Initial Study for the

Commercial Collection System Redesign

File Number PP10-157

Prepared by

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

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SECTION 1.0 INTRODUCTION AND PURPOSE

This Initial Study of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the City of San José. This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from awarding and implementing the City's proposed Commercial Collection System Redesign.[1]

Three City policies (Urban Environmental Accords, Zero Waste Policy, and Green Vision) drive the Commercial Collection System Redesign project. In November 2005, the City Council approved support of the Urban Environmental Accords including Action 4 of the Accords, which sets a goal of 75 percent diversion by 2013. In October 2007, the City Council adopted the Zero Waste Policy, which sets goals of 75 percent diversion by 2013 and Zero Waste by 2022, and the Green Vision, which is comprised of 10 goals including diversion of 100 percent of waste from landfill and converting waste to energy.[2] In addition to the City's diversion goals, the Green Vision introduces a goal of ensuring that 100 percent of the public fleet uses alternative fuels.[3]

Currently, the City has a non-exclusive commercial collection system with over 20 hauling companies collecting solid waste, mixed recyclables, and organics from commercial customers. All haulers are required to obtain a Commercial Solid Waste and Recyclables Collection Franchise agreement granted by the City Council that allows them to provide hauling services on a "non-exclusive" basis. This non-exclusive collection system allows commercial businesses to choose the hauler that offers the rates and services that meets their needs. The current system does not require franchisees to divert commercial waste from the landfill. The existing commercial franchise hauling agreements expire on June 30, 2012.

The City of San José has approximately 8,000 reported commercial businesses that receive solid waste collection services and approximately 3,800 reported commercial businesses that receive recycling collection services from the franchised haulers. These figures do not include businesses that do not use a franchised hauler because of other collection arrangements, including company-owned vehicles hauling commercial solid waste, recyclables, and/or organics to a disposal facility, central distribution facility, or recycling center. Commercial waste comprises 32 percent of disposed waste City-wide. The commercial diversion rate between July 2009 and June 2010 was approximately 22 percent.

[1] The proposed Commercial Collection System serves businesses (e.g., offices, grocery stores, department stores, restaurants, etc.) in the City. No residential (single-family or multi-family) waste would be collected as part of this proposed system.

[2] "Zero Waste" is a perception change. It requires rethinking what we have traditionally regarded as garbage and treating all materials as valued resources instead of items to discard. Zero waste entails shifting consumption patterns, more carefully managing purchases, and maximizing the reuse of materials at the end of their useful life.

[3] While the City does not own a commercial collection fleet, the size of the commercial collection haul fleet and the City's ability to establish standards make this project an opportunity to help achieve this goal.

An assessment of the City's existing non-exclusive commercial collection system found that, because there are multiple haulers operating in the City, collection vehicles from different hauling companies cross each other's path, each day, to service customers on the same streets.[4] The assessment found that inefficient routing leads to more truck time on streets, which translates into higher fuel consumption and air pollutant emissions, more traffic, noise, and wear and tear on the streets. In addition, the existing operating haul companies likely use older collection vehicles that emit more air pollutant emissions than newer vehicles that yield better fuel efficiency and may use alternative fuels.

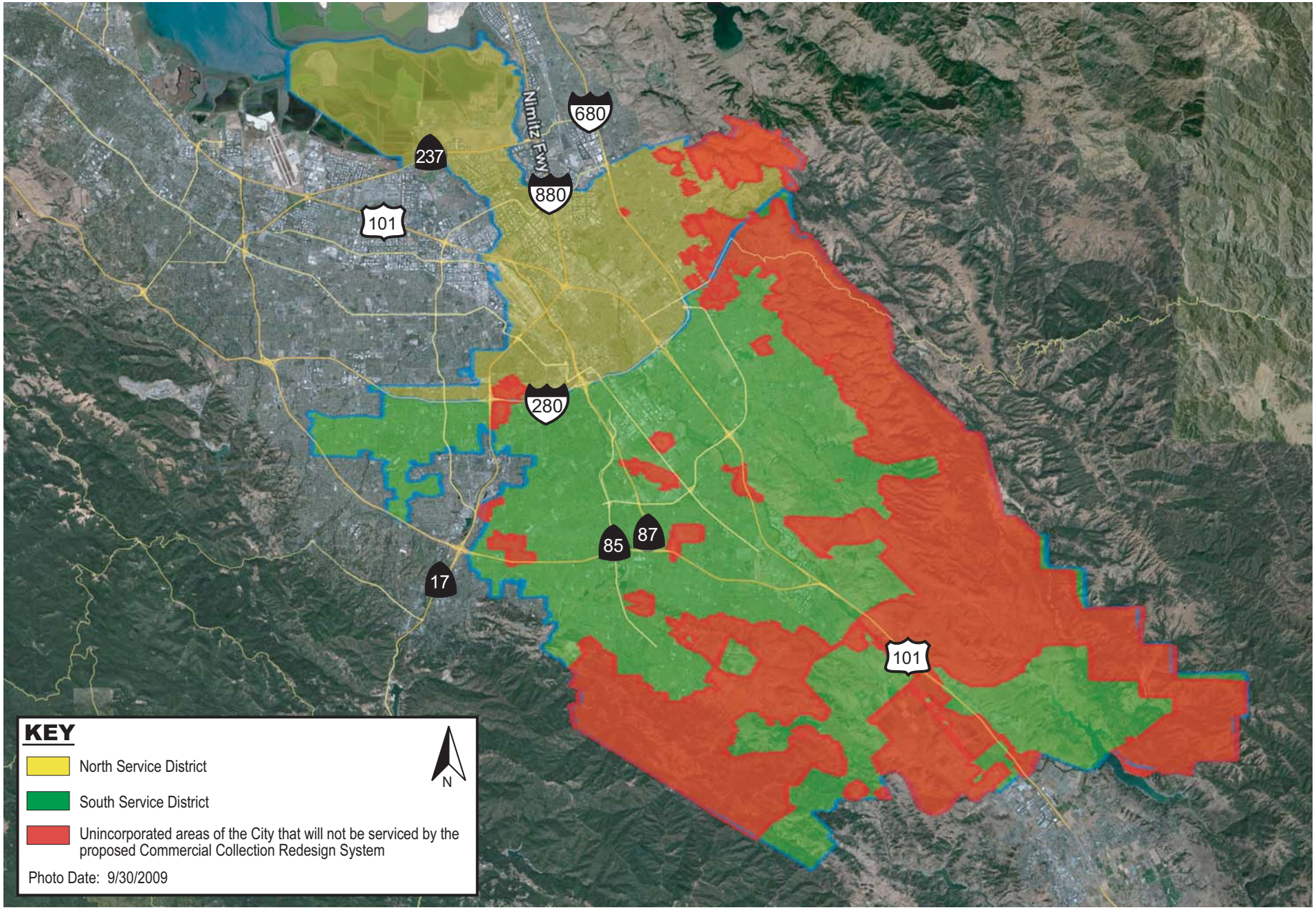
The assessment recommended increasing commercial diversion for recyclables and organics, and minimizing adverse environmental impacts of collection vehicles (e.g., converting fleets to newer equipment with improved emissions technology and using alternative fuels, and having more efficient routes).

In February and April 2010, the City solicited Requests for Proposal (RFPs) to implement a proposed redesign of the current non-exclusive commercial solid waste collection system. The redesign would result in an exclusive commercial franchise collection system with one or two franchisees providing commercial collection and diversion services for two service districts (North Service District and South Service District) (refer to Figure 1). A two-step RFP process selected providers for Commercial Solid Waste Collection and Diversion Services, including exclusive solid waste collection, materials processing and marketing, and residue disposal services. First, the Commercial Organics Processing Services RFP was released for processing organic materials collected from commercial customers, with the goal of selecting one or more organics processing contractors. The second RFP, the Commercial Solid Waste and Recyclable Material Collection Franchise RFP, was released with the goal of selecting one commercial collection franchisee for each service district, or awarding both service districts to the same franchisee. The commercial collection franchisee will deliver the organic materials collected from commercial customers to the selected organics processing contractor.

In February 2011, the City had evaluated all proposals submitted in response to the RFPs and issued a Notice of Intended Award to *Zero Waste Energy Development Company* (ZWED) to be the sole commercial organic processing contractor and *Allied Waste of Santa Clara County* (Allied Waste) to be the sole commercial collection franchisee for both service districts.

The proposed Commercial Collection System Redesign would result in an exclusive commercial franchise collection system with one franchisee providing collection and diversion services for the entire City. The City's goal for the Commercial Collection System Redesign is diversion of a minimum of 75 percent of commercial solid waste from the landfill.[5]

[4] HF&H Consultants, LLC. The City of San José Commercial Redesign White Paper, Current System Performance and Alternative System Arrangements. November 14, 2008. Page 19.
[5] The 75 percent diversion rate does not include diversion of construction and demolition (C&D) debris or metals, which would remain non-exclusive under the proposed system.



COMMERCIAL COLLECTION REDESIGN SYSTEM SERVICE AREA

FIGURE 1

SECTION 2.0 PROJECT INFORMATION

2.1 PROJECT TITLE AND FILE NUMBER

Commercial Collection System Redesign, File Number PP10-157

2.2 PROJECT LOCATION

The project is to provide commercial collection services to the North and South Service District in the City of San José, as shown in Figure 1.

2.3 LEAD AGENCY CONTACT INFORMATION

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Department of Planning, Building, and Code Enforcement
200 East Santa Clara Street, 3rd Floor
San José, CA 95113
(408) 535-7895

2.4 PROJECT DESCRIPTION

Under the proposed Commercial Collection System Redesign, one franchised hauler – Allied Waste of Santa Clara County (Allied Waste) – would have an exclusive agreement to collect commercial solid waste, recyclables, and organics generated in San José; and one organics processing contractor – Zero Waste Energy Development Company (ZWED) – would have an exclusive contract to process commercial organics generated in San José.

For the purposes of this document, commercial solid waste, recyclables, and organics are defined as follows:

- *Commercial solid waste* includes materials that are not considered recyclables or organics.

- *Recyclables* (also referred to as "dry" material), excluding organics, includes clean paper and cardboard, glass bottles and jars, rigid plastics, metal cans and scrap metal, clean wood, reusable items, carpet and carpet padding, clean expanded polystyrene block packing materials, polylactic acid (PLA) bioplastic bottles, and all other materials for which a viable market can be found.

- *Organics* (also referred to as "wet" materials) includes yard trimmings, food scraps, compostable paper, and compostable plastics (corn, potato, and other starch). Table 1 below lists examples of different organic materials.

Table 1: Examples of Organic Materials

Yard Trimmings	Food Scraps	Compostable Paper	Compostable Plastics (corn, potato, and other starch)
• Branches • Flowers • Grass clippings • Christmas trees • Leaves • Lumber • Plants • Sawdust • Shrubs • Stumps • Wood chips • Wood waste	• Bones • Bread • Coffee grounds • Coffee filters • Dairy products • Dough • Fruit • Grains • Meat • Pasta • Tea bags • Vegetables	• Food soiled paper (paper plates, napkins, cups, towels, containers, packaging, wrappers, trays, waxed paper) • Pizza boxes • Tissues and bathroom paper waste • Waxed cardboard • Wet paper towels	• Bags • Clamshell containers • Cups • Cutlery • Lids • Liners • Straws

Studies on the commercial waste stream in San José estimate that nine to 22 percent of the commercial waste stream is solid waste (i.e., material that cannot be recycled or composted).[6] In accordance with the City's stated objective for the project, it is assumed that the full implementation of the proposed Commercial Collection System Redesign would result in a minimum of 75 percent diversion of the commercial waste stream from the landfill.[7] The commercial diversion rate between July 2009 and June 2010 (under the existing collection system) was approximately 22 percent.

As part of the Commercial Collection System Redesign, Allied Waste would implement an extensive public outreach and education program that includes contacting every business in San José and offering the resources and assistance necessary to maximize their participation and diversion results. Allied Waste anticipates that with the successful implementation of their public outreach and education program, over time, the minimum diversion percentage would be exceeded and fewer and fewer materials would be landfilled. Under the optimal operation of the Commercial Collection System Redesign, the commercial waste stream would comprise only residual amounts of waste being landfilled.

2.4.1 Commercial Waste Collection and Destination

2.4.1.1 *Solid Waste and Recyclables/Dry Material*

Allied Waste would haul commercial solid waste and recyclables to the Newby Island Resource Recovery Park (NIRRP) located at 1601 Dixon Landing Road in San José.[8] The NIRRP consists of the Newby Island Sanitary Landfill (NISL) and the Browning Ferris Industries Recyclery (the Recyclery). The solid waste would be collected from commercial businesses and hauled to NISL for landfilling.

The recyclables (or dry materials) would be collected and hauled to the Recyclery where they would be sorted, bundled, and sold to brokers or manufacturers. Solid waste and organics (if any) that have been improperly mixed with the recyclables would be removed. The removed solid waste would be landfilled and the removed organics would be transferred from the Recyclery to the selected organics processor. The processing of organics is described in Section 2.4.1.2, below.

[6] Sources: 1) Cascadia Consulting Group, Inc. City of San José Waste Characterization Study, Final Report – Draft. May 2008. Page 40. 2) R3 Consulting Group, Inc. Needs Assessment for the Integrated Waste Management Zero Waste Strategic Plan Development. November 3, 2008. Section 5-7.

[7] There is a six month adjustment period after the proposed system is initiated to achieve the above stated diversion rate.

[8] The NIRRP is physically located in the City of San José; however, it has a Milpitas mailing address.

2.4.1.2 *Organics/Wet Material*

Allied Waste would collect and haul organics (or wet materials) from commercial businesses to either the NISL or GreenWaste Materials Recovery Facility (MRF), located at 625 Charles Street in San José, for pre-processing. For the purposes of this document, pre-processing is the removal of contaminants (i.e., solid waste and recyclables) from organic loads. Any solid waste or recyclables extracted during pre-processing would be landfilled or recycled at the NIRRP.

After the organics are pre-processed, the organic material would be processed (i.e., anaerobically digested and/or composted) at one of three facilities: 1) the ZWED Dry-Fermentation Anaerobic Digestion Facility (ZWED AD Facility) located at 2100 Los Esteros Road in San José; 2) Z-Best Composting Facility located at 980 State Highway 25 in Gilroy; or 3) NISL.[9,10] Any residual solid waste and recyclables found in the finished compost at the ZWED AD Facility, Z-Best Composting Facility, or NISL would be transferred to the NIRRP for landfilling or recycling. Figure 2 illustrates the treatment path of the commercial waste stream and Figure 3 provides a map showing the location of the receiving facilities.

