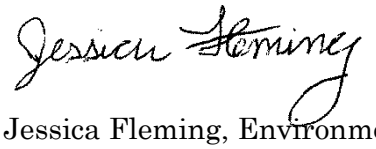
Waste Management Plan for the Bella Mar Project San Diego, California

Prepared for
Red Tail Acquisitions
2082 Michelson Drive, 4th Floor
Irvine, CA 92612

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108-5726
P 619.308.9333

RECON Number 8575
December 17, 2020



Jessica Fleming, Environmental Analyst

TABLE OF CONTENTS

FIGURES

TABLE OF CONTENTS (cont.)

TABLES

ATTACHMENTS

Acronyms and Abbreviations

AB	Assembly Bill
C&D	Construction and Demolition
CalRecycle	State of California Department of Resources Recycling and Recovery
City	City of San Diego
du	dwelling unit
ESD	Environmental Services Department
PA	Planning Area
project	Bella Mar Project
sf	square foot
SR-905	State Route 905
SWMC	Solid Waste Management Coordinator
U.S. EPA	U.S. Environmental Protection Agency
WMP	Waste Management Plan

1.0 Introduction

The purpose of this Waste Management Plan (WMP) for the Bella Mar Project (project) is to identify potential solid waste impacts that could be generated by construction and operation of the project and propose measures (project design features) to reduce those impacts.

This WMP addresses all four phases of site development, including the Demolition Phase, Grading Phase, Construction Phase, and the Occupancy (post-construction) Phase. This WMP addresses the amount of waste that could be generated by project activities during each phase; waste reduction goals, and the recommended techniques to achieve the waste reduction goals. More specifically, for each phase, this WMP includes the following:

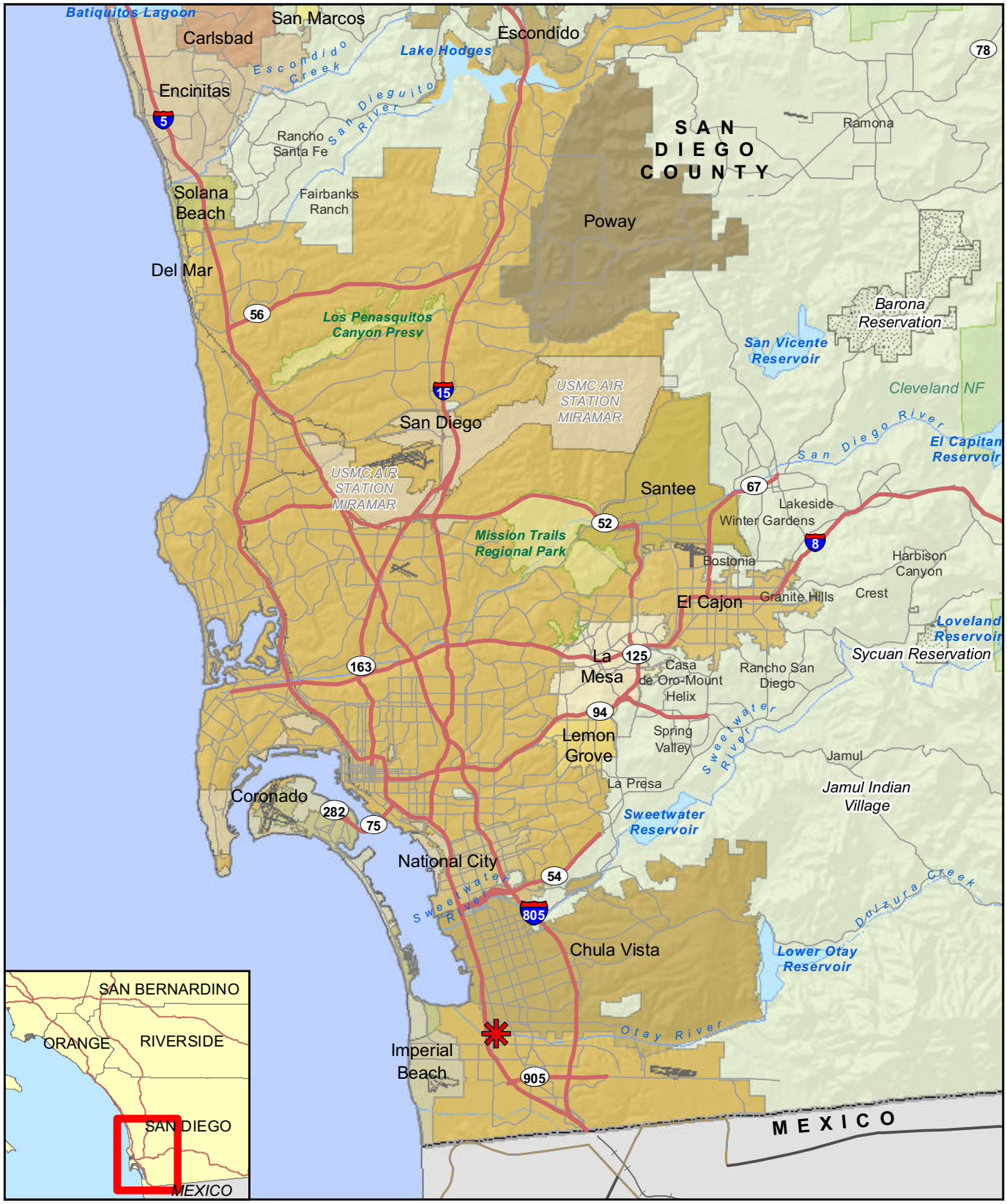
- Tons of waste anticipated to be generated;
- Material/type and amount of waste anticipated to be diverted;
- Project features that would reduce the amount of waste generated;
- Project features that would divert or limit the generation of waste;
- Source separation techniques for waste generated;
- How materials shall be reused on-site; and
- Name and location of recycling, reuse, or landfill facilities where waste shall be taken.

