City and County of Honolulu ISWMP Advisory Committee Presentation

Section 8: Facility Capacity and Siting

June 12, 2018
Agenda Review

i. Welcome and Agenda Overview

ii. April 3, 2018 Meeting Minutes - Comments or Corrections

iii. Review Comment/Resolution on Sections 3, 4, 6, 7 and 9

iv. Presentation and Discussion - Section 8, Facility Capacity and Siting

v. Public Comments on Section 8
April 3, 2018 Meeting Minutes

• Comments
• Corrections
Review Comment/Resolutions

• Section 3
• Section 4
• Section 6
• Section 7
• Section 9
Section 8: Facility Capacity and Siting
Goals and Objectives

The City has the following goals and objectives related to the network of solid waste facilities that handle MSW in the City’s system:

• Provide the type and size of facilities needed to provide comprehensive and cost-effective solid waste disposal and recycling services to the public

• Evaluate and respond to changes needed at existing facilities

• Plan for needed future facilities

The City’s approach to achieving these goals and objectives is to continuously evaluate the capacities of existing facilities, while observing the onset of new recycling and disposal technologies or facilities that may be needed in order to more effectively manage solid waste.
Per Section 342G-25(c) of the Hawaii Revised Statutes (HRS), the facility capacity and siting element shall include descriptions of existing capacity and future needs, facility implementation tasks, and enterprise zones. Expanding on Section 342G-25(c), HRS Section 342G-27 further details the information to be included within each component:

• The existing capacity and future needs component shall identify existing and future facilities needed by the county for solid waste management

• The facility implementation component shall describe the specific tasks that are necessary to provide for the development or expansion of source reduction, recycling, bioconversion, and disposal facility capacity

• The enterprise zone component shall describe the county’s current and planned actions to establish enterprise zones

In addition to the facility capacity and siting element, Section 8 includes information required for the Plan’s landfill and incineration component described in HRS Section 342G-26(h):

• Assess the county’s current landfill capacity and ways to extend that capacity

• Assess the availability of land for future landfills

• Estimate the amount of waste currently going into incineration facilities and the remaining available capacity

• Estimate the quantity of ash generated at incineration facilities

• Describe provisions for ash disposal
Enterprise Zones

• HRS Section 342G-25 lists inclusion of “an enterprise zone component” as part of “the facility capacity and siting element” of the plan

• The Hawaii State Legislature has established enterprise zones to encourage certain types of business activity, job creation, and economic diversification in desired areas

• The State offers tax exemptions and other incentives to businesses willing to locate in enterprise zones and provide employment in these designated areas

• In addition to State benefits, the City offers their own incentives
Enterprise Zones

- There are currently six designated enterprise zones on Oahu
  - North Shore – Mililani – Wahiawa
  - Pearl City – Ewa – Central Oahu
  - Waipio Oahu
  - Leeward Oahu
  - Urban Honolulu
  - Waimanalo
Waste Processing Capacity and Solid Waste Growth

Understanding the existing capacity and future needs of those facilities is an important element of solid waste planning.

- In 2017, a report was prepared for the City, titled the *Assessment of Municipal Solid Waste Handling Requirements for the Island of O‘ahu* (2017 Assessment)

- This report included waste projections through the year 2040 based on historic solid waste generation patterns and the expected *de facto* population on O‘ahu as predicted by the Department of Business, Economic Development and Tourism (DBEDT)

- Findings from the 2017 Assessment have been incorporated into the capacity analyses prepared in this section (discussed within each facility type)

- In general, solid waste generation is expected to follow an increasing trend over the next ten years (2017 to year 2028)
  - MSW tonnage will increase by a total of approximately 3.1 percent
  - Recyclable materials tonnage by a total of 7.6 percent
  - Projections do not take into account additional changes outside of population growth (e.g. regulatory changes or operational modifications)
Existing Capacity and Future Needs

• Section 8 includes an evaluation of existing capacity and future needs

• Primary focus is on City facilities
  – Convenience Centers
  – Transfer Stations
  – Waste-to-Energy (H-POWER)
  – MSW Landfill (Waimanalo Gulch Sanitary Landfill)

• Since the City has limited control over waste flow through private and contracted facilities, these solid waste facilities are discussed to a lesser extent
Convenience Centers

- The Refuse Division operates six convenience centers located throughout the island where residents can drop off up to two loads of waste per day
  - Waianae
  - Ewa
  - Waipahu
  - Waimanalo
  - Laie
  - Wahiawa
Convenience Centers

- Accept household waste from residents only, including residential refuse, green waste, auto batteries, tires, compressed gas cylinders such as propane tanks and fire extinguishers, and appliances
Waste Processing Capacity and Solid Waste Growth

Convenience Centers

• The total growth rate for MSW received at these facilities was calculated from the projected 2017 and 2028 “Total Tons Received at H-POWER and LF” quantities presented in Appendix B of the 2017 Assessment.