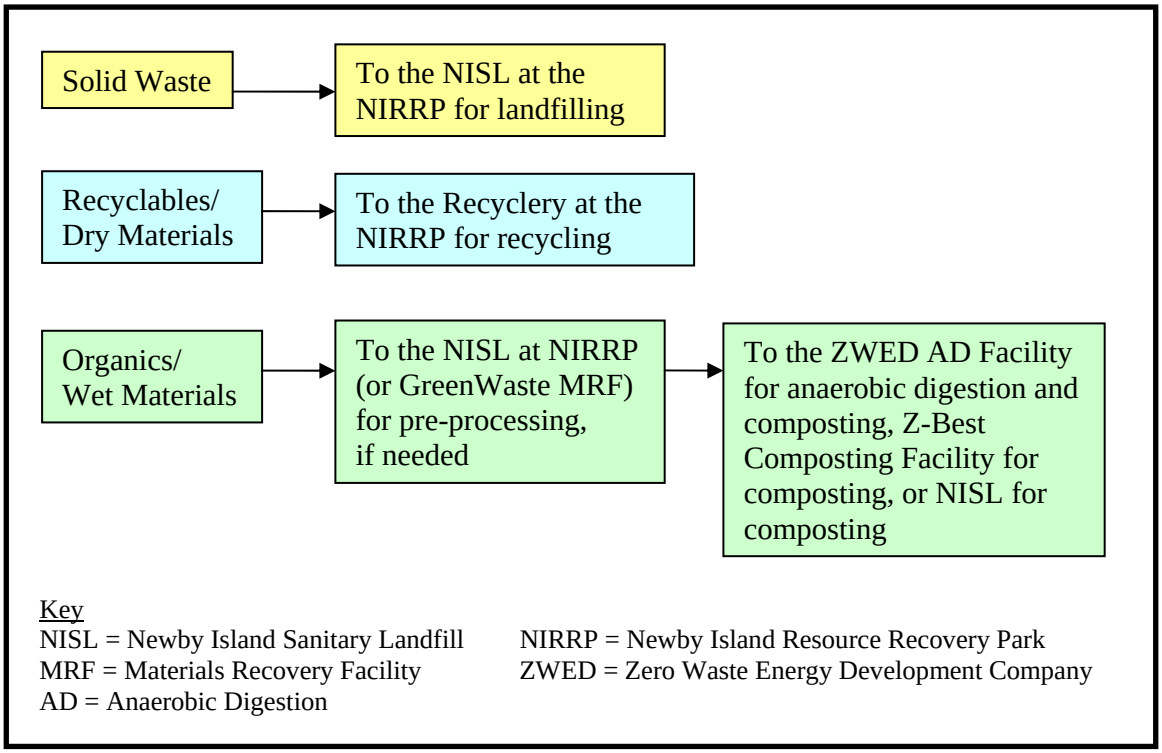
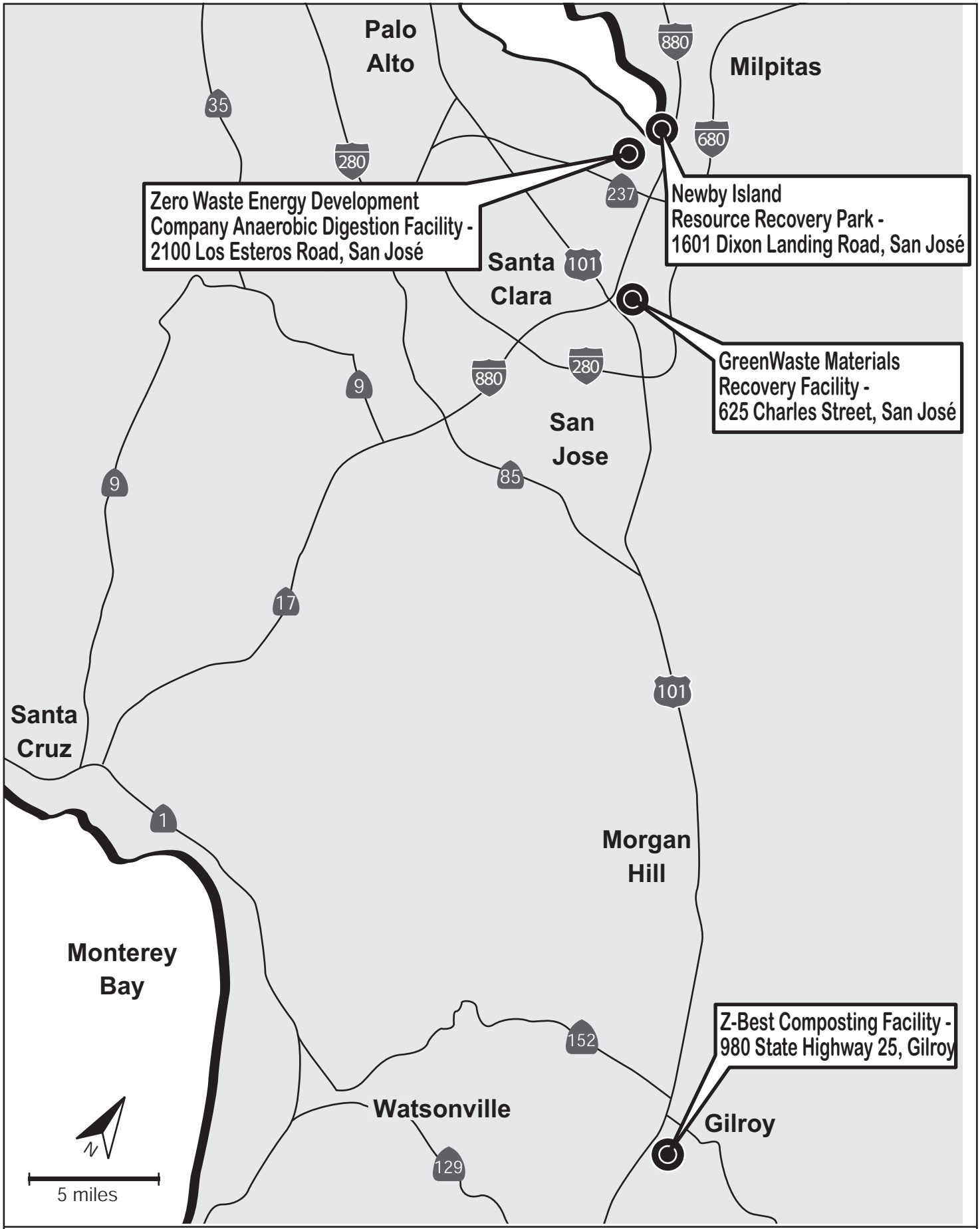


Figure 2: Destination of Commercial Waste Under the Proposed Commercial Collection System Redesign

[9] The ZWED AD Facility is a proposed project currently on file with the City of San José (File No. SP09-057). The Initial Study for the ZWED AD Facility has been completed and circulated for public review. It is anticipated that the City Council will make a decision on ZWED AD Facility project in June 2011.

[10] The ZWED AD Facility does not have the ability to pre-process organics; therefore, the organics must first be pre-processed (if needed) at the NISL or GreenWaste MRF prior to being delivered to the ZWED AD Facility. It is assumed that if organics are processed at NISL, they would be pre-processed at NIRRP. Pre-processing of organics is only required if the organic loads contain more than 20 percent contaminants. It is anticipated that, over time, as the Commercial Collection System Redesign is implemented, the organic loads would contain less than 20 percent contaminants and, therefore, be hauled directly from the generator to the selected organics processor.



LOCATION OF PROPOSED RECEIVING FACILITIES FIGURE 3

2.4.1.3 *Pilot Programs*

As part of the Commercial Collection System Redesign project, the City and Allied Waste and/or ZWED could conduct pilot programs that temporarily change the collection method, equipment, or the type of service of up to 10 percent of the total collected commercial waste material. The specifics of these pilot programs are unknown at this time. The pilot programs allowed, however, would: a) have no greater or substantially different environmental impacts than analyzed in this Initial Study or previous environmental review completed for the facility (e.g., NIRRP, GreenWaste MRF, ZWED AD Facility, and Z-Best Composting Facility); b) be limited to activities allowed by existing land use and solid waste facility permits at the facility where the pilot programs are to take place; and c) be subject to approval by the Director of Planning, Building, and Code Enforcement.

2.4.1.4 *Bin Collection Systems*

Under the proposed project, commercial solid waste, recyclables, and organics would be collected in one of the following two systems:[11]

- **Two-Container System** (i.e., wet/dry collection system) – Commercial businesses would have one or two collection bins. Businesses that sell or process food would have two collection bins: one bin for wet materials (i.e., organics) and a second bin for dry materials (i.e., recyclables).

  Businesses that do not sell or process food do not generate substantial amounts of compostable organics and would, therefore, have only one collection bin. The discarded waste would primarily consist of dry materials. The minimal amount of wet materials discarded by these businesses would include paper waste from bathrooms, snack food, and lunch leftovers. These minimal amounts of wet materials would be placed into the collection bin with the dry materials. It is anticipated that many businesses in the City would have only one collection bin under this system. The wet and dry material would be processed as described in Sections 2.4.1.1 and 2.4.1.2.

- **One-Bin Plus System** – Most commercial businesses would have one collection bin where solid waste, recyclables, and small amounts of organics would be placed. The commercial businesses would collect their solid waste, recyclables, and small amounts of organics in clear plastic bags. The janitors at the commercial businesses would then collect the plastic bags and place all of them in a single bin (the *One-Bin*) for collection. If commercial businesses generate large quantities of organics (such as a grocery store or florist), they would be provided with a separate bin (the *Plus*) for their organics.

  The solid waste, recyclables, and organics collected via the One-Bin Plus system would be hauled to the Recyclery at the NIRRP. At the Recyclery, the bags of solid waste, recyclables,

[11] In addition to the Two-Container and the One-Bin Plus systems, a Three-Container System is an option under the proposed Commercial Collection System Redesign project. Under the Three-Container System, commercial businesses would have three collection bins, one for solid waste, a second for recyclables, and a third for organic material. The solid waste, recyclables, and organic material collected under the Three-Container System would be processed as described in Sections 2.4.1.1 and 2.4.1.2. The Three-Container System would have similar impacts (including number of vehicle trips, vehicle miles traveled, air pollutant emissions, greenhouse gas emissions, and noise) as the Two-Container System and is therefore, not discussed in detail in this Initial Study.

and organics would be sorted. The bags of solid waste would be hauled to the NISL and landfilled. The bags of recyclables would be opened and processed as described in Section 2.4.1.1. The bags of organics would be opened and processed as described in Section 2.4.1.2.

Allied Waste would collect the material in front and side load haul trucks that would be fueled by compressed natural gas.

The collection containers for the above systems range in size from one to eight cubic yard plastic or metal bins and 36, 65, or 96 gallon carts for both dry/recyclable material and wet/organic material (see Figure 4). The size of the collection containers for each commercial business will depend on their need. For commercial businesses that have limited space, such as those in the Downtown area, "split containers" may be available. Split containers are the same as the large plastic or metal bins but have a center divider that creates two separate internal sections (e.g., one section for wet materials and the other for dry materials). The split container would have separate lids for each section so that the sections can be secured and dumped independently of each other (see Figure 5).

Source: Allied Waste

Figure 4: 32, 65, and 96 Gallon Carts

Source: Allied Waste.

Figure 5: Split Container

SECTION 3.0 ENVIRONMENTAL SETTING, CHECKLIST, AND DISCUSSION OF IMPACTS

This section describes the existing environmental conditions (i.e., the existing commercial solid waste and recycling system), as well as environmental impacts associated with the proposed Commercial Collection System Redesign project. The environmental checklist, as recommended in the California Environmental Quality Act (CEQA) Guidelines, identifies environmental impacts that could occur if the proposed Commercial Collection System Redesign project is implemented.

The proposed project would change the process in which City of San José commercial solid waste, recyclables, and organics are collected and hauled to landfill, recycling/processing, and anaerobic digestion/composting facilities.

The right-hand column in the checklist lists the source(s) for the answer to each question. The sources cited are identified at the end of this section. Mitigation measures are identified for all significant project impacts. "Mitigation Measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guideline 15370).

The analysis in this Initial Study solely focuses on the proposed collection system. The project proposed and analyzed in this Initial Study does not include the receiving facilities and their associated processes. The receiving facilities (NISL, the Recyclery, GreenWaste MRF, ZWED AD Facility, and Z-Best Composting Facility) have the necessary approvals, permits, and CEQA clearance required to receive and/or process the materials anticipated to be collected via the proposed Commercial Collection System Redesign, or will need to have completed such processes prior to (approval of) being a receiving facility for the proposed Commercial Collection Redesign project.[12]

Since the project's impacts are to be measured against a baseline that consists of the existing physical conditions (i.e., operation of the existing commercial solid waste and recycling system), little or no physical impact will occur in many of the resource areas typically evaluated in an Initial Study. There is no development proposed as part of the project. **Section 3.1** of this document is a checklist of those resource areas that will not experience measurable impacts from the proposed project. For example, the project would not have measureable impacts on hazards and hazardous materials because the project does not change how hazardous materials are currently generated, stored, or disposed. It is against the law to dispose of hazardous materials (also referred to as universal waste) in garbage or recycling bins. Hazardous materials are disposed of by alternative means, such as through County of Santa Clara collection programs. The proposed project would not affect existing hazardous material collection programs.

The resource areas within which the proposed project may result in some impacts or changes were identified as air quality, greenhouse gas emissions, land use, noise, transportation, and utilities and service systems. Each of these resources areas are addressed separately and in greater detail in **Sections 3.2 – 3.8** of this Initial Study.

[12] The ZWED AD Facility is a proposed project currently on file with the City of San José (File No. SP09-057). The Initial Study for the ZWED AD Facility has been completed and circulated for public review. It is anticipated that the City Council will make a decision on ZWED AD Facility project in June 2011.

Basis of Impact Analysis

Currently, commercial solid waste, recyclables, and organics are collected by 22 franchised haulers and delivered to 22 landfill, recycling/processing, composting, and/or transfer facilities. Table 2 lists the existing franchised haulers and facilities that collect San José commercial solid waste, recyclables, and organics and receive it.

At the commencement of the environmental review process, the most recent year that City Environmental Services Department (ESD) Staff had complete information regarding existing franchises, tonnage of material collected, and existing receiving facilities (i.e., landfills, recycling/processing, and composting facilities) was July 2009 – June 2010. This 12 month period is used in this document to comprise the baseline conditions for the City's commercial waste collection and handling.

Between July 2009 and June 2010, approximately 193,300 tons of solid waste, 20,100 tons of recyclables (excluding construction and demolition debris and metals), and 34,300 tons of organics were generated from commercial uses in San José and collected by commercial franchisees.

The collection and processing of construction and demolition (C&D) debris and source separated materials that are sold or donated by the generator, such as metals, would continue to remain non-exclusive under the proposed Commercial Collection System Redesign. Therefore, the analysis in this Initial Study does not include analysis of C&D debris and metal collection and processing.

Table 2: Commercial Solid Waste, Recyclables, and Organics Collected in San José By Hauler and Receiving Landfill, Recycling/Processing, and Composting Facilities (July 2009 – June 2010)

Facility Name and Location	Danny's Recycling Center – 1745 Walsh Avenue, Santa Clara	Del Toro Recycling – 2676 Ferguson Road, Gilroy	Eagle Recycling – 2400 San Juan Hollister Road, Hollister	GreenTeam MRF Direct Transfer Facility – 575 Charles Street, San José	GreenWaste Recovery Facility* – 625 Charles Street, San José	Guadalupe Sanitary Landfill – 15999 Guadalupe Mines Road, San José	John Smith Road Class III Landfill – 2650 John Smith Road, Hollister	Kirby Canyon Facility – 910 Coyote Creek Golf Drive, Morgan Hill	Mission Trails Transfer Station* – 1060 Richard Avenue, Santa Clara	Monterey Regional Waste Management District – 14201 Del Monte Boulevard, Marina	Newby Island Resource Recovery Park – 1601 Dixon Landing Road, San José	Ox Mountain – 12310 Highway 92, Half Moon Bay	Pacheco Pass – 3665 Pacheco Pass Highway, San Felipe	Pacific Coast Recycling – 5895 Obata Way, Gilroy	Premier Recycling Facility – 348 Phelan Avenue, San José	Recycled Fibers – 388 East Alma Avenue, San José	RH Wood/ETM – 6756 Central Avenue, Newark	Smurfit-Stone - 205 East Alma Avenue, San José	SRDC Recycling Facility – 475 Seaport Boulevard, Redwood City	Valley Recycling* – 1615B South Seventh Street, San José	Zanker Material Processing Facility* – 675 Los Esteros Road, San José	Zanker Road Class III Landfill – 705 Los Esteros Road, San José
Hauler Name and Location	**Materials Collected/Received: SW = Solid Waste, R = Recyclables, O = Organics**																					
$99 Debris Box Service – 1500 Berger Drive, San José					SW	SW															SW	SW
A & A Recycling – 1369 Mofat Street, Suite C, San José																					O	O
Accurate Cleaning Solutions – 802 Industrial Drive, Suite 200, Hollister																					R	
All Points Roll Off, Inc. – 2269 Will Wool, San José						SW																O
Allied Waste of Santa Clara County – 1601 Dixon Landing Road, San José											SW, R, O											
Eagle Recycling – 2400 San Juan-Hollister Road, Hollister			R			SW, O	SW	SW		SW			O									
Eco Box Recycling – 1150 Walsh Avenue, Santa Clara																					O	
Environmental Management Systems, LLC – 1590 Berryessa Road, San José																					O	
Ferma Corporation – 6655 Smith Avenue, Newark												SW							R, O			
GreenWaste Recovery, Inc. – 1500 Berger Drive, San José					SW, R, O			O													R, O	R, O
GT Waste – 1333 Oakland Road, San José				R, O	SW, O	SW					SW										SW, O	SW
Haul-Away Today – 333 Phelan Avenue, San José															SW, R, O							
Lam Hauling – 1028 Branham Lane, San José																					O	
Number "1" Disposal – 16885 Joleen Way, Morgan Hill						SW		SW, O														
Pacific Coast Recycling – 5896 Obata Way, Gilroy	R													R, O				R				
Panther Industries – 23782 Connecticut Street #6, Hayward											SW											