2.0 Existing Conditions

The project site is located immediately west of Hollister Avenue, east of Interstate 5, north of Conifer Avenue, and south of Louret Avenue, at the mouth of the Otay River valley in the city of San Diego. The project site is a single parcel, identified by Assessor's Parcel Number 627-100-0900, and is approximately 14.62 acres in size. The project site is designated open space within the AR-1-2 (Agricultural-Residential–minimum 1-acre lots) and OF-1-1 (Open Space Floodplain) zones in the Otay Mesa-Nestor Community Plan Area. Figure 1 shows the regional location. An aerial photograph of the project site and vicinity is shown in Figure 2. The project site is bounded by vacant land to the north and south, Interstate 5 to the west, and agricultural fields and open space to the east. The project site is currently undeveloped.

3.0 Project Description

The project site is currently undeveloped. The project proposes a re-zone from AR-1-2 to RM-2-5 and the construction of 380 multi-family units. The development would consist of two neighborhoods: a north neighborhood and south neighborhood. The north neighborhood would contain 14 separate, three-story buildings, for a total of 280 dwelling units, in addition to a 1,500-square-foot option leasing building and a 2,500-square-foot club/cabana area. The south neighborhood comprises a single building with both three- and four-story elements, consisting of 100 affordable housing total dwelling units, in addition to a 4,500-square-foot community building. The overall multi-family square footage is 475,941 square feet. Figure 3 shows the overall site plan for the project.



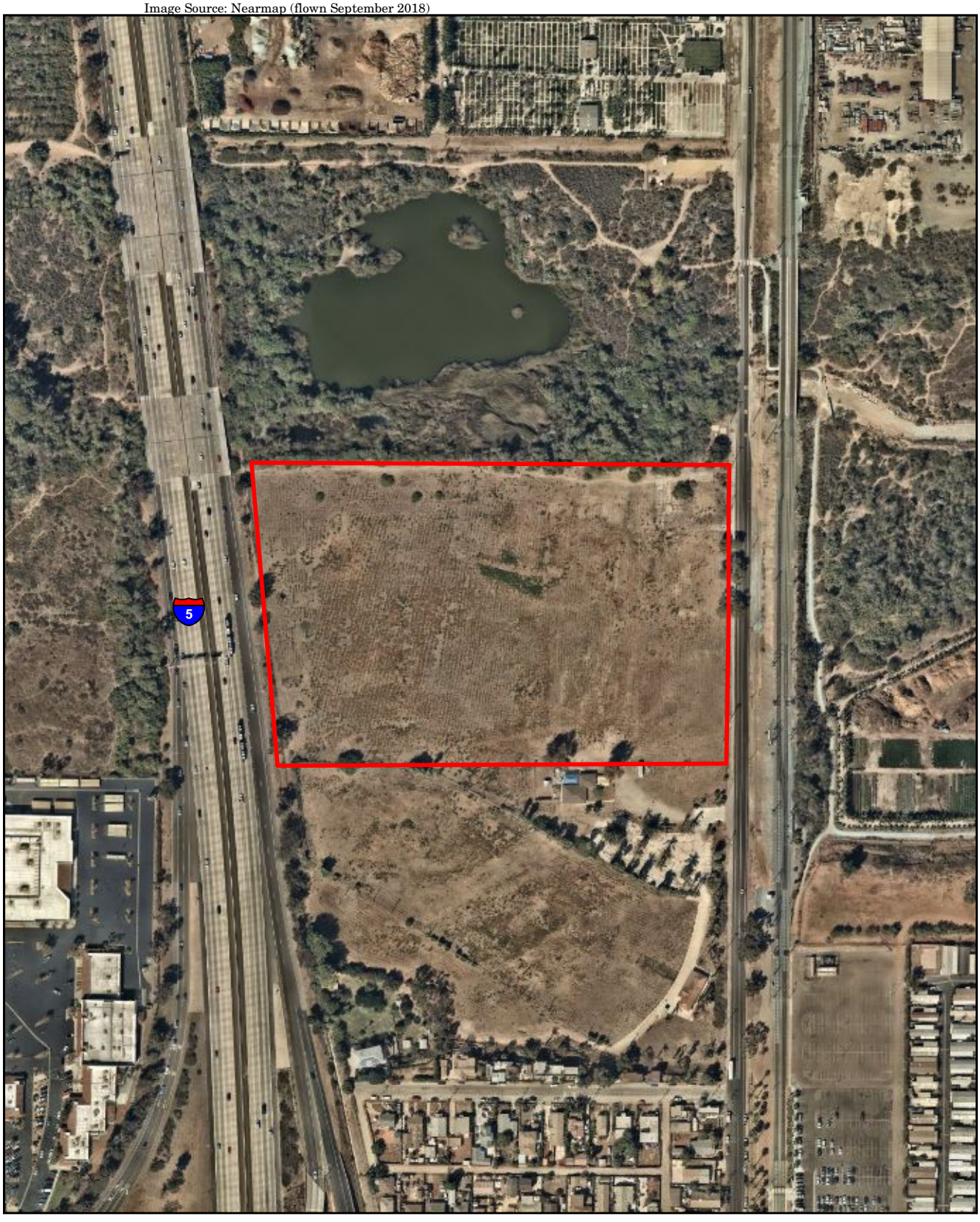
Project Location

FIGURE 1
Regional Location

RECON

M:\JOBS5\8575\common_gis\fig1.mxd 11/14/2018 bma

Image Source: Nearmap (flown September 2018)



Project Boundary

FIGURE 2

Project Location on Aerial Photograph

RECON

M:\JOBS5\8575\common_gis\fig2.mxd 2/8/2019 bma

The proposed land uses for the project are shown in Table 1.

