



Solid Waste Facility Condition Assessment and Infrastructure Management Plan

FINAL

*Thurston County Public Works
Solid Waste Division*

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Acronyms and Abbreviations

County	Thurston County
GMA	Growth Management Act
HDR	HDR Engineering, Inc.
Herrera	Herrera Environmental Consultants
Inventory	Facility Condition Assessment Inventory
Landfill	Hawks Prairie Landfill
LFG	Landfill Gas
MSW	Municipal Solid Waste
O&M	Operation and Maintenance
Plan	Solid Waste Facility Condition Assessment and Infrastructure Management Plan
Project	Solid Waste Facilities Assessment and Capital Planning Project
Rainier	Rainier Drop Box Site
Rochester	Rochester Drop Box Site
SCADA	Supervisory Control and Data Acquisition
TRPC	Thurston Regional Planning Council
WARC	Waste and Recovery Center

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Executive Summary

As population and economic activity in Thurston County (County) continue to grow, solid waste activity at the County's Waste and Recovery Center (WARC) and drop box sites will increase.

Utilizing 2017 as the base year, population forecasts indicate that the County will see an estimated 27 percent increase in population between 2017 and 2040. In order to meet these future demands, the County hired HDR Engineering, Inc. (HDR), to conduct a facility conditions assessment, perform a capital need analysis of its solid waste facilities, and prepare a Solid Waste Facility Condition Assessment and Infrastructure Management Plan (Plan). The solid waste facilities included as part of the Plan are the WARC, the closed Hawks Prairie Landfill (Landfill), the Rainier Drop Box Site (Rainier), and the Rochester Drop Box Site (Rochester).

As part of this effort, the Plan:

- Provides an overview of the current waste handling facilities that the County operates;
- Provides population and tonnage projections through 2040;
- Determines the condition of existing infrastructure;
- Evaluates whether existing capital infrastructure meets current and future service needs and operational and regulatory requirements; and
- Develops a 20-year strategic, coordinated, and fiscally responsible Plan that prioritizes recommendations to maintain, repair, replace, renovate and construct capital infrastructure to provide continued high-quality delivery of public solid waste services.

The Plan recommends scheduled implementation of 32 solid waste capital infrastructure maintenance, repair, and replacement upgrades to the facilities, presented in 2-year increments, over the planning horizon to align with the County's budgeting process. The estimated 20-year Infrastructure Management Plan costs (in 2018 dollars) by project facility are shown in Table ES-1.

Table ES-1. Facility 20-Year Estimated Costs (in 2018 \$)	
Project Facility	Estimated 20-Year Project Cost
WARC Site	\$18,694,435
Hawks Prairie Closed Landfill	\$3,990,910
Rainier/Rochester Drop Box Sites	\$3,618,980
Total All	\$26,304,325

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1 Introduction

In 2016, Thurston County (County) issued a request for proposals to conduct a facility conditions assessment, perform a capital needs analysis of its solid waste facilities, and prepare a Solid Waste Facility Condition Assessment and Infrastructure Management Plan (Plan). HDR Engineering, Inc. (HDR), was contracted to perform these services for the County.

1.1 Purpose of the Plan

The purpose of the Plan is to:

- Describe the general condition of solid waste infrastructure, including structures, grounds, and major components; and
- Provide for the timing, estimated cost, and prioritization of recommendations needed to maintain, repair, replace, renovate, and construct infrastructure to correct deficiencies and meet operational needs, regulatory requirements, and public demand for services now and into the future.

1.1.1 Goal and Objectives for the Plan

The County established a project goal for the Plan of:

Development of a Thurston County Solid Waste 20-year solid waste facility strategic asset management plan which will enhance the County's planning capabilities by identifying and prioritizing recommendations for current and future solid waste infrastructure needs in a strategic and coordinated way to ensure high-quality service delivery in the most fiscally responsible manner.

Specific project objectives for the Plan include:

- Determine the condition of existing solid waste infrastructure, including structures, grounds, and major systems, equipment, and components, and identify deficiencies;
- Evaluate whether existing capital infrastructure meets current and future service needs and operational and regulatory requirements; and
- Develop a 20-year strategic, coordinated, and fiscally responsible management plan that includes timing, estimated cost, and prioritization of recommendations needed to maintain, repair, replace, renovate, and construct capital infrastructure in order to provide continued high-quality delivery of public solid waste services.

1.2 Importance of Planning

The management of solid waste in the County has evolved over time based on population growth, regulatory changes, and cultural changes. Prior to the closure of the Hawks Prairie Landfill (Landfill) in 2000, waste was disposed at this County-owned and -operated landfill. Upon closure of the Landfill, the County shifted disposal operations to a

transfer station system, with final disposal occurring at a regional landfill facility outside of the County. This shift in operations required an investment in facilities and services to provide adequate accessibility and availability to customers.

The amounts and types of wastes have also grown and changed over the years, requiring more facilities with new capabilities to properly manage these wastes. Many items that were formerly disposed of are now part of diversion programs that recycle or reuse them.

Beginning in 2008, the County began experiencing a decrease in waste disposal due to the economic recession. From a high of 196,221 tons in 2007 to a low of 146,360 tons in 2012, this decrease in waste disposal affected revenues generated by tipping fees that provide funding for maintenance, repairs, and upgrades to the solid waste system.

This Plan provides a 20-year strategic, coordinated, and fiscally responsible management plan to maintain, repair, replace, renovate, and construct capital infrastructure in order to provide continued high-quality delivery of public solid waste services now and into the future.