Table 2: Commercial Solid Waste, Recyclables, and Organics Collected in San José By Hauler and Receiving Landfill, Recycling/Processing, and Composting Facilities (July 2009 – June 2010)

Facility Name and Location	Danny's Recycling Center – 1745 Walsh Avenue, Santa Clara	Del Toro Recycling – 2676 Ferguson Road, Gilroy	Eagle Recycling – 2400 San Juan Hollister Road, Hollister	GreenTeam MRF Direct Transfer Facility – 575 Charles Street, San José	GreenWaste Recovery Facility* – 625 Charles Street, San José	Guadalupe Sanitary Landfill – 15999 Guadalupe Mines Road, San José	John Smith Road Class III Landfill – 2650 John Smith Road, Hollister	Kirby Canyon Facility – 910 Coyote Creek Golf Drive, Morgan Hill	Mission Trails Transfer Station* – 1060 Richard Avenue, Santa Clara	Monterey Regional Waste Management District – 14201 Del Monte Boulevard, Marina	Newby Island Resource Recovery Park – 1601 Dixon Landing Road, San José	Ox Mountain – 12310 Highway 92, Half Moon Bay	Pacheco Pass – 3665 Pacheco Pass Highway, San Felipe	Pacific Coast Recycling – 5895 Obata Way, Gilroy	Premier Recycling Facility – 348 Phelan Avenue, San José	Recycled Fibers – 388 East Alma Avenue, San José	RH Wood/ETM – 6756 Central Avenue, Newark	Smurfit-Stone - 205 East Alma Avenue, San José	SRDC Recycling Facility – 475 Seaport Boulevard, Redwood City	Valley Recycling* – 1615B South Seventh Street, San José	Zanker Material Processing Facility* – 675 Los Esteros Road, San José	Zanker Road Class III Landfill – 705 Los Esteros Road, San José
Hauler Name and Location	**Materials Collected/Received: SW = Solid Waste, R = Recyclables, O = Organics**																					
Qualified Trucking – 18145 Peet Road, Suite A, Morgan Hill		O															O				O	O
Recology Silicon Valley – 1676 Rogers Avenue, San José					SW, R, O	SW, O		SW, O			SW					R		R			O	
Recycle West – 1060 Richard Avenue, Santa Clara									SW, O													
San José Conservation Corps & Charter School – 1534 Berger Drive, San José			R															R				
The Flea Market, Inc. – 1590 Berryessa Road, San José					SW	SW															O	
Valley Recycling – 1615 South 7th Street, San José						O												R		SW		

Note: *Solid waste delivered to Greenwaste Recovery Facility is transferred to Monterey Regional Waste Management District, solid waste delivered to Missions Trails Transfer Station is transferred to Forward Landfill (999 S. Austin Road, Manteca), solid waste delivered to Valley Recycling is transferred to Guadalupe Sanitary Landfill, and solid waste delivered to Zanker Material Processing Facility is delivered to Zanker Road Class III Landfill.

3.1 AREAS OF NO MEASURABLE IMPACT

Based on the proposed project description, the proposed Commercial Collection System Redesign project would have no perceptible impact for the following subject areas.

AESTHETICS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	☐	1,2
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒	☐	1,2
3) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒	☐	1
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒	☐	1

AGRICULTURAL AND FOREST RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒	☐	1,3
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒	☐	1,4

AGRICULTURAL AND FOREST RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒	☐	1,4
4) Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒	☐	1
5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒	☐	1,3

BIOLOGICAL RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒	☐	1
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒	☐	1

BIOLOGICAL RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒	☐	1
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, impede the use of native wildlife nursery sites?	☐	☐	☐	☒	☐	1
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒	☐	1,2,4
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒	☐	1

CULTURAL RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	☐	☐	☐	☒	☐	1,2
2) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☒	☐	1,2
3) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☐	☒	☐	1

CULTURAL RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
4) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒	☐	1

GEOLOGY AND SOILS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:						
a) Rupture of a known earthquake fault, as described on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒	☐	1
b) Strong seismic ground shaking?	☐	☐	☐	☒	☐	1
c) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒	☐	1
d) Landslides?	☐	☐	☐	☒	☐	1
2) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒	☐	1
3) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒	☐	1
4) Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?	☐	☐	☐	☒	☐	1

GEOLOGY AND SOILS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒	☐	1

HAZARDS AND HAZARDOUS MATERIALS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒	☐	1
2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒	☐	1
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒	☐	1
4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒	☐	1

HAZARDS AND HAZARDOUS MATERIALS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	☐	1
6) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	☐	1
7) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	☐	1
8) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒	☐	1

HYDROLOGY AND WATER QUALITY						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒	☐	1

HYDROLOGY AND WATER QUALITY						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒	☐	1
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site?	☐	☐	☐	☒	☐	1
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	☐	☐	☐	☒	☐	1
5) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒	☐	1
6) Otherwise substantially degrade water quality?	☐	☐	☐	☒	☐	1
7) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒	☐	1

HYDROLOGY AND WATER QUALITY						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒	☐	1
9) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒	☐	1
10) Be subject to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒	☐	1

MINERAL RESOURCES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒	☐	1
2) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒	☐	1

POPULATION AND HOUSING						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	☐	1

POPULATION AND HOUSING						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐	1
3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐	1

PUBLIC SERVICES						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:						
– Fire Protection?	☐	☐	☐	☒	☐	1
– Police Protection?	☐	☐	☐	☒	☐	1
– Schools?	☐	☐	☐	☒	☐	1
– Parks?	☐	☐	☐	☒	☐	1
– Other Public Facilities?	☐	☐	☐	☒	☐	1

RECREATION						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒	☐	1
2) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒	☐	1

UTILITIES AND SERVICE SYSTEMS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒	☐	1
2) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐	1
3) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐	1
4) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒	☐	1

UTILITIES AND SERVICE SYSTEMS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
5) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒	☐	1
6) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	*Please refer to Section 3.7 for a discussion of this impact.*					
7) Comply with federal, state, and local statutes and regulations related to solid waste?	*Please refer to Section 3.7 for a discussion of this impact.*					

3.2 AIR QUALITY

The following discussion is based on an air quality analysis completed for the project by *Illingworth & Rodkin, Inc.* in May 2011. A copy of this report is included in Appendix A of this Initial Study.

3.2.1 Existing Setting

Air quality and the amount of a given pollutant in the atmosphere are determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

The Bay Area typically has moderate ventilation, frequent inversions that restrict vertical dilution, and terrain that restricts horizontal dilution. These factors give the Bay Area, and San José in particular, a relatively high atmospheric potential for pollution. The Bay Area as a whole does not meet state or federal ambient air quality standards for ground level ozone and state standards for particulate matter (PM_{10} and $PM_{2.5}$). The area is considered attainment or unclassified for all other pollutants.

The current commercial collection system consists of 22 franchised haulers that collect commercial solid waste, recyclables, and organics in the City and deliver the materials to 22 different landfill, recycling/processing, composting, and transfer facilities (refer to Table 2). Air pollutant emissions from the commercial collection system are from the combustion of fossil fuel used by haul and transfer trucks (refer to Table 5).[13] The estimated haul and transfer truck miles traveled, combined with air pollution emission factors for the trucks, were used to calculate the existing commercial collection system's daily air pollutant emissions. It was assumed all existing haul and transfer truck trips are fueled by diesel. Please refer to Appendix A of this Initial Study for additional details about the methodology and assumptions used in the calculation. The existing commercial collection system is estimated to emit 2.2 pounds of reactive organic gases (ROG), 33.1 pounds of nitrogen oxide (NO_x), and 0.8 pounds of PM_{10} daily.

Average daily emissions of ROG and PM_{10} exhaust from haul and transfer trucks are low because of the low ROG rates associated with diesel exhaust and the stringent emission standards that solid waste trucks are required to meet. There are also fairly stringent NO_x standards for solid waste trucks, therefore NO_x emissions are considered low (though not as low as ROG and PM_{10} emissions). Refer to Appendix A for detail regarding air quality regulations for solid waste trucks.

[13] Besides mobile sources, air pollutant emissions can come from stationary sources. Stationary sources, such as landfills, recycling/processing facilities, and composting facilities that receive commercial solid waste, recyclables, and organics under the existing and proposed commercial collection system already exist (with the exception of the ZWED AD Facility) and their operation will not change with the proposed project. The air pollutant emissions for the ZWED AD Facility have been analyzed in a separate environmental document (City of San José. Dry-Fermentation Anaerobic Digestion Facility Project. April 2011.) Air pollutant emissions associated with stationary sources (i.e., the receiving facilities) will remain constant under existing and project conditions. For these reasons, air pollutant emissions from stationary sources were not evaluated in this Initial Study.

3.2.1.1 *Regulatory Overview*

The Bay Area Air Quality Management District (BAAQMD) is the agency primarily responsible for assuring that the federal and state ambient air quality standards are maintained in the San Francisco Bay Area. Air quality standards are set by the federal government (the 1970 Clean Air Act and its subsequent amendments) and the state (California Clean Air Act of 1988 and its subsequent amendments). Regional air quality management districts such as BAAQMD must prepare air quality plans specifying how state standards would be met. BAAQMD's most recently adopted Clean Air Plan (CAP) is the *2010 Clean Air Plan* (2010 CAP).

According to the adopted BAAQMD thresholds of significance, a project that generates 54 pounds per day of ROG or NO_x or 82 pounds per day of PM_{10} would result in significant operational air quality impacts.

3.2.2 Environmental Checklist and Discussion of Impacts

AIR QUALITY						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒	☐	1
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☐	☒	1,5
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard including releasing emissions which exceed quantitative thresholds for ozone precursors?	☐	☐	☐	☐	☒	1,5
4) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒	☐	1
5) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒	☐	1

The proposed project would change the process by which the commercial waste stream is collected (i.e., one hauler vs. 22 haulers) and processed (i.e., one facility for solid waste/recyclables and one facility for organics vs. 22 different facilities). In addition, Allied Waste proposes to use haul trucks fueled by compressed natural gas (CNG). Transfer trucks, however, would continue to be fueled by diesel. The estimated haul and transfer truck miles traveled (refer to Table 6), combined with air pollutant emission factors for the trucks, were used to calculate the project's daily air pollutant emissions. Please refer to Appendix A of this Initial Study for additional details about the methodology and assumptions used in the calculation. The project's air quality impact is based on the difference between air pollutant emissions of the existing collection system and the proposed collection system.

Each bin collection system has multiple haul scenarios given the options where the organics can be pre-processed and processed (refer to Section 2.4.1.2 for more detail). The project's emissions, therefore, are described within a range in Table 3. Depending on where the organics are pre-processed and processed, the project would result in an approximately 45 percent decrease to 18 percent increase in emissions of ROG, 12-77 percent decrease in emissions of NO_x, and 22 percent decrease to 43 percent increase in emissions of PM_{10} compared to the emissions under the existing system.[14] Please refer to Appendix A for the emissions for each haul scenario under the bin collection systems.

Although the vehicle miles traveled under project conditions could be greater compared to existing conditions (refer to Tables 5 and 6), air pollutant emissions would generally decrease, because most of the trucks under the proposed system would be fueled by CNG. CNG emission rates are generally lower than diesel emission rates.

As shown in Table 3, project's air pollutant emissions are below the BAAQMD CEQA thresholds of significance. The project, therefore, would not result in a significant air quality impact.

3.2.3 Conclusion

The proposed project would have a less than significant impact on air quality. **(Less Than Significant Impact)**

[14] In general, the pre-processing of organics at the NIRRP results in the fewer miles traveled (which translates into fewer air pollutant emissions) compared to pre-processing the organics at the GreenWaste MRF. The processing of organics at the ZWED AD Facility or NISL in San José would result in the fewer miles traveled compared to processing the organics at the Z-Best Composting Facility in Gilroy.

Table 3: Existing and Project Emissions

	Daily Emissions			Net Project Emissions (Proposed – Existing)			Project Emissions Exceed BAAQMD Thresholds?
	ROG	**NO_x**	**PM_{10}**	**ROG**	**NO_x**	**PM_{10}**	
	in pounds per day						
Existing Collection System	2.2	33.1	0.77				
Proposed Collection System							
• Two-Container System	1.2 to 2.5	7.7 to 28.6	0.61 to 1.09	-1.0 to 0.4	-25.4 to -4.5	-0.16 to 0.32	No
• One-Bin Plus System	1.2 to 2.6	7.7 to 29.1	0.60 to 1.10	-1.0 to 0.4	-25.4 to -4.0	-0.17 to 0.33	No
BAAQMD Thresholds of Significance				*54*	*54*	*82*	

Note: Each bin collection system has multiple haul scenarios given the options where the organics can be pre-processed and processed (refer to Section 2.4.1.2 for more detail). Therefore, the project emissions are described within a range in this table. The emissions for each haul scenario under the bin collection systems is provided in Appendix A of this Initial Study.

3.3 GREENHOUSE GAS EMISSIONS

The following discussion is based on an air quality analysis completed for the project by *Illingworth & Rodkin, Inc.* in April 2011. A copy of this report is included in Appendix A of this Initial Study.

3.3.1 Existing Setting

3.3.1.1 *Regulatory Overview*

This section provides a general discussion of global climate change and focuses on emissions from human activities that alter the chemical composition of the atmosphere. The discussion on global climate change and greenhouse gas emissions is based upon the California Global Warming Solutions Act of 2006 [Assembly Bill (AB) 32], the 2006 and 2009 Climate Action Team (CAT) reports to Governor Schwarzenegger and the Legislature, and research, information and analysis completed by the International Panel on Climate Change (IPCC), the United States Environmental Protection Agency (EPA), California Air Resources Board (CARB), and the CAT.

Global climate change refers to changes in weather including temperatures, precipitation, and wind patterns. Global temperatures are modulated by naturally occurring and anthropogenic (generated by mankind) atmospheric gases such as carbon dioxide, methane, and nitrous oxide.[15] These gases allow sunlight into the Earth's atmosphere but prevent heat from radiating back out into outer space and escaping from the earth's atmosphere, thus altering the Earth's energy balance. This phenomenon is known as the greenhouse effect.

Naturally occurring greenhouse gases include water vapor,[16] carbon dioxide, methane, nitrous oxide, and ozone. Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but are for the most part solely a product of industrial activities.

Agencies at the international, national, state, and local levels are considering strategies to control emissions of gases that contribute to global warming. There is no comprehensive strategy that is being implemented on a global scale that addresses climate change; however, in California a multi-agency "Climate Action Team," has identified a range of strategies and the Air Resources Board, under AB 32, has approved the *Climate Change Scoping Plan***.** The *Scoping Plan* includes a mandatory commercial recycling measure designed to achieve a reduction of five million metric tons of carbon dioxide equivalents (CO_2e). AB 32 requires achievement by 2020 of a statewide greenhouse gas emissions limit equivalent to 1990 emissions, and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions. The ARB and other state agencies are currently working on regulations and other initiatives to implement the *Scoping Plan*. By 2050, the state plans to reduce emissions to 80 percent below 1990 levels.

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[15] IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Bases*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: http://ipcc.ch/.

[16] Concentrations of water are highly variable in the atmosphere over time, with water occurring as vapor, cloud droplets and ice crystals. Changes in its concentration are also considered to be a result of climate feedbacks rather than a direct result of industrialization or other human activities. For this reason, water vapor is not discussed further as a greenhouse gas.

