.
37. Adopt City EPR Requirements: Extended Producer Responsibility (EPR) is a long-term solution to manage waste products by shifting the responsibility for collection, transportation, and management for those products away from local governments to the manufacturers. Some local governments across California and in Wisconsin have already passed EPR policies relating to Universal Waste (U-Waste). Below is a list of policies with a brief description of actions the City may wish to emulate:
  - Dane County, Wisconsin: Ordinance passed in January 1990 prohibiting any retailer from selling tires, lead-acid batteries, mercury thermostats or fluorescent lamps without also informing the public that they are banned from landfill disposal and offering to accept these products back for reuse and recycling.
  - City of Madison, Wisconsin: Ordinance passed December 2003 requiring any retailer that sells fluorescent bulbs or other lamps containing mercury to notify the public that they cannot be disposed of in landfills and requiring retailers to offer to accept those items for a reasonable fee.
  - Central Contra Costa County Solid Waste Authority: Resolution adopted in March 2002 urging the state to require E-Waste take-back legislation that encourages green design.
  - City of Morgan Hill, California: Resolution passed September 20, 2006 supporting statewide EPR policies and stating that if the state does not pass effective legislation within the next 18 months, or if the industry does not implement take-back, the City will consider requiring local retailers to take-back U-Waste.
  - San Luis Obispo County, CA: Ordinance passed in May 2006 requiring local retailer take-back of batteries and fluorescent lamps. Additional ordinances have since been adopted for sharps and paint take-back.
  - City of San Francisco, CA: Ordinance passed February 2006 urging statewide EPR legislation targeted at U-Waste and other hazardous products and packaging and directing City staff to develop producer responsibility policies for City procurement.



- Suffolk County, NY: Resolution 1545 passed unanimously September 5, 2006 creating a purchasing policy that will require County agencies to seek out and do business only with vendors that take-back used electronics and recycle them in an environmentally sound manner.
38. Support EPR legislative initiatives: In addition to implementing its own EPR legislation, the City may wish to provide support for state and national EPR efforts.
39. Material Bans/Prohibitions from Disposal: Disallow specific materials from being disposed. The following are examples of jurisdictions that have taken such measures:
- Seattle, WA: The city's ordinance prohibits the disposal of certain recyclables from residential, commercial and self-haul garbage. Enforcement includes non-pickup of residential accounts with significant amounts of recyclables (more than 10 percent by volume) and warnings followed by \$50 surcharges to multi-family and business accounts identified by City inspectors.
  - Cambridge, MA: Ordinance mandates separation of certain recyclable materials from refuse. There is a five percent contamination limit.
  - Honolulu, HI: Green waste from commercial and government generators is banned from disposal. Cardboard from commercial and government generator is restricted from disposal. Tires, auto batteries, white goods and scrap metals are banned from all City disposal sites. Bars and restaurants serving alcoholic beverages are required to recycle glass. Office buildings are required to recycle office paper, newspaper and cardboard. Hotels, restaurants, grocery stores, food courts, food manufacturers/processors and hospitals are required to recycle food waste. City agencies are required to recycle. The City is required to purchase recycled paper products. The City conducts annual site inspections to determine compliance, which can be remedied with help from Recycling Specialists. Inspectors also monitor trucks unloading at the landfill and transfer stations. Offending vehicles can be denied access.
40. Mandatory Single-Family Recycling Participation: Require single family customers to subscribe to recycling services (i.e., San Francisco, CA).
- San Francisco, CA: The ordinance requires all residences and businesses to participate in the city's recycling and composting services. The primary goal is to get recycling and composting services available to tenants who want to participate but have unwilling owners.
41. Mandatory Multi-Family Recycling Participation: Require multi-family customers to subscribe to recycling services (i.e., San Luis Obispo County, CA).
- San Luis Obispo County, CA: Establishes mandate for recycling for residential, commercial, special events and self-haul generators. Enforcement may be through a civil action for civil penalties. Multi-family complexes in violation may be sued for up to \$1,000 per day. Substantial non-compliance is defined as a garbage sample containing 20 percent of recyclable material.
42. Mandatory Commercial Recycling Participation: Require commercial customers to subscribe to recycling services. Note that as of 2012, the State of California will require mandatory commercial recycling programs (AB 32). Below are examples of jurisdictions mandating commercial recycling participation.

