

# OC Waste & Recycling Processed Green Material Diversion Study – Final Report



**November 28, 2017**



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November 28, 2017

Mr. John Arnau  
Environmental Sciences Manager  
OC Waste & Recycling  
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Santa Ana, California 92703

**Processed Green Material Diversion Study – Final Report**

Dear Mr. Arnau:

We have completed the Processed Green Material (PGM) Diversion Study. Our findings and related assumptions and calculations are documented in the enclosed report.

\* \* \* \* \*

We are pleased to have had the opportunity to assist OC Waste & Recycling with this study, and would like to thank you for your support during the project. We would also like to acknowledge the cooperation and support by County staff, including Brian Probolsky and Kristin Almaraz.

If you have any questions, please call me at (949) 251-8902.

Very truly yours,

Laith B. Ezzet, CMC  
Senior Vice President

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## SECTION I

### EXECUTIVE SUMMARY

**Objective #1: What are the facility options and estimated costs to the ratepayers served by unincorporated area haulers to divert material in accordance with AB 1594 that is currently delivered as processed green material to the County of Orange landfills?**

Finding #1A: Existing organic processing facilities in the Southern California Region do not appear to have sufficient permitted capacity to process PGM currently delivered to landfills within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego, and Ventura.

Finding #1B: The cost of processing green material at other facilities that is currently being accepted as PGM at the Orange County Landfills is estimated at \$1.24 to \$2.85 per home per month for the unincorporated areas, with a midpoint of \$2.05 per home per month.

Finding #1C: If current PGM levels were considered disposal per AB 1594, two cities within Orange County would fall below the 50% AB 939 diversion requirement.

**Objective #2: What is the cost impact on the residential customers served by the incorporated and unincorporated area franchise haulers if Orange County were to assess a fee for processed green material delivered to County of Orange landfills?**

Finding #2A: If the County were to charge \$10.00 per ton for the acceptance of PGM at the three County of Orange landfills starting July 1, 2018, the weighted average cost increase for City residents is estimated at \$0.31 per home per month. The average cost increase for unincorporated area residents is estimated to be approximately \$0.38 per home per month.

Finding #2B: If the County were to charge the existing WDA rate of \$33.50 per ton for the acceptance of PGM at the three County of Orange landfills, the weighted average cost increase for City residents is estimated at \$1.03 per home per month. The average cost increase for unincorporated area residents is estimated to be approximately \$1.26 per home per month.

Finding #2C: Residential green waste collected by the waste haulers within the cities and unincorporated areas of Orange County account for approximately 60% of total PGM delivered to the three County of Orange landfills.

**Objective #3: Identify the historical experience of other landfill operators that assessed a fee for processed green material (e.g. Riverside County and San Bernardino County).**

Finding #3A: Processed green material delivered to Riverside County Landfills declined by 96% between 2008 and 2010 with the imposition of a \$10.00 per ton fee.

Finding #3B: Processed green material delivered to San Bernardino County Landfills decreased by 73% from July 2005 through December 2011 with the imposition of a fee for alternative daily cover.

## SECTION II BACKGROUND, OBJECTIVES, AND SCOPE OF WORK

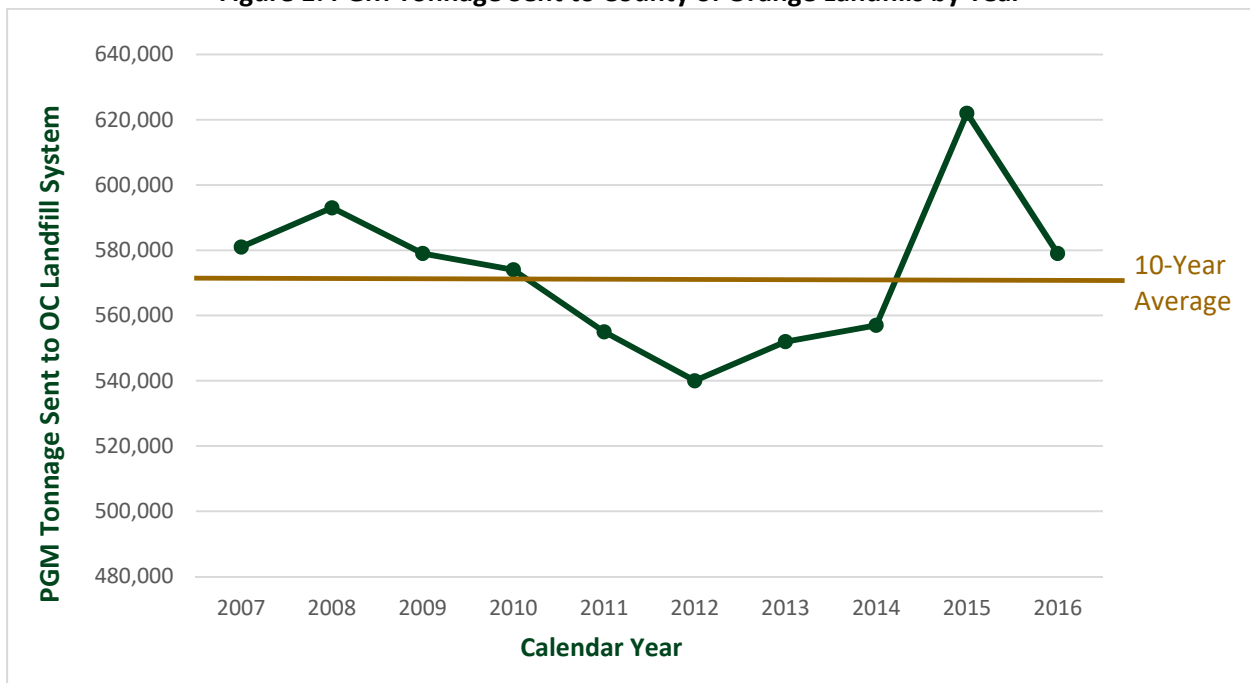
### Background

#### Processed Green Material Diversion Operations

The County of Orange owns three active landfills within the County: Olinda Alpha, Frank R. Bowerman and Prima Deshecha. The landfills are operated by the OC Waste & Recycling (OCWR) department. OCWR accepts and uses processed green material (PGM) as part of its landfill operations. As stated on the OCWR website, PGM consists of yard wood waste and “shall be ground, chipped, shredded, screened or otherwise processed in a manner to provide a compacted material free of open voids when applied to meet the performance requirements as alternative daily cover.” OCWR currently accepts this material at no cost. The PGM is used primarily for landfill alternative daily cover (ADC), tarp framing, and for erosion control. Per CalRecycle’s website, “Alternative daily cover (ADC) means cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging.”

In CY 2016, OCWR accepted approximately 580,000 tons of PGM at the Olinda Alpha, Frank R. Bowerman and Prima Deshecha landfills from jurisdictions within Orange County. The 10-year annual average is approximately 573,000 tons of PGM per year. See Figure 1 and Appendix A for detailed information on tonnage delivered to County of Orange landfills.

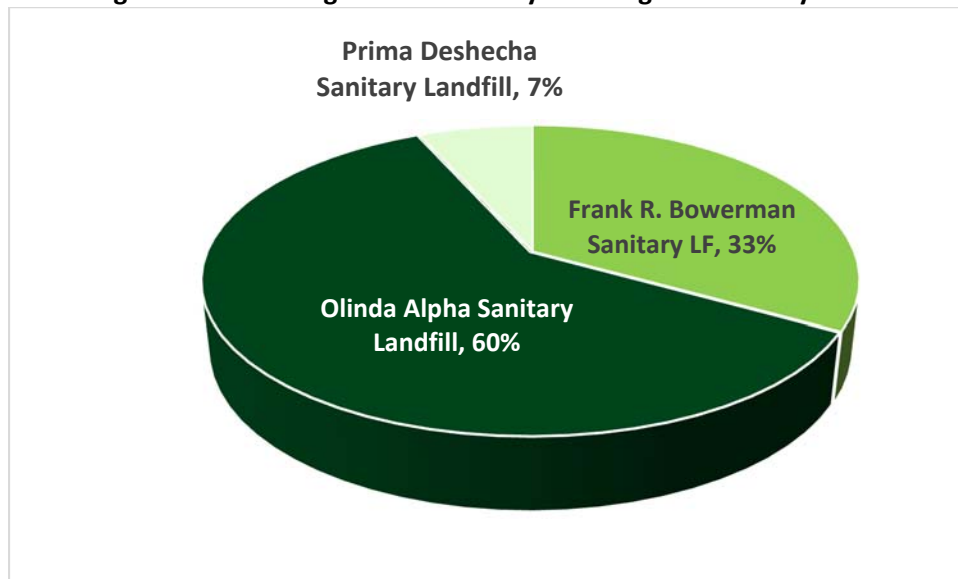
**Figure 1: PGM Tonnage Sent to County of Orange Landfills by Year<sup>(1)</sup>**



<sup>(1)</sup> From 2016 CalRecycle Disposal Reporting System (DRS) Destination Report.