1.3 Overview of Current Thurston County Solid Waste System

The County owns and operates the following solid waste facilities:

- Waste and Recovery Center (WARC), located at 2420 Hogum Bay Rd NE, Lacey, WA 98516
- Rainier Drop Box (Rainier), located at 13010 Rainier Acres Rd SE, Rainier, WA 98576
- Rochester Drop Box (Rochester), located at 16500 Sargent Rd SW, Rochester, WA 98579
- Hawks Prairie Landfill, located at 2420 Hogum Bay Rd NE, Lacey, WA 98516

The WARC, which operates as the main transfer station, is currently contracted to Republic Services to dispose of the waste delivered to the WARC. Republic Services subcontracts with Waste Connections to operate the WARC transfer building.

The WARC accepts municipal solid waste (MSW) from municipal, commercial, and self-haul (public) customers. Commercial haulers are directed to a transfer building where waste is placed on a tipping floor for compaction into shipping containers and transported to Roosevelt Regional Landfill in Klickitat County for disposal. Self-haulers are directed to a separate disposal area on site, where MSW is placed in drop boxes, hauled to the tipping floor in the transfer building, and compacted with the commercially hauled waste.

The WARC offers opportunities to drop off recyclable materials in an area separate from the disposal area. An area for collection of household hazardous waste is available in a separate building on site as well.

The WARC site also includes the Landfill, which was capped and closed in April 2000. The closed Landfill is currently monitored and controlled in accordance with regulatory

post-closure monitoring requirements per the Washington Administrative Code (WAC 173-351) for groundwater, leachate, and landfill gas (LFG).

The Rainier and Rochester sites accept MSW from self-haul customers. MSW is deposited into 40-cubic-yard containers and then transported to the WARC transfer building for compaction into shipping containers for transport to the Roosevelt Regional Landfill. These sites offer a separate designated area for drop-off of recyclable materials, and collection containers for used oil and used vehicle batteries are also available.

1.4 Population and Tonnage Projections

The Thurston Regional Planning Council (TRPC) has adopted County Wide Planning Policies in accordance with the State of Washington Growth Management Act (GMA). TRPC-established population growth, employment growth, and residential development expected to occur in the County from 2017 through 2040 are utilized as a basis for population and tonnage projections for this Plan. The TRPC population estimates are developed shortly after the release of annual county-wide estimates by the state's Office of Financial Management by June 30 of each year. These datasets are calibrated to Census 2010 datasets at the city level for population and utilize the medium growth scenario established by the Office of Financial Management.

Using 2017 as the base year, projected tonnage of waste delivered to the WARC for disposal has been calculated using the estimated population from the TRPC for years 2025 and 2040. Table 1-1 provides total tonnage of waste projected to be delivered to the WARC in 2017, 2025, and 2040 based upon the tons disposed per person per year, or the per capita disposal rate. The per capita disposal rate was generated by evaluating historical per capita disposal rates in the County from the years 2007–2017. During this time frame, the County saw a disposal reduction due to the recession. Taking this disposal reduction into account, the years 2011–2014 were eliminated from the calculation, and a threshold per capita disposal rate was calculated at 0.71 tons per person per year. The future total waste disposal projection assumes that the disposal rate would remain the same as population growth occurs.

Table 1-1. Projected Per Capital Disposal Rate for Materials Delivered to WARC (in Tons)

Facility	2017	2025	2040
Thurston County Projected Population ¹	280,588	316,508	370,699
WARC Projected Tonnage ²	193,900	224,721	263,196
MSW Tons/Person/Year (Disposal Rate per Capita)	0.69	0.71	0.71

¹Thurston County Projected Population from TPRC established population growth estimates.

²Tonnage includes waste hauled from Rainier and Rochester.

Figure 1-1, Figure 1-2, and Figure 1-3 highlight the projected population geographic hotspots within the County for 2016, 2025, and 2040, respectively, and show tonnage expected for the County overall. Population growth is based on the 2017 GMA medium series projections.