• The resulting total growth rate of 3.1 percent was applied to actual 2017 tonnages received at each convenience center and transfer station to project 2028 tonnages.

\[\text{[2017 tonnages]} \times 1.031 = \text{[2028 tonnages]}\]
## Capacity Analysis for Convenience Centers

<table>
<thead>
<tr>
<th>Facility</th>
<th>Annual Permitted Capacity (Tons)(^a)</th>
<th>2017 Receipt (Tons)(^b)</th>
<th>2028 Projected Receipt (Tons)(^c)</th>
<th>Projected Receipt Exceeds Permitted Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waipahu</td>
<td>14,600</td>
<td>13,490</td>
<td>13,900</td>
<td>No</td>
</tr>
<tr>
<td>Ewa</td>
<td>14,600</td>
<td>9,266</td>
<td>9,600</td>
<td>No</td>
</tr>
<tr>
<td>Waianae</td>
<td>14,600</td>
<td>6,911</td>
<td>7,100</td>
<td>No</td>
</tr>
<tr>
<td>Wahiawa</td>
<td>14,600</td>
<td>5,859</td>
<td>6,000</td>
<td>No</td>
</tr>
<tr>
<td>Laie</td>
<td>14,600</td>
<td>4,009</td>
<td>4,100</td>
<td>No</td>
</tr>
<tr>
<td>Waimanalo</td>
<td>14,600</td>
<td>5,160</td>
<td>5,300</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:

\(^a\) Permitted Capacity is based on the permitted capacity of 40 tons per day (set forth in the current permit) multiplied by 365 days per year.

\(^b\) 2017 Receipt encompasses quantities collected in FY 2017.

\(^c\) 2028 Projected Receipt tonnages are based on a total growth percentage (3.1 percent), derived from the 2017 Assessment of Municipal Solid Waste Handling Requirements for the Island of O’ahu forecasted 2017 and 2028 tonnages, applied to 2017 Receipt tonnages.
Convenience Centers

• Other than for Waipahu, it is not anticipated that any of the other existing convenience centers are nearing permitted capacity or will require expansion or support from neighboring facilities to accommodate solid waste growth
Convenience Center Future Needs

• The City is currently planning to construct a seventh convenience center on the leeward side of the island

• The convenience center is planned to be located at the new refuse facility in Campbell Industrial Park, Kapolei

• The new location could alleviate the traffic received at the Ewa, Waianae, and Waipahu convenience centers

• Furthermore, providing more options for disposal may lead to a decrease in illegal dumping
## Convenience Center Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Signage</td>
<td>Investigate the need for updating or improving facility signage</td>
<td>Planned</td>
</tr>
<tr>
<td>Staff Training</td>
<td>Investigate better training of facility attendants to enforce disposal compliance</td>
<td>Planned</td>
</tr>
<tr>
<td>Driver Availability</td>
<td>Increase the number of drivers available to change out bins at facilities</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Facility Inspections</td>
<td>Continue to conduct regular inspections to identify maintenance needs (pavement condition, guard shack condition, vegetation overgrowth, etc.)</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
## Convenience Center Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bin Replacement</strong></td>
<td>Replace 15 to 20 roll-off bins every three to four years</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Guard Shacks</strong></td>
<td>Replace/Repair existing guard shacks</td>
<td>Planned</td>
</tr>
<tr>
<td><strong>Metals Bin Pilot Test</strong></td>
<td>Conclude pilot test of a metals bin at Ewa Convenience Center and roll out to other convenience centers, if appropriate</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td><strong>Materials Acceptance</strong></td>
<td>Investigate accepting more types of materials (such as more battery types and compressed gas tanks) and modify recycler contracts, accordingly</td>
<td>Planned</td>
</tr>
<tr>
<td><strong>Donation Station</strong></td>
<td>Investigate feasibility of partnering with nonprofit organizations to host reuse/donation stations at convenience centers</td>
<td>Planned</td>
</tr>
<tr>
<td><strong>Permit Renewals</strong></td>
<td>Renew convenience center permits (expiration date of August 2020)</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
Transfer Stations