Figure 2 below shows the total percentage of PGM sent to each of the three County of Orange landfills in CY 2016.

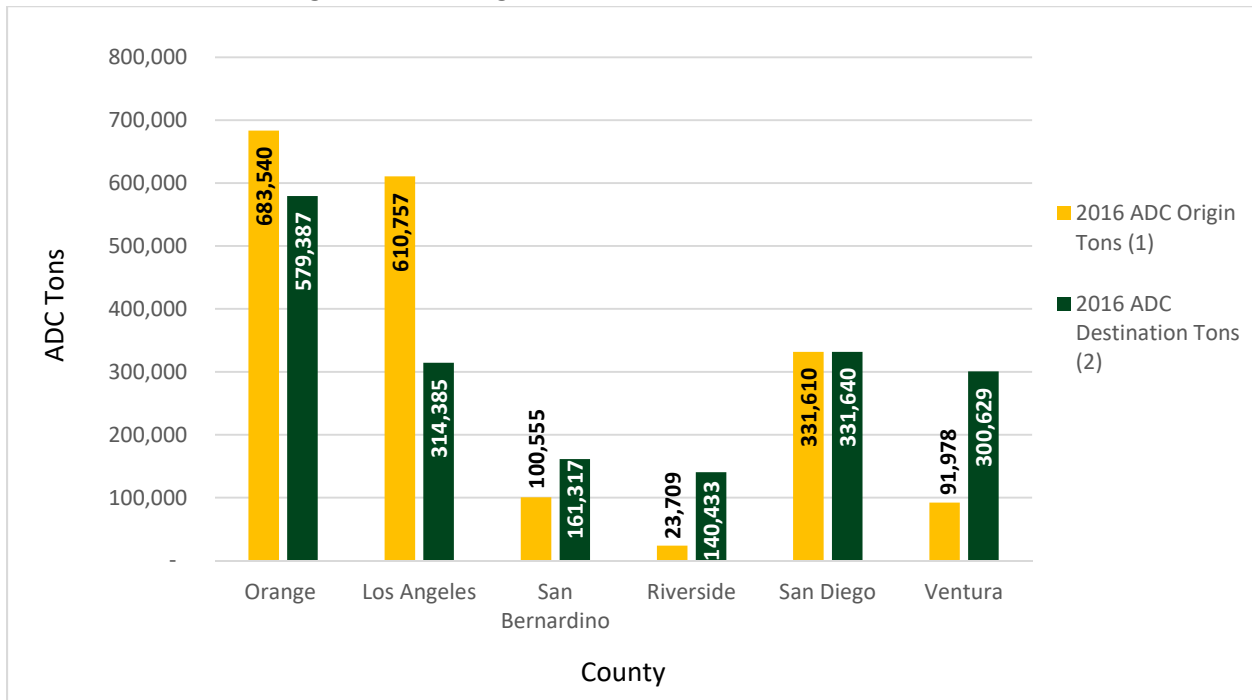
**Figure 2: Percentage of PGM Tonnage Sent to County of Orange Landfills by Destination – CY 2016**



### Processed Green Material in Southern California Region

In CY 2016, the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego and Ventura generated a total of approximately 1.8 million tons of ADC per CalRecycle's Disposal Reporting System (also referred to as "origin tons"). CalRecycle's Disposal Reporting System also indicates that approximately 1.8 million tons of material were utilized as ADC at landfills within these counties (also referred to as "destination tons"). However, some counties may receive more or less ADC tons than generated within their county. Landfills in the counties of Orange and Los Angeles receive significantly less ADC tons than generated within each county, while landfills in the counties of San Bernardino, Riverside and Ventura receive more ADC than generated in each county. Landfills in the County of San Diego received approximately the same amount of ADC as generated within the county in 2016. Figure 3 includes details of ADC origin and destination tons by County.

**Figure 3: ADC Origin Tons vs. Destination Tons – CY 2016**



(1) From CalRecycle DRS Origin Report for 2016. “Origin” means the jurisdiction where the ADC was generated.

(2) From CalRecycle DRS Destination Report for 2016. “Destination” means the county where the ADC was beneficially used at landfills.

**Solid Waste Collection within the County Unincorporated Franchise Areas**

Solid waste collection in the unincorporated areas of Orange County is divided into nine franchise areas. See Figure 4 on the following page for a map of the franchise areas.



**Figure 4: Orange County Solid Waste Franchise Areas**



There are currently five franchisees for the unincorporated areas: CR&R, Rainbow Environmental, Republic Services, Ware Disposal and Waste Management. In addition to the five contracted franchisees, Midway City Sanitary District collects residential refuse and recyclables in Unincorporated Franchise Area #4. See Table 1 on the following page for details regarding the franchise arrangements by zone.



**Table 1: Franchise Hauler by Unincorporated Franchise Area**

| Franchise Area # | Hauler                                      |
|------------------|---|
| 1                | CR&R  |
| 2                | CR&R <sup>(1)</sup> , Republic Services     |
| 3                | CR&R  |
| 4                | Midway City Sanitation, CR&R <sup>(2)</sup> |
| 5                | Waste Management, Ware Disposal             |
| 6                | Waste Management                            |
| 7                | Waste Management, Rainbow                   |
| 8                | Waste Management                            |
| 9                | CR&R  |

<sup>(1)</sup> In November 2015, Waste Management transferred its rights and obligations under their franchise agreement for Unincorporated Franchise Area #2 to CR&R, Inc.

<sup>(2)</sup> Unincorporated Area #4 residential waste and recycling is hauled by Midway City Sanitary District. Commercial waste and recycling was initially hauled by CR&R and Rainbow Environmental, but the responsibility was transferred solely to CR&R, Inc. in November 2016.

All of the haulers listed above deliver PGM from the unincorporated area to the County of Orange landfills, with the exception of Ware Disposal (Ware), who is a franchise hauler for a portion of Unincorporated Franchise Area #5 (El Modena). Based on Ware's CY 2016 tonnage report to the County, Ware collected approximately 552 tons of green waste from residential and commercial customers in Unincorporated Franchise Area #5. According to Ware, organics collected within their franchise area are processed into pellets to be used for transformation.

### **Phase-Out of Diversion Credit for PGM**

Under current law, all of the incorporated cities in Orange County, as well as the County Unincorporated Franchise Areas, receive diversion credit for the use of the PGM material at County of Orange landfills, which assists jurisdictions in meeting 50 percent diversion, as required by Assembly Bill (AB) 939.

Recent State legislation will impact operations at the County of Orange landfills. State law AB 1594 states that beginning January 1, 2020, all jurisdictions in California will no longer receive AB 939 diversion credits for the use of PGM as ADC in landfills. ADC will instead be considered disposal.

### **Diversion Study**

The County requested HF&H Consultants, LLC (HF&H) conduct a PGM diversion study to identify facility options and the potential ratepayer impacts if OCWR were to charge haulers for PGM in the future.

## Study Objectives

The study objectives were to research the following questions:

- 1) What are the facility options and estimated costs to the ratepayers served by franchised unincorporated area haulers to divert material in accordance with AB 1594 that is currently delivered as processed green material to the County of Orange landfills?
- 2) What is the cost impact on the residential customers served by the incorporated and unincorporated area franchise haulers if Orange County were to assess a fee for PGM delivered to County of Orange landfills?
- 3) Identify the historical experience of other landfill operators that assessed a fee for PGM (e.g. Riverside County and San Bernardino County).

## Scope of Work

In order to achieve the study objectives, HF&H performed the following tasks:

- Identified current permitted and active green waste processing facilities in the Counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego and Ventura through CalRecycle's Solid Waste Information System Facility Database.
- Interviewed green waste processing facility operators and/or managers to obtain gate rates and available capacity.
- Interviewed several of Orange County's unincorporated area franchise haulers to understand their AB 1594-compliant green waste diversion plans.
- Gathered incorporated and unincorporated tonnage reports, residential refuse rates, and data from OCWR and the Cities within Orange County.
- Obtained diversion and tonnage data from CalRecycle.
- Gathered population reports from the California Department of Finance to estimate the number of single-family households in Orange County.
- Determined potential cost increases for utilizing processing facilities that receive diversion credit for PGM under AB 1594.
- Calculated the weighted average rate impact for residents in the cities and unincorporated areas of Orange County if OCWR charged for PGM at the County of Orange landfills.
- Obtained historical gate rates for green material from Riverside and San Bernardino County.
- Analyzed the data gathered and prepared report for OCWR.