BAAQMD Air Quality CEQA Thresholds of Significance

According to the BAAQMD, if a project would result in operational-related greenhouse gas emissions of 1,100 metric tons of carbon dioxide equivalents (CO_2e) a year, it would make a cumulatively considerable contribution to greenhouse gas emissions and result in a cumulatively significant impact to global climate change.

3.3.1.2 *Existing GHG Emissions*

The current commercial collection system consists of 22 franchised haulers that collect commercial solid waste, recyclables, and organics in the City and deliver the materials to 22 different landfill, recycling/processing, composting, and transfer facilities (refer to Table 2). Greenhouse gas (GHG) emissions from the commercial collection system are from the combustion of fossil fuels by haul and transfer trucks.[17] It is assumed all haul and transfer trucks are fueled by diesel. The estimated haul and transfer truck miles traveled (refer to Table 5), combined with emission factors for the trucks, were used to calculate the existing commercial collection system's annual GHG emissions. Please refer to Appendix A of this Initial Study for additional details about the methodology and assumptions used in the calculation. The existing commercial collection system is estimated to generate approximately 1,693 metric tons of CO_2e annually.

3.3.2 Environmental Checklist and Discussion of Impacts

GREENHOUSE GAS EMISSIONS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☐	☒	5
2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☐	☒	5

[17] Besides mobile sources, greenhouse gas emissions can come from stationary sources. Stationary sources, such as landfills, recycling/processing facilities, and composting facilities that receive commercial solid waste, recyclables, and organics under the existing and proposed commercial collection system already exist (with the exception of the ZWED AD Facility) and their operation will not change with the proposed project. The greenhouse gas emissions for the ZWED AD Facility have been analyzed in a separate environmental document (City of San José. Dry-Fermentation Anaerobic Digestion Facility Project. April 2011.) Greenhouse gas emissions associated with stationary sources (i.e., the receiving facilities) will remain constant under existing and project conditions. For these reasons, greenhouse gas emissions from stationary sources were not evaluated in this Initial Study.

The proposed project would change the process by which the commercial waste stream is collected (i.e., one hauler vs. 22 haulers) and processed (i.e., one facility for solid waste/recyclables and one facility for organics vs. 22 different facilities). In addition, Allied Waste proposes to use haul trucks fueled by compressed natural gas (CNG). Transfer trucks, however, would continue to be fueled by diesel fuel. The estimated haul and transfer truck miles traveled (refer to Table 6), combined with air pollutant emission factors for the trucks, were used to calculate the project's annual GHG emissions. Please refer to Appendix A of this Initial Study for additional details about the methodology and assumptions used in the calculation. The project's GHG impact is based on the difference between the GHG emissions under the existing system and the GHG emissions under the proposed system. The project's GHG emissions are summarized in Table 4.

Each bin collection system has multiple haul scenarios given the options where the organics can be pre-processed and processed (refer to Section 2.4.1.2 for more detail). The project's GHG emissions, therefore, are described within a range in Table 4. Depending on where the organics are pre-processed and processed, the project would result in up to a 33 percent decrease (560 tons) or up to a 32 percent increase (534 tons) of GHG emissions per year compared to the existing system.[18]

In general, the bin collection system and organics pre-processing and processing facility scenarios that result in an increase in vehicle miles traveled compared to the existing vehicle miles traveled (refer to Tables 5 and 6, and Appendix A) would result in an increase in GHG emissions. However, some of that increase is offset by the lower overall emissions resulting from the use of CNG haul trucks. CNG trucks are estimated to have emissions that are about 25 percent lower than diesel trucks. Please refer to Appendix A for the GHG emissions for each haul scenario under the bin collection systems.

As shown in Table 4, project's GHG emissions (see Net Project Emissions column) are below the BAAQMD CEQA thresholds of significance. The project, therefore, would not result in a significant greenhouse gas emissions impact.

Table 4: Existing and Project Greenhouse Gas Emissions

	Annual GHG Emissions	**Net Project Emissions (Proposed – Existing)**	**Project Emissions Exceed BAAQMD Thresholds?**
	(in metric tons of CO_2e)		
Existing Collection System	1,693		
Proposed Collection System			
• Two-Container System	1,136 to 2,202	-557 to 509	No
• One-Bin Plus System	1,133 to 2,227	-560 to 534	No
BAAQMD Threshold		*1,100*	

Note: Each bin collection system has multiple haul scenarios given the options where the organics can be pre-processed and processed (refer to Section 2.4.1.2 for more detail). Therefore, the project's GHG emissions are described within a range in this table. The GHG emissions for each haul scenario under the bin collection systems is provided in Appendix A of this Initial Study.

[18] In general, the pre-processing of organics at the NIRRP results in the fewer miles traveled (which translates into fewer GHG emissions) compared to pre-processing the organics at the GreenWaste MRF. The processing of organics at the ZWED AD Facility or NISL in San José would result in the fewer miles traveled compared to processing the organics at the Z-Best Composting Facility in Gilroy.

3.3.3 Conclusion

Implementation of the proposed project would not result in a significant greenhouse gas emissions impact. **(Less Than Significant Impact)**

3.4 LAND USE

3.4.1 Existing Setting

Currently, the City of San José has approximately 8,000 reported commercial businesses that receive solid waste collection services and approximately 3,800 reported commercial businesses that receive recycling collection services from the franchised haulers. These figures do not include businesses that do not use a franchised hauler because of other collection arrangements, including company-owned vehicles hauling the material to a disposal facility, central distribution facility, or recycling center.

Solid waste, recyclables, and organics from commercial businesses collected under the existing franchise system are hauled to existing, permitted disposal and processing facilities (refer to Table 2). The existing commercial diversion rate is approximately 22 percent.

3.4.2 Environmental Checklist and Discussion of Impacts

LAND USE						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Physically divide an established community?	☐	☐	☐	☒	☐	1
2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☐	☒	1,2,4
3) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒	☐	1

Under the proposed project, commercial solid waste, recyclables, and organics would continue to be collected, processed, and disposed. The ongoing physical collection of commercial solid waste, recyclables, and organics would not result in land use impacts.

As discussed previously, the City has three policies that include goals for increased solid waste diversion and increased use of alternative fuels: the Urban Environmental Accords (specifically Action 4), Zero Waste Policy, and Green Vision. The proposed Commercial Collection System Redesign project would increase the commercial diversion rate from approximately 22 percent to at least 75 percent. In addition, the proposed haul trucks would all be fueled by an alternative fuel, compressed natural gas. For these reasons, the project would be consistent with the City's policies to increase solid waste diversion and increase alternative fuel use.

Under the proposed collection system, commercial waste would be separated or combined in one to two containers for collection, depending on the commercial businesses' needs and the collection bin system the City Council ultimately approves. The size of the collection bins would be tailored to the needs of the commercial business. It is anticipated that the new collection bins would be accommodated within the commercial businesses' existing trash enclosures. The proposed collection system, either with a Two-Container or One-Bin Plus system, would not result in any substantial physical changes related to the size of bin storage areas or frequency of collection that would result in an environmental impact related to land use.

The project does not propose any new physical development[19] and therefore, would not physically divide an established community. The project does not conflict with an applicable habitat conservation plan or natural community conservation plan.

3.4.3 Conclusion

Implementation of the proposed project would not result in significant land use impacts. **(No Impact**)

[19] All receiving facilities, except ZWED AD Facility, can currently accommodate the Commercial Collection System Redesign project. The ZWED AD Facility was recently approved by the City Council and will be developed and operating by July 1, 2012 (which is date of commencement for the Commercial Collection System Redesign).

3.5 NOISE

3.5.1 Existing Setting

Several factors influence sound as it is perceived by the human ear, including the actual level of sound, the period of exposure to the sound, the frequencies involved, and fluctuation in the noise level during exposure. Noise is measured on a "decibel" scale which serves as an index of loudness. Because the human ear cannot hear all pitches or frequencies, sound levels are frequently adjusted or weighted to correspond to human hearing. This adjusted unit is known as the "A-weighted" decibel or dBA. Further, sound is averaged over time and penalties are added to the average for noise that is generated during times that may be more disturbing to sensitive uses such as early morning, or late evening.

Since excessive noise levels can adversely affect human activities (such as conversation and sleeping) and human health, federal, state, and local governmental agencies have set forth criteria or planning goals to minimize or avoid these effects. The noise guidelines are almost always expressed using one of several noise averaging methods, such as L_{eq}, DNL, or CNEL.[20] Using one of these descriptors is a way for a location's overall noise exposure to be measured, realizing of course that there are specific moments when noise levels are higher (e.g., when a jet is taking off from the Airport or when a leaf blower is operating) and specific moments when noise levels are lower (e.g., during lulls in traffic flows on a freeway or in the middle of the night).

3.5.2 Environmental Checklist and Discussion of Impacts

NOISE						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project result in:						
1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	☐	1,2
2) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	☐	1
3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐	1

[20] L_{eq} stands for the Noise Equivalent Level and is a measurement of the average energy level intensity of noise over a given period of time such as the noisiest hour. DNL stands for Day-Night Level and is a 24-hour average of noise levels, with a 10 dB penalty applied to noise occurring between 10:00 PM and 7:00 AM. CNEL stands for Community Noise Equivalent Level; it is similar to the DNL except that there is an additional five dB penalty applied to noise which occurs between 7:00 PM and 10:00 PM. As a general rule of thumb where traffic noise predominates, the CNEL and DNL are typically within two dBA of the peak-hour L_{eq}.

NOISE						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project result in:						
4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒	☐	1
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	☐	1
6) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	☐	1

A human-perceptible increase in ambient noise level is three dBA. Typically, if a project would cause ambient noise levels to increase by three or more dBA at noise-sensitive receptors, the impact is considered significant. For roadway traffic noise to increase by three or more dBA, traffic trips would need to double on the roadway.

Under the proposed commercial collection system redesign, one hauler (Allied Waste) would collect all of the commercial solid waste, recyclables, and organics in the City. As discussed in **Section 3.6 Transportation**, the proposed commercial collection system could generate up to approximately 56 more daily truck trips than the existing system.[21] The increase of 56 daily truck trips Citywide would not double traffic on roadways in the City. The project, therefore, would not cause roadway noise to increase by three or more dBA. In addition, the crossing of paths of multiple haulers that can occur under existing conditions would not occur under the proposed project and therefore, the number of truck trips and truck noise in most commercial areas of the City should decrease.

In addition, CNG fueled haul trucks (which would be used under the proposed project) are quieter than diesel fueled haul trucks (which are primarily used under the existing system).

The project would not result in a temporary or periodic increase in ambient noise levels, or expose people residing or working in the project area to excessive noise levels. For these reasons, the proposed project would have a less than significant impact on noise.

[21] Under either bin collection system, if organics are pre-processed at NIRRP and processed at NISL, the number of truck trips would be less than the existing system. Other project haul scenarios would result in approximately 23 – 56 more daily truck trips than the existing system. Refer to Appendix B for the number of truck trips and miles traveled by the trucks for each haul scenario.

3.5.3 Conclusion

Implementation of the proposed project would not result in significant noise impacts. **(Less Than Significant Impact)**

3.6 TRANSPORTATION

3.6.1 Existing Setting

The current commercial collection system consists of 22 franchised haulers that collect commercial solid waste, recyclables, and organics in the City and deliver the materials to 22 different landfill, recycling/processing, composting, and transfer facilities (refer to Table 2).

In general, haulers leave the corporation yard and collect materials on their assigned route. Once the haul truck is at or near capacity, or the driver has completed the assigned route, the materials are delivered to the contracted facility. If the haul truck reaches capacity and the driver has not yet completed the route, the driver will deliver the materials to the appropriate receiving facility and return to complete the route. When the driver has completed the route and delivered the materials to the contracted facility, the driver returns to the corporation yard.

3.6.1.1 *Number of Truck Trips and Miles Traveled Under Existing Conditions*

While the City has collected hauler data for several years and has a good understanding of the commercial waste collection process, the City does not know the exact number of haul truck trips, the specific haul routes for each hauler, or the total mileage traveled under existing conditions to collect solid waste, recyclables, and organics from commercial businesses in the City. The City does have the following data:

- existing franchised haulers and the location of their corporation yards,
- location of the facilities to which each hauler delivers the materials
- approximate capacity of each haul truck (approximately 10 tons per truck of solid waste and organics, and approximately 7.5 tons per truck of recyclables), and
- total tonnage of commercial solid waste, recyclables, and organics collected under the existing system in a recent one year period (July 2009 through June 2010).

The following text describes how the haul truck trips, haul route, and mileage traveled were calculated.

The total number of truck trips by existing franchisees was estimated by dividing the tonnage of each collected material (solid waste, recyclables, organics) by the assumed capacity of the collection/haul vehicle.[22]

To estimate the total vehicle miles traveled by the franchised haulers under the existing commercial collection system, a centroid was established to represent a single, central collection location within the City's urban service area. This centroid is located at the intersection of Monterey Road and Alma Avenue. It is assumed that a haul truck trip would originate at the hauler's corporation yard, travel to the centroid, then to the hauler's contracted facility, and return to the hauler's corporation yard (corporation yards and receiving facilities are noted in Table 2). If the contracted facility is a transfer station, the material would be loaded into a transfer vehicle (approximately 22 tons capacity) and

[22] While it is acknowledged that not every truck will be loaded to capacity, using the tonnage capacity per truck to estimate trips is reasonable and provides a consistent method that can be used in making comparisons to the proposed project.

hauled to the receiving facility. Figure 6 illustrates the assumed haul and transfer truck routing under the existing system.

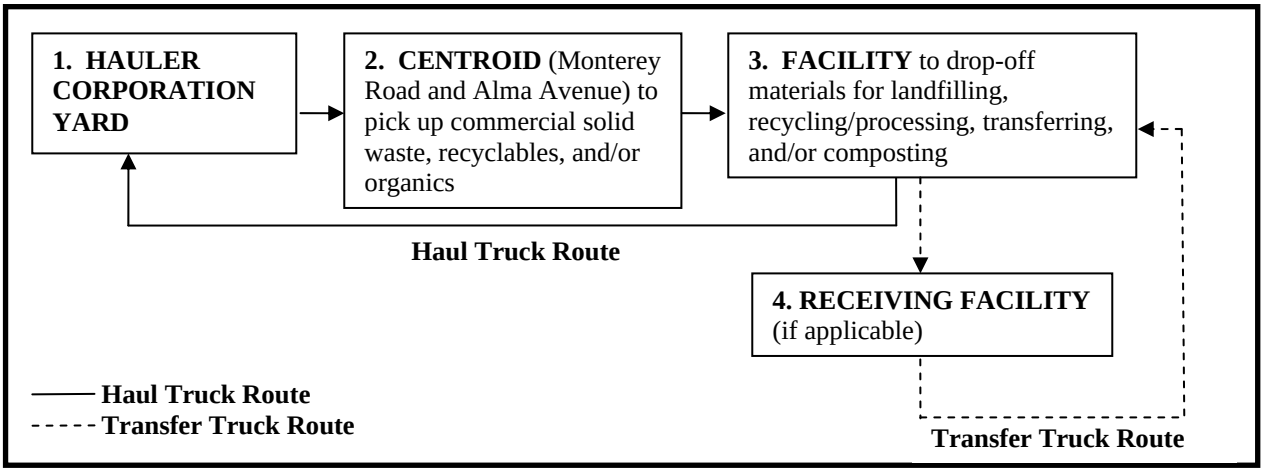

Figure 6: Assumed Truck Routes Under the Existing System

Using the above-described methodology, and the hauler corporation yard and receiving facilities noted in Table 2, it is estimated that the existing commercial collection system generates approximately 26,400 truck trips that traveled a total of approximately 817,500 miles a year. It is estimated that approximately 20,300 truck trips a year were generated collecting solid waste (total of approximately 616,100 miles traveled), 2,700 truck trips a year were generated collecting recyclables (total of approximately 92,000 miles traveled), and 3,400 truck trips a year were generated collecting organics (total of approximately 109,400 miles traveled) (refer to Table 5).