Table 1
Site Development Summary

Land Use	Dwelling Units	Building Square Footage
Multi-family Residential	380 dwelling units	475,941 square feet
Total	**380 dwelling units**	**475,941 square feet**

4.0 Regulatory Framework

4.1 State Regulations

The California State Legislature has enacted several bills intended to promote waste diversion. In 1989, Assembly Bill (AB) 939, the Integrated Waste Management Act—as modified in 2010 by Senate Bill 1016—mandated that all local governments reduce disposal waste in landfills from generators within their borders by 50 percent by the year 2000 (State of California 1989, 2010).

AB 341, approved October 2011, sets a statewide policy goal of 75 percent waste diversion by the year 2020 (State of California 2011). This bill also created a mandatory commercial recycling requirement that would hold local jurisdictions responsible for implementing and complying with the 75 percent diversion rate through outreach and monitoring programs.

AB 1826, approved September 2014, requires businesses in California to arrange for recycling services for organic waste including food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. As of January 1, 2016, the law was effective for businesses that generate greater than 8 cubic yards of organic waste per week; effective January 1, 2017 for businesses that generate greater than 4 cubic yards of organic waste per week; effective January 1, 2019 for businesses that generate greater than 4 cubic yards of commercial solid waste per week; and, if a 50 percent statewide reduction in organic waste from 2014 has not yet been achieved, the law will be effective January 1, 2020 for businesses that generate greater than 2 cubic yards of commercial solid waste per week (State of California 2014). Strategies for compliance are discussed in Section 6.2, Waste Reduction Measures.

4.2 City of San Diego Requirements

All landfills within the San Diego region are approaching capacity and are due to close within the next 3 to 20 years. In compliance with the state policies, the City of San Diego (City) Environmental Services Department (ESD) developed the Source Reduction and Recycling Element, which describes local waste management policies and programs. The City's Recycling Ordinance, adopted November 2007, requires on-site recyclable collection for residential and commercial uses (City of San Diego 2007a). The ordinance requires recycling of plastic and glass bottles and jars, paper, newspaper, metal containers, and cardboard.

Image Source: Nearmap (flown February 2019)

Project Boundary

Site Plan Lines

Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig3_nos.mxd 7/15/2019 bma

FIGURE 3

Site Plan

The focus of the ordinance is on education, with responsibility shared between the ESD, haulers, and building owners and managers. On-site technical assistance, educational materials, templates, and service provider lists are provided by the ESD. Property owners and managers provide on-site recycling services and educational materials annually and to new tenants. Strategies for compliance are discussed in Section 6.2, Waste Reduction Measures.

The City's Refuse and Recyclable Materials Storage Regulations, adopted December 2007, addresses the minimum exterior refuse and recyclable material storage areas required at residential and commercial properties (City of San Diego 2007b). These are intended to provide permanent, adequate, and convenient space for the storage and collection of refuse and recyclable materials; encourage recycling of solid waste to reduce the amount of waste material entering landfills; and meet the recycling goals established by the City Council and mandated by the State of California. These regulations are discussed further in Section 6.3, Exterior Storage.

In July 2008, the Construction and Demolition (C&D) Debris Deposit Ordinance was adopted by the City (City of San Diego 2008). The ordinance, which was updated in July 2016, requires that the majority of construction, demolition, and remodeling projects requiring building, combination, or demolition permits pay a refundable C&D Debris Recycling Deposit and divert at least 65 percent of their waste by recycling, reusing, or donating reusable materials. The ordinance is designed to keep C&D materials out of local landfills. Requirements are discussed further in Section 5.4.1, Contractor Education and Responsibilities.

In December 2013, City Council adopted the Zero Waste Objective, implementing the 75 percent diversion of waste target goal from landfills by the year 2020 and zero waste by 2040. An additional City target of 90 percent diversion by 2035 is proposed in the City's Climate Action Plan.

5.0 Demolition, Grading, and Construction Waste Generation and Diversion

This section discussed the waste generation and diversion rates from the demolition, grading, and construction phases of the project.

5.1 Demolition

As discussed in Section 2.0, Existing Conditions, the project site is currently undeveloped (see Figure 2). Therefore, no demolition would be involved, and no demolition waste would be generated.

5.2 Grading

The project would require on-site grading of 14.62 acres and off-site grading of 1.51 acres. Soil cuts would not be required for either the on- or off-site grading. However, the fill quantity for the on-site graded area would be 78,200 cubic yards of soil, and the fill quantity for the off-site graded area would be 3,150 cubic yards of soil, resulting in a net import of 81,350 cubic yards of soil. No net export of soil would be required. Any vegetation removed during site preparation would be taken to the Otay Landfill facility for 100 percent diversion. Therefore, no soil export waste would result from the grading phase of the project.

5.3 Construction

The project includes the construction of 16 multi-family residential buildings containing a maximum of 380 units, totaling 475,941 square feet of residential building space. Construction of sidewalks and any new surface parking or driveway areas are not anticipated to generate additional waste during the construction phase. Therefore, the assessment of construction waste is based on the square footage of buildings proposed within the project site.

According to a 2009 sample study by the U.S. Environmental Protection Agency (U.S. EPA), multi-family residential units generate an average of 4.4 pounds of construction waste per square foot (U.S. EPA 2009). Based on these construction generation rates, the project's total square footage of 475,941 would generate approximately 1,047 tons of construction waste (see calculations below). Table 2 summarizes the project's construction waste.

Table 2
Construction Waste

Land Use Type	Gross Square Footage	Generation Rate[1] (pounds per square foot)	Tons Generated
Multi-Family Residential	475,941	4.4	1,048
Total	**475,941**		**1,048**

[1]U.S. EPA 2009
NOTE: Totals may vary due to independent rounding.