## SECTION III FINDINGS

### **Objective #1: What are the facility options and estimated costs to the ratepayers served by unincorporated area haulers to divert material in accordance with AB 1594 that is currently delivered as processed green material to the Orange County landfills?**

***Finding #1A: Existing organic processing facilities in the Southern California Region do not appear to have sufficient permitted capacity to process PGM currently delivered to landfills within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego and Ventura.***

Out of the 47 fully permitted and active organic processing facilities open to third parties listed on the CalRecycle facility database within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego and Ventura:

- Twenty-six facilities perform composting and anaerobic digestion (AD) activities.
- Eleven facilities were landfills with chipping and grinding facilities that utilize the post-processed material as ADC.
- Nine facilities are transfer stations that offer chipping and grinding services for subsequent transfer to a third party facility for composting, processing or use as alternative daily cover
- One facility is a wastewater treatment plan.

Of the 26 facilities that perform composting and AD, 11 facilities were removed from the list due to the following:

- Four are small composting operations such as farms and landscape supply centers who do not accept material by tonnage from outside sources.
- Three are research facilities that are not open to the public.
- Two facilities are currently closed.
- One has limited capacity and is geographically prohibitive due to its location on Santa Catalina Island.
- One is a scrap metal recycler.

The remaining 15 facilities are permitted to handle approximately 12,150 tons per day of green waste, with approximately 2,150 tons per day currently available (unused permitted capacity). Most of the reported available capacity is at Tierra Verde Industries Eco Centre (TVI), located in Irvine. Per CalRecycle's database, TVI has a composting permit for 3,000 tons per day and a large volume transfer/processing permitted capacity of 1,890 tons per day. Tierra Verde's primary uses for green waste after January 1, 2020 under AB 1594 may include composting and erosion control, with secondary uses including biomass conversion, mulch production and other building products. If the demand in these markets does not keep pace with the supply of green waste, Tierra Verde indicated that it has out-of-county market options for post-processed green waste in the Inland Empire and Central Valley.

In addition to the fully permitted composting facilities described above, there are another 87 active composting facilities in the CalRecycle Facility Database within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego and Ventura that fall under CalRecycle's Regulatory "Notification" Tier. Per CalRecycle's website, to qualify for the Notification Tier, green material composting facilities must have less than 12,500 Cubic Yards of compostable material on site. Of these 87 facilities, 54 facilities were removed because they are chipping & grinding facilities, or small volume construction and

demolition and inert debris facilities, and one was a wastewater treatment plant. Of the 33 facilities remaining, two facilities indicated that they had available capacity to accept a total of 247 tons per day of PGM originating from curbside collection. Of the remaining thirty-one facilities:

- Twelve facilities do not accept third party PGM tons.
- Eleven facilities are at capacity or close enough that they are not accepting PGM for composting from new customers.
- One facility is no longer in the composting business.
- One facility only accepts clean feed stock without grass clippings, but does have capacity.
- Six facilities, operated by three companies, were unresponsive after a minimum of a dozen attempts to collect information via phone and email.

It is possible that the CalRecycle database is not fully up to date, and some facilities may have more capacity than indicated. Table 2 lists the number of fully permitted and “notification” tier facilities that reported available capacity during our survey. Refer to Appendix B and Appendix C for more information regarding facility options.

**Table 2: Available Green Waste Processing Capacity per Day at Facilities  
Within Six Local Southern California Counties <sup>(1)</sup>**

| Row | Facility <sup>(2)</sup>   | Permit Tier         | Available Daily Capacity (Tons) <sup>(3)</sup> |
|-----|---|---------------------|--|
| 1   | Tierra Verde Industries EcoCentre                                 | Full Permit         | 1,500  |
| 2   | Victor Valley Regional Composting Facility<br>(American Organics) | Full Permit         | 500  |
| 3   | <u>La Pata Avenue Green Waste Facility</u>                        | <u>Full Permit</u>  | <u>150</u>                                     |
| 4   | Subtotal: Fully Permitted Facilities                              | Full Permit         | 2,150  |
| 5   | A. Lua Recycling, Inc. <sup>(4)</sup>                             | Notification        | 150  |
| 6   | <u>Southern California Landscape Supply</u>                       | <u>Notification</u> | <u>97</u>                                      |
| 7   | <u>Subtotal: Notification Tier Facilities</u>                     | <u>Notification</u> | <u>247</u>                                     |
| 8   | <b>Total</b>  |                     | <b>2,397</b>                                   |

<sup>(1)</sup> Surveyed facilities within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego, and Ventura.

<sup>(2)</sup> See Appendix B and Appendix C for facility locations.

<sup>(3)</sup> Available capacity as of July 2017. Information obtained through telephone interviews with facilities. The data was not independently verified.

<sup>(4)</sup> A. Lua Recycling indicated they could take 5-10 transfer trailers per day. For this analysis we assumed an average of 7.5 transfer trailers with 20 tons of PGM in each.

Although there appears to be approximately 2,397 tons per day of available green waste processing capacity at the five facilities identified in Table 2, TVI currently chips and grinds approximately 182,000 tons per year, or 593 tons per day, of green material from within Orange County that it delivers to OCWR landfills as PGM. Since 593 tons per day of Orange County PGM is currently counted toward their permitted composting capacity of 3,000 tons per day, redirection of these 593 tons to TVI’s composting operation will not consume additional capacity as it is already counted against the 3,000 TPD limit (see row 9 of Table 3 for this adjustment). The six counties as a whole received approximately 5,952 PGM tons per day in CY 2016, indicating there is a net capacity shortage of approximately 2,962 PGM tons per

day if all six counties were to process CY 2016 PGM tonnage for diversion credit under AB 1594 at these facilities as shown in Table 3.

**Table 3: Daily PGM Delivered to Landfills by County – CY 2016**

| Row | County                               | Green Waste Tons Delivered as PGM Per Day <sup>(1)</sup> |
|-----|--------------------------------------|--|
| 1   | Orange                               | 1,887  |
| 2   | San Diego                            | 1,080  |
| 3   | Los Angeles                          | 1,024  |
| 4   | Ventura                              | 979  |
| 5   | San Bernardino                       | 525  |
| 6   | Riverside                            | 457  |
| 7   | Total                                | 5,952  |
| 8   | Less Available Capacity from Table 2 | (2,397)  |
|     | Less TVI Capacity Adjustment for OC  |  |
| 9   | Tons currently accepted as PGM       | (593)  |
| 10  | <b>Net Capacity Shortage</b>         | <b>(2,962)</b>   |

<sup>(1)</sup> From CalRecycle Disposal Reporting System Destination Report.

<sup>(2)</sup> Currently, 593 tons of OC green waste is processed at TVI and delivered as PGM to OCWR landfills. When PGM is no longer considered diversion per AB 1594, redirection of these 593 tons to TVI's composting operation will not consume additional capacity as it is already counted against TVI's 3,000 TPD limit.

In conclusion, it appears the current infrastructure in Southern California has insufficient existing capacity to support the diversion of green waste currently used as ADC. We anticipate there will be some future facility development, including new facilities and/or expansion of existing facilities that may reduce the gap between demand and supply for green waste processing facilities. There may also be diversion activities that are not readily tracked in existing public reporting systems, such as land application at various agricultural properties, long haul transfer to distant regions, and/or illegal dumping of green material on unmonitored lands.

***Finding #1B: The cost of processing green material at other facilities, that is currently being accepted as PGM at the County of Orange Landfills, is estimated at \$1.24 to \$2.85 per home per month for the unincorporated areas, with a midpoint of \$2.05 per home per month.***

As described in Section II, jurisdictions in California will no longer receive AB 939 diversion credits for the use of PGM as ADC in landfills as of January 1, 2020. Since PGM is currently accepted as ADC free of charge at Orange County Landfills, there will be increases in costs for franchise haulers to utilize other facilities in order to continue to receive diversion credit starting January 1, 2020.

To quantify the impact of increased gate rates on unincorporated residents served by the franchise haulers, HF&H identified existing green waste processing facilities that could be utilized by the franchise haulers beginning in 2020. Through telephone interviews with the haulers serving the unincorporated areas, it was determined that CR&R plans to use their anaerobic digestion facility in Perris, California for green waste processing. Republic and Rainbow indicated that they currently do not have formal plans for future green waste processing, but mentioned their options include utilizing a third party or building a new facility. Finally, Waste Management indicated that they have secured contracts with composting facilities in Southern California, but declined the opportunity to provide details.

HF&H obtained a list of all permitted and active composting facilities through CalRecycle’s Solid Waste Information System Facility Database and filtered the list as described in Finding #1A. Next, HF&H obtained gate rates where available for composting green waste at ten of the facilities through the facility websites and phone interviews with facility operators. The cost for green waste processing ranged from \$28 per ton to \$58 per ton, with a median of \$43 per ton. It is possible that reduced rates may be available to be negotiated in certain circumstances. Future rates may be higher if the demand for green waste processing capacity exceeds supply after January 1, 2020.