• The Refuse Division operates three transfer stations
  – Keehi
  – Kapaa
  – Kawailoa
Transfer Stations

• Consolidate waste from MSW collection trucks into large transfer trailers for more efficient and economical transport to H-POWER

• Residents may dispose of their MSW for free; commercial users must pay a tipping fee
Transfer Stations

• The total growth rate for MSW received at these facilities was calculated from the projected 2017 and 2028 “Total Tons Received at H-POWER and LF” quantities presented in Appendix B of the 2017 Assessment.

• The resulting total growth rate of **3.1 percent** was applied to actual 2017 tonnages received at each convenience center and transfer station to project 2028 tonnages.

\[
[2017 \text{ tonnages}] \times 1.031 = [2028 \text{ tonnages}]
\]
## Capacity Analysis for Transfer Stations

<table>
<thead>
<tr>
<th>Facility</th>
<th>Annual Permitted Capacity (Tons)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2017 Receipt (Tons)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>2028 Projected Receipt (Tons)&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Projected Receipt Exceeds Permitted Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keehi</td>
<td>182,500</td>
<td>100,978</td>
<td>104,100</td>
<td>No</td>
</tr>
<tr>
<td>Kapaa</td>
<td>182,500</td>
<td>80,608</td>
<td>83,100</td>
<td>No</td>
</tr>
<tr>
<td>Kawailoa</td>
<td>29,200</td>
<td>16,602</td>
<td>17,100</td>
<td>No</td>
</tr>
</tbody>
</table>

**Notes:**

<sup>a</sup> Annual Permitted Capacity is based on the permitted capacity of 500 tons per day (Keehi and Kapaa) and 80 tons per day (Kawailoa) (set forth in the current permit) multiplied by 365 days per year.

<sup>b</sup> 2017 Receipt encompasses quantities collected in FY 2017.

<sup>c</sup> 2028 Projected Receipt tonnages are based on a total growth percentage (3.1 percent), derived from the 2017 Assessment of Municipal Solid Waste Handling Requirements for the Island of O‘ahu forecasted 2017 and 2028 tonnages, applied to 2017 Receipt tonnages.
Transfer Stations Future Needs

- It is not anticipated that existing transfer stations will require expansion to accommodate solid waste growth.
- The facility receiving the most tonnage, Keehi Transfer Station, currently receives an MSW tonnage of approximately 101,000 tons per year.
- It is projected that by year 2028 the tonnage receipt will increase to 104,100 tons; this quantity is still within the permitted capacity of 182,500 tons.
## Transfer Stations Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Configuration</td>
<td>Evaluate the traffic flow through facilities and then design and construct improvements, as appropriate</td>
<td>Planned</td>
</tr>
<tr>
<td>Facility Signage</td>
<td>Investigate the need for updating or improving facility signage</td>
<td>Planned</td>
</tr>
<tr>
<td>Staff Training</td>
<td>Investigate better training of facility attendants to enforce disposal compliance</td>
<td>Planned</td>
</tr>
<tr>
<td>Structural Assessments</td>
<td>Perform structural assessments at Keehi and Kawailoa transfer stations. Identify facility needs and secure contracts for repair work</td>
<td>Planned</td>
</tr>
<tr>
<td>Open Top Loading Transition</td>
<td>Complete transition from four-line compactor operations to two-chute open top loading at Keehi Transfer Station</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Pit Floor and Tip Floor Exit Improvements</td>
<td>Complete repairs to the pit floor and tip floor exit as well as other structural improvements at Kapaa Transfer Station</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Facility/Future Need</td>
<td>Action Item/Implementation Task</td>
<td>Initiative Timeframe</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Green Waste Load-out Area</td>
<td>Plan, design, and construct a new green waste load-out area at Kapaa Transfer Station</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Additional Load-out Area</td>
<td>Plan, design, and construct an additional load-out area at Kawailoa Transfer Station</td>
<td>Planned</td>
</tr>
<tr>
<td>Materials Acceptance</td>
<td>Implement acceptance of householder bulky waste and expanded householder hours at Keehi Transfer Station; investigate accepting more types of materials at Keehi Transfer Station, including Honolulu green waste and blue bin material, and householder white goods, tires, propane tanks, and fire extinguishers; investigate adding Sunday as a normal day of operations to Keehi Transfer Station and evaluate receiving schedule for early morning routes; investigate accepting more types of materials at all transfer stations (such as more battery types and compressed gas tanks) and modify recycler contracts, accordingly</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td>Donation Station</td>
<td>Investigate feasibility of partnering with nonprofit organizations to host reuse/donation stations at transfer stations</td>
<td>Planned</td>
</tr>
<tr>
<td>Permit Renewals</td>
<td>Renew transfer station permits (expiration date of August 2020)</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
Waste-to-Energy Facility (H-POWER)