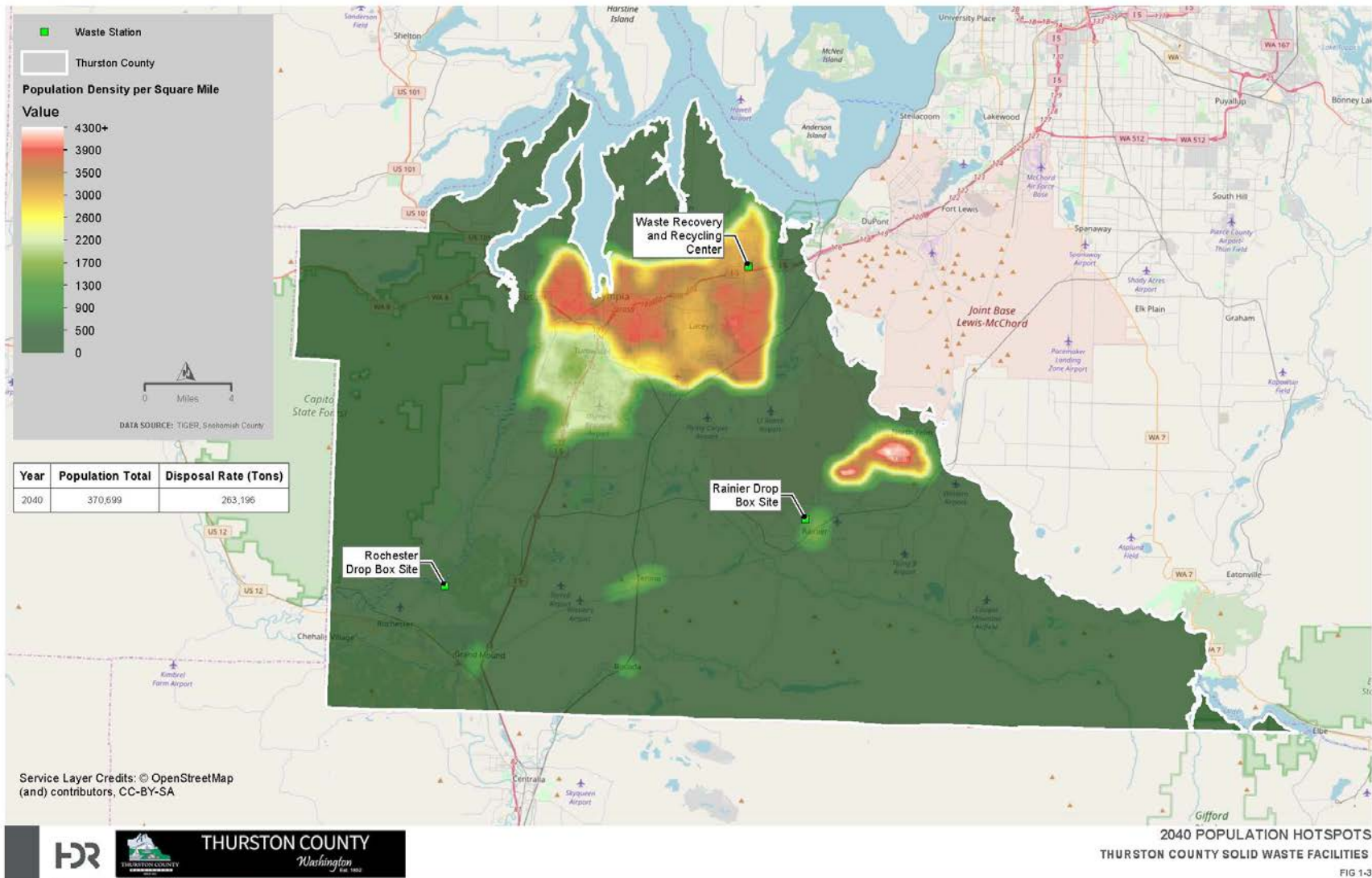


Figure 1-3. Thurston County 2040 Population Hot Spot Map

1.5 Site Capacities

Site capacities for the WARC and Rainier and Rochester Drop Box Sites are outlined in the following sections.

1.5.1 WARC Site

The WARC transfer station capacity was reviewed based on the following parameters:

- The operational capabilities of the two load-out bays, one of which is top load and one of which is utilized to feed the SSI 4500 SPH compactor;
- Transfer station operations of 10 hours per day;
- Daily traffic volumes;
- The current scales configuration; and
- Input from operational staff.

Table 1-2 summarizes the WARC peak capacities.

Facility	Peak Capacity Tonnage Per Year ¹	Peak Daily Tonnage	Peak Hourly Tonnage	Peak Daily Traffic
WARC	580,350	1,590	159	800

¹Tonnage based on current single compactor 870 tons/day based on a 10-hour operating day: (10 Hours x 60 Minutes/Hour) / (20 Minutes/Load) x (29 Tons/Load) and on the top load bay 720 tons/day on a 10-hour operating day: (10 hours x 60 Minutes/Hour) / (20 Minutes/Load) x (24 Tons/Load).

Based on the current County-provided tonnage and traffic capacity at the WARC and the projected tonnages, the WARC will exceed compactor capacity on peak days when tonnage surpasses 870 tons and will exceed peak traffic volume when customer traffic exceeds 800 vehicles.

Peak facility capacity noted in Table 1-2 is approximate and occurs when the system has no equipment failures, WARC is fully staffed, and there is an unrestricted supply of shipping containers with no shipment delays due to highway traffic, problems at the intermodal yard, or availability of containers from the rail system. Capacity conditions are not sustainable on a long-term basis, and waste may need to be stored on the tipping floor or in containers, or the WARC may need to be operated for additional hours to process waste.

Traffic flow around the WARC was considered including traffic circulation efficiency and peak daily traffic volumes. Potential relocation of the Public Tipping Area could provide long-term benefits on the site by separating commercial haulers from self-haulers and could alleviate possible safety issues seen when mixing the commercial vehicles with self-haul vehicles. This potential Public Tipping Area relocation could benefit commercial

haulers by eliminating cross-traffic issues that are currently causing wait times when entering and exiting the site. Overall, the capacity of the transfer station is adequate during the planning period based on annual tonnage projections.

1.5.2 Rainier and Rochester Drop Box Sites

Rainier and Rochester Drop Box capacity was reviewed based on the following parameters:

- The operational capabilities of the drop box load-out bays at each site;
- Drop box operations of 8 hours per day;
- The current site configuration; and
- Input from operational staff.

Table 1-2 summarizes the Rainier and Rochester Drop Box Sites peak capacities. Currently both drop box sites operate 3 days per week.

Table 1-3. Rainier/Rochester Peak Operational Capacity

Facility	Peak Capacity Cubic Yards Per Year ¹	Peak Daily Cubic Yards	Peak Hourly Cubic Yards ²
Rainier	86,640	240	30
Rochester	115,520	320	40

¹Peak capacity based on an 8-hour operating day, 361 days per year.