Table 5: Tons of Material Collected, Number of Haul Truck Trips, and Miles Traveled by Haul Trucks Under Existing Conditions

Material Collected Via the Existing Commercial Collection System	Approximate Tons of Material Collected (July 2009-June 2010)	Estimated	
		Number of Haul and Transfer Truck Trips	Miles Traveled by Haul and Transfer Trucks
Solid Waste	193,300	20,300	616,100
Recyclables	20,100	2,700	92,000
Organics	34,300	3,400	109,400
TOTAL	***247,700***	***26,400***	***817,500***

3.6.2 Environmental Checklist and Discussion of Impacts

TRANSPORTATION/TRAFFIC						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	☐	1,2
2) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	☐	1,2
3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒	☐	1
4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	☐	☐	☐	☒	☐	1
5) Result in inadequate emergency access?	☐	☐	☐	☒	☐	1
6) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒	☐	1

Currently, 22 franchised haulers collect commercial solid waste, recyclables, and organics in San José and deliver the material to 22 landfill, recycling, and composting facilities (refer to Table 2). An assessment of the City's existing non-exclusive commercial collection system found that because there are multiple haulers operating in the City collection vehicles from different hauling companies cross each other's paths each day to service customers on the same streets.[23] The assessment found that inefficient routing lead to more truck time on streets.

Under the proposed system, only one franchised hauler (Allied Waste) would collect commercial solid waste, recyclables, and organics in San José. Allied Waste would collect solid waste and recyclables from commercial businesses and haul the material to the NIRRP for landfilling and/or processing. Allied Waste would collect organics from commercial businesses and haul the organic material to the NIRRP (or GreenWaste MRF) for pre-processing. After pre-processing, the organics would be transferred from the NIRRP (or GreenWaste MRF) to the ZWED AD Facility, Z-Best Composting Facility, or NISL for processing (e.g., anaerobic digestion and/or composting).

3.6.2.1 *Number of Truck Trips and Miles Traveled under Project Conditions*

The proposed project focuses on a change in the process by which commercial waste is collected (i.e., one hauler vs. 22 haulers) and processed (one facility for solid waste/recyclables and one facility for organics), with increased diversion and other enhancements. In order to provide an accurate comparison to evaluate the proposed process change, the same methodology used to calculate existing conditions haul truck trips and miles traveled was used to calculate project conditions haul truck trips and miles traveled. The same centroid used to estimate the existing haul truck route was used to estimate the haul truck trip route under the proposed project. The centroid, therefore, is a constant in the calculations rather than a variable.

Haul and Transfer Truck Routing

Two-Container Collection System

Under the Two-Container Collection System, one haul truck would pick up the dry material at a business and another haul truck would pick up the wet material. The total vehicle miles traveled under this system was estimated by assuming all haul trucks would originate at the corporation yard at NIRRP located at 1601 Dixon Landing Road in San José and travel to the centroid located at the intersection of Monterey Road and Alma Avenue. Haul trucks that pick up dry material would then return to NIRRP to drop off the dry material for landfilling and recycling and end at the corporation yard at NIRRP. Haul trucks that pick up wet material would travel to NIRRP or GreenWaste MRF located at 625 Charles Street in San José to drop off the organics for pre-processing, then return to the corporation yard at NIRRP. After the organics are pre-processed, the organics would be loaded into a transfer truck and hauled to the ZWED AD Facility located at 2100 Los Esteros Road in San José, Z-Best Composting Facility located at 980 State Highway 25 in Gilroy, or NISL for processing.[24] After dropping off the pre-processed organics, the transfer truck would return to its origin (either NIRRP or GreenWaste MRF).

[23] HF&H Consultants, LLC. The City of San José Commercial Redesign White Paper, Current System Performance and Alternative System Arrangements. November 14, 2008. Page 19.
[24] It is assumed that if organics are processed at NISL, they would be pre-processed at NIRRP.

One-Bin Plus Collection System

Under the One-Bin Plus Collection System, one haul truck would pick up the "One-Bin" and another haul truck would pick up the "Plus" bin. The total vehicle miles traveled under this system was estimated by assuming all haul trucks would originate at the corporation yard at NIRRP located at 1601 Dixon Landing Road in San José and travel to the centroid located at the intersection of Monterey Road and Alma Avenue. Haul trucks that pick up the One-Bin would then return to NIRRP to drop off the material for landfilling and recycling and end at the corporation yard at NIRRP. Haul trucks that pick up the Plus bin would travel to NIRRP or GreenWaste MRF to drop off the organics for pre-processing then return to the corporation yard at NIRRP. After the organics are pre-processed, the organics would be loaded into transfer trucks and hauled to the ZWED AD Facility, Z-Best Composting Facility, or NISL for processing.[25] After dropping off the pre-processed organics, the transfer truck would return to its origin (either NIRRP or GreenWaste MRF).

Number of Truck Trips and Miles Traveled

While the amount of commercial solid waste, recyclables, and organics would likely increase incrementally between existing conditions (collected data for July 2009 – June 2010) and project implementation (July 1, 2012), it would be similar; therefore, the total tons of materials collected in July 2009 – June 2010 was also assumed under project conditions. Since an objective of the project is to increase diversion to a minimum 75 percent diversion, this diversion rate was used to calculate the percentages of solid waste, recyclables, and organics that comprise the total tonnage.[26]

Based upon the above assumptions, it is estimated that the proposed system, depending on the bin collection system selected and where the organics would be pre-processed and processed, would generate approximately 28,300 – 41,500 truck trips and the trucks would travel approximately 734,800 – 1,261,900 miles per year (refer to Table 6).

Table 6: Number of Haul and Transfer Truck Trips and Miles Traveled by Haul Trucks Under Project Conditions

Collection System	Number of Haul and Transfer Truck Trips	Miles Traveled by Haul and Transfer Trucks
2-Container	28,300 – 41,100	734,800 – 1,250,200
One-Bin Plus	28,200 – 41,500	732,800 – 1,261,900

Notes: Each bin collection system has multiple haul scenarios given the options where the organics can be pre-processed and processed (refer to Section 2.4.1.2 for more detail). Therefore, the number of truck trips and miles traveled are described within a range in this table. In general, the pre-processing of organics at the NIRRP results in the fewer miles traveled compared to pre-processing the organics at the GreenWaste MRF. The processing of organics at the ZWED AD Facility or NISL in San José would result in the fewer miles traveled compared to processing the organics at the Z-Best Composting Facility in Gilroy. The number of truck trips and miles traveled by the trucks for each haul scenario under the bin collection systems is provided in Appendix B of this Initial Study.

[25] It is assumed that if organics are processed at NISL, they would be pre-processed at NIRRP.
[26] The breakdown of commercial solid waste, recyclables, and organics tonnage for under the proposed system was derived from Allied Waste's proposal.

The proposed system would result in up to 15,100 more truck trips annually, which equates to 56 more haul trips per day Citywide, than the existing system. Note that if the organics are pre-processed at the NIRRP and processed at either the ZWED AD Facility or NISL, the project would result in 35,500 – 84,700 fewer miles traveled than the existing system. Please refer to Appendix B for the number of truck trips and miles traveled by the truck for each haul scenario under the bin collection systems.

As discussed in **Section 2.4 Project Description**, over time, it is anticipated that organic loads will not need to be pre-processed. If pre-processing is not required, collected organics would be hauled directly to the processing facility.[27] Therefore, the estimated number of truck trips and miles traveled under project conditions (Table 6 above) could be up to nine percent less and the impacts would be less than described above.[28]

3.6.2.2 *Other Transportation Impacts*

The proposed system would not result in a change in air traffic patterns, hazards due to design features or incompatible land uses, inadequate emergency service, inadequate parking capacity, or conflict with adopted policies, plans, or programs supporting alternative transportation.

3.6.3 Conclusion

The proposed project would not result in significant transportation impacts. **(Less Than Significant Impact)**

[27] If the organics are to be processed at the ZWED AD Facility or NISL, they would be hauled directly there. If the organics are to be processed at the Z-Best Composting Facility, it is assumed that the organics would be hauled to Zanker Landfill first, then loaded into transfer trucks and hauled to Z-Best Composting Facility.
[28] If pre-processing is not required, the reductions in truck miles traveled are for haul scenarios assuming pre-processing at the GreenWaste MRF only.

3.7 UTILITIES AND SERVICE SYSTEMS

3.7.1 Existing Setting

According to the operator of NISL, as of December 31, 2007, the landfill has approximately 10.7 million cubic yards of capacity remaining.[29] The City of San José has a contract with Newby Island for 320,000 tons of residential and commercial solid waste per year through December 31, 2020, with a provision for the City to extend the contract as long as capacity exists.

In recent years, the City has generated approximately 200,000 tons of residential solid waste per year and 85,000 tons of commercial solid waste a year that is landfilled at Newby Island. Residential and commercial disposal tonnage is expected to decrease as new pilot programs and zero waste strategies are implemented.

3.7.2 Environmental Checklist and Discussion of Impacts

UTILITIES AND SERVICE SYSTEMS						
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
Would the project:						
6) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	☐	1
7) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐	☐	1

It is anticipated that, with the implementation of the Commercial Collection System Redesign project, approximately 52,500 tons of commercial solid waste would need to be landfilled per year.

Given Newby Island Landfill's existing capacity, the City's contract with NISL, the existing amount of waste the City disposes at the landfill, and the estimated amount of commercial solid waste that would need to be landfilled at NISL under the proposed project, there is sufficient capacity within the City's contract with NISL to serve the proposed Commercial Collection System Redesign project.

Note that an application is on file (file no. PDC07-071) at the City for a height expansion at Newby Island Sanitary Landfill, which would add approximately 15 million cubic yards to the capacity of the landfill.

The receiving, pre-processing, and processing facilities (i.e., NIRRP, GreenWaste MRF, ZWED AD Facility, Z-Best Composting Facility) are required to comply with federal, state, and local statues and regulations related to solid waste.

[29] Allied Waste Services of North America, LLC. Personal communications. April 2008.

Based on the above discussion, the project would not result in significant impacts to utilities and service systems.

3.7.3 Conclusion

The project would not result in a significant utilities and service systems impact. **(Less Than Significant Impact)**

3.8 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Source(s)
1) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐	☐	1, pgs. 11-47
2) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐	☐	1, pgs. 11-47
3) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐	☐	1, pgs. 11-47

As discussed in the respective sections, implementation of the proposed project would have a less than significant impact on the environment. Therefore, the proposed project would not result in significant unavoidable impacts, impacts that are cumulatively considerable (i.e., air quality and greenhouse gas emissions), or cause substantial adverse affects on human beings either directly or indirectly.

Checklist Sources

1. Professional judgment and expertise of the environmental specialist preparing this assessment, based upon a review of the project service area and surrounding conditions.

2. City of San José. Focus on the Future San José 2020 General Plan. Amended through December 1, 2009.

3. California Department of Conservation. Santa Clara County Important Farmland 2008. Map. July 2009.

4. City of San José. Zoning Ordinance. Amended through December 10, 2010.

5. Illingworth & Rodkin, Inc. Commercial Collection Redesign Air Quality Analysis San José, California. May 2011.

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R3 Consulting Group, Inc. Needs Assessment for the Integrated Waste Management Zero Waste Strategic Plan Development. November 3, 2008.

SECTION 5.0 LEAD AGENCY AND CONSULTANTS

5.1 LEAD AGENCY

City of San José
Planning, Building, and Code Enforcement Department
Joseph Horwedal, Director
John Davidson, Senior Planner

5.2 CONSULTANTS

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Illingworth & Rodkin, Inc.
Air Quality Consultants
James Reyff, Senior Consultant

Appendix A

Air Quality and Greenhouse Gas Analysis

COMMERCIAL COLLECTION REDESIGN AIR QUALITY ANALYSIS SAN JOSÉ, CALIFORNIA

April 22, 2011
Revised May 20, 2011

♦ ♦ ♦

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Job No.: 11-047

Introduction

This report presents the results of an environmental air quality emissions analysis associated with proposed changes to commercial waste collection in San José. Proposed changes to commercial waste collection are described below. While the proposed project is not anticipated to result in localized impacts, there could be emissions changes that could effect regional air quality or result in increased emissions of greenhouse gases. Therefore, this analysis computes changes in air pollutant and greenhouse gases. Changes in emissions of ozone precursor pollutants (i.e., reactive organic gases [ROG] and nitrogen oxides [NOx]), particulate matter exhaust (PM_{10} and $PM_{2.5}$), and greenhouse gases (GHG) were computed as a result of proposed changes and alternatives or options.

Regulatory Overview

CEQA Air Quality Guidelines prepared by BAAQMD are used to establish the significance criteria to judge the impacts caused by the project[1]. The recently adopted BAAQMD CEQA Air Quality Thresholds for projects were used to evaluate air quality impacts from the project[2]. The following are the significance criteria that are used to judge project impacts:

- A cumulatively considerable net increase of any criteria pollutant or a precursor to that pollutant for which the project region is non-attainment under an applicable national or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). This is judged by comparing direct and indirect project emissions to the BAAQMD significance thresholds of 54 pounds per day for ROG, NOx, or $PM_{2.5}$, and 82 pounds per day for PM_{10}. Annual significance thresholds are 10 tons per year for ROG, NOx, or $PM_{2.5}$, and 15 tons per year for PM_{10}. *Changes to emissions associated with the proposed project are computed and compared against these thresholds.*
- A substantial contribution to an existing or projected violation of an ambient air quality standard would result if the project would cause an exceedance of an ambient air quality standard. *Changes to emissions associated with the proposed project are computed and compared against these thresholds. The proposed project would not affect local air quality, so localized violations of ambient air quality standards (i.e., carbon monoxide) are not anticipated.*
- Expose sensitive receptors or the general public to substantial pollutant concentrations. This is evaluated by assessing the health risk in terms of cancer risk or hazards posed by the placement of new sources of air pollutant emissions near existing sensitive receptors or placement of new sensitive receptors near existing sources. *The proposed project would not affect local air quality, so no impact under this criteria is anticipated.*
- Create or expose a substantial number of people to objectionable odors. This is evaluated based on the potential for the project to generate odors that could affect nearby sensitive receptors in a manner that would cause frequent complaints. The project is not anticipated to be a source of objectionable odors that would affect sensitive receptors. *The proposed project would not affect local air quality, so no impact under this criterion is anticipated.*
- Conflict with or obstruct implementation of the applicable air quality plan. *The proposed project would not interfere with projections used in the latest Clean Air Plan or the prescribed control measures.*
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. *Changes to emissions associated with the proposed project are computed and compared against these thresholds.*
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. *The City does not have an applicable plan, therefore, the proposed project would not have an impact.*

[1] BAAQMD. 2010. California Environmental Quality Act, Air Quality Guidelines. June.
[2] The BAAQMD thresholds of significance were adopted June 2, 2010.

Emission associated with the proposed project would come from changes in operations of trucks hauling commercial waste in San José. In 2003, the California Air Resources Board (CARB) adopted California's solid waste collection vehicle rule intended to reduce the harmful health impacts of exhaust from diesel-fueled waste collection trucks. The solid waste collection vehicle regulation (SWCV) reduces particulate matter and smog-forming nitrogen oxide emissions from these trucks, by requiring fleet owners to use CARB verified control technology that best reduces emissions. The rule includes a phased-in schedule from 2004 through 2010. The deadline for 100-percent compliance was December 31, 2010; therefore, SWCVs used to collect commercial waste are assumed to be fully compliant with this regulation. New diesel trucks sold starting in 2007 meet requirements of the SWCV rule. In addition, SWCVs powered by compressed natural gas (CNG) also meet the rule.

Project Description

Existing Commercial Collection System

Currently, the City of San José has a non-exclusive commercial collection system with over 20 hauling companies collecting solid waste, recyclables, and organic from commercial customers. All haulers are required to obtain a Commercial Solid Waste and Recyclables Collection Franchise agreement granted by the City Council that allows them to provide hauling services on a “non-exclusive” basis. This non-exclusive collection system allows commercial businesses to choose the hauler that offers the rates and services that meets their needs. The current system does not require franchisees to divert commercial waste from the landfill. The commercial diversion rate between July 2009 and June 2010 was approximately 22 percent. The existing commercial franchise hauling agreements expire on June 30, 2012.