- H-POWER is the only WTE facility on Oahu
- The facility uses two combustion processes to process combustible solid waste materials into energy:
  - Refuse-derived fuel (RDF) incineration
  - Mass burn incineration
Waste-to-Energy Facility (H-POWER)

• Historically up to 90 percent of the volume of the MSW received at H-POWER is diverted from WGSL and converted into renewable electric energy.

• H-POWER also extracts ferrous and non-ferrous metals from the waste, which is sent to recycling facilities for further processing.

• Facility boiler capacity of approximately 952,000 tons per year.

• Operational maximum capacity is estimated to be 900,000 tons per year (accounting for routine downtime).
Waste Processing Capacity and Solid Waste Growth

H-POWER

- The total growth rate for all MSW received at these two facilities was calculated from the projected 2017 and 2028 “Total Tons Received at H-POWER and LF” quantities presented in Appendix B of the 2017 Assessment.
- The resulting total growth rate of 3.1 percent was applied to the total actual 2017 tonnage of MSW received at H-POWER and WGSL to forecast the total MSW tonnage in 2028.
- Subsequently, portions of the forecasted 2028 total MSW tonnage were then allocated to H-POWER and WGSL based on the expected operational ability of H-POWER in 2028.
  - H-POWER is expected to process approximately 95.5 percent of total MSW in 2028 per Appendix B of the 2017 Assessment.

\[
\text{[2017 total MSW tonnage]} \times 1.031 = \text{[2028 total MSW tonnage]} \\
\text{[2028 total MSW tonnage]} \times 0.95 = \text{[2028 H-POWER tonnage]} 
\]
# Capacity Analysis for H-POWER

<table>
<thead>
<tr>
<th>Facility</th>
<th>Annual Boiler Design Capacity (Tons)(^a)</th>
<th>2017 Receipt (Tons)(^b)</th>
<th>2028 Projected Receipt (Tons)(^c)</th>
<th>Projected Receipt Exceeds Permitted Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-POWER</td>
<td>951,920</td>
<td>695,414</td>
<td>793,000</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:

\(^a\) Annual Boiler Design Capacity is based on the sum of the individual boiler design capacities (854 tons per day, 854 tons per day, and 900 tons per day) multiplied by 365 days per year.

\(^b\) 2017 Receipt is based on Covanta’s monthly material reports.

\(^c\) 2028 Projected Receipt tonnages are based on a total growth percentage (3.1 percent) derived from the 2017 Assessment of Municipal Solid Waste Handling Requirements for the Island of O’ahu applied to the total quantity of MSW received in 2017. A portion of the forecasted 2028 total MSW tonnage was then allocated to H-POWER based on the forecasted split in 2028 between anticipated MSW tonnages to H-POWER and WGSL.
H-POWER Future Needs

• Existing H-POWER processing capacity will be sufficient to handle projected solid waste growth, thus H-POWER expansion is not anticipated in the next ten years