Multi-Family Residential:

$$475{,}941 \text{ square feet} \times \frac{4.4\ pounds}{square\ foot} \times \frac{1\ ton}{2{,}000\ pounds} = 1{,}048 \text{ tons}$$

5.4 Waste Diversion

There are two types of waste diversion, "mixed-debris diversion" and "source-separated diversion." Mixed-debris diversion is a method in which all material waste is disposed of in a single container for transport to a mixed C&D recycling facility where 75 percent of the mixed-debris is diverted for recycling. Under source-separated diversion, materials are

separated on-site before transport to appropriate facilities that accept specific material types. Generally, a greater diversion rate is achieved under source-separated diversion, as facilities that accept mixed debris typically achieve 50–70 percent diversion, whereas single materials recyclers often achieve a nearly 100 percent diversion rate (Attachment 1; City of San Diego 2013).

The project would implement source-separated diversion, and recyclable waste materials would be separated on-site into material-specific containers and diverted to an approved recycler selected from the City's ESD directory of facilities that recycle specific waste materials from construction and demolition (Attachment 2). These facilities achieve a 100 percent diversion rate for most materials with the exception of a 75 percent diversion rate for roof material (mixed C&D debris). Implementing the City's 75 percent diversion of waste target goal adopted under the Zero Waste Objective requires a majority of waste to be handled at facilities other than landfills.

Construction waste would be diverted or disposed of at nearby facilities based on the material type. Table 3 provides a breakdown of the total tonnage by material type estimated for the project's construction waste and the closest handling facility.

Table 3
Construction Waste Diversion and Disposal by Material Type

Material Type	Estimated Waste (tons)[1]	Percent Diverted[2]	Nearest Handling Facility[1]	Estimated Diversion (tons)	Estimated Disposal (tons)
Asphalt and Concrete	180	100	Reclaimed Aggregates Chula Vista	180	0
Metals	301	100	HVAC Exchange	301	0
Brick/Masonry/Tile	103	100	Vulcan Caroll Canyon Landfill and Recycle Site	103	0
Clean Wood/Wood Pallets	56	100	Miramar Greenery	56	0
Carpet, Padding/Foam	43	100	DFS Flooring	43	0
Drywall	107	100	EDCO Recovery & Transfer	107	0
Corrugated Cardboard	44	100	IMS Recycling Services	44	0
Trash/Garbage	213	0	EDCO Recovery & Transfer	0	213
Total	**1,047**			**834 (79%)**	**213 (21%)**

NOTE: Totals may vary due to independent rounding.
[1]City of San Diego ESD 2019 Certified C&D Recycling Facility Directory (see Attachment 2).

With implementation of the diversion-estimated calculations outlined in Table 3, it is estimated that 79 percent of the waste generated during the construction phase of the project would be diverted to appropriate facilities for reuse. Thereafter, 213 tons (trash/garbage), equivalent to 21 percent of the total construction waste, would be required to be disposed of in the landfill.

5.4.1 Contractor Education and Responsibilities

In order to ensure that the anticipated diversion of waste would occur during project construction, the project would include the designation of a Solid Waste Management Coordinator (SWMC) for the duration of project construction. The SWMC would ensure that all contractors and subcontractors are educated and trained to follow City waste diversion regulations and procedures for waste reduction and recycling efforts are implemented. Specific responsibilities of the SWMC would include the following:

- Review of the WMP at the preconstruction meeting, including the SWMC responsibilities.
- Distribute the WMP to all contractors when they first begin work on-site and when training workers, subcontractors, and suppliers on proper waste management procedures applicable to the project.
- Work with the contractors to estimate the quantities of each type of material that would be salvaged, recycled, or disposed of as waste, then assist in documentation.
- Use detailed material estimates to reduce risk of unplanned and potentially wasteful material cuts.
- Review and enforce procedures for source-separated receptacles. Containers of various sizes shall:
    - Be placed in readily accessible areas that will minimize misuse or contamination.
    - Be clearly labeled with a list of acceptable and unacceptable materials, the same as the materials recycled at the receiving material recovery facility or recycling processor.
    - Contain no more than 10 percent non-recyclable materials, by volume.
    - Be inspected daily to remove contaminants and evaluate discarded material for reuse on-site.
- Review and enforce procedures for transportation of materials to appropriate recipients selected from ESD's directory of facilities that recycle C&D materials (see Attachment 2 for ESD's facility directory).
- Ensure removal of C&D waste materials from the project site at least once every week to ensure no over-topping of containers. The accumulation and burning of on-site construction, demolition, and land-clearing waste materials will be prohibited.
- Document the return or reuse of excess materials and packaging to enhance the diversion rate.
- Coordinate implementation of a "buy recycled" program for green construction products, including incorporating mulch and compost into the landscaping.

- Coordinate implementation of solid waste mitigation with other requirements such as storm water requirements, which may include specifications such as the placement of bins to minimize the possibility of runoff contamination.

The SWMC would ensure that the project meets the following state law and City Municipal Code requirements. Adjustments would be made as needed to maintain conformance:

- The City's C&D Debris Diversion Deposit Program, which requires a refundable deposit based on the tonnage of the expected recyclable waste materials as part of the building permit requirements (City of San Diego 2008).
- The City's Recycling Ordinance, which requires that collection of recyclable materials is provided (City of San Diego 2007a).
- The City's Storage Ordinance, which requires that areas for recyclable material collection must be provided (City of San Diego 2007b).
- The name and contact information of the waste contractor provided to ESD at least 10 days prior to the start of any work and updated within 5 days of any changes.

5.4.2 Total Diversion

With the oversight of the SWMC, the project would meet City waste diversion goals. Table 4 summarizes the amount of waste estimated to be generated and diverted by each phase of the project. Of the 1,047 tons estimated to be generated, 834 tons would be diverted, primarily through source separation. This would result in the diversion and reuse of 79 percent of the waste material generated from the project from the landfill.