Proposed Commercial Collection System Redesign

Under the proposed Commercial Collection System Redesign, one franchised hauler – Allied Waste of Santa Clara County (Allied Waste) – would have an exclusive contract to collect commercial solid waste, recyclables, and organics generated in San José. Allied Waste would haul commercial solid waste and recyclables to Newby Island Resource Recovery Park (NIRRP) at 1601 Dixon Landing Road, San José. NIRRP consists of Newby Island Sanitary Landfill (NISL) and the BFI Recyclery (the Recyclery). Allied Waste would haul collected organics from commercial businesses to either NIRRP or GreenWaste Materials Recovery Facility (MRF) at 625 Charles Street, San José for pre-processing. After the organics are pre-processed, the organics would be processed at one of three facilities: a) the Zero Waste Energy Development Company (ZWED) Anaerobic Digestion (AD) Facility at 2100 Los Esteros Road, Alviso for anaerobic digestion and composting; b) Z-Best Composting Facility located at 980 State Highway 25, Gilroy for composting; or c) NISL for composting.

It is assumed that the full implementation of the proposed Commercial Collection System Redesign would result in a minimum of 75 percent diversion. Allied Waste would collect the material in front and side load haul trucks that would be fueled by compressed natural gas.

Bin Collection System

Under the proposed system, commercial solid waste, recyclables, and organics would be collected in one of the two systems: 1) Two-Container System (i.e., wet/dry collection system) or 2) One-Bin Plus System. The type of collection system would affect the number of haul trips and distances, since sorting may not be required at a centralized facility.

1. Under the Two-Container System, commercial businesses would have one or two collection bins. Businesses that sell or process food would have two collection bins: one bin for "wet" materials and a second bin for "dry" materials.
2. Under the One-Bin Plus System, most commercial businesses would have one collection bin where solid waste, recyclables, and small amounts of organics would be placed in. The commercial businesses would collect their solid waste, recyclables, and small amounts of organics in clear plastic bags. The janitors at the commercial businesses would then collect the plastic bags and place all of them in a single bin (the One-Bin) for collection. If the commercial business generates large quantities of organics (such as a grocery store or florist), the organics would be collected separated in another bin (the Plus).

Study Methodology

This analysis computes the expected changes in emissions resulting from changes in haul truck travel. The first step of the analysis involves computing the change in haul truck traveled, which is computed in terms of vehicles miles traveled (VMT). The VMT for existing conditions and project conditions were computed, including changes associated with the two different Bin Collection options.

<u>Haul Truck Trip and VMT Estimates</u>

Existing Conditions – (i.e., July 2009 – June 2010)

While the City has collected hauler data for several years and has a good understanding of the commercial waste collection process, the City does not know the exact number of haul truck trips, the specific haul routes for each hauler, or the total mileage traveled under existing conditions to collect materials from commercial businesses in the City. The City does have the following data:

- existing operating haulers and the location of their corporation yards,
- location of the facilities to which each hauler delivers the materials
- the approximate capacity of each haul truck (approximately 10 tons per truck of solid waste and organics, and approximately 7.5 tons per truck of organics), and
- total tonnage of commercial solid waste, recyclables, and organics collected under the existing system in a recent one year period (July 2009 through June 2010).

The following discussion describes how the haul truck trips, haul route, and mileage traveled were computed. The number of truck trips was estimated by dividing the tonnage of each collected material (solid waste, recyclables, organics) by the capacity of the collection/haul vehicle.[3]

The annual VMT for each of the franchised haulers under the existing commercial collection system was estimated by establishing a centroid to represent a single, central collection location within the City. This centroid was located at the intersection of Monterey Road and Alma Avenue. A haul truck trip was assumed to originate at the hauler's corporation yard, travel to the centroid, then to the hauler's contracted facility, and return to the hauler's corporation yard. If the contracted facility is a transfer station, the material would be loaded into a transfer vehicle (approximately 22 tons capacity) and hauled to the receiving facility. Figure 1 illustrates the assumed haul and transfer truck routes. The estimated number of haul trips and VMT, along with the approximate tons of waste hauled are shown in Table 1 for existing conditions. These estimates are broken down by the three different waste streams (i.e., solid, recyclables and organics).

[3] While it is acknowledged that not every truck will be loaded to capacity, using the capacity of truck to estimate trips is reasonable and provides a consistent method that can be compared to the proposed project.

Figure 1: Assumed Hauler and Transfer Truck Routes

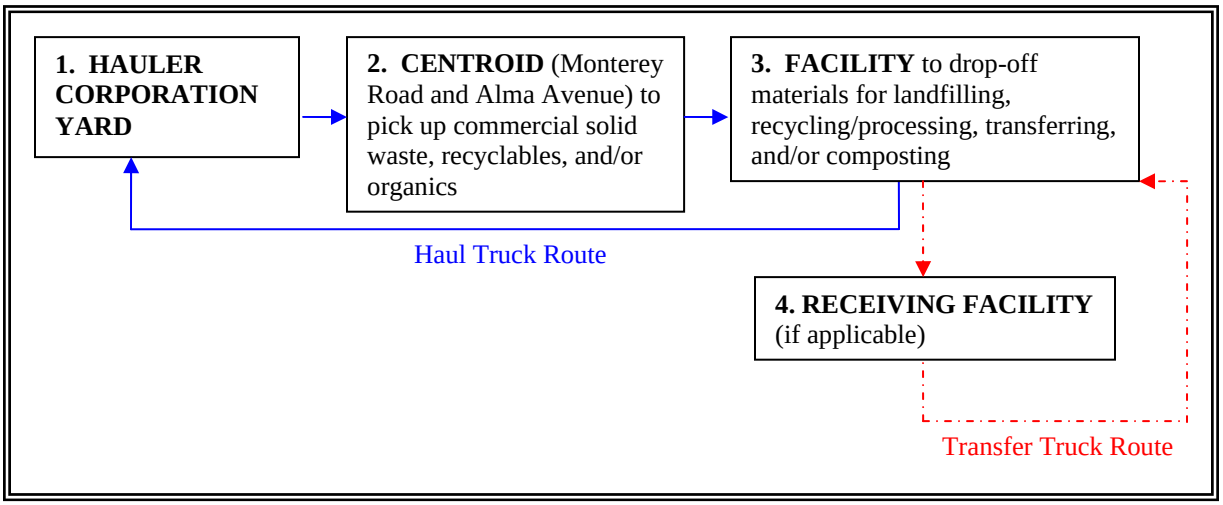

Table 1: Tons of Material Collected, Number of Haul Truck Trips, and Miles Traveled by Haul Trucks Under Existing Conditions

Material Collected Via the Existing Commercial Collection System	Approximate Tons of Material Collected (July 2009-June 2010)	Estimated	
		Number of Haul and Transfer Truck Trips	Miles Traveled by Haul and Transfer Trucks
Solid Waste	194,260	20,282	616,009
Recyclables	20,130	2,683	92,018
Organics	34,296	3,427	109,345
TOTAL	*248,686*	*26,392*	*817,472*

Project Conditions

Under the proposed system, only one franchised hauler (Allied Waste) would collect commercial solid waste, recyclables, and organics in San José. Solid waste and recyclables from commercial businesses would be collected and hauled to NIRRP for processing and/or landfilling. Allied Waste would also collect organics from commercial businesses and haul that material to NIRRP (or GreenWaste MRF) for pre-processing. After pre-processing, the organics would be taken to the ZWED AD Facility for anaerobic digestion and composting, Z-Best Composting Facility for composting, or NISL for composting.

The proposed project focuses on a change in the process by which commercial waste is collected (i.e., one hauler vs. 22 different haulers) and processed (one facility for solid waste/recyclables and one facility for organics vs. 22 different receiving facilities), with increased diversion and other enhancements. In order to provide an accurate comparison to evaluate the proposed process change, the same methodology used to calculate haul truck trips and miles traveled under existing conditions was used to calculate haul truck trips and miles traveled under project conditions. While the amount of commercial solid waste, recyclables, and organics would likely increase incrementally between existing conditions (collected data for July 2009 – June 2010) and project implementation (July 1, 2012), it would be similar; therefore, the total tons of materials collected in July 2009 – June 2010 was also assumed under project conditions. Since an objective of the project is to increase diversion, a minimum 75% diversionwas used to calculate the percentages of solid waste, recyclables, and organics that comprise the total tonnage. Based upon the above assumptions, it is estimated that the proposed system, depending on the bin collection system

selected, would generate approximately 28,184 – 41,447 haul truck trips and the haul trucks would travel approximately 732,799 – 1,261,879 miles per year. Table 2 provides the estimates of haul truck trips and associated VMT.

Table 2: Tons of Material Collected, Number of Haul Truck Trips, and Miles Traveled by Haul Trucks Under Project Conditions

Collection System	Haul Scenario	Number of Haul and Transfer Truck Trips	Miles Traveled by Haul and Transfer Trucks
2-Container	1. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for anaerobic digestion and composting	32,556	782,025
	2. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	32,556	1,112,775
	3. Solid waste and recyclables hauled to NIRRP, organics hauled to GreenWaste MRF to be pre-processed then transferred to ZWED for anaerobic digestion and composting	36,851	855,047
	4. Solid waste and recyclables hauled to NIRRP, organics hauled to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	36,851	1,121,366
	5. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	36,850	1,164,275
	6. Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	41,145	1,250,175
	7. Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	28,260	734,775
One-Bin Plus	1. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for anaerobic digestion and composting	32,593	781,285
	2. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	32,593	1,120,740
	3. Solid waste and recyclables hauled to NIRRP, organics hauled to GreenWaste MRF to be pre-processed then transferred to ZWED for anaerobic digestion and composting	37,001	869,455
	4. Solid waste and recyclables hauled to NIRRP, organics hauled to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	37,001	1,129,557
	5. Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	37,002	1,173,699
	6. Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	41,447	1,261,879
	7. Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	28,184	732,799

The VMT computation sheets are contained in Attachment A.

Emission Rates

Emission rates in grams per mile of air pollutants and GHG were developed and applied to the haul truck travel data. The proposed project would involve the use of two different types of trucks: diesel-fueled and compressed-natural-gas (CNG) fueled. Currently, diesel-fueled trucks collect and haul commercial waste in San José. Emission factors were developed for 2011 and applied to existing and project conditions.

The EMFAC2007 model developed and used by the California Air Resources Board (CARB) to compute on-road vehicle emission rates was used. Diesel truck air pollutant emission rates were computed for heavy-duty trucks with the earliest model being 2007. These computations are consistent with California Air Resources Board (CARB) regulations for solid waste trucks. For existing conditions, a fleet of trucks that are model 2007 to 2011 were assumed. Haul trucks older than 2007 were assumed to be retrofitted or modified to meet the current CARB standards for solid waste collection vehicles. In other words, they meet model 2007 emission standards or better. The EMFAC2007 model predicts the effect of age deterioration on emission rates. However, the model assumes some newer trucks. The EMFAC2007 model provides gram per mile emission rates of carbon dioxide (CO_2). In order to compute the emissions of the other two common GHGs from truck emissions (nitrous oxides and methane), the California Climate Action Registry (CCAR) protocol method was used. CCAR provides emission rates, based on fuel consumption. Therefore, the average truck fuel efficiency provided by EMFAC2007 was used to compute fuel consumptions and the CCAR factors for nitrous oxide and methane emissions were applied.

The EMFAC2007 model does not compute emission factors for CNG. CNG emissions were based on EMFAC2007, but using the newer stringent 2011 standard that new waste collection trucks will have to meet. GHG emissions for CNG were computed based on CNG usage and factors from CCAR. For CNG use, the CARB average CNG fuel use value of 26.86 MJ/mile. This was based on a county-wide average travel speed. It was assumed that, like for the CARB average diesel fuel use, it was for a slightly higher average travel speed than 25 mph that was estimated for the collection truck travel. Therefore, this average fuel use value was adjusted by the ratio of the EMFAC diesel fuel use at 25 mph to the CARB average diesel fuel use. The fuel use was then calculated in miles per therm since the CCAR CNG CO_2 emission factor is in kilograms per therm. CCAR N_2O and CH_4 emission factors are in grams per mile.

Emission rate computations are provided in Attachment B.

Computed Emissions

Estimated vehicle travel was combined with the emission factors to compute daily emissions of air pollutants and annual emissions of GHGs. Travel fractions by fuel type (CNG or diesel) were applied. All existing trips were assumed to be made by diesel trucks. Table 3 presents provides a summary of the emission computations for existing conditions in 2011, the proposed project with 2-Container option and the proposed project with the One-Bin Plus option. Emissions associated with each of the four scenarios are provided.

Table 3 Proposed Project Emissions

Scenario	Daily Emissions			Annual Emissions	Difference with Project 2011				Percent Change			
Existing in 2011	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr
Existing in 2011	*2.2*	*33.1*	*0.77*	*1,693*								
2-Container Option - 1	1.3	9.6	0.65	1,233	-0.9	-23.5	-0.1	-459.5	-41%	-71%	-15%	*-27%*
2-Container Option - 2	2.2	23.0	0.96	1,918	0.0	-10.1	0.2	224.8	0%	-30%	25%	*13%*
2-Container Option - 3	1.5	13.1	0.73	1,411	-0.7	-20.0	0.0	-281.8	-30%	-60%	-5%	-17%
2-Container Option - 4	2.2	23.4	0.97	1,936	0.0	-9.7	0.2	242.6	1%	-29%	26%	*14%*
2-Container Option - 5	2.3	25.1	1.01	2,024	0.1	-8.0	0.2	331.4	6%	-24%	32%	*20%*
2-Container Option - 6	2.5	28.6	1.09	2,202	0.4	-4.5	0.3	509.1	16%	-14%	42%	*30%*
2-Container Option - 7	1.2	7.7	0.61	1,136	-1.0	-25.4	-0.2	-557.3	-47%	-77%	-21%	*-33%*
One-Bin-Plus Option - 1	1.3	9.7	0.65	1,233	-0.9	-23.4	-0.1	-460.0	-41%	-71%	-15%	-27%
One-Bin-Plus Option - 2	2.2	23.4	0.97	1,935	0.0	-9.7	0.2	242.4	1%	-29%	26%	*14%*
One-Bin-Plus Option - 3	1.5	13.2	0.73	1,415	-0.7	-19.9	0.0	-277.6	-30%	-60%	-4%	-16%
One-Bin-Plus Option - 4	2.2	23.8	0.98	1,954	0.0	-9.4	0.2	260.6	2%	-28%	27%	15%
One-Bin-Plus Option - 5	2.3	25.5	1.02	2,045	0.2	-7.6	0.3	351.9	7%	-23%	33%	21%
One-Bin-Plus Option - 6	2.6	29.1	1.10	2,227	0.4	-4.0	0.3	534.4	18%	-12%	44%	32%
One-Bin-Plus Option - 7	1.2	7.7	0.60	1,133	-1.0	-25.4	-0.2	-560.4	-47%	-77%	-21%	*-33%*
BAAQMDThresholds					54	54	82	1,100*				

*** Emissions are compared against efficiency metric if above threshold**

Average daily emissions of ROG and PM_{10} exhaust from trucks collecting commercial waste in San José are quite low, primarily because of the low ROG rates associated with diesel exhaust and the stringent emission standards that solid waste trucks must meet. There are also fairly stringent NOx standards in place on these types of trucks, so emission rates are quite low. On an average daily basis, air pollutant emissions associated with existing or future proposed project conditions are below the BAAQMD CEQA thresholds[4]. Air pollutant emissions with the proposed project will either hardly change or decrease. Although VMT would be greater under most of the scenarios, emissions would be lower because most of the trucks would be powered by CNG. CNG emission rates are generally lower than diesel. $PM_{2.5}$ emissions were not computed. However, they would be less than the insignificant PM_{10} emissions, since $PM_{2.5}$ are included in the PM_{10} fraction of particulates.