• The City plans to complete a number of maintenance and capital improvement projects, most of which have been budgeted in the City’s Capital Improvements Plan
## H-POWER Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvements to Vehicle Traffic Flow</td>
<td>Complete study, assess recommendations, secure contract, and complete improvements</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Roof Rehabilitation</td>
<td>Secure contract and complete work</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Ash Building Rehabilitation</td>
<td>Develop plans, secure contract, and complete work</td>
<td>Planned</td>
</tr>
<tr>
<td>Third Boiler Enclosure</td>
<td>Develop plans, secure contract, and complete work</td>
<td>Planned</td>
</tr>
</tbody>
</table>
## H-POWER Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Refurbishment</td>
<td>Work with Covanta to assess needs, secure contracts, and complete work</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td>Waste Processing and Baling</td>
<td>Develop plans, secure contract, and complete work</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td>Enhanced Metal Recovery</td>
<td>Investigate feasibility, develop plans, secure contract, and complete work</td>
<td>Planned</td>
</tr>
<tr>
<td>Heat Recovery and Energy Utilization</td>
<td>Investigate feasibility, develop plans, secure contract, and complete work</td>
<td>Planned</td>
</tr>
<tr>
<td>Long-Range Planning</td>
<td>Assess future needs and plan for future expansion as appropriate</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
MSW Landfill - Waimanalo Gulch Sanitary Landfill (WGSL)

- WGSL is the primary permitted MSW landfill on Oahu and is located at 92-460 Farrington Highway in Kapolei on the western side of Oahu in Waimanalo Gulch
Both commercial haulers and residents can drop waste off at WGSL, however, the landfill has set policies to accept only limited types of materials including ash, special handle wastes, and small amounts (from residents) of dirt, rock, sand, gravel, and concrete.

Permitted to receive 3,500 tons of MSW per day and 600 tons of H-POWER ash per day.
Waste Processing Capacity and Solid Waste Growth

WGSL

• The total growth rate for all MSW received at these two facilities was calculated from the projected 2017 and 2028 “Total Tons Received at H-POWER and LF” quantities presented in Appendix B of the 2017 Assessment.

• The resulting total growth rate of 3.1 percent was applied to the total actual 2017 tonnage of MSW received at H-POWER and WGSL to forecast the total MSW tonnage in 2028.

• Subsequently, portions of the forecasted 2028 total MSW tonnage were then allocated to H-POWER and WGSL based on the expected operational ability of H-POWER in 2028
  – H-POWER is expected to process approximately 95.5 percent of total MSW in 2028 per Appendix B of the 2017 Assessment

• A similar methodology was utilized to derive the 2028 Projected Receipt of ash at WGSL. Using the total projected MSW for the two facilities and then applying the anticipated division of that material between the two facilities, corrects for the atypical allocation of materials in 2017 (due to diversions of MSW to WGSL caused by several major refurbishment projects at H-POWER that year)

\[
\text{[2017 total MSW tonnage]} \times 1.031 = \text{[2028 total MSW tonnage]} \\
\text{[2028 total MSW tonnage]} \times 0.05 = \text{[2028 WGSL tonnage]}
\]
## Capacity Analysis for WGSL

<table>
<thead>
<tr>
<th>Facility</th>
<th>Annual Permitted Capacity (Tons)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2017 Receipt (Tons)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>2028 Projected Receipt (Tons)&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Projected Receipt Exceeds Permitted Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGSL (MSW Landfill)</td>
<td>1,277,500</td>
<td>122,489</td>
<td>97,500</td>
<td>No</td>
</tr>
<tr>
<td>WGSL (Ash Monofill)</td>
<td>219,000</td>
<td>141,648</td>
<td>144,300</td>
<td>No</td>
</tr>
</tbody>
</table>

### Notes:

<sup>a</sup> Annual Permitted Capacity is based on the permitted capacity of 3,500 tons of MSW per day and 600 tons of ash per day (set forth in the current permit) multiplied by 365 days per year.

<sup>b</sup> 2017 Receipt encompasses quantities collected in FY 2017.