² Peak Hourly Cubic Yards based on actual observed throughput on site.

Based on the current County-provided cubic yards/tonnages at the drop box sites and the projected cubic yards/tonnages, the drop box sites may exceed capacity on peak days. Operational modifications can be implemented to alleviate capacity issues at the drop box sites by expanding hours and days of operations, placing larger containers/trailers in the bays or hauling boxes from the sites to the WARC more frequently. Overall, the capacity of the drop box sites is adequate during the planning period, based on annual tonnage and population projections for each drop box site area.

Peak facility capacity noted in Table 1-2 is approximate and occurs when the system has no equipment failures, the drop box sites are fully staffed, and there is an unrestricted supply of drop boxes with no shipment delays due to highway traffic, equipment breakdowns, or availability of drop boxes.

2 Infrastructure Facility Conditions Assessment

Initial efforts were conducted in the Solid Waste Facilities Assessment and Capital Planning Project (Project) in order to gain a comprehensive understanding of existing site and facility conditions and operations and performance for the WARC, including the transfer station and other on-site functions and the Rainier and Rochester sites.

2.1 Document Review and Staff Interviews

On August 31, 2017, Thurston County Solid Waste, HDR, and sub-consultant Herrera Environmental Consultants (Herrera) attended the Project Kickoff meeting. During that meeting, HDR presented the document and information data request. Thurston County subsequently provided available historical records, data, and reports, generally including:

- Facility permits and operating plans
- Landfill environmental systems operational and monitoring data (i.e., LFG, leachate)
- Thurston County Solid Waste and Moderate Risk Waste Management Plans
- Facility design and/or record drawings
- Scale records for customer counts and tonnage by material
- Transfer Station Development and Services Agreement
- Contract for Waste Disposal

These items were reviewed and questions were developed in preparation for staff interviews.

Staff interviews and a facility walk-through were conducted by HDR and Herrera at the WARC on September 27, 2017. Key findings were identified during the data review and staff interview process and were noted for inclusion in the facility assessment and capital planning activities. A summary of the staff interviews is provided in Appendix A.

2.2 On-site Facility Conditions Assessment

On October 30 and 31, 2017, on-site assessments were conducted by multi-disciplinary teams from the firms of HDR, Herrera, and Aspect Consulting with experience in solid waste facilities and/or evaluating facility conditions.

The conditions assessment was completed over the course of 2 days and included facilities at the WARC and the Rainier and Rochester Drop Box sites. Assessments were grouped to minimize the number of separate site visits required.

Assessor teams (minimum of two staff) worked together on-site for safety and to minimize impacts to on-site operations. The teams were accompanied by County Solid Waste staff or, with County permission, accessed areas unescorted.

The following structures and site features were evaluated:

WARC, Rainier, Rochester

- Condition and operation of site features: fences, barriers, roadways, parking lots, retaining walls, exterior storage areas, and concrete and asphalt pads.
- Condition of the staff support buildings (Rainier and Rochester).
- Condition and operation of the lighting and security systems.

Transfer Station, HazoHouse, Miscellaneous Buildings

- Condition and operation of buildings and building components and systems, structure, roof/envelope, and associated infrastructure.
- Condition and operation of vehicle scales and associated components.
- Condition and operation of customer service and unloading areas and mobile infrastructure, including roll-off/rail containers.

Closed Landfill

- Condition and operation of the Landfill environmental systems, including the leachate collection system and lagoon, LFG collection system and flare, groundwater monitoring system, and stormwater collection system and lift stations.
- Condition and operation of the programmable logic controller network wireless and wired connections and hardware.

A field template for documentation of on-site conditions for infrastructure, equipment, and systems was provided to each assessor electronically. Forms were generally organized by structure (e.g., transfer station) and discipline (e.g., structural) and were completed in hardcopy or electronically in the field. Specific items for assessment (e.g., LFG flare station) were identified based on preliminary site walks, staff interviews, and data/document review, but each assessor determined appropriate items not specifically identified on the forms and documented the conditions using the blank rows in the form. Photos were taken to document field conditions.

Each structure or site feature was scored based on following rating system described in Table 2-1:

Condition Score	Rating	Scoring Description
0	New	New or near new condition, fully operable, and performs consistently at or above required level of service.
1	Very Good	Sound physical condition. Asset likely to perform adequately without major work for 25 years or more for structures, and for 10 years or more for mechanical and electrical assets.

Table 2-1. Facility Conditions Assessment Scoring

Condition Score	Rating	Scoring Description
2	Good	Acceptable physical condition. Minimal short-term failure risk, but potential for deterioration in medium to long term (10 years plus for structures and 5 to 10 years for mechanical and electrical assets). Only minor work required, if any.
3	Fair	Significant deterioration evident for structures, and deterioration beginning to be reflected in performance and higher attendance for maintenance for mechanical and electrical assets. Failure unlikely within next 2 years, but further deterioration likely, and major replacement likely within 10 years for structures and within 5 years for mechanical and electrical assets. Minor components or isolated sections of the asset need replacement or repair now, but asset still functions safely at adequate level of service. Work required, but asset is still serviceable.
4	Poor	Failure likely in short term. Likely need to replace most, or all, of asset within 2 years. No immediate risk to health or safety, but work required within 2 years to ensure asset remains safe. Substantial work required in short term; asset barely serviceable.
5	Very Poor	Failed or near failure. Immediate need to replace most, or all, of asset. Component effective life exceeded, and excessive maintenance costs incurred. A high risk of breakdown with serious impact on performance. Health and safety hazards exist that present a possible risk to public safety, or asset cannot be serviced/operated without risk to personnel. Major work or replacement required urgently.