GHG emissions are computed on an annual basis in terms of metric tons of equivalent CO_2 based on CO_2, nitrous oxide, and methane. Equivalent CO_2 is expressed as CO_2e . For existing conditions, waste collections is estimated to produce about 1,693 metric tons of CO_2e per year. Under the proposed project alternatives, CO_2e emissions could increase by up to 534 metric tons per year or decrease by 560 metric tons per year. The variation is based on the option and scenario. In general, the option with a scenario that increases VMT would likely result in an increase in CO_2e emissions. However, some of that increase would be offset by the lower overall emissions resulting from use of CNG trucks that currently are not used to collect commercial waste. CNG trucks are estimated to have emissions that are about 25-percent lower than diesel truck emissions. In any event, the CO_2e emission changes would be below the BAAQMD's CEQA thresholds.

4 BAAQMD. 2010. BAAQMD CEQA Air Quality Guidelines. June.

Scenario			Miles Traveled using CNG	Miles Traveled using diesel		Total Miles Traveled
2-Container System	1	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for composting	734,780	47,245		782,025
	2	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	734,815	377,960		1,112,775
	3	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZWED for composting	734,773	133,161		867,934
	4	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	734,770	386,596		1,121,366
	5	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	734,775	429,500		1,164,275
	6	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	734,775	515,400		1,250,175
	7	Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	734,775	0		734,775
One-Bin Plus	1	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for composting	732,786	48,499		781,285
	2	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	732,748	387,992		1,120,740
	3	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZWED for composting	732,791	136,664		869,455
	4	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	732,791	396,766		1,129,557
	5	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	440,900		1,173,699
	6	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	529,080		1,261,879
	7	Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	732,799	0		732,799

ATTACHMENT A: VMT Computations

Existing SOLID WASTE Hauler Trip Length							July 2009 - June 2010		
1: Hauler Origin		**2: Centroid**	**3: Facility**		**4: End Location**	**Total Miles**	**Total Tons of Solid Waste**	**Total # of Truck Trips**	**Total Annual Miles**
$99 Debris Box Service	1500 Berger Drive, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1500 Berger Drive, San José, CA	32	2.00	0	0
$99 Debris Box Service	1500 Berger Drive, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	37	38.48	4	148
$99 Debris Box Service	1500 Berger Drive, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1500 Berger Drive, San José, CA	14	3,767.14	377	5,278
$99 Debris Box Service	1500 Berger Drive, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	37	20.25	2	74
All Points Roll Off, Inc.	2269 Will Wool Drive, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	2269 Will Wool Drive, San José, CA	22	12.03	1	22
Allied Waste Services of Santa Clara County	1601 Dixon Landing Road, Milpitas, CA		Newby Island Sanitary Landfill	1601 Dixon Landing Road, Milpitas, CA	---	26	71,283.84	7,128	185,328
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	2400 San Juan- Hollister Road, Hollister, CA	108	709.49	71	7,668
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, Morgan Hill, CA	2400 San Juan- Hollister Road, Hollister, CA	100	681.44	68	6,800
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Monterey RWMD	14201 Del Monte Boulevard, Marina, CA	2400 San Juan- Hollister Road, Hollister, CA	135	103.49	10	1,350
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		John Smith Road Class III Landfill	2650 John Smith Road, Hollister, CA	2400 San Juan- Hollister Road, Hollister, CA	106	847.68	85	9,010
Ferma Corporation	6655 Smith Avenue, Newark, CA		Ox Mountain	12310 Highway 92, Half Moon Bay	6655 Smith Avenue, Newark, CA	95	48.00	5	475
GreenWaste Recovery	1500 Berger Drive, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1500 Berger Drive, San José, CA	14	13,838.56	1,384	19,376
GT Waste	1333 Oakland Road, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1333 Oakland Road, San José, CA	36	3,669.65	367	13,212
GT Waste	1333 Oakland Road, San José, CA		Newby Island Sanitary Landfill	1601 Dixon Landing Road, Milpitas, CA	1333 Oakland Road, San José, CA	26	13,427.29	1,343	34,918
GT Waste	1333 Oakland Road, San José, CA	Monterey Road and Alma Avenue, San José, CA	Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1333 Oakland Road, San José, CA	27	56.00	6	162
GT Waste	1333 Oakland Road, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1333 Oakland Road, San José, CA	13	8.72	1	13
GT Waste	1333 Oakland Road, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	1333 Oakland Road, San José, CA	27	52.69	5	135
Haul-Away Today	333 Phelan Avenue, San José, CA		Premier Recycling Facility	348 Phelan Avenue, San José, CA	333 Phelan Avenue, San José, CA	2	44.99	4	8
Number ``1`` Disposal	16885 Joleen Way, Morgan Hill, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	16885 Joleen Way, Morgan Hill, CA	53	1.79	0	0
Number ``1`` Disposal	16885 Joleen Way, Morgan Hill, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, San José, CA	16885 Joleen Way, Morgan Hill, CA	45	18.59	2	90
Panther Industries	23782 Connecticut St # 6, Hayward, CA		Newby Island Sanitary Landfill	1601 Dixon Landing Road, Milpitas, CA	23782 Connecticut St # 6, Hayward, CA	66	114.50	11	726
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1675 Rogers Avenue, San José, CA	33	82,500.00	8,250	272,250
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, San José, CA	1675 Rogers Avenue, San José, CA	39	633.00	63	2,457
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Newby Island Sanitary Landfill	1601 Dixon Landing Road, Milpitas, CA	1675 Rogers Avenue, San José, CA	27	48.00	5	135
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1675 Rogers Avenue, San José, CA	14	29.00	3	42
Recycle West	1060 Richard Avenue, Santa Clara, CA		Mission Trails Transfer Station	1060 Richard Avenue, Santa Clara, CA	1060 Richard Avenue, Santa Clara, CA	16	359.70	36	576
The Flea Market, Inc.	1590 Berryessa Road, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1590 Berryessa Road, San José, CA	34	1,176.87	118	4,012
The Flea Market, Inc.	1590 Berryessa Road, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1590 Berryessa Road, San José, CA	15	114.99	11	165
Valley Recycling	1615 South 7th Street, San José, CA		Valley Recycling	1615B South Seventh Street, San José, CA	1615 South 7th Street, San José, CA	1	651.78	65	65
								SUBTOTAL	564,495

					Total Miles	Total Tons of Solid Waste	Total # of Truck Trips	Total Annual Miles
Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	transferred to:	Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	(167 feet)	94.48	4	0
Greenwaste Recovery Facility	625 Charles Street, San José, CA	transferred to:	Monterey RWMD	14201 Del Monte Boulevard, Marina, CA	62	17,758.41	807	50,034
Valley Recycling	1615B South Seventh Street, San José, CA	transferred to:	Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	10	651.78	30	300
Mission Trails Transfer Station	1060 Richard Avenue, Santa Clara, CA	transferred to:	Forward Landfill	9999 S. Austin Road, Manteca, CA	80	359.70	16	1,280
							SUBTOTAL	51,614

Assumptions: 1 truck load = 10 tons, 1 transfer truck load = 22 tons

TOTAL ANNUAL MILES TRAVELED
616,109

Existing RECYCLABLES Hauler Trip Length							July 2009 - June 2010		
1: Hauler Origin		**2: Centroid**	**3: Facility**		**4: End Location**	**Total Miles**	**Total Tons of Recyclables**	**Total # of Truck Trips**	**Total Annual Miles**
Accurate Cleaning Solutions	802 Industrial Dr, Suite 200, Hollister, CA	Monterey Road and Alma Avenue, San José, CA	Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	802 Industrial Dr, Suite 200, Hollister, CA	116	53.47	7	812
Allied Waste Services of Santa Clara County	1601 Dixon Landing Road, Milpitas, CA		BFI Recycling	1601 Dixon Landing Road, Milpitas, CA	1601 Dixon Landing Road, Milpitas, CA	26	3,727.92	497	12,922
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Eagle Reycling	2400 San Juan Hollister Road, Hollister, CA	2400 San Juan- Hollister Road, Hollister, CA	120	3,047.38	406	48,720
Ferma Corporation	6655 Smith Avenue, Newark, CA		SRDC	475 Seaport Boulevard, Redwood City, CA	6655 Smith Avenue, Newark, CA	61	17.76	2	122
GreenWaste Recovery	1500 Berger Drive, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1500 Berger Drive, San José, CA	14	3,211.90	428	5,992
GreenWaste Recovery	1500 Berger Drive, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	37	180.06	24	888
GreenWaste Recovery	1500 Berger Drive, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	37	170.91	23	851
GT Waste	1333 Oakland Road, San José, CA		GreenTeam MRF Direct Transfer Facility	575 Charles Street, San José, CA	1333 Oakland Road, San José, CA	13	1,719.61	229	2,977
Haul-Away Today	333 Phelan Avenue, San José, CA		Premier Recycling Facility	348 Phelan Avenue, San José, CA	333 Phelan Avenue, San José, CA	2	4.21	1	2
Pacific Coast Recycling	5895 Obata Way, Gilroy, CA		Danny's Recycling Center	1745 Walsh Avenue, Santa Clara, CA	5895 Obata Way, Gilroy, CA	81	0.55	0	0
Pacific Coast Recycling	5895 Obata Way, Gilroy, CA		Pacific Coast Recycling	5895 Obata Way, Gilroy, CA	5895 Obata Way, Gilroy, CA	67	238.04	32	2,144
Pacific Coast Recycling	5895 Obata Way, Gilroy, CA		Smurfit-Stone	205 East Alma Avenue, San José, CA	5895 Obata Way, Gilroy, CA	68	0.55	0	0
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1675 Rogers Avenue, San José, CA	14	37.81	5	70
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Recycled Fibers	388 East Alma Avenue, San José, CA	1675 Rogers Avenue, San José, CA	15	3,719.25	496	7,440
Recology Silicon Valley	1675 Rogers Avenue, San José, CA		Smurfit-Stone	205 East Alma Avenue, San José, CA	1675 Rogers Avenue, San José, CA	14	3,652.07	487	6,818
San Jose Conservation Corps & Charter School	1534 Berger Drive, San José, CA		Eagle Reycling	2400 San Juan Hollister Road, Hollister, CA	1534 Berger Drive, San José, CA	106	134.61	18	1,908
San Jose Conservation Corps & Charter School	1534 Berger Drive, San José, CA		Smurfit-Stone	205 East Alma Avenue, San José, CA	1534 Berger Drive, San José, CA	13	203.92	27	351
Valley Recycling	1615 South 7th Street, San José, CA		Smurfit-Stone	205 East Alma Avenue, San José, CA	1615 South 7th Street, San José, CA	1	9.46	1	1
								TOTAL	**92,018**

Assumption: 1 truck load = 7.5 tons

Existing ORGANICS Hauler Trip Length							July 2009 - June 2010		
1: Hauler Origin		**2: Centroid**	**3: Facility**		**4: End Location**	**Total Miles**	**Total Tons of Organics**	**Total # of Truck Trips**	**Total Annual Miles**
A & A Recycling	1369 Mofat Street, Suite C, San José, CA	Monterey Road and Alma Avenue, San José, CA	Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1369 Mofat Street, Suite C, San José, CA	27	6.45	1	27
A & A Recycling	1369 Mofat Street, Suite C, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	1369 Mofat Street, Suite C, San José, CA	27	24.91	2	54
All Points Roll Off, Inc.	2269 Will Wool Drive, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	2269 Will Wool Drive, San José, CA	30	1.99	0	0
Allied Waste Services of Santa Clara County	1601 Dixon Landing Road, Milpitas, CA		BFI Recycling	1601 Dixon Landing Road, Milpitas, CA	1601 Dixon Landing Road, Milpitas, CA	26	6644.68	664	17,264
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	2400 San Juan- Hollister Road, Hollister, CA	108	56.8	6	648
Eagle Recycling Inc.	2400 San Juan- Hollister Road, Hollister, CA		Pacheco Pass	3665 Pacheco Pass Highway, San Felipe, CA	2400 San Juan- Hollister Road, Hollister, CA	100	228.94	23	2,300
Eco Box Recycling	1150 Walsh Avenue, Santa Clara, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1150 Walsh Avenue, Santa Clara, CA	28	114	11	308
Environmental Management Systems, LLC	1590 Berryessa Road, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1590 Berryessa Road, San José, CA	31	143.49	14	434
Ferma Corporation	6655 Smith Avenue, Newark, CA		SRDC	475 Seaport Boulevard, Redwood City, CA	6655 Smith Avenue, Newark, CA	61	90.91	9	549
GreenWaste Recovery	1500 Berger Drive, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1500 Berger Drive, San José, CA	31	21220.61	2,122	65,782
GreenWaste Recovery	1500 Berger Drive, San José, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, Morgan Hill, CA	1500 Berger Drive, San José, CA	38	12.77	1	38
GreenWaste Recovery	1500 Berger Drive, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	27	7.3	1	27
GreenWaste Recovery	1500 Berger Drive, San José, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	1500 Berger Drive, San José, CA	27	203.65	20	540
GT Waste	1333 Oakland Road, San José, CA		GreenTeam MRF Direct Transfer Facility	575 Charles Street, San José, CA	1333 Oakland Road, San José, CA	13	0.75	0	0
GT Waste	1333 Oakland Road, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1333 Oakland Road, San José, CA	13	0.7	0	0
GT Waste	1333 Oakland Road, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1333 Oakland Road, San José, CA	27	347.77	35	945
Haul-Away Today	333 Phelan Avenue, San José, CA		Premier Recycling Facility	348 Phelan Avenue, San José, CA	333 Phelan Avenue, San José, CA	2	12.14	1	2
Lam Hauling	1028 Branham Lane, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1028 Branham Lane, San José, CA	33	7.4	1	33
Number "1" Disposal	16885 Joleen Way, Morgan Hill, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, Morgan Hill, CA	16885 Joleen Way, Morgan Hill, CA	45	1.94	0	0
Pacific Coast Recycling	5896 Obata Way, Gilroy, CA		Pacific Coast Recycling	5895 Obata Way, Gilroy, CA	5896 Obata Way, Gilroy, CA	67	29.16	3	201
Qualified Trucking	18145 Peet Road, Suite A, Morgan Hill, CA		Other (see calc below for details)	---	18145 Peet Road, Suite A, Morgan Hill, CA	74	370.8	37	2,738
Qualified Trucking	18145 Peet Road, Suite A, Morgan Hill, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	18145 Peet Road, Suite A, Morgan Hill, CA	63	3.61	0	0
Qualified Trucking	18145 Peet Road, Suite A, Morgan Hill, CA		Zanker Road Class III Landfill	705 Los Esteros Road, San José, CA	18145 Peet Road, Suite A, Morgan Hill, CA	63	2021.73	202	12,726
Recology Silicon Valley	1676 Rogers Avenue, San José, CA		Greenwaste Recovery Facility	625 Charles Street, San José, CA	1676 Rogers Avenue, San José, CA	14	2256.33	226	3,164
Recology Silicon Valley	1676 Rogers Avenue, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1676 Rogers Avenue, San José, CA	33	193.48	19	627
Recology Silicon Valley	1676 Rogers Avenue, San José, CA		Kirby Canyon Facility	910 Coyote Creek Golf Drive, Morgan Hill, CA	1676 Rogers Avenue, San José, CA	39	79.19	8	312
Recology Silicon Valley	1676 Rogers Avenue, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1676 Rogers Avenue, San José, CA	28	49.05	5	140
Recycle West	1060 Richard Avenue, Santa Clara, CA		Mission Trails Transfer Station	1060 Richard Avenue, Santa Clara, CA	1060 Richard Avenue, Santa Clara, CA	16	3.65	0	0
The Flea Market, Inc.	1590 Berryessa Road, San José, CA		Zanker Material Processing Facility	675 Los Esteros Road, San José, CA	1590 Berryessa Road, San José, CA	31	147.19	15	465
Valley Recycling	1615 South 7th Street, San José, CA		Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road, San José, CA	1615 South 7th Street, San José, CA	21	14.67	1	21
								TOTAL	**109,345**