- Ventura County, CA: The ordinance in 1998 requires all businesses and organizations in unincorporated county areas to separate and recycle certain designated materials from their refuse. The County also requires that recyclables collection be provided at a lower cost than refuse collection.
  - Sacramento Regional Solid Waste Authority, CA: Has business recycling, C&D and multi-family recycling ordinances in place. All businesses and non-residential properties who subscribe to 4 cubic yards a week or greater of garbage collection service per week shall separate recyclables and subscribe to service. Multi-family threshold is for dwellings with 5 or more units and who subscribe to 10 cubic yards a week or greater of garbage collection service.
43. Provide Incentives to Hire Oakland Residents: The City could make it more attractive for companies to hire local residents.

## C&D

44. Require all C&D to be Processed at a Permitted/Certified C&D Facility (No Dollar Threshold of Project): Unless C&D materials are delivered to a processing facility, they become part of the solid waste stream and are disposed. The City could expand its current C&D program by mandating all C&D materials be delivered to a desired facility no matter the project size.
45. Require Building Permit Deposit for Remodeling/Demolition, Construction (No Dollar Threshold of Project): This increases the amount of projects that would fall under the City's C&D requirements.
46. Decouple Building and Demolition Permits: The ReUse People (TRP), based out of Oakland, CA, suggest that cities *decouple building and demolition permits so that there is adequate time allowed for deconstruction to be pursued*. This avoids sudden rush once permits are issued to demolish as quickly as possible and begin building. According to TRP, "Most projects over 5000 sq ft require a **month** of deconstruction time to hit 75 percent diversion," and that is actually makes financial sense to do so because, "TRP can provide charitable donation receipts."
47. Require Thrift Contacts: The City could require contractors engaging in a demolition project to contact a certain number or specific thrift store and reuse organizations before a demolition would be allowed. This would provide time for deconstruction practices.

## Processing

48. Require Processing Facilities to be Located within 15 Miles of Oakland: This minimizes the impact of long distance transportation of waste streams.
49. Process all Multi-Family Material Prior to Disposal: Ensures best effort to identify and divert recyclable materials in the waste stream.
50. Process all Commercial Material Prior to Disposal: Ensures best effort to identify and divert recyclable materials in the waste stream.
51. Process all Single Family Material Prior to Disposal: Ensures best effort to identify and divert recyclable materials in the waste stream.

## Reusables

52. Provide incentives for development of local green businesses that reuse or use discarded materials in the manufacturing process.
53. Encourage Donation Of Unwanted But Usable Items: Promote FreeCycle, Craigslist, eBay, and the California Materials Exchange (CalMAX) on website and in distributed promotional materials.
54. Encourage donation of unwanted but repairable items.
55. Partnering With And Promoting Thrift Organizations To Provide Bulky Item Pickup Services: Potential local partnerships include:
  - The ReUse People;
  - Ohmega Salvage;
  - C&K Salvage;
  - Last Gasp Salvage;
  - Savvy Salvage; and
  - A&K Salvage.
56. Salvage of Materials at the Landfill or Transfer Station Prior to Disposal: The City has a few options to increase diversion of reusables in this way. First, is that the City could contract with a for-profit or non-profit reuse vendor to set up a trailer or salvage shop at the landfill or transfer station to offer self-haulers the opportunity to donate reusable items instead of paying to dispose of them. Second, the City could work with its facilities and others frequented by self-haulers to re-route traffic to recycling "stations" where recyclable materials can be deposited prior to going over the scales and disposing of material. The McCourtney Road Transfer Station in Nevada County has done an effective job in re-routing traffic flow and providing such an option to self-haul customers. A benefit is that it provides convenience and financial incentive for self-haulers to divert materials. Drawbacks include that the ability to provide diversion options at facilities depends on space and traffic flow restrictions, and the City's ability to influence out-of-City facilities to improve self-haul recycling options may be limited.
57. Forming Opportunities Commission Partnership: Montgomery County, MD sponsors a furniture pickup program with the Housing Opportunities Commission (HOC), an organization serving families who need homes. HOC collects furniture in good condition from residents on a on-call basis, and delivers these the same day to families. The City may wish to consider such a partnership with the HOC.
58. Develop Community-Based Reuse Complex: Some communities are supporting warehouses or dedicated sites available to the storage and distribution of reusable items. The City may wish to identify a central site that would act as a reusable item exchange place for the City's residents and businesses.