Source: International Infrastructure Management Manual, Version 3.0, 2006.

2.3 Infrastructure Inventory

Upon completion of the facility conditions assessment, a Facility Condition Assessment Inventory (Inventory) was developed. The Inventory database is utilized as the basis to develop the conditions of solid waste infrastructure and assists in providing information for the capital needs analysis. Due to the Inventory database size, it was provided to the County as a separate electronic submittal.

3 Capital Needs Analysis

This section describes the findings at facilities and recommended projects to be completed.

3.1 Gap Analysis

A Gap Analysis was conducted to identify areas of unmet needs and where improvements are required to meet future goals and requirements, including areas for repair or improvement in providing level of service to customers, assessing the current shortcomings in the existing facilities, and identifying strategies for improvements.

3.2 Key Findings

On April 26, 2018, County, HDR and Herrera staff met to review and refine the findings from the Gap Analysis. The following key findings were noted for inclusion in the preliminary capital and Operation and Maintenance (O&M) recommendations and rankings for the 20-year planning horizon in the capital needs analysis. Projects identified below are further described in Section 4.

Key findings are based on safety, efficiency, operational functionality, and level of service needs for the future planning period. A Gap Analysis detailing the specific recommendations based on these criteria is provided in Appendix B and summarized below.

3.2.1 WARC Site

Upon closure of the Landfill in 2000, the County shifted disposal operations to transfer and compaction waste prior to shipment to a regional landfill. The County owns and maintains a number of buildings and structures at the WARC site as part of the transfer operations.

Transfer Station

The Transfer Station was constructed in 2000 and is in generally good condition. The facility consists of a flat tipping floor, an elevated customer disposal wall, a Keith Walking Floor mechanical sort line, one top load chute, one compactor load out chute, one SSI 4500 compactor, an office, an employee lunch room, and utility services. Exterior to the transfer station is a trailer staging area and a stormwater collection system.

The tipping floor and load out chutes are showing damage due to wear. The load out chutes have damage to the steel liners and the concrete. Both the tipping floor and load out chutes have exposed rebar. The tipping floor will need to be resurfaced and the load out chutes repaired. Repairs to the east and north wall steel building frame and the west push wall, due to damage and replacement of the wall-mounted exhaust fans, should be completed as routine repairs and maintenance (Project 15; see Table 4-1).

Based on projected tonnages and the capabilities of the current compactor, expansion of the tipping floor is not recommended during this planning period. A recommendation has

been included as a placeholder if tonnages or traffic volumes change significantly during the planning period (Project 14).

The Keith Walking Floor mechanical sort line was originally designed to recover traditional recyclable materials from the waste stream. In 2014 the pick line was shut down due to the need for equipment repairs in excess of \$250,000. The majority of the structure has experienced corrosion, and the hydraulic components and magnetic separators do not currently function and would require replacement prior to operation. None of the hydraulic components were visible but are assumed to be original and in need of replacement. Based on the current fluctuations in recycling markets and the estimated costs for repairs at over \$1,000,000, it would not be cost-effective to restore the pick line at this time. Equipment removal could be an option for consideration as additional tip floor space is needed in the future (Project 13).

An SSI 4500 pre-load stationary compactor was installed in the transfer station in late 2016. The compactor is estimated to have a 15-year life and will require regular yearly maintenance and repairs with anticipated major overhaul scheduled in 2023 and complete replacement in 2031 (Project 12).

The office area and employee lunch room are adequate for the facility needs. Minor maintenance to the mop sink, shower fixtures, and the office condenser unit should be completed.

The trailer staging area is unpaved with dust, ponding, and mud, causing impacts to the stormwater collection system. This area has limited lighting for security. The trailer staging area should be paved and security lighting installed. The stormwater collection system in the lower bay area needs routine maintenance to maintain functionality (Project 17 and Project 21).

There is no covered equipment repair area for contractor equipment. Staff notes that equipment repair occurs in the lower bay of the transfer station. This project is not directly tied to the Facility Assessment but was noted on-site (Project 16).

Scales and Scalehouses

The scales and scalehouses are experiencing differential settlement which is expected to continue due to their location on the closed Landfill. Estimated cost to repair is \$1,571,700 with routine repairs and maintenance necessary over the 20-year planning horizon to maintain scale alignment and compliance with the State of Washington, Department of Agriculture Weight and Measures, scale certification requirements (Project 19).

While this repair is listed in the 20-year Management Plan, the scales and scalehouses are recommended to be relocated, and this cost is included in the recommendation to relocate the public tipping area (Project 18 and Project 22).

Public Drop-Off Area

The Public Drop-Off Area is an uncovered area with below-grade drop boxes for the general public to unload their MSW. The area is experiencing differential settlement in the concrete walls and surrounding pavement due to the settlement of the closed Landfill. Traffic flow and customer queuing to and from the area need upgrades and

improvements, drainage issues and ponding occur, there is limited site security and lighting in the area, and residential and small business dump trailers cannot be accommodated at the area. The Public Drop-Off Area is recommended to be relocated to improve customer service and to reduce customer queuing issues and traffic conflicts (Project 18 and Project 22).