Table 4
Total Waste Generated, Diverted, and Disposed of by Phase

Phase	Tons Generated	Tons Diverted	Tons Disposed
Demolition	0	0	0
Grading	0	0	0
Construction	1,047	834 (79%)	213 (21%)
Total	**1,047**	**834 (79%)**	**213 (21%)**
NOTE: Totals may vary due to independent rounding.			

6.0 Occupancy–Operational Waste

6.1 Waste Generation

The annual waste estimated to be generated during occupancy of the project was calculated using the City ESD Waste Generation Factors for multi-family residential (Attachment 3). The estimated solid waste generation rate for multi-family residential is 1.2 tons per year per unit. The estimated annual operational amount in tons is based on buildout of 380 multi-

family dwelling units, calculated below. Table 5 shows the amount of waste that would be generated during the occupancy phase.

Table 5
Occupancy Phase Annual Waste Generation

Land Use Type	Amount	Annual Generation Rate[1]	Waste Generated[2,3]
Multi-family Residential	380 dwelling units	1.2 tons/year/dwelling unit	456
Total			**456**

[1] City of San Diego Environmental Services Department, Waste Generation Factors – Occupancy Phase (see Attachment 3)
[2] Tons per year
[3] Totals may vary due to independent rounding.

Multi-family Residential:

$$380 \text{ dwelling units} \times \frac{1.2\ tons}{year} = 456 \text{ tons/year}$$

The total generation of waste for the project equates to approximately 456 tons per year. As discussed in Section 6.2 below, the applicant (or applicant's successor in interest) would implement a long-term waste management plan to manage waste disposal in order to meet state and City waste reduction goals.

6.2 Waste Reduction Measures

According to the City Waste Management Guidelines (City of San Diego 2013), compliance with the City's Recycling Ordinances is expected to provide a minimum recycling service volume of 40 percent for large complexes. Therefore, waste anticipated to be diverted during the occupancy phase would be approximately 183 tons per year. The remaining 273 tons per year would, however, exceed the 60 ton-per-year threshold of significance for a cumulative impact on solid waste services in the City (City of San Diego 2016).

To reduce the cumulative impact on solid waste, the applicant (or applicant's successor in interest) shall be responsible for implementing a waste reduction measures through a long-term waste management program, as required by City regulation. This program shall include recyclable collection services required by and in accordance with the Recycling Ordinance, as well as providing exterior storage space for refuse, recyclable materials, and a means of handling landscaping and green waste materials. Specific program measures shall include the following:

- For multi-family residential facilities which receive solid waste collection services from a Franchisee, the responsible person shall provide on-site recycling services to occupants as required by the dates prescribed in the San Diego Municipal Code, Chapter 6, Article 6, Division 7, Section 66.0706c.

- Occupants of multi-family residential facilities which receive solid waste collection services from a Franchisee, shall participate in a recycling program by separating recyclable material from other solid waste and depositing the recyclable materials in the recycling container provided by the Franchisee or Recyclable Materials Collector (San Diego Municipal Code, Chapter 6, Article 6, Division 7, Section 66.0706d).

- At a minimum, multi-family residential facilities' recycling services would include the following (San Diego Municipal Code, Chapter 6, Article 6, Division 7, Section 66.0706e):

    1. Collection of recyclable materials at least two times per month.

    2. Collection of plastic bottles and jars, paper, newspaper, metal containers, cardboard, and glass containers.

    3. Utilization of recycling receptacles which comply with the standards in the Container and Signage Guidelines established by the City ESD or its successor.

    4. Designated recycling collection and storage areas.

    5. Signage on all recycling receptacles, containers, chutes, and/or enclosures which comply with the standards described in the Container and Signage Guidelines established by the City ESD or its successor.

- Occupant Education – For multi-family residential facilities, the responsible person shall ensure that occupants are educated about the recycling services as follows (San Diego Municipal Code, Chapter 6, Article 6, Division 7, Section 66.0706f):

    1. Information, including the types of recyclable materials accepted, the location of recycling containers, and the occupants' responsibility to recycle, shall be distributed to all occupants annually.

    2. All new occupants shall be given information and instructions upon occupancy.

    3. All occupants shall be given information and instructions upon any change in recycling service to the facility.

Conformance with City regulations through the implementation of a project-specific waste management program would ensure the project's cumulative portion of impacts on solid waste, as, per the City's California Environmental Quality Act Significance Determination Thresholds, would be less than significant. The implementation of a WMP would ensure that the overall waste produced is reduced sufficiently to comply with waste reduction targets established in the Public Resources Code (City of San Diego 2016).

6.3 Exterior Storage

The project would be required to implement the City's Municipal Code on-site refuse and recyclable material storage space requirements (City of San Diego 2007b) for the duration of project occupancy. Table 6 shows the City's exterior storage area requirements for commercial and residential developments, respectively, and the application of the requirements to the project.

Table 6
Minimum Exterior Refuse and Recyclable Material Storage Areas for Residential Development

Number of units	Minimum Refuse Area (square feet)	Minimum Recyclable Area (square feet)	Total Storage Area (square feet)
2–6	12	12	24
7–15	24	24	48
16–25	48	48	96
26–50	96	96	192
51–75	144	144	288
76–100	192	192	384
101–125	240	240	480
126–150	288	288	576
151–175	336	336	672
176–200	384	384	768
200+	384 plus 48 square feet for every 25 dwelling units above 201	384 plus 48 square feet for every 25 dwelling units above 201	768 plus 96 square feet for every 25 dwelling units above 201
Total	**720**	**720**	**1,440**

SOURCE: City of San Diego Municipal Code, Chapter 14, Article 2, Division 8: Refuse and Recyclable Material Storage Regulations, Section 142.0820, Table 142-08B.

The project includes the construction of 380 dwelling units. As shown in Table 6, the project would require a minimum of 720 square feet of refuse storage area and a minimum of 720 square feet of recyclable material storage area would be required. The total exterior refuse/recyclable material storage requirement for the project would be 1,440 square feet. Site plans would be required to show the location and required square footage of refuse and recyclable storage areas.