Assumption: 1 truck load = 10 tons

Other

Qualified Trucking	18145 Peet Road, Suite A, Morgan Hill, CA	Monterey Road and Alma Avenue, San José, CA	RH Wood/ETM	6756 Central Avenue, Newark, CA	18145 Peet Road, Suite A, Morgan Hill, CA	80
Qualified Trucking	18145 Peet Road, Suite A, Morgan Hill, CA	Monterey Road and Alma Avenue, San José, CA	Del Toro	2676 Ferguson Road, Gilroy, CA	18145 Peet Road, Suite A, Morgan Hill, CA	67
					AVERAGE DISTANCE	**74**

Scenario		1. Origin		2. Centroid	Material Collected	3. Receiving Facility/Transfer Station		4. Receiving Facility/Transfer Station		4a. Receiving Facility		5. End Location		Total miles	Total Tons of Material	# of haul truck trips	# of transfer truck trips	Total Miles Travelled
2-Container Collection System	A	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Monterey Road and Alma Avenue, San José, CA	Dry material -solid waste	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	52,423	5,242	0	136,300
					Dry material - recyclables	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	101,762	13,568	0	352,775
	1				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 11 m	94,500	9,450	4,295	292,950
	2				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 88 m	94,500	9,450	4,295	623,700
	3				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 16 m	94,500	9,450	8,591	378,859
	4				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 75 m	94,500	9,450	8,591	632,291
	5				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 3-4-3 = 11m; Points 4-4a-5 = 89m	94,500	9,450	8,590	675,200
	6				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 1-3-1 = 15m; Points 3-4-3 = 16m; Points 4-4a-5 = 89	94,500	9,450	12,885	761,100
	7				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	---	---	---	---	---	---	Points 1-2-3 = 26 m	94,500	9,450	0	245,700
One-Bin Plus	B	NIRRP	1601 Dixon Landing Road, Milpitas, CA		Solid Waste	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	52,224	5,222	0	135,782
					Recyclables	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	99,474	13,263	0	344,843
	1				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 11 m	96,987	9,699	4,409	300,660
	2				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 88 m	96,987	9,699	4,409	640,114
	3				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 16 m	96,987	9,699	8,817	388,830
	4				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 75 m	96,987	9,699	8,817	648,931
	5				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 3-4-3 = 11m; Points 4-4a-5 = 89m	96,987	9,699	8,818	693,074
	6				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 1-3-1 = 15m; Points 3-4-3 = 16m; Points 4-4a-5 = 89	96,987	9,699	13,227	781,254
	7				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	---	---	---	---	---	---	Points 1-2-3 = 26 m	96,987	9,699	0	252,174

ATTACHMENT B: Emissions Computations

Scenario	Daily Emissions			Annual Emissions	Difference with Project 2011				Percent Change			
Existing in 2011	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr	ROG lbs/day	NOx lbs/day	PM10 lbs/day	CO2e metric tons/yr
Existing in 2011	*2.2*	*33.1*	*0.77*	*1,693*								
2-Container Option - 1	1.3	9.6	0.65	1,233	-0.9	-23.5	-0.1	-459.5	-41%	-71%	-15%	*-27%*
2-Container Option - 2	2.2	23.0	0.96	1,918	0.0	-10.1	0.2	224.8	0%	-30%	25%	*13%*
2-Container Option - 3	1.5	13.1	0.73	1,411	-0.7	-20.0	0.0	-281.8	-30%	-60%	-5%	-17%
2-Container Option - 4	2.2	23.4	0.97	1,936	0.0	-9.7	0.2	242.6	1%	-29%	26%	*14%*
2-Container Option - 5	2.3	25.1	1.01	2,024	0.1	-8.0	0.2	331.4	6%	-24%	32%	*20%*
2-Container Option - 6	2.5	28.6	1.09	2,202	0.4	-4.5	0.3	509.1	16%	-14%	42%	*30%*
2-Container Option - 7	1.2	7.7	0.61	1,136	-1.0	-25.4	-0.2	-557.3	-47%	-77%	-21%	*-33%*
One-Bin-Plus Option - 1	1.3	9.7	0.65	1,233	-0.9	-23.4	-0.1	-460.0	-41%	-71%	-15%	-27%
One-Bin-Plus Option - 2	2.2	23.4	0.97	1,935	0.0	-9.7	0.2	242.4	1%	-29%	26%	*14%*
One-Bin-Plus Option - 3	1.5	13.2	0.73	1,415	-0.7	-19.9	0.0	-277.6	-30%	-60%	-4%	-16%
One-Bin-Plus Option - 4	2.2	23.8	0.98	1,954	0.0	-9.4	0.2	260.6	2%	-28%	27%	15%
One-Bin-Plus Option - 5	2.3	25.5	1.02	2,045	0.2	-7.6	0.3	351.9	7%	-23%	33%	21%
One-Bin-Plus Option - 6	2.6	29.1	1.10	2,227	0.4	-4.0	0.3	534.4	18%	-12%	44%	32%
One-Bin-Plus Option - 7	1.2	7.7	0.60	1,133	-1.0	-25.4	-0.2	-560.4	-47%	-77%	-21%	*-33%*
BAAQMDThresholds					54	54	82	1,100*				

*** Emissions are compared against efficiency metric if above threshold**

		Annual Emissions in tons (metric tons for CO2e)								Daily Emissions in pounds				
Scenario		**ROG**	**CO**	**NOx**	**CO2**	**CO2e**	**Total PM 10**	**Total PM 2.5**		**ROG**	**CO**	**NOx**	**Total PM 10**	**Total PM 2.5**
2-Container System	Alt 1	0.2	0.6	1.2	1316.0	1233.5	0.1	0.1		1.3	4.4	9.6	0.7	0.4
	2	0.3	1.1	3.0	2065.3	1917.8	0.1	0.1		2.2	8.1	23.0	1.0	0.6
	3	0.2	0.7	1.7	1510.6	1411.2	0.1	0.1		1.5	5.4	13.1	0.7	0.5
	4	0.3	1.1	3.0	2084.8	1935.6	0.1	0.1		2.2	8.2	23.4	1.0	0.6
	5	0.3	1.1	3.3	2182.0	2024.4	0.1	0.1		2.3	8.7	25.1	1.0	0.6
	6	0.3	1.3	3.7	2376.6	2202.1	0.1	0.1		2.5	9.7	28.6	1.1	0.7
	7	0.2	0.5	1.0	1209.0	1135.7	0.1	0.1		1.2	3.9	7.7	0.6	0.4
One-Bin Plus	Alt 1	0.2	0.6	1.3	1315.6	1233.0	0.1	0.1		1.3	4.4	9.7	0.6	0.4
	2	0.3	1.1	3.0	2084.6	1935.4	0.1	0.1		2.2	8.2	23.4	1.0	0.6
	3	0.2	0.7	1.7	1515.3	1415.4	0.1	0.1		1.5	5.4	13.2	0.7	0.5
	4	0.3	1.1	3.1	2104.6	1953.6	0.1	0.1		2.2	8.3	23.8	1.0	0.6
	5	0.3	1.1	3.3	2204.6	2044.9	0.1	0.1		2.3	8.8	25.5	1.0	0.6
	6	0.3	1.3	3.8	2404.3	2227.4	0.1	0.1		2.6	9.8	29.1	1.1	0.7
	7	0.2	0.5	1.0	1205.7	1132.6	0.1	0.1		1.2	3.9	7.7	0.6	0.4

Emissin Factor (g/mi) ----->

Year 2011 Diesel Solid Waste Truck Emission Factors (gram/mi)

ROG	CO	NOx	CO2	CO2e	Total PM 10	Total PM 2.5
0.315	1.32	4.759	2057	2071	0.11	0.063

Year 2011 CNG Solid Waste Truck Emission Factors (gram/mile)

ROG	CO	NOx	CO2	CO2e	Total PM 10	Total PM 2.5
0.187	0.624	1.236	1494	1547	0.097	0.063

Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/04/13 13:28:18
Scen Year: 2010 -- Model year 2010 selected
Season : Annual ***Assume CNG meets 2010 NOx Standard***
Area : San Francisco
****

Year: 2010 -- Model Years 2010 to 2010 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

San Francisco Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.194	0.000	0.000	0.194

Pollutant Name: Carbon Monoxide Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.896	0.000	0.000	0.896

Pollutant Name: Oxides of Nitrogen Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	1.302	0.000	0.000	1.302

Pollutant Name: Carbon Dioxide Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	2022.465	0.000	0.000	2022.465

Pollutant Name: Sulfur Dioxide Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.019	0.000	0.000	0.019

Pollutant Name: PM10 Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.034	0.000	0.000	0.034

Pollutant Name: PM10 - Tire Wear Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.036	0.000	0.000	0.036

Pollutant Name: PM10 - Break Wear Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.028	0.000	0.000	0.028

Pollutant Name: Gasoline - mi/gal Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	12.420	0.000	0.000	12.420

Pollutant Name: Diesel - mi/gal Temperature: 60F Relative Humidity: 60%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	4.935	0.000	0.000	4.935

Title : Solid Waste
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/04/12 11:42:52
Scen Year: 2011 -- All model years in the range 2007 to 2011 selected
Season : Annual
Area : San Francisco
****

Year: 2011 -- Model Years 2007 to 2011 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

San Francisco Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.315	0.000	0.000	0.315

Pollutant Name: Carbon Monoxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	1.322	0.000	0.000	1.322

Pollutant Name: Oxides of Nitrogen Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	4.759	0.000	0.000	4.759

Pollutant Name: Carbon Dioxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	2025.738	0.000	0.000	2025.738

Pollutant Name: Sulfur Dioxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.019	0.000	0.000	0.019

Pollutant Name: PM2.5 Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.042	0.000	0.000	0.042

Pollutant Name: PM2.5 - Tire Wear Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.009	0.000	0.000	0.009

Pollutant Name: PM2.5 - Break Wear Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	0.012	0.000	0.000	0.012

Pollutant Name: Gasoline - mi/gal Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	12.262	0.000	0.000	12.262

Pollutant Name: Diesel - mi/gal Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
25	0.000	0.000	0.000	4.935	0.000	0.000	4.935

Appendix B

Haul and Transfer Truck Trips and Miles Traveled
by Collection System and Haul Scenario

Summary of Bin Collection System Haul Scenarios and Truck Miles Traveled

Scenario			Miles Traveled using CNG	Miles Traveled using diesel		Total Miles Traveled
3-Container System	1	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for composting	732,786	48,499		781,285
	2	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	732,748	387,992		1,120,740
	3	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZWED for composting	732,799	136,672		869,471
	4	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	732,799	396,811		1,129,610
	5	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	1,213,424		1,173,700
	6	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	529,081		1,261,880
	7	Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	732,799	0		732,799
2-Container System	1	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for composting	734,780	47,245		782,025
	2	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	734,815	377,960		1,112,775
	3	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZWED for composting	734,773	133,161		867,934
	4	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	734,770	386,596		1,121,366
	5	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	734,775	429,500		1,164,275
	6	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	734,775	515,400		1,250,175
	7	Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	734,775	0		734,775
One-Bin Plus	1	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZWED for composting	732,786	48,499		781,285
	2	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to ZBEST for composting	732,748	387,992		1,120,740
	3	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZWED for composting	732,791	136,664		869,455
	4	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to ZBEST for composting	732,791	396,766		1,129,557
	5	Solid waste and recyclables hauled to NIRRP, organics hauled to NIRRP to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	440,900		1,173,699
	6	Solid waste, recyclables, and organics hauled to NIRRP, organics transferred to GreenWaste MRF to be pre-processed then transferred to Zanker Road Landfill. The organics would be transferred from Zanker Road Landfill to Z-Best Composting Facility for composting	732,799	529,080		1,261,879
	7	Solid waste, recyclables, and organics hauled to NIRRP, organics pre-processed and composted at NIRRP	732,799	0		732,799

Haul and Transfer Truck Routes and Miles Traveled Calculations

Scenario		1. Origin		2. Centroid	Material Collected	3. Receiving Facility/Transfer Station		4. Receiving Facility/Transfer Station		4a. Receiving Facility		5. End Location		Total miles	Total Tons of Material	# of haul truck trips	# of transfer truck trips	Total Miles Travelled		
3-Container Collection System		NIRRP	1601 Dixon Landing Road, Milpitas, CA	Monterey Road and Alma Avenue, San José, CA	Solid Waste	---	---	---	---			NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	52,224	5,222	0	135,782		
	C				Recyclables	---	---	---	---			NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	99,474	13,263	0	344,843		
	1				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 11 m	96,987	9,699	4,409	300,660	C1 total miles travelled	781,285
	2				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 88 m	96,987	9,699	4,409	640,114	C2 total miles travelled	1,120,740
	3				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 16 m	96,987	9,699	8,817	388,845	C3 total miles traveled	869,471
	4				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 75 m	96,987	9,699	8,817	648,984	C4 total miles traveled	1,129,610
	5				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 3-4-3 = 11m; Points 4-4a-5 = 89m	96,987	9,699	8,817	693,074	C5 total miles traveled	1,173,700
	6				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 1-3-1 = 15m; Points 3-4-3 = 16m; Points 4-4a-5 = 89m	96,987	9,699	13,226	781,254	C6 total miles traveled	1,261,880
	7				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	---	---	---	---	---	---	Points 1-2-3 = 26 m	96,987	9,699	0	252,174	C7 total miles traveled	732,799
2-Container Collection System	A	NIRRP	1601 Dixon Landing Road, Milpitas, CA		Dry material -solid waste	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	52,423	5,242	0	136,300		
					Dry material - recyclables	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	101,762	13,568	0	352,775		
	1				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 11 m	94,500	9,450	4,295	292,950	A1 total miles traveled	782,025
	2				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 88 m	94,500	9,450	4,295	623,700	A2 total miles traveled	1,112,775
	3				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 16 m	94,500	9,450	8,591	378,859	A3 total miles travelec	867,934
	4				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 75 m	94,500	9,450	8,591	632,291	A4 total miles traveled	1,121,366
	5				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 3-4-3 = 11m; Points 4-4a-5 = 89m	94,500	9,450	8,590	675,200	A5 total miles traveled	1,164,275
	6				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 1-3-1 = 15m; Points 3-4-3 = 16m; Points 4-4a-5 = 89m	94,500	9,450	12,885	761,100	A6 total miles traveled	1,250,175
	7				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	---	---	---	---	---	---	Points 1-2-3 = 26 m	94,500	9,450	0	245,700	A7 total miles traveled	734,775
One-Bin Plus Collection System	B	NIRRP	1601 Dixon Landing Road, Milpitas, CA		Solid Waste	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	52,224	5,222	0	135,782		
					Recyclables	---	---	---	---	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-5 = 26 m	99,474	13,263	0	344,843		
	1				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 11 m	96,987	9,699	4,409	300,660	B1 total miles traveled	781,285
	2				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Points 1-3 = 26 m; Points 3-5 = 88 m	96,987	9,699	4,409	640,114	B2 total miles traveled	1,120,740
	3				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	ZWED	2100 Los Esteros Road, San José, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 16 m	96,987	9,699	8,817	388,830	B3 total miles traveled	869,455
	4				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	---	---	Greenwaste MRF	625 Charles Street, San José, CA	Points 1-2-1 = 26 m; Points 1,3,1 = 15 m; Points 3,4,3 = 75 m	96,987	9,699	8,817	648,931	B4 total miles traveled	1,129,557
	5				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 3-4-3 = 11m; Points 4-4a-5 = 89m	96,987	9,699	8,818	693,074	B45total miles traveled	1,173,699
	6				Wet material - organics	Greenwaste MRF	625 Charles Street, San José, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Zbest	980 State Highway 25, Gilroy, CA	Zanker Landfill	705 Los Esteros Road, San José, CA	Points 1-2-1 = 26 m; Points 1-3-1 = 15m; Points 3-4-3 = 16m; Points 4-4a-5 = 89m	96,987	9,699	13,227	781,254	B6 total miles traveled	1,261,879
	7				Wet material - organics	NIRRP	1601 Dixon Landing Road, Milpitas, CA	---	---	---	---	---	---	Points 1-2-3 = 26 m	96,987	9,699	0	252,174	B7 total miles traveled	732,799

Assumptions: 1 haul truck load = 10 tons, 1 transfer truck load = 22 tons