Organics Processing Area

The Organics Processing Area is also experiencing differential settlement in the surrounding pavement, curbing, and stormwater collection system. The Organics Processing Area is recommended to be relocated due to these issues as part of the Public Drop-Off Area relocation (Project 18).

HazoHouse

The HazoHouse was constructed in 2014 and accepts household and business moderate risk wastes. The facility is in good condition and needs minor repairs, including an electrical upgrade to the Goodwill Building (Project 26), repair of the traffic counter (Project 27), sealing of the concrete joints (Project 28), and security camera upgrades (Project 29).

Recycling Area

The Recycling Area is in good condition. Electricity to the recycling area trailer had a traffic cone over the conduit to the electrical vault and needs to be replaced for code compliance (Project 25).

The recycling drop boxes are in varying conditions and in need of repairs, maintenance, and paint. A routine O&M program is recommended for the drop boxes (Project 24).

Tech Office/Job Shack

Differential settlement is causing building damage to the Tech Office/Job Shack, and the facility is in need of numerous repairs and maintenance. This facility is recommended to be demolished and replaced as part of the consolidated Administration Building (Project 20).

Blue Roof Building

The “Blue Roof Building” is currently utilized for storage. The building foundation has experienced differential settlement due to its location on the Landfill. The Blue Roof Building is recommended be demolished and is included as part of the consolidated Administration Building (Project 20).

Green Roof Building

The “Green Roof Building” is utilized for the site computer servers. Minor repairs and maintenance include replacing the dedicated heating, ventilation, and air conditioning (HVAC) server, the ceiling mounted unit heaters, and the existing propane tank, and servicing and regularly inspecting the generator. These are routine maintenance and repair items with an estimated cost of \$29,000. There is no specific project identified for the Green Roof Building.

Irrigation Wellshed and Tanks

The County previously invested in repair of the groundwater pump to utilize available water for dust suppression and other on-site, non-potable needs. However, the associated water tanks are currently not suitable for use due to corrosion and holes in the tanks. Repair is not expected to be cost effective, and replacement should be considered for increased safety and functionality (Project 23). The existing wall heater in the wellshed should be replaced as part of routine repairs and maintenance.

Main Office Building

The Main Office Building is experiencing differential settlement due to its location on the closed Landfill. Numerous repairs and upgrades to the building are needed. This facility is recommended to be demolished and replaced as part of the consolidated Administration Building (Project 20).

General Site Stormwater

Site stormwater management features are being impacted by the differential settlement on the site. The stormwater facilities, including inlets, ditches, and outfalls, need routine maintenance to maintain functionality. The stormwater outfall in the organics processing area had fines and windblown litter and should be replaced with a functioning outfall (Project 10).

3.2.2 Rainier and Rochester Drop Box Sites

The Rainier and Rochester sites are utilized by self-haul customers for disposal of MSW and recyclables drop-off. Customers drop waste into 40-yard containers which are hauled to the WARC for compaction and shipment to the regional landfill. There are no scales located at either site, and site attendants calculate customer fees based on a visual estimate of waste volume to be disposed. In 2017, this visual estimate versus the actual tonnage disposed resulted in an estimated revenue loss to the County in the amount of \$29,000. Scales and scalehouses are recommended to be installed at both drop box sites to ensure that waste tracking and fee collection is accurate (Project 30).

The recycling drop boxes are in varying conditions and in need of repairs, maintenance, and paint. A routine O&M program is recommended for the drop boxes (Project 31).

The security camera systems at both sites were not functional and need to be repaired for site safety and security (Project 32).

3.2.3 Hawks Prairie Closed Landfill

The Landfill was capped and closed in 2000. The site is currently regulated under a 30-year post-closure monitoring plan. The County is responsible for condition and operation of the Landfill environmental systems, which include the leachate collection system and lagoon, LFG collection system and flare, groundwater monitoring system, and stormwater collection system and lift stations, as well as maintenance of the landfill cap due to erosion and settlement.

Leachate Collection System

The leachate collection system is aging and needs repairs and maintenance in order to meet regulatory requirements for handling leachate.

The Pond Outlet Control (Shack 001) function of the valve station needs to be upgraded. Upgrades are needed to both the isolation valve vault and flow meter/actuated valve vault access and configuration. General upgrade is necessary to address access and maintenance. Supervisory Control and Data Acquisition (SCADA) control is needed for solenoid actuation, as the valves are currently actuated by scaled hand control. The inline strainer in the vault has to be manually cleaned on the discharge force main which requires a confined space entry (Project 2 and Project 5).

Pump station 002 upgrades should be undertaken. The pump rails are broken, conduit and valves are corroded, there is no local alarm, and piping connections need repairs (Project 2 and Project 3).

Pump station 003 (Hogum Bay) should be replaced. The wetwell, pumps, rails and control system should be upgraded to be automated with the leachate pond, and pond influent and effluent isolation valves. Pump station replacement should include upgrades to the compliance monitoring sampling equipment and shed (Project 2 and Project 4).

The condensate sump access hatches are unsafe, and there is a risk of someone falling in. Staff has had at least one incident related to sump configuration. Sump access hatches should be replaced and grating should be added to mitigate fall risk (Project 6).

The leachate lagoon inlet/bypass valve station should be maintained. The sample ports and piping should be cleaned and inspected to ensure there are no leaks. The valve should be exercised quarterly (Project 7).