6.4 Organic Waste Recycling

The project would incorporate landscaping and landscape maintenance. Drought-tolerant plants would be used to reduce the amount of green waste produced. Collection of organic waste and its disposal at recycling centers that accept organic waste would further reduce the waste generated by the project during occupancy. An ongoing WMP would include a means for handling landscaping and other organic waste materials.

7.0 Conclusion

7.1 Demolition, Grading, and Construction Waste

A total of approximately 1,047 tons of material would be generated from the construction phase of the project, of which 834 tons would be diverted through recycling at source-separated facilities that achieve a 100 percent diversion rate. When necessary, mixed debris and trash would be recycled at a lower diversion rate, leaving 213 tons to be disposed of. This amounts to an approximate solid waste diversion rate of 79 percent that would be diverted from the landfill.

7.2 Occupancy–Operational Waste

The project would include 380 multi-family dwelling units, generating approximately 456 tons of waste per year. As such, the project would be required to provide a minimum of 720 square feet of exterior refuse area and 720 square feet of recyclable material storage area (total of 192 square feet; see Table 6). The applicant (or applicant's successor in interest) would implement ongoing waste reduction measures as prescribed in this WMP to ensure that the waste is minimized and the operation of the project complies with City ordinances. According to the City of San Diego Waste Management Guidelines (City of San Diego 2013), compliance with existing ordinances is expected to achieve a 40 percent diversion rate. Therefore, approximately 273 tons of non-recyclable waste per year would be generated from the project, exceeding the 60 ton-per-year threshold of significance for having a cumulative impact on solid waste. However, preparation of this WMP and implementation of the Waste Reduction Measures, outlined in Section 6.2 above, would ensure the cumulative solid waste impact is reduced to below a level of significance.

7.3 Overall Compliance

With implementation of the strategies outlined in this WMP and compliance with all applicable City ordinances, solid waste impacts would be reduced to below a level of significance regarding collection, diversion, and disposal of waste generated from C&D, grading, and occupancy. The implementation of a SWMC for the project during demolition, grading, and construction phases would achieve a 79 percent of waste diverted from landfill disposal.

During occupancy, the applicant or applicant's successor in interest would be required to implement the ongoing WMP measures detailed herein to ensure maximum diversion from landfills. Implementation of the WMP would include provisions to provide adequate exterior storage space for refuse, recyclable, and landscape/green waste materials.

This WMP outlines strategies to achieve 79 percent of waste being diverted from disposal during C&D of the project. This would reduce the anticipated impact of waste disposal to

below the direct impact threshold of significance. Without implementation of WMP measures, the occupancy phase would only achieve 40 percent diversion. However, with implementation of ongoing WMP measures detailed in Section 6.2, and achievement of a 79 percent diversion rate during the C&D phase, the project would achieve overall compliance.

8.0 References Cited

California, State of

1989 Assembly Bill 939. Integrated Waste Management Act.

2010 Senate Bill 1016. Solid Waste Per Capita Disposal Measurement Act.

2011 Assembly Bill 341. Jobs and Recycling.

2014 Assembly Bill 1826. Solid Waste: Organic Waste.

San Diego, City of

2007a Recycling Ordinance. San Diego Municipal Code Chapter 6, Article 6, Division 7. November 20, 2007.

2007b Refuse and Recyclable Materials Storage Regulations. Municipal Code Chapter 14, Article 2, Division 8. December 9, 2007.

2008 Construction and Demolition Debris Diversion Deposit Program. San Diego Municipal Code Chapter 6, Article 6, Division 6.

2013 California Environmental Quality Act – Guidelines for a Waste Management Plan. June 2013. Available at https://www.sandiego.gov/sites/default/files/legacy/environmental-services/pdf/recycling/wmpguidelines.pdf. Accessed on February 7, 2019.

2016 Significance Determination Thresholds. California Environmental Quality Act. July.

United States Environmental Protection Agency (U.S. EPA)

2009 Estimating 2003 Building-Related Construction and Demolition Materials Amounts. March.

ATTACHMENTS

ATTACHMENT 1

City of San Diego Environmental Services Department
Construction & Demolition Debris Conversion Rate Table

CITY OF SAN DIEGO
CONSTRUCTION & DEMOLITION (C&D) DEBRIS
CONVERSION RATE TABLE

This worksheet lists materials typically generated from a construction or demolition project and provides formulas for converting common units (i.e., cubic yards, square feet, and board feet) to tons. It should be used for preparing your Waste Management Form, which requires that quantities be provided in tons.

Step 1
Enter the estimated quantity for each applicable material in Column I, based on units of cubic yards (cy), square feet (sq ft), or board feet (bd ft).

Step 2
Multiply by Tons/Unit figure listed in Column II. Enter the result for each material in Column III. If using Excel version, column III will automatically calculate tons.

Step 3
Enter quantities for each separated material from Column III on this worksheet into the corresponding section of your Waste Management Form.

For your final calculations, use the actual quantities, based on weight tags, gate receipts, or other documents.