In addition to the increased gate rates for processing green material under AB 1594, it is likely that haulers for the unincorporated areas will have increased transportation costs for delivering PGM to end-use facilities. Since distances and travel times will vary based on the transfer station and end-use facilities, HF&H focused on quantifying the range of potential rate increases to unincorporated area customers.

The haulers already incur transportation costs from their transfer stations to the County’s landfills. Depending on the transfer station location, existing landfill location, and future green waste processing facility location, incremental transportation impacts could vary. Generally, most of the options would incur incremental travel time of one to four hours round-trip.

For analytical purposes, using the travel time assumption of one to four hours per round trip, a transfer-trailer capacity of 22 tons per load and an average of \$100 per hour for transfer-trailer operation, HF&H calculated the transportation cost increase per ton. See Table 4 below for a calculation of the incremental transportation cost per ton for PGM delivered to green waste processing facility.

**Table 4: Incremental Transportation Cost per Ton of PGM Delivered to Green Waste Facility**

| Description  | Low          | High         |
|--|--------------|--------------|
| Assumed round-trip travel time increase (in hours) | 1            | 4            |
| <u>Transfer-trailer cost per hour</u>              | <u>\$100</u> | <u>\$100</u> |
| Cost per load (round-trip)                         | \$100        | \$400        |
| <u>Tons per load</u>                               | <u>22</u>    | <u>22</u>    |
| <b>Incremental transportation cost per ton</b>     | <b>\$5</b>   | <b>\$18</b>  |

The potential transportation cost increase of \$5 to \$18 per ton was then added to the range of facility gate rates to calculate the maximum potential increase per ton for processing PGM. See Table 5 below for information on the potential cost impacts inclusive of incremental processing and transportation costs.

**Table 5: Maximum Potential Gate Rate Inclusive of Transportation from Transfer Station**

| Description                                    | Low         | High        |
|--|-------------|-------------|
| Processing cost per ton <sup>(1)</sup>         | \$28        | \$58        |
| <u>Incremental transportation cost per ton</u> | <u>\$5</u>  | <u>\$18</u> |
| <b>Total cost per ton</b>                      | <b>\$33</b> | <b>\$76</b> |

<sup>(1)</sup> Incremental transportation cost per ton from Table 4.

After quantifying the range of facility processing rates per ton inclusive of potential transportation cost increases, HF&H calculated the total residential green waste tonnage collected from the unincorporated areas. Information on green waste tonnage was obtained from the various franchise haulers from the

OCWR staff. Please see Table 6 for tonnage details regarding residential green waste in the unincorporated areas.

**Table 6: Unincorporated Orange County Residential Green Waste Tons by Hauler – CY 2016**

| Hauler <sup>(1)</sup>        | Residential Green Waste Tons | Percentage of Total Residential Green Waste Tons |
|------------------------------|------------------------------|--|
| CR&R                         | 318                          | 2%   |
| Republic                     | 666                          | 4%   |
| Ware Disposal <sup>(2)</sup> | 552                          | 3%   |
| Waste Management             | 14,765                       | 91%  |
| <b>Total</b>                 | <b>16,301</b>                | <b>100%</b>                                      |

<sup>(1)</sup> Midway City Sanitary District collected residential waste in franchise area #4. Tonnage information from Midway City Sanitary District could not be provided since green waste is commingled with refuse.

<sup>(2)</sup> Ware currently grinds green waste into pellets for transformation. No additional processing facilities are needed.

Approximately 16,301 tons of green waste was collected from unincorporated area residents by CR&R, Republic, Ware and Waste Management, as indicated on their annual reports to OCWR. Midway Sanitary District was not included in this figure because they commingle green waste with refuse for the minimal quantity of residential properties they collect within unincorporated Orange County.

Per the California Department of Finance, there are approximately 36,143 residential dwellings with four or less units within the unincorporated areas of Orange County as of January 1, 2017. Dividing the previously calculated residential green waste tonnage from Table 6 by the number of residential dwellings indicates the average household produces 0.45 tons of green waste per year, or 17 pounds per week. See Table 7 below for calculation details.

**Table 7: Unincorporated Orange County Green Waste Generation per Household – CY 2016**

| Category  | Amount      |
|---|-------------|
| Residential Green Waste Tons Per Year <sup>(1)</sup>                | 16,301      |
| Residential Dwellings within OC Unincorporated Areas <sup>(2)</sup> | ÷ 36,143    |
| <b>Green Waste Generation per Dwelling per Year (in tons)</b>       | <b>0.45</b> |
| <b>Green Waste Generation per Dwelling per Week (in pounds)</b>     | <b>17</b>   |

<sup>(1)</sup> Excludes Midway City Sanitary District because it commingles green waste with refuse.

<sup>(2)</sup> Number of dwellings with four units or less per the California Department of Finance E-5 Housing Estimate.

After quantifying the annual green waste per dwelling in the unincorporated areas of Orange County, HF&H applied the estimated reported range in cost per ton (inclusive of transportation) calculated in Table 5 to determine the potential range of cost impacts for unincorporated residential customers. Please see Table 8 below for detailed calculations.



**Table 8: Unincorporated Orange County Green Waste Cost Impact per Household**

| Description   | Low Cost<br>Impact per<br>Dwelling | High Cost<br>Impact per<br>Dwelling |
|---|------------------------------------|-------------------------------------|
| Green Waste Generation per Dwelling per Year (in tons) <sup>(1)</sup> | 0.45                               | 0.45                                |
| Incremental Processing and Transportation Cost per Ton <sup>(2)</sup> | X \$33.00                          | X \$76.00                           |
| Processing Cost per Dwelling per Year                                 | \$14.85                            | \$34.20                             |
| <b>Processing Cost per Dwelling per Month</b>                         | <b>\$1.24</b>                      | <b>\$2.85</b>                       |
| CY 2016 Monthly Rates   | + \$15.57                          | + \$24.12                           |
| <u>Rates including Incremental Processing and Transportation Cost</u> | <u>\$16.81</u>                     | <u>\$26.97</u>                      |
| <b>% Rate Impact for Processing and Transportation of Green Waste</b> | <b>8%</b>                          | <b>12%</b>                          |

<sup>(1)</sup> Green waste generation per household from Table 7.

<sup>(2)</sup> Low cost and high cost rates from Table 5.

In conclusion, HF&H calculates that on average each residential dwelling in the unincorporated areas of Orange County produce approximately 0.45 tons of PGM per year. The cost for diverting this material in compliance with AB 1594 in the unincorporated areas is estimated at approximately \$1.24 per month to \$2.85 per month based on current costs reported by existing processing facilities, which represents approximately an 8% to 12% rate increase to residential rates in the unincorporated areas.

***Finding #1C: If current PGM levels were considered disposal per AB 1594, two cities within Orange County would fall below the 50% AB 939 diversion requirement.***

Starting January 1, 2020, State law AB 1594 will consider ADC as disposal, and will count against each jurisdiction's diversion. Based on 2016 countywide tonnage data from CalRecycle, approximately 580,000 annual tons of PGM will be considered disposal per AB 1594. In Orange County, this may cause some cities to fall below the 50 percent AB 939 diversion threshold. Using available 2015 diversion data from CalRecycle, HF&H recalculated each jurisdiction's diversion rate with PGM considered as disposal, and found that the City of Fountain Valley would fall below the required 50% AB 939 diversion threshold, decreasing from 57% diversion to 48%. The City of Garden Grove, which is currently below the AB939 threshold at 48% diversion as of 2015, would fall to 41% diversion. Four cities including Anaheim, Buena Park, Stanton and Villa Park would have diversion levels that range from 51% to 53% and would minimally exceed the 50% diversion requirement. Table 9 shows the impact of PGM as disposal on the AB 939 diversion rates. The reduction in diversion rates for the 35 cities would range from zero to 19 diversion percentage points, with a median reduction of seven percentage points.