Gas Collection System and Flares

The LFG flare system is oversized with regard to the quantity and percent of methane generated within the waste mass. The flares and blowers are not reliably able to operate at the current and projected lower future flow rates and methane concentrations for treatment and migration control. There are inefficiencies, as manual monitoring is required due to a lack of SCADA. The flares and associated components are in relatively good condition and should be maintained per manufacturer's specifications until the flare stations are replaced. A correctly sized flare station should be designed and installed and should be accomplished in parallel with the Landfill SCADA system replacement (Project 1 and Project 2).

Landfill SCADA System

The Landfill SCADA system has failed due to an aged software platform. The system should be expanded to tie the other Environmental systems (i.e. leachate, stormwater) into this platform. This system should be replaced and operational and should be accomplished in parallel with the LFG flare station replacement (Project 1 and Project 2).

Groundwater Monitoring System

The current groundwater monitoring system is functioning adequately. Routine repair of the existing monitoring well lids should be accomplished as part of maintenance and repair.

Stormwater Collection System and Lift Stations

The stormwater pumping station equipment is aging and inefficient for piping configuration control and maintenance and should be upgraded (Project 9).

The stormwater transition pond (TriPlex pump station) is in need of rail replacement and repair (Project 11).

Landfill Cap

The landfill cover material is settling, causing changes in surface drainage paths, slopes, pipelines, and ponding. Settlement points should be located and surveyed, and an overall survey should be completed so the site can be re-graded for positive drainage, to prevent ponding and assist in pipeline alignment. A routine survey for data collection for post-closure termination should be established (Project 8).

4 Recommendations

Recommendations were developed for maintenance, repair and replacement, and upgrades and improvements of facility infrastructure elements and Landfill systems. These recommendations focused on operational improvements (i.e., safety, efficiency), technology improvements, energy-savings improvements, and environmental improvements. The recommendations were grouped into a consolidated list of 32 identified projects. Each project identifies the timing and concept-level costs for maintenance, repair, or replacement required to bring each facility into acceptable operating standards, and applicable codes and regulations, if deficient.

A scoring system was developed to prioritize the identified projects. The following key criteria were developed in accordance with the program goals and each criteria was given a weight indicating the importance of the criteria in the success of the project:

- Legal and regulatory requirements (25%)
- Public and employee safety and security (25%)
- Ability to meet current operational needs (20%)
- Ability to meet future operational needs (20%)
- Improvements in efficiency (10%)

For each project, a weighted score was calculated based on the performance of the project against the each of the key criteria. Project costs were developed independently. Table 4-1 provides a prioritized list of recommendations with the associated project rankings. The individual project scoring tables are provided in Appendix C.

Table 4-1. Prioritized Recommendations by Project Score

Project Number	Project Category	Project Name	Project Description	Project Score
1	Landfill	Landfill Flare Station Replacement	The LFG flare system is oversized with regard to the quantity and percent methane generated within the waste mass. The flares and associated components are in relatively good condition and should be maintained to manufacturer's specifications until the flare stations are replaced. A correctly sized flare system should be designed and installed. Replacement of the LFG flare station should be accomplished in parallel with the SCADA system replacement project (Project 2).	4.7

Table 4-1. Prioritized Recommendations by Project Score

Project Number	Project Category	Project Name	Project Description	Project Score
3	Landfill	Pump Station 002 Upgrades	Upgrades to Pump Station 002 should be undertaken to address broken pump rails, corroded conduit and valves, and piping connections. A local alarm should be added.	4.4
30	Rainier and Rochester	Rainier/Rochester Weigh Scales and Staff Booth Replacement	The staff booths should be replaced, and locations for installation of scales should be chosen to accommodate population growth. At the time of staff booth replacement, on-site utilities should be evaluated for upgrades.	4.3
21	General Site	Improve Site Security	Site security, including lighting, cameras, fencing, and access control, needs to be improved, as unauthorized parties currently have access before and after hours due to lack of fencing and uncontrolled access through the lower gate.	4.3
5	Landfill	Pond Outlet (Shack 001) Upgrade	Function of the valve station needs to be upgraded, including both isolation valve vault and flow meter/actuated valve vault access and configuration. General upgrade is needed to address access and maintenance. SCADA control is needed for solenoid actuation. Currently, valves are actuated by scaled hand control in Shack 001. The inline strainer in the vault has to be manually cleaned—on the discharge force main, which requires a confined space entry. Verify continued function and need for strainer.	4.3
18	General Site	Relocate Public Tipping Area, Scales, and Scalehouses	Traffic flow and customer queuing to and from the site need upgrades and drainage improvements, there is limited site security and lighting, and residential and small business dump trailers cannot be accommodated. The Public Tipping Area, along with the scales, scalehouses, organics processing area, and recycling area, should be relocated to improve customer service and to reduce customer queuing issues and traffic conflicts.	4.2
4	Landfill	Pump Station 003 (Hogum Bay) Replacement	Replace Pump Station 003. Upgrade the wet well, pumps, and rails; control system should be automated with leachate pond and isolation/effluent pond valves. Include isolation valves on the influent side. Pump station design should include upgrade to compliance monitoring sampling equipment and shed. This Project is linked to Project 2.	4.2