		Column I			Column II		Column III
Category	**Material**	**Volume**	**Unit**		**Tons/Unit**		**Tons**
Asphalt/Concrete	Asphalt (broken)		cy	x	0.70	=	
	Concrete (broken)		cy	x	1.20	=	
	Concrete (solid slab)		cy	x	1.30	=	
Brick/Masonry/Tile	Brick (broken)		cy	x	0.70	=	
	Brick (whole, palletized)		cy	x	1.51	=	
	Masonry Brick (broken)		cy	x	0.60	=	
	Tile		sq ft	x	0.00175	=	
Building Materials (doors, windows, cabinets, etc.)			cy	x	0.15	=	
Cardboard (flat)			cy	x	0.05	=	
Carpet	By square foot		sq ft	x	0.0005	=	
	By cubic yard		cy	x	0.30	=	
Carpet Padding/Foam			sq ft	x	0.000125	=	
Ceiling Tiles	Whole (palletized)		sq ft	x	0.0003	=	
	Loose		cy	x	0.09	=	
Drywall (new or used)	1/2" (by square foot)		sq ft	x	0.0008	=	
	5/8" (by square foot)		sq ft	x	0.00105	=	
	Demo/used (by cubic yd)		cy	x	0.25	=	
Earth	Loose/Dry		cy	x	1.20	=	
	Excavated/Wet		cy	x	1.30	=	
	Sand (loose)		cy	x	1.20	=	
Landscape Debris (brush, trees, etc)			cy	x	0.15	=	
Mixed Debris	Construction		cy	x	0.18	=	
	Demolition		cy	x	1.19	=	
Scrap metal			cy	x	0.51	=	
Shingles, asphalt			cy	x	0.22	=	
Stone (crushed)			cy	x	2.35	=	
Unpainted Wood & Pallets	By board foot		bd ft	x	0.001375	=	
	By cubic yard		cy	x	0.15	=	
Garbage/Trash			cy	x	0.18	=	
Other (estimated weight)			cy	x	estimate	=	
			cy	x	estimate	=	
			cy	x	estimate	=	
			cy	x	estimate	=	

5/21/08

Total All

ATTACHMENT 2

City of San Diego 2017 Construction & Demolition Recycling Facility Directory

2019 Certified Construction & Demolition (C&D) Recycling Facility Directory

These facilities are certified by the City of San Diego to accept materials listed in each category. Hazardous materials are not accepted. The diversion rate for these materials shall be considered 100 percent, except mixed C&D debris, which update quarterly. The City is not responsible for changes in facility information. Please call ahead to confirm details such as accepted materials, days and hours of operation, limitations on vehicle types, and cost. For more information visit: www.recyclingworks.com.

Transfer Stations offer both recycling and trash disposal services. In order to receive recycling credit, you must: *-Notify the weighmaster your load is subject to the City of San Diego C&D Ordinance.* *-If your load is mixed Construction and Demolition (C&D) debris, ensure it is coded correctly on the receipt. Tickets coded as "**MSW, trash or refuse**" will receive 0% credit.* *-Ensure the project address and Permit number are added to the receipt.* ***Please note: Miramar Landfill and other landfills DO NOT recycle mixed C&D debris.***	Mixed C&D Debris	Asphalt/Concrete	Brick/Block/Rock	Building Materials for Reuse	Cardboard	Carpet	Carpet Padding	Ceiling Tile	Ceramic Tile/Porcelain	Clean Fill Dirt	Clean Wood/Green Waste	Drywall	Industrial Plastics	Lamps/Light Fixtures	Metal	Mixed Inerts	Styrofoam Blocks	Trash
EDCO Recovery & Transfer 3660 Dalbergia St, San Diego, CA 92113 619-234-7774 | www.edcodisposal.com	71%											•						•
EDCO Station Transfer Station & Buy Back Center 8184 Commercial St, La Mesa, CA 91942 619-466-3355 | www.edcodisposal.com	71%				•							•			•			•
EDCO CDI Recycling & Buy Back Center 224 S. Las Posas Rd, San Marcos, CA 92078 760-744-2700 | www.edcodisposal.com	84%				•										•			•
Escondido Resource Recovery 1044 W. Washington Ave, Escondido 760-745-3203 | www.edcodisposal.com	71%																	
Fallbrook Transfer Station & Buy Back Center 550 W. Aviation Rd, Fallbrook, CA 92028 760-728-6114 | www.edcodisposal.com	71%				•										•			•
Otay C&D/Inert Debris Processing Facility 1700 Maxwell Rd, Chula Vista, CA 91913 619-421-3773 | www.sd.disposal.com	78%																	
Ramona Transfer Station & Buy Back Center 324 Maple St, Ramona, CA 92065 760-789-0516 | www.edcodisposal.com	71%				•										•			•
SANCO Resource Recovery & Buy Back Center 6750 Federal Blvd, Lemon Grove, CA 91945 619-287-5696 | www.edcodisposal.com	71%				•										•			
All American Recycling 10805 Kenney St, Santee, CA 92071 619-508-1155 (Must call for appointment)						•												
Allan Company 6733 Consolidated Wy, San Diego, CA 92121 858-578-9300 | www.allancompany.com/facilities					•										•			
Allan Company Miramar Recycling 5165 Convoy St, San Diego, CA 92111 858-268-8971 | www.allancompany.com/facilities					•										•			
AMS 8515 Miramar Pl., San Diego, CA 92121 858-541-1977 | www.a-m-s.com								•										