## Public Education

59. Require hauler to provide public education.

60. Rewards/Recognition Program: The City may want to consider implementing a rewards/recognition program for residents that reduce their waste over a given time period. The program can be administered by neighborhood, route, or other means. Benefits of this type of program are that it rewards positive behavior and can be a mechanism to promote greater awareness of program efforts and motivate others in the community to change their habits. Drawbacks of the program could be that the administration of the project could be time intensive, difficult to track tonnage (e.g., measuring sustained behavior changes versus economic conditions impact).
61. City contract with 3<sup>rd</sup> party for public education.
62. Volunteer Corps: The City can train volunteers to perform "grassroots" education campaigns.

## Compostable Organics Diversion

Food waste diversion opportunities exist with the greatest impact in the single family, multi-family and commercial sectors. Although, food waste can be a significant material to target, the 'organics' category in the study also includes tires, untreated lumber, pallets, treated wood waste, textiles, leather, carpet, diapers, manure and other organics; roll-off and self-haul have the greatest opportunities to divert these materials. Benefits of organic options identified below include that the diversion results of the increased outreach can be measured. A drawback of the options may require additional staff and resources to promote the programs beyond current levels or create new ones. It may also be difficult to determine the effectiveness, because the economy may influence consumption and disposal, rather than education and outreach programs.

63. Single Family Food Waste: Increasing diversion can be achieved through increasing promotional efforts and targeted reminder messages to residents; conducting informational workshops and distribute kitchen pails; and promoting a community garden where residents can provide food scraps and receive fruit/vegetables and/or compost for participating.
64. Single Family Diapers: Promote the use of reusable cloth diapers through hospital and maternity venues, and promote the use of diaper collection services.
65. Single Family Textiles and Leather: Promote reuse/donation facilities such as Goodwill, Salvation Army, and other local charities, provide a collection point(s) in the City where materials can be provided to shelters or sold to companies that make rags, and use electronic resources such as CalMax, with artisans who may be seeking materials.
66. Multi-Family Food Waste: The City may want to begin providing compostable organics collection from the multi-family sector. The City could choose to mandate or incentive multi-family complexes to adopt co-collection of organics with plant trimming similar to the single family sector.
67. Commercial Food Waste: The City may want to provide food waste collection to the commercial sector. Some jurisdictions are collecting segregated organic food waste in the commercial sector already.
  - City of Berkeley, CA: The City developed a pilot program targeting the 39 largest food-generating businesses it could identify by way of SIC codes and offered both

carts and bins up to 6 cubic yards in size for the food scraps. The food waste is collected at the end of the residential plant debris routes. Then the mixed green and food wastes are taken to the City's transfer station where it is then hauled to a Modesto compost plant. The businesses divert 140 tons per month of food scraps. The program has been funded in part by grants and by solid waste fees. The City benefits financially by only paying \$25 per ton to transport and compost food scraps and plant debris, as opposed to \$40 per ton for refuse.

- City of San Francisco, CA: San Francisco has a pilot program in place that is targeting large businesses resulting in diverting 33 percent of organic materials in the commercial waste stream. San Francisco has also placed the highest use value on edible food redistribution by supporting local food donation organizations to incorporate edible food recovery. Participants have cut trash bills by 45-50 percent.

68. Food Waste Reuse Program: The City of Portland, Oregon operates a "Fork-It-Over" food waste reuse program. The City gave grant money to food banks and homeless shelters to purchase freezers, refrigerated trucks, and other food storage devices which is coordinated with the reuse of food from large producers, restaurants and cafeterias. The City may wish to consider developing such a program partnering local producers and food banks and homeless shelters.

DRAFT

## Date 11/08/09

Green = Level 1 attribute (most fundamentally basic)

## Date 11/08/09

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## Date 11/08/09

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## Date 11/08/09

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