<sup>c</sup> 2028 Projected Receipt tonnages are based on a total growth percentage (3.1 percent) derived from the 2017 Assessment of Municipal Solid Waste Handling Requirements for the Island of O‘ahu applied to the total quantity of MSW received in 2017. A portion of the forecasted 2028 total MSW tonnage was then allocated to WGSL based on the forecasted split in 2028 between anticipated MSW tonnages to H-POWER and WGSL. The 2028 Projected Receipt of ash is based on the ratio of ash to MSW per the 2017 Assessment.
The City has plans to rebalance the MSW and ash portions of the landfill in order to prolong the life of WGSL. The analysis performed as part of the 2017 Assessment anticipates that the landfill will reach capacity in 2038. If the City is successful in diverting more materials from WGSL (e.g., ash RFP), the life of the landfill can be extended. The process to rebalance cell configuration is currently ongoing and will require approval by the State.
## WGSL Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill End-of-Life Monitoring</td>
<td>Perform annual evaluations to monitor the effect of solid waste generation on landfill life (evaluations are currently performed in the landfill’s annual reports)</td>
<td>Ongoing</td>
</tr>
<tr>
<td>New Landfill</td>
<td>Begin activities to site a new landfill at least ten years prior to the depletion of landfill capacity. Tasks include finalizing site selection, undertaking land acquisition (e.g., negotiation, condemnation or purchase), obtaining environmental permits, land use permits and operating permits, and conducting site planning, design, engineering, and construction</td>
<td>Planned</td>
</tr>
<tr>
<td>Permit Renewal</td>
<td>Continue to monitor the permit renewal process and rebalance configuration approval</td>
<td>Planned</td>
</tr>
<tr>
<td>Contract Extension or Re-bid Landfill Operator</td>
<td>Determine whether the contract with the landfill operator will be extended or rebid prior to contract expiration (expiration in 2024). Extend or re-bid, as appropriate</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
C&D Debris Landfill

- PVT Landfill is a privately owned and operated permitted C&D debris landfill located in Waianae (the only C&D debris landfill on Oahu)
- The PVT Landfill serves as a C&D Landfill and also conducts recycling and materials recovery operations to divert C&D debris from disposal
- Recycling and materials recovery operations consist of mining and reclamation of previously landfilled material as well as operation of a Materials Recovery Facility (MRF)

Source: http://www.pvtland.com/recycling
C&D Debris Landfill

- Permitted Capacity for 730,000 tons per year and up to 182,000 tons per year of ACM

- 2030 projections estimate approximately 200,000 tons per year of debris, and will not reach capacity

- Reclamation efforts will extend the life of the landfill

Source: http://www.pvtland.com/recycling
Waste Processing Capacity and Solid Waste Growth

PVT Landfill

- The forecast for C&D debris was derived from the 2015 *Final Environmental Impact Statement for PVT Integrated Solid Waste Management Facility – Expanded Recycling, Landfill Grading and Renewable Energy Project*

- This report forecasted approximately 200,000 tons of C&D debris generated for disposal by year 2030
## PVT Landfill Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
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<tbody>
<tr>
<td>Landfill End-of-Life Monitoring</td>
<td>City to keep apprised of PVT Landfill’s disposal and recycling initiatives to understand developments in C&amp;D debris management</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
Recycling and Processing Facilities

• The City contracts with a number of recycling and processing facilities to process certain components in the waste stream, including mixed recyclables, green waste, white goods, batteries, gas cylinders, and tires.

• Contracts with each of the facilities specify minimum tonnages that the facility must be able to accept from the City.
Waste Processing Capacity and Solid Waste Growth

Recycling and Processing Facilities

• The total growth rate for recyclable materials received at these facilities was calculated from the projected 2017 and 2028 “Recycled Materials” tonnages presented in Appendix A of the 2017 Assessment.

• The resulting total growth rate of 7.6 percent was applied to actual 2017 tonnages received at each recycling/processing facility to project 2028 tonnages.

\[
[2017 \text{ recycled material tonnage}] \times 1.076 = [2028 \text{ recycling tonnage}]
\]
Recycling and Processing Facilities

Existing Capacity

• Mixed Recyclables: The City procures recycling and processing services to handle mixed recyclables. The current contract expires in 2019 and requires that the contractor be able to process a minimum of 23,000 tons of mixed recyclables from the City and no maximum

• Green Waste: The City also procures green waste processing services. The current contract expires in 2025 and requires that the contractor be able to process a guaranteed annual minimum of 75,000 tons of green waste (or 1,440 tons per week) from the City

• White Goods: The City contracts with a white goods processor to handle white goods. The current City contract is expired; however, white goods services continue to be handled by an interim emergency purchase order
Recycling and Processing Facilities

Future Needs

• Mixed Recyclables: Anticipated to reach approximately 25,000 tons per year in ten years. Current contract expires in 2019, which is expected to handle the additional recyclables generated. After the existing contract expires, it is expected that the City will establish a new contract that includes sufficient capacity for future growth.

• Green Waste: Anticipated to reach approximately 77,000 tons per year in ten years. The processing capacity at the contracted facility is expected to handle the additional green waste generated through the contract period. After the current contract expires in year 2025, the City can then choose to extend the contract for up to ten additional years or rebid the contract.