**Table 9: Impact of PGM Disposal on AB 939 Diversion Rates**  
(Sorted from highest to lowest estimated diversion rate)

| Row | Jurisdiction           | 2015 Diversion Rate | Estimated Diversion Rate if PGM is Considered Disposal | Change in Percentage Points |
|-----|------------------------|---------------------|--|-----------------------------|
| 1   | Lake Forest            | 79%                 | 77%  | (2%)                        |
| 2   | Tustin                 | 74%                 | 69%  | (5%)                        |
| 3   | Huntington Beach       | 74%                 | 68%  | (6%)                        |
| 4   | Orange                 | 73%                 | 68%  | (5%)                        |
| 5   | Seal Beach             | 68%                 | 68%  | (0%)                        |
| 6   | Costa Mesa             | 72%                 | 67%  | (5%)                        |
| 7   | Cypress                | 67%                 | 67%  | (0%)                        |
| 8   | San Clemente           | 74%                 | 67%  | (7%)                        |
| 9   | Irvine                 | 71%                 | 66%  | (5%)                        |
| 10  | Westminster            | 73%                 | 66%  | (7%)                        |
| 11  | Laguna Beach           | 69%                 | 65%  | (4%)                        |
| 12  | Santa Ana              | 67%                 | 64%  | (3%)                        |
| 13  | La Habra               | 69%                 | 63%  | (6%)                        |
| 14  | Los Alamitos           | 63%                 | 63%  | (0%)                        |
| 15  | Laguna Niguel          | 74%                 | 62%  | (12%)                       |
| 16  | Laguna Woods           | 63%                 | 62%  | (1%)                        |
| 17  | Placentia              | 68%                 | 62%  | (6%)                        |
| 18  | Fullerton              | 71%                 | 61%  | (10%)                       |
| 19  | Mission Viejo          | 67%                 | 61%  | (6%)                        |
| 20  | San Juan Capistrano    | 77%                 | 61%  | (16%)                       |
| 21  | Unincorporated OC      | 71%                 | 61%  | (10%)                       |
| 22  | Yorba Linda            | 72%                 | 61%  | (11%)                       |
| 23  | Brea                   | 63%                 | 59%  | (4%)                        |
| 24  | Dana Point             | 68%                 | 58%  | (10%)                       |
| 25  | La Palma               | 69%                 | 58%  | (11%)                       |
| 26  | Laguna Hills           | 72%                 | 58%  | (14%)                       |
| 27  | Rancho Santa Margarita | 65%                 | 58%  | (7%)                        |
| 28  | Newport Beach          | 63%                 | 57%  | (6%)                        |
| 29  | Aliso Viejo            | 68%                 | 56%  | (12%)                       |
| 30  | Anaheim                | 60%                 | 53%  | (7%)                        |
| 31  | Buena Park             | 62%                 | 52%  | (10%)                       |
| 32  | Stanton                | 58%                 | 51%  | (7%)                        |
| 33  | Villa Park             | 70%                 | 51%  | (19%)                       |
| 34  | Fountain Valley        | 57%                 | 48%  | (9%)                        |
| 35  | <u>Garden Grove</u>    | <u>48%</u>          | <u>41%</u>   | <u>(7%)</u>                 |
| 36  | <b>Median</b>          | <b>69%</b>          | <b>61%</b>   | <b>(7%)</b>                 |

**Objective #2: What is the cost impact on the residential customers served by the incorporated and unincorporated area franchise haulers if Orange County were to assess a fee for processed green material delivered to County of Orange landfills?**

***Finding #2A: If the County were to charge \$10.00 per ton for the acceptance of PGM at the three OC landfills starting July 1, 2018, the weighted average cost increase for residents in the incorporated areas of Orange County is estimated at \$0.31 per home per month. The average cost increase for unincorporated area residents is estimated to be approximately \$0.38 per home per month.***

The County is considering implementing a \$10.00 per ton charge for PGM in order to support a growing market for composting. In order to quantify the impact on both incorporated and unincorporated area residents, HF&H requested annual tonnage reports from all 34 incorporated cities within Orange County. Of the cities contacted, 22 responded which accounts for 65% of the total cities, and represents 74% of the franchise PGM tonnage delivered to Orange County Landfills in 2016. Two of the 22 cities that responded (Cypress and Laguna Woods) do not send residential green material to the Orange County landfill system and have been excluded from the analysis. For details on residential franchise PGM generated in each city please refer to Table 10 below.

**Table 10: Orange County Residential PGM by City – CY 2016**

| Row | Incorporate Area (City) | Residential PGM (tons) | Percentage of Residential PGM From Orange County Cities Who Provided Annual Reports |
|-----|-------------------------|------------------------|---|
| 1   | Anaheim                 | 27,618                 | 15.0%   |
| 2   | Brea                    | 4,633                  | 2.5%  |
| 3   | Buena Park              | 2,825                  | 1.5%  |
| 4   | Dana Point              | 3,627                  | 2.0%  |
| 5   | Fullerton               | 16,357                 | 8.9%  |
| 6   | Garden Grove            | 19,569                 | 10.6%   |
| 7   | Huntington Beach        | 13,178                 | 7.2%  |
| 8   | Irvine                  | 10,763                 | 5.8%  |
| 9   | La Habra                | 6,362                  | 3.5%  |
| 10  | La Palma                | 234                    | 0.1%  |
| 11  | Laguna Beach            | 1,179                  | 0.6%  |
| 12  | Laguna Hills            | 4,830                  | 2.6%  |
| 13  | Mission Viejo           | 9,942                  | 5.4%  |
| 14  | Rancho Santa Margarita  | 3,678                  | 2.0%  |
| 15  | San Clemente            | 7,345                  | 4.0%  |
| 16  | Santa Ana               | 28,940                 | 15.7%   |
| 17  | Stanton                 | 1,527                  | 0.8%  |
| 18  | Tustin                  | 5,099                  | 2.8%  |
| 19  | Villa Park              | 2,580                  | 1.4%  |
| 20  | <u>Yorba Linda</u>      | <u>13,800</u>          | <u>7.5%</u>   |
| 21  | <b>Total</b>            | <b>184,086</b>         | <b>100.0%</b>   |

Using the housing data from the California Department of Finance and the residential PGM tons from each city, HF&H calculated the annual PGM generation per home per year for each city. Please reference Table 11 for details regarding PGM generation in each city in Orange County that provided data.

**Table 11: Orange County PGM Generation by City – CY 2016**

| Row | City                   | Residential PGM | Number of Dwellings with 4 or Less Units | Residential PGM Tons Per Home Per Year |
|-----|------------------------|-----------------|--|--|
| 1   | Anaheim                | 27,618          | 65,634                                   | 0.42                                   |
| 2   | Brea                   | 4,633           | 11,199                                   | 0.41                                   |
| 3   | Buena Park             | 2,825           | 18,138                                   | 0.16                                   |
| 4   | Dana Point             | 3,627           | 13,433                                   | 0.27                                   |
| 5   | Fullerton              | 16,357          | 33,479                                   | 0.49                                   |
| 6   | Garden Grove           | 19,569          | 35,531                                   | 0.55                                   |
| 7   | Huntington Beach       | 13,178          | 58,134                                   | 0.23                                   |
| 8   | Irvine                 | 10,763          | 60,859                                   | 0.18                                   |
| 9   | La Habra               | 6,362           | 13,768                                   | 0.46                                   |
| 10  | La Palma               | 234             | 4,356                                    | 0.05                                   |
| 11  | Laguna Beach           | 1,179           | 10,782                                   | 0.11                                   |
| 12  | Laguna Hills           | 4,830           | 8,892                                    | 0.54                                   |
| 13  | Mission Viejo          | 9,942           | 29,891                                   | 0.33                                   |
| 14  | Rancho Santa Margarita | 3,678           | 13,555                                   | 0.27                                   |
| 15  | San Clemente           | 7,345           | 21,601                                   | 0.34                                   |
| 16  | Santa Ana              | 28,940          | 48,866                                   | 0.59                                   |
| 17  | Stanton                | 1,527           | 6,260                                    | 0.24                                   |
| 18  | Tustin                 | 5,099           | 17,310                                   | 0.29                                   |
| 19  | Villa Park             | 2,580           | 2,025                                    | 1.27                                   |
| 20  | Yorba Linda            | <u>13,800</u>   | <u>21,258</u>                            | <u>0.65</u>                            |
| 21  | <b>Total</b>           | <b>184,086</b>  | <b>494,971</b>                           | <b>0.37<sup>(1)</sup></b>              |

<sup>(1)</sup> Represents weighted average.

Using the estimate of the PGM generation per home in each city within Orange County for 2016, HF&H applied a rate of \$10.00 per ton of PGM. The cost impact on city residential customers was calculated at a weighted average of \$0.31 per home per month. Please refer to Table 12 for cost impact calculations for city residents.

**Table 12: Monthly Cost Impact on City Residents within Orange County  
for Charging \$10.00 per Ton for PGM<sup>(1)</sup>**

| Row | Description             | Residential PGM Tons Per Home Per Year | Cost Increase Per Home Per Year at \$10.00 per PGM Ton | Cost Increase Per Home Per Month |
|-----|-------------------------|--|--|----------------------------------|
| 1   | Minimum                 | 0.05                                   | \$0.54   | \$0.05                           |
| 2   | <u>Maximum</u>          | <u>1.27</u>                            | <u>\$12.74</u>   | <u>\$1.06</u>                    |
| 3   | <b>Weighted Average</b> | <b>0.37</b>                            | <b>\$3.66</b>  | <b>\$0.31</b>                    |

<sup>(1)</sup> The cities of Cypress and Laguna Woods do not currently deliver PGM to Orange County Landfills. Because they are not delivering material to OC Landfills, the proposed PGM price increase will not impact their residents. Therefore, these two cities have been excluded from price impact calculations.