Transfer Stations offer both recycling and trash disposal services. In order to receive recycling credit, you must: *-Notify the weighmaster your load is subject to the City of San Diego C&D Ordinance.* *-If your load is mixed Construction and Demolition (C&D) debris, ensure it is coded correctly on the receipt. Tickets coded as "**MSW, trash or refuse**" will receive 0% credit.* *-Ensure the project address and Permit number are added to the receipt.* ***Please note: Miramar Landfill and other landfills DO NOT recycle mixed C&D debris.***	Mixed C&D Debris	Asphalt/Concrete	Brick/Block/Rock	Building Materials for Reuse	Cardboard	Carpet	Carpet Padding	Ceiling Tile	Ceramic Tile/Porcelain	Clean Fill Dirt	Clean Wood/Green Waste	Drywall	Industrial Plastics	Lamps/Light Fixtures	Metal	Mixed Inerts	Styrofoam Blocks	Trash
Armstrong World Industries, Inc. 300 S. Myrida St, Pensacola, FL 32505 877-276-7876 (Press 1, Then 8) www.armstrong.com/commceilingsna								•										
Cactus Recycling 2225 Avenida Costa Este Suite 1600, San Diego, CA 92154 619-446-7093 | www.cactusrecycling.com					•							•		•		•	
DFS Flooring 10178 Willow Creek Road, San Diego, CA 92131 858-630-5200 | www.dfsflooring.com						•	•										
Duco Metals 220 Bingham Drive Suite 100, San Marcos, CA 92069 760-747-6330 | www.ducometals.com														•			
Enniss Incorporated 12421 Vigilante Rd, Lakeside, CA 92040 619-443-9024 | www.ennissinc.com		•	•						•	•							
Escondido Sand and Gravel 500 N. Tulip St, Escondido, CA 92025 760-432-4690 | www.weirasphalt.com		•															
Habitat for Humanity ReStore 10222 San Diego Mission Rd, San Diego, CA 92108 619-516-5267 | www.sandiegohabitat.org				•													
Hanson Aggregates West – Lakeside Plant 12560 Highway 67, Lakeside, CA 92040 858-547-2141		•															
Hanson Aggregates West – Miramar 9229 Harris Plant Rd, San Diego, CA 92126 858-974-3849		•								•							
HVAC Exchange 2675 Faivre St, Chula Vista, CA 91911 619-423-1855 | www.hvacx.com														•			
IMS Recycling Services 2740 Boston Ave, San Diego, CA 92113 619-423-1564 | www.imsrecyclingservices.com					•							•					
IMS Recycling Services 2697 Main St, San Diego, CA 92113 619-231-2521 | www.imsrecyclingservices.com												•		•			
Inland Pacific Resource Recovery 12650 Slaughterhouse Canyon Rd, Lakeside, CA 92040 619-390-1418											•						
Lamp Disposal Solutions 1405 30th Street, San Diego, CA 92154 858-569-1807 | www.lampdisposalsolutions.com													•				
Los Angeles Fiber Company 4920 S. Boyle Ave, Vernon, CA 90058 323-589-5637 | www.lafiber.com						•	•										

Transfer Stations offer both recycling and trash disposal services. In order to receive recycling credit, you must: *-Notify the weighmaster your load is subject to the City of San Diego C&D Ordinance.* *-If your load is mixed Construction and Demolition (C&D) debris, ensure it is coded correctly on the receipt. Tickets coded as "**MSW, trash or refuse**" will receive 0% credit.* *-Ensure the project address and Permit number are added to the receipt.* ***Please note: Miramar Landfill and other landfills DO NOT recycle mixed C&D debris.***	Mixed C&D Debris	Asphalt/Concrete	Brick/Block/Rock	Building Materials for Reuse	Cardboard	Carpet	Carpet Padding	Ceiling Tile	Ceramic Tile/Porcelain	Clean Fill Dirt	Clean Wood/Green Waste	Drywall	Industrial Plastics	Lamps/Light Fixtures	Metal	Mixed Inerts	Styrofoam Blocks	Trash
Miramar Greenery, City of San Diego 5180 Convoy St, San Diego, CA 92111 858-694-7000 | www.miramargreenery.com											•							
Moody's 3210 Oceanside Blvd., Oceanside, CA 92056 760-433-3316 | http://www.moodyselcorazonrecycling.com		•								•						•		
Otay Valley Rock, LLC 2041 Heritage Rd, Chula Vista, CA 91913 619-591-4717 | www.otayrock.com		•																
Reclaimed Aggregates Chula Vista 855 Energy Way, Chula Vista, CA 91913 619-656-1836		•														•		
Robertson's Ready Mix 2094 Willow Glen Dr, El Cajon, CA 92019 619-593-1856		•								•						•		
RAMCO 8354 Nelson Way, Escondido, CA 92026 760-205-1797 | www.ramco.us.com		•																
SA Recycling 3055 Commercial St., San Diego, CA 92113 619-238-6740 | www.sarecycling.com															•			
SA Recycling 1211 S. 32nd St., San Diego, CA 92113 619-234-6691 | www.sarecycling.com															•			
Universal Waste Disposal 8051 Wing Avenue, El Cajon, CA 92020 619-438-1093 | www.universalwastedisposal.com														•				
Vulcan Carol Canyon Landfill and Recycle Site 10051 Black Mountain Rd, San Diego, CA 92126 858-530-9465 | www.vulcanmaterials.com		•	•							•						•		
Vulcan Otay Asphalt Recycle Center 7522 Paseo de la Fuente, San Diego, CA 92154 619-571-1945 | www.vulcanmaterials.com		•																

ATTACHMENT 3

City of San Diego Waste Generation Factors – Occupancy Phase

Waste Generation Factors – Occupancy Phase

The following factors are used by the City of San Diego Environmental Services Department to estimate the expected waste generation in a new residential or commercial development.

Residential Uses
Residential Unit = 1.6 tons/year/unit
Multi-family Unit = 1.2 tons/year/unit

Example: To calculate the amount of waste that will be generated from a project with 100 new homes, multiply the number of homes by the generation factor.

100 single family homes x 1.6 = 160 tons/year
100 multi-family units x 1.2 = 120 tons/year

Commercial/Industrial Uses	
General Retail	0.0028
Restaurants & Bars	0.0122
Hotels/Motels	0.0045
Food Stores	0.0073
Auto/Service/Repair	0.0051
Medical Offices	0.0033
Hospitals	0.0055
Office	0.0017
Transp/Utilities	0.0085
Manufacturing	0.0059
Education	0.0013
Unclassified Services	0.0042

Example: To calculate the amount of waste that could be generated from a new building with 10,000 square feet for offices and 10,000 square feet for manufacturing, multiply the square footage for each use by the generation factor.

10,000 square feet x 0.0017 = 17 tons/year
10,000 square feet x 0.0059 = 59 tons per year
Total estimated waste generation for building = 76 tons/year