• White Goods: Expected to reach approximately 90,000 units per year in ten years. The City is also planning a new facility in Campbell Industrial Park, Kapolei for City-collected white goods storage and processing. The existing purchase order contract is planned to be cancelled discontinued once this new facility is operational.
## Recycling and Processing Facilities Future Needs

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixed Recyclables Contract</strong></td>
<td>Determine if the contract with the mixed recyclables contractor should be extended or re-bid prior to contract expiration (expiration in 2019). Extend or re-bid, as appropriate</td>
<td>Planned</td>
</tr>
<tr>
<td><strong>Green Waste Contract</strong></td>
<td>Determine if the contract with the green waste contractor should be extended or re-bid prior to contract expiration (expiration in 2025). Extend or re-bid, as appropriate</td>
<td>Planned</td>
</tr>
<tr>
<td><strong>Contracts for Other Commodities</strong></td>
<td>Determine if contracts with other recyclables processors (white goods, batteries, tires, etc.) should be extended, re-bid, or terminated prior to contract expiration</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
New Refuse Facility in Campbell Industrial Park

• A new refuse facility is under construction on a 23-acre City-owned property on Kaomi Loop within Campbell Industrial Park, Kapolei

• The facility is intended to include different material-handling areas, including a convenience center, white goods processing facility, glass processing facility, ash and ASR facility, and MRF

• While the capacity at each of these facilities is expected to meet solid waste needs for the next ten years, the City is planning to supplement the existing facility network with this new refuse facility
New Refuse Facility in Campbell Industrial Park

- The future needs of the new refuse facility largely include feasibility studies, planning, bid solicitation, design, permitting, and construction tasks to complete each facility.
# New Refuse Facility in Campbell Industrial Park

<table>
<thead>
<tr>
<th>Facility/Future Need</th>
<th>Action Item/Implementation Task</th>
<th>Initiative Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience Center</td>
<td>Plan, design, permit, and construct facility</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td>White Goods Processing Facility</td>
<td>Release RFP, evaluate proposals, plan, design, permit, and construct facility</td>
<td>Planned</td>
</tr>
<tr>
<td>Glass Processing Facility</td>
<td>Release RFP, evaluate proposals, plan, design, permit, and construct facility</td>
<td>Planned</td>
</tr>
<tr>
<td>Ash and ASR Facility</td>
<td>Evaluate proposals, plan, design, permit, and construct facility</td>
<td>Ongoing/Planned</td>
</tr>
<tr>
<td>MRF</td>
<td>Assess feasibility, release RFP, evaluate proposals, plan, design, permit, and construct facility</td>
<td>Planned</td>
</tr>
<tr>
<td>Public Viewing Area</td>
<td>Consider building a public viewing area or education center at the new refuse facility (see Section 7 for more details)</td>
<td>Planned</td>
</tr>
</tbody>
</table>
Advisory Committee Comments
## Next Steps

<table>
<thead>
<tr>
<th>Advisory Committee Workshops (Plan sections in parentheses)</th>
<th>Completed and Proposed Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kickoff/Chartering</td>
<td>Completed – Nov. 7, 2017</td>
</tr>
<tr>
<td>2. Existing System (1), Special Wastes (5)</td>
<td>Completed – Jan. 9, 2018</td>
</tr>
<tr>
<td>4. Public Education (7), Materials Marketing and Procurement (9)</td>
<td>Completed – April 3, 2018</td>
</tr>
<tr>
<td>5. Facility Capacity and Siting [Includes Convenience Centers, Transfer Stations (TSs), H-Power, and Landfills (Section 8 in 2008 Plan), Facility Siting (Section 11 in 2008 Plan) and Enterprise Zones (Section 14 in 2008 Plan)]</td>
<td>This Meeting – June 12, 2018</td>
</tr>
<tr>
<td>6. Solid Waste Generation (2), Energy Balance and Alternative Technologies (10), and System Cost Analysis (11)</td>
<td>Tue July 10, 2018</td>
</tr>
<tr>
<td>7. Implementation Plan (12) and Draft Plan</td>
<td>Tue September 18, 2018</td>
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<tr>
<td>8. Public Hearing</td>
<td>Tue November 13, 2018</td>
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</tbody>
</table>