The cost impact on unincorporated area residential customers was calculated at \$0.38 per home per month using the same methodology as for Orange County city residents. See Table 13 below for the detailed calculation.

**Table 13: Monthly Cost Impact on Orange County Unincorporated Area Residents for Charging \$10.00 per Ton for PGM**

|  |               |
|--|---------------|
| Green Waste Generation per Dwelling (in tons) <sup>(1)</sup>         | 0.45          |
| Cost per Ton   | X \$10.00     |
| <u>Cost per Dwelling per Year for Unincorporated Area Residents</u>  | <u>\$4.50</u> |
| <b>Cost per Dwelling per Month for Unincorporated Area Residents</b> | <b>\$0.38</b> |

<sup>(1)</sup> Green waste generation per unincorporated area residential dwelling from Table 7.

In conclusion, should the County charge \$10.00 per ton for PGM delivered to Orange County landfills, the impact on residential customers within city limits would range from approximately \$0.05 to \$1.06 per home per month, with an average of \$0.31 per home per month. The impact on unincorporated area residential customers would be approximately \$0.38 per month. Note that cities that use PGM as ADC will only continue to receive diversion credit for ADC until January 1, 2020.

***Finding #2B: If the County were to charge the existing WDA rate of \$33.50 per ton for the acceptance of PGM at the three OC landfills, the weighted average cost increase for City residents is estimated at \$1.03 per home per month. The average cost increase for unincorporated area residents is estimated to be approximately \$1.26 per home per month.***

The County is also considering charging the WDA rate, currently \$33.50 per ton, for PGM delivered to the Orange County Landfills. Using the same methodology as Finding #2A of this report, and the annual PGM quantities for each incorporated city, HF&H was able to estimate the impact to residents of each city within Orange County. As shown in Table 14, the cost impact to city residents ranges from a minimum of \$0.14 per home per month to a maximum of \$3.55 per home per month, with a weighted average of \$1.03 per home per month.

**Table 14: Monthly Cost Impact on City Residents within Orange County for Charging WDA Rate (\$33.50 per Ton) for PGM <sup>(1)</sup>**

| City                    | Residential PGM Tons Per Home Per Year | Cost Increase Per Home Per Year at \$33.50 per ton for PGM | Cost Increase Per Home Per Month |
|-------------------------|--|--|----------------------------------|
| Minimum                 | 0.05                                   | \$1.68   | \$0.14                           |
| <u>Maximum</u>          | <u>1.27</u>                            | <u>\$42.55</u>   | <u>\$3.55</u>                    |
| <b>Weighted Average</b> | <b>0.37</b>                            | <b>\$12.40</b>   | <b>\$1.03</b>                    |

<sup>(1)</sup> The cities of Cypress and Laguna Woods do not currently deliver PGM to Orange County Landfills. Because they are not delivering material to OC Landfills, the proposed PGM price increase will not impact their residents. Therefore, these two cities have been excluded from price impact calculations.

The cost impact on unincorporated area residential customers was calculated at \$1.26 per month using the same methodology as for city residents within Orange County. See Table 15 on the following page for detailed calculations.

**Table 15: Monthly Cost Impact on Orange County Unincorporated Area Residents for Charging \$10.00 per Ton for PGM**

|  |                |
|--|----------------|
| Green Waste Generation per Dwelling (in tons) <sup>(1)</sup>         | 0.45           |
| <u>Cost per Ton</u>  | X \$33.50      |
| <u>Cost per Dwelling per Year for Unincorporated Area Residents</u>  | <u>\$15.08</u> |
| <b>Cost per Dwelling per Month for Unincorporated Area Residents</b> | <b>\$1.26</b>  |

<sup>(1)</sup> Green waste generation per unincorporated area residential dwelling calculated in Table 7.

As described earlier in the report, there will no diversion credit for PGM used as ADC after January 1, 2020. Therefore, after January 1, 2020 PGM used as ADC will be considered disposal. Should the County charge the WDA rate for PGM after January 1, 2020, cities will not have ADC counted as diversion, and are likely to request the hauler to divert residential green waste at a processing facility for diversion credit.

**Finding #2C: Residential green waste collected by the waste haulers within the incorporated cities and unincorporated areas of Orange County account for approximately 60% of total PGM delivered to the three county landfills.**

Should Orange County charge for PGM, findings #2A and #2B estimate the cost impacts to the residential sector only. As shown in Table 16 on the following page, residential green waste tonnage collected from the cities and unincorporated areas of the county represent approximately 60% of total PGM. Although the scope of this study was limited to estimating residential cost impacts, self-haulers, landscapers, and commercial businesses that generate green waste may be affected by the PGM charges as well.

**Table 16: Residential Green Waste Collected as a Percentage of Total PGM – CY 2016**

| Row | City                   | Residential Green Waste Tons Per Home Per Year <sup>(1)</sup> | Total PGM Per Year <sup>(2)</sup> | Residential Green Waste as % of Total PGM |
|-----|------------------------|---|-----------------------------------|---|
| 1   | Anaheim                | 27,618  | 58,655                            | 47%                                       |
| 2   | Brea                   | 4,633   | 6,051                             | 77%                                       |
| 3   | Buena Park             | 2,825   | 18,484                            | 15%                                       |
| 4   | Dana Point             | 3,627   | 8,461                             | 43%                                       |
| 5   | Fullerton              | 16,357  | 25,156                            | 65%                                       |
| 6   | Garden Grove           | 19,569  | 24,691                            | 79%                                       |
| 7   | Huntington Beach       | 13,178  | 40,078                            | 33%                                       |
| 8   | Irvine                 | 10,763  | 11,257                            | 96%                                       |
| 9   | La Habra               | 6,362   | 9,839                             | 65%                                       |
| 10  | La Palma               | 234   | 2,913                             | 8%  |
| 11  | Laguna Beach           | 1,179   | 1,139                             | 103%                                      |
| 12  | Laguna Hills           | 4,830   | 8,566                             | 56%                                       |
| 13  | Mission Viejo          | 9,942   | 12,039                            | 83%                                       |
| 14  | Rancho Santa Margarita | 3,678   | 5,336                             | 69%                                       |
| 15  | San Clemente           | 7,345   | 10,736                            | 68%                                       |
| 16  | Santa Ana              | 28,940  | 28,813                            | 100%                                      |
| 17  | Stanton                | 1,527   | 6,246                             | 24%                                       |
| 18  | Tustin                 | 5,099   | 8,933                             | 57%                                       |
| 19  | Villa Park             | 2,580   | 3,277                             | 79%                                       |
| 20  | <u>Yorba Linda</u>     | <u>13,800</u>   | <u>16,818</u>                     | <u>82%</u>                                |
| 21  | <b>Total</b>           | <b>184,086</b>  | <b>307,486</b>                    | <b>60% <sup>(3)</sup></b>                 |

<sup>(1)</sup> Total PGM from OC Landfill report.

<sup>(2)</sup> Residential green waste tons from annual hauler reports submitted to each city. For haulers reporting gross tons collected, net tons delivered as PGM could be less after removal of contamination during processing.

<sup>(3)</sup> Represents weighted average for 20 cities who provided annual reports for this study.

### **Objective #3: Identify the historical experience of other landfill operators that assessed a fee for PGM (e.g. Riverside County and San Bernardino County).**

#### **Finding #3A: Processed green material delivered to Riverside County Landfills declined by 96% between 2008 and 2010 with the imposition of a \$10.00 per ton fee.**

Riverside County implemented a fee of \$10 per ton for PGM starting July 1, 2009. HF&H obtained the gate rates from Riverside County landfills and overlaid them with Riverside County ADC tonnages collected through CalRecycle's Disposal Reporting System. Refer to Figure 5 below for details regarding disposal tonnages and gate rates.



**Figure 5: ADC Use at Lamb Canyon and Badlands Landfills in Riverside County**



While ADC tonnage delivered to Riverside County Landfills already declined by 29% from 2005 to 2008, the above chart indicates that the approval on July 24, 2008 of the imposition of a fee for ADC effective July 1, 2009 was a factor in the decline of ADC tons delivered to Riverside County landfills, as evidenced by the 96% decline in tonnage from 2008 to 2010. Tonnage at the Riverside County landfills increased from 2013 through 2015, which can be partially attributed to the closure of Puente Hills Landfill on October 31, 2013.

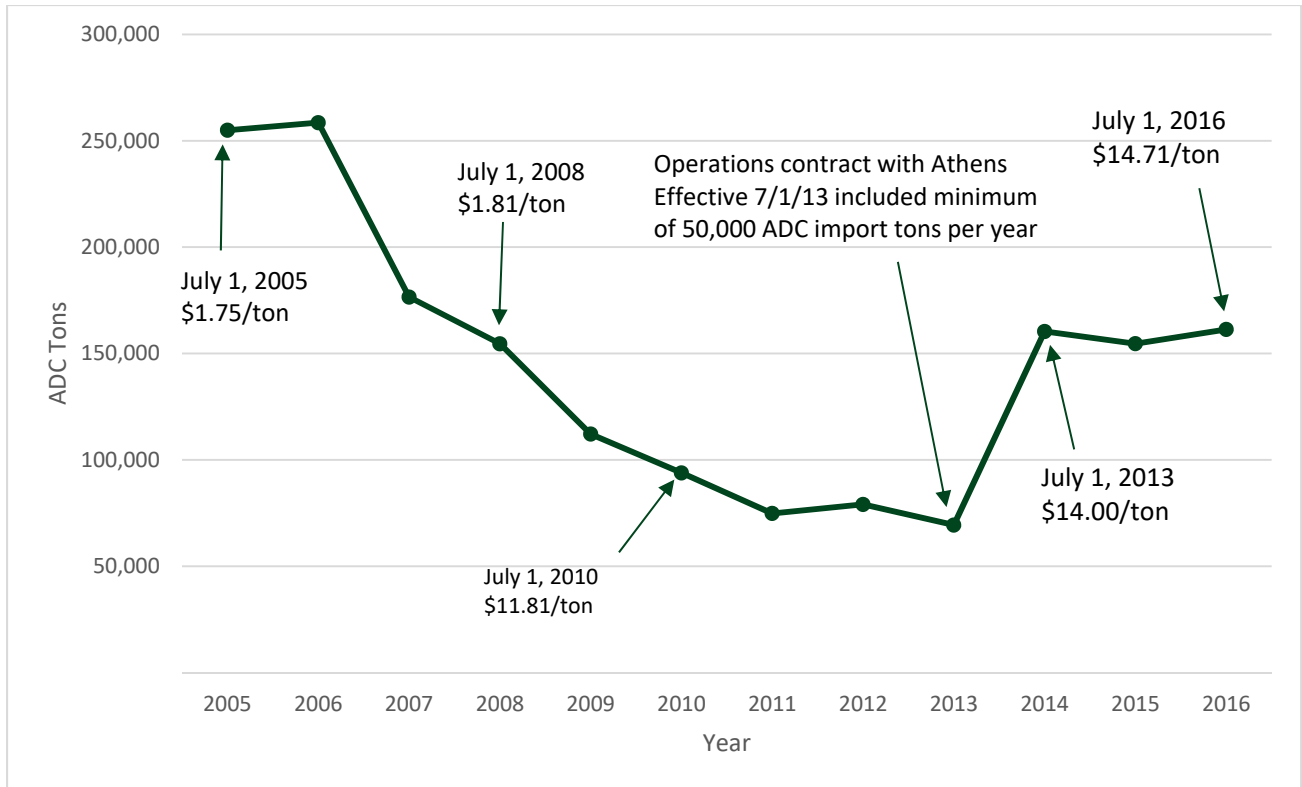
**Finding #3B: Processed green material delivered to San Bernardino County landfills decreased by 73% from July 2005 through December 2011 with the imposition of a fee for ADC.**

San Bernardino County’s experience with imposing a fee for ADC at the San Bernardino County landfills was consistent with Riverside County’s experience. From July 2005 through June 2010, San Bernardino County charged a fee for ADC, that ranged from \$1.75 to \$1.81 per ton, which resulted in a 56% decline in ADC tonnage delivered to their landfill system. On July 1, 2010 the fee for ADC delivered to San Bernardino County landfills was increased to \$11.81, which resulted in an additional 20% decline in tonnage by December 31, 2011. From July 1, 2005 through December 31, 2011 there was a cumulative decline in ADC tonnage delivered to San Bernardino County landfills of 73%

ADC tonnage increased by 132% in 2014 despite an increase in the ADC tonnage fee due to a contractual obligation for the new landfill operator (Athens Services) to deliver a minimum of 50,000 tons of green waste per year. On July 1, 2013, San Bernardino County contracted with Athens Services to operate the San Bernardino County landfill system, with the contract stipulating that Athens deliver a minimum of 50,000 tons per year of material for alternative daily cover, up to a maximum of 150,000 tons per year at the “ADC Article 20 Import Rate,” which is currently \$14.71 per ton as of July 1, 2017. Additional ADC tonnage delivered by Athens above 150,000 tons per year, or from other haulers is accepted at the San

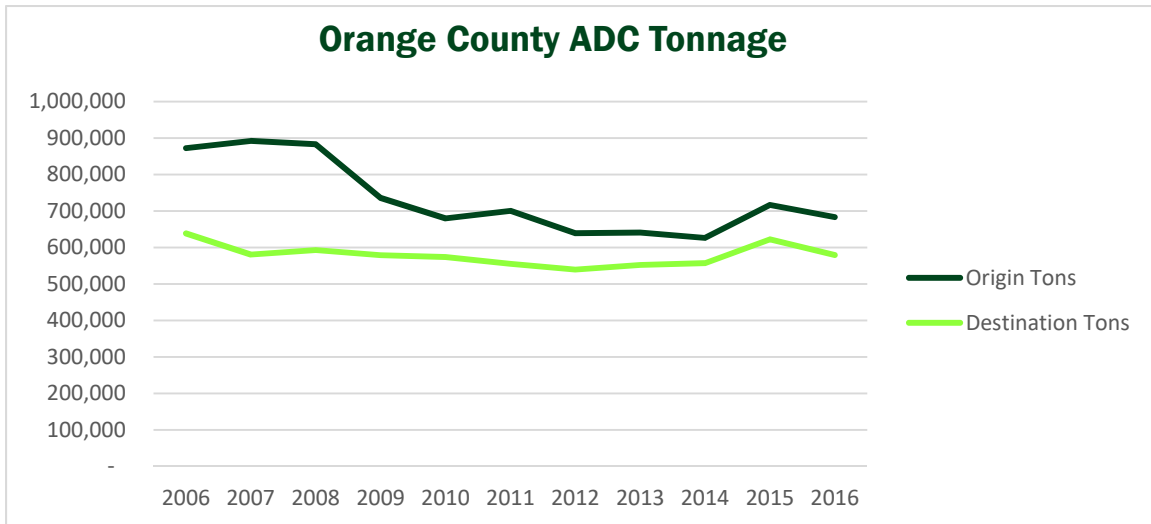
Bernardino County landfill system at the rate of \$47.94 per ton. See Figure 6 below for ADC tonnage details at the San Bernardino County landfill system.

**Figure 6: ADC Tonnage at San Bernardino County Landfills**



## Appendix A

### Orange County ADC Tonnage 2016



| Year           | Orange County ADC Origin Tons <sup>(1)</sup> | Orange County ADC Destination Tons <sup>(2)</sup> |
|----------------|--|---|
| 2007           | 892,255                                      | 580,728   |
| 2008           | 882,797                                      | 593,087   |
| 2009           | 736,100                                      | 579,147   |
| 2010           | 680,067                                      | 573,545   |
| 2011           | 700,442                                      | 555,304   |
| 2012           | 639,183                                      | 539,746   |
| 2013           | 640,641                                      | 552,367   |
| 2014           | 626,188                                      | 556,883   |
| 2015           | 716,615                                      | 622,486   |
| 2016           | 683,540                                      | 579,387   |
| <b>Average</b> | <b>719,783</b>                               | <b>573,268</b>                                    |
| <b>Median</b>  | <b>691,991</b>                               | <b>576,346</b>                                    |

<sup>(1)</sup> From CalRecycle DRS Origin Report for 2016. Origin means the jurisdiction where the waste was produced.

<sup>(2)</sup> From CalRecycle DRS Destination Report for 2016. Destination means the county where the waste was disposed.

**Appendix B**  
**Fully Permitted Organics Processing Facilities Capacity Information For**  
**Surveyed Facilities**  
**(Sorted by Highest to Lowest Permitted Capacity)**

| Row       | Facility <sup>(1)</sup>  | CalRecycle Maximum Permitted Capacity (Tons Per Day) <sup>(2)</sup> | Available Daily Capacity (Tons) <sup>(3)</sup> |
|-----------|--|---|--|
| 1         | Agromin Organics Recycling                                     | 4,170   | 0  |
| 2         | Tierra Verde Industries EcoCentre                              | 3,000   | 1,500  |
| 3         | Victor Valley Regional Composting Facility (American Organics) | 700   | 500  |
| 4         | Miramar Greenery   | 690   | 0  |
| 5         | Perris Transfer Station and MRF (CR&R)                         | 520   | 0  |
| 6         | La Pata Avenue Green Waste Facility                            | 500   | 150  |
| 7         | One Stop Landscape Supply Center                               | 500   | N/A  |
| 8         | El Corazon Compost Facility                                    | 500   | 0  |
| 9         | Inland Empire Regional Composting Facility                     | 420   | 0  |
| 10        | American Soil Amendment Products                               | 330   | 0  |
| 11        | Coachella Valley Composting Facility                           | 250   | N/A  |
| 12        | Agromin Chino  | 200   | 0  |
| 13        | Limoneira / Agromin Ag. Composting Op.                         | 200   | 0  |
| 14        | Evergreen Nursery Compost Facility                             | 170   | 0  |
| 15        | West Valley Materials Recovery Facility                        | N/A   | 0  |
| <b>16</b> | <b>Total</b>   | <b>12,150</b>   | <b>2,150</b>                                   |

<sup>(1)</sup> Surveyed facilities with full composting permit within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego, and Ventura. See Finding #1A for a description of how facilities were selected for surveying.

<sup>(2)</sup> Available Capacity per CalRecycle's SWIS Database.

<sup>(3)</sup> Available capacity as of July 2017. Information obtained through telephone interviews with facilities. The data was not independently verified.

**Appendix B**  
**Fully Permitted Organics Processing Facilities Location Information For**  
**Surveyed Facilities**  
**(Sorted in Alphabetical Order)**

| Row <sup>(1)</sup> | Name <sup>(2)</sup>                        | Operator                     | Address   |
|--------------------|--|------------------------------|---|
| 1                  | Agromin Chino                              | Agromin Inc.                 | 8100 Chino-Corona Road, Chino, CA 91708                         |
| 2                  | Agromin Organics Recycling                 | Agromin Inc.                 | 6859 Arnold Road Port Hueneme, CA                               |
| 3                  | American Soil Amendment Products           | American Soil                | 4730 Tapo Canyon Road, Simi Valley, CA 93063                    |
| 4                  | Coachella Valley Composting Facility       | Burrtec                      | 87011 Landfill Road, Coachella, CA 92236                        |
| 5                  | El Corazon Compost Facility                | Agriservice, Inc.            | 3210 Oceanside Boulevard, Oceanside, CA 92056                   |
| 6                  | Evergreen Nursery Compost Facility         | Evergreen Distributors, Inc. | 3231 Oceanside Boulevard, Oceanside, CA 92056                   |
| 7                  | Inland Empire Regional Composting Facility | IEUA and SDLAC               | 12645 Sixth Street, Rancho Cucamonga, CA 91730                  |
| 8                  | La Pata Avenue Greenwaste Facility         | Tierra Verde Industries      | 31748 La Pata Avenue, San Juan Capistrano, CA 92675             |
| 9                  | Limoneira / Agromin Ag. Composting Op.     | Agromin Inc.                 | S. End Olive/Edwards Ranch Rd. via Hwy126 Santa Paula, CA 93060 |
| 10                 | Miramar Greenery                           | City of San Diego            | 5180 Convoy Street, San Diego, CA 92111                         |
| 11                 | One Stop Landscape Supply Center           | One Stop Landscape Supply    | 13024 San Timoteo Canyon Road, Redlands, CA 92373               |
| 12                 | Perris Transfer Station and MRF            | CR&R                         | 1706 Goetz Road, Perris, CA 92570                               |
| 13                 | Tierra Verde Industries EcoCentre          | Tierra Verde Industries      | 8065 Marine Way, Planning Area 51, Irvine, CA 92618             |
| 14                 | Victor Valley Regional Composting Fac.     | Athens Services              | 20055 Shay Road, Victorville, CA 92392                          |
| 15                 | West Valley Materials Recovery Facility    | Burrtec                      | 13373 Napa Street, Fontana, CA 92335                            |

<sup>(1)</sup> Row numbers correspond with map labels on second page of Appendix B.

<sup>(2)</sup> Source: CalRecycle SWIS Facility Database.





## Appendix C

### Surveyed Organics Processing Facilities Subject to Regulatory Notification Tier (Sorted in Alphabetical Order)

| Row | Name <sup>(1)</sup>                                    | County                | Cal Recycle Capacity <sup>(2)</sup> |
|-----|--|-----------------------|-------------------------------------|
| 1   | A. Lua Recycling, Inc. <sup>(3)</sup>                  | Riverside County      | 10,000 Cubic Yards / Day            |
| 2   | Agromin OC- Oceanside Green Materials                  | San Diego County      | 62,000 Tons / Year                  |
| 3   | Andre Landscape Services Inc.                          | San Bernardino County | 10,000 Cubic Yards / Year           |
| 4   | Artesia Sawdust Products                               | San Bernardino County | 12,499 Cubic Yards / Day            |
| 5   | Baker Canyon Green Recycling                           | Orange County         | 73,000 Tons / Year                  |
| 6   | Bemus Landscape, Inc.                                  | San Bernardino County | 20 Tons / Day                       |
| 7   | Beneficial Ag. Services <sup>(5)</sup>                 | San Bernardino County | 50,000 Cubic Yards / Day            |
| 8   | C M Topsoil Inc.                                       | LA County             | 100 Cubic Yards / Day               |
| 9   | Cal Blends Inc.  | LA County             | 50 Cubic Yards / Day                |
| 10  | CLS Landscape Management                               | San Bernardino County | 200 Tons / Day                      |
| 11  | CR R Lakeview  | Riverside County      | 15 Tons / Day                       |
| 12  | Ecology Auto Parts                                     | San Bernardino County | 500 Tons / Day                      |
| 13  | Foothill Soils, Inc.                                   | LA County             | 200 Tons / Day                      |
| 14  | Golden Rain Foundation Composting Op.                  | Orange County         | 20 Tons / Day                       |
| 15  | Greenwise Soil Technologies                            | LA County             | 250 Tons / Day                      |
| 16  | GS Brothers, Inc.                                      | LA County             | 100 Tons / Day                      |
| 17  | Hanson Aggregates A-1 Soils                            | San Diego County      | 240 Cubic Yards / Day               |
| 18  | JMD Composting Operations                              | San Diego County      | 200 Tons / Day                      |
| 19  | Lopez Canyon Environmental Center                      | LA County             | 12,499 Cubic Yards Onsite           |
| 20  | Mission Landscape Environmental Resource               | San Bernardino County | 75 Tons / Day                       |
| 21  | Plants Choice Comp Material Handling Op.               | San Diego County      | 200 Tons / Day                      |
| 22  | R S Soil Products, Inc. Irvine                         | Orange County         | 200 Tons / Day                      |
| 23  | Rancho Mission Viejo Compost Facility                  | Orange County         | 35,000 Tons / Year                  |
| 24  | Recycled Wood Products <sup>(5)</sup>                  | San Bernardino County | 35,000 Tons / Year                  |
| 25  | Red Star Plant Foods- Composting Site C <sup>(5)</sup> | San Bernardino County | 3,500 Cubic Yards / Day             |
| 26  | RWP <sup>(5)</sup>                                     | Riverside County      | 100,000 Cubic Yards / Year          |
| 27  | RWP Recycled Wood Products Ontario 2 <sup>(5)</sup>    | San Bernardino County | 50,000 Tons / Year                  |
| 28  | Sage Ranch   | Riverside County      | 200 Tons / Day                      |
| 29  | San Pasqual Valley Soils                               | San Diego County      | 150 Tons / Day                      |
| 30  | Southern California Landscape Supply <sup>(4)</sup>    | Riverside County      | 100 Tons / Day                      |
| 31  | Villa Park Landscape                                   | San Bernardino County | 160 Cubic Yards / Day               |
| 32  | Viramontes Express <sup>(5)</sup>                      | San Bernardino County | 5,460 Cubic Yards / Day             |
| 33  | Whittier Fertilizer Co.                                | LA County             | 100 Cubic Yards / Day               |



## Appendix C

### Surveyed Organics Processing Facilities Subject to Regulatory Notification Tier (Sorted in Alphabetical Order)

<sup>(1)</sup> Surveyed notification tier facilities within the counties of Orange, San Bernardino, Riverside, Los Angeles, San Diego, and Ventura. See Finding #1A for a description of how facilities were selected for surveying.

<sup>(2)</sup> Source: CalRecycle SWIS Facility Database.

<sup>(3)</sup> A. Lua Recycling indicated it has available capacity to accept approximately 150 tons per day of PGM.

<sup>(4)</sup> Southern California Landscape Supply indicated it has the available capacity to accept approximately 97 tons per day of PGM

<sup>(5)</sup> Facilities did not respond to requests for information regarding available capacity.