Table 4-1. Prioritized Recommendations by Project Score

Project Number	Project Category	Project Name	Project Description	Project Score
20	General Site	Consolidated Administration Building	Recommend demolishing the “blue roof” building, tech trailer, and main office building and replacing them with a Consolidated Administration Building.	4.0
25	General Site	Recycling Area Electrical Upgrade	Electricity supplied to the recycling area trailer needs to be code compliant.	4.0
26	HazoHouse	Goodwill Building Electrical Upgrade	Need to replace the power source with one that is code compliant.	4.0
12	Transfer Station	Transfer Station Operational Capacity (Includes compactor overhaul in 2023, replacement in 2031 and repairs/maint.)	Load out capacity will need to be increased to accommodate future demands. Operational efficiencies on the tipping floor should be reviewed for measures to add capacity.	4.0
6	Landfill	Condensate Sump Access Hatch Upgrade	Typical of 8 sumps. Sump access hatches should be replaced and grating added to mitigate fall risk. Replace with CT6WV (Open Channel flow is retrofit manufacturer, 1-855-481-1118).	4.0
2	Landfill	Landfill SCADA System Replacement	Landfill SCADA system should be replaced, and environmental systems should tie into the new platform. Replacements of the SCADA system should be accomplished in parallel with the LFG flare station replacement project (Project 1).	3.8
8	Landfill	Routine Landfill Cover Monitoring	The Landfill cover material is settling, causing changes in surface drainage paths, slopes, pipelines, and ponding. An overall survey should be completed so settlement points are located and the site can be re-graded for positive drainage and assist in pipeline alignment. A routine survey for data collection for post-closure termination should be established.	3.8
19	General Site	Scale and Scalehouse Differential Settlement Repairs	The Scales and Scalehouse pile capacities need to be tested to assess tilt or deformation and construction installation should be reviewed. The scales are experiencing excessive axial sway when handling large vehicles because guide bumpers are out of alignment due to ramp settlement.	3.8

Table 4-1. Prioritized Recommendations by Project Score

Project Number	Project Category	Project Name	Project Description	Project Score
22	General Site	Improve Customer Queuing (See Project 19)	Relocation of the Public Tipping area away from the Transfer Station area should be considered to alleviate the queuing issues.	3.8
9	Stormwater	Stormwater Pond Pump Station Equipment Upgrade	The stormwater pumping station equipment is aging and inefficient for piping configuration and maintenance and should be upgraded.	3.7
17	Transfer Station	Upgrades to Transfer Station Lower Bay Area	The lower bay area of the Transfer Station should be paved and the lighting upgraded.	3.7
10	Stormwater	General Stormwater System Improvements	Site stormwater facilities need routine maintenance to maintain functionality. The stormwater outfall should be replaced with a functioning outfall.	3.5
11	Stormwater	Transition Pond (TriPlex pump station) pump rail replacement	The Transition Pond (TriPlex pump station) pump rail should be replaced/repared.	3.5
32	Rainier and Rochester	Install Security Camera System at Rainier/Rochester	The security camera systems at both sites need to be repaired for site safety and security.	3.4
29	HazoHouse	HazoHouse Security Camera Upgrade	The security camera system is not currently accessible from the HazoHouse and needs to be repaired for site safety and security.	3.2
28	HazoHouse	HazoHouse Load out Concrete Joint Sealing	Concrete joints in the load out area need to be sealed.	3.1
15	Transfer Station	Transfer Station Tipping Floor Resurfacing and Load out Chute Repair	The Transfer Station tipping floor will need to be resurfaced, and the load out chute repaired.	3.0
16	Transfer Station	Covered Equipment Repair Area	A covered area should be constructed for heavy equipment repairs and maintenance onsite.	2.9
23	General Site	Water Tank Replacement	The water tanks should be replaced for increased safety and functionality.	2.8

Table 4-1. Prioritized Recommendations by Project Score

Project Number	Project Category	Project Name	Project Description	Project Score
7	Landfill	Leachate Lagoon Bypass Vault Maintenance and Repair	Maintain the inlet/bypass valve station for the leachate lagoon. Clean and inspect sample ports and piping. Ensure that nothing is leaking. Exercise valves quarterly. Check the O&M plan for piping configuration and consider labeling pipe and valves for normal and bypass operation.	2.3
14	Transfer Station	Transfer Station Expansion	Opportunity for material diversion on the tipping floor is limited, as the sort line is not in use and has not been maintained. The tipping floor area is currently fully utilized for material unloading and storage, operational vehicular movement, and load out—there is no additional area for manual sorting or separated material storage. Expand the tipping floor to increase operational area.	1.8
24	General Site	Drop Box O&M Program	The drop boxes in the recycling and public drop off areas are in need of repairs, maintenance, and paint. A routine O&M program for repairs, painting, and replacement should be established.	1.8
31	Rainier and Rochester	Rainier/Rochester Drop-Box O&M Program	All recycling drop boxes on site are in need of repairs and paint. A routine O&M program for repairs, painting, and replacement should be established.	1.8
27	HazoHouse	Repair HazoHouse Traffic Counter	The automatic traffic counter is not functional and needs repair.	1.6
13	Transfer Station	Remove Transfer Station Sort Line Removal	While the sort line may be brought back to functionality with repairs and maintenance, it may not be cost effective to operate and should be evaluated based on the County's goals and objectives for material diversion.	0.7

5 Opinions of Cost

Recommendations from the Inventory and the Gap Analysis for maintenance, repair, and replacement upgrades were used to develop planning-level cost estimates. These costs were then consolidated into the various projects discussed in the previous section. While there is not a standardized methodology for planning level capital project cost estimates, the costs provided in this Plan are based on professional experience and judgment from similar solid waste facility projects. Costs will vary as the project scope and design process progresses and include contingency based on the preliminary planning stage. Costs are provided in 2018 dollars.

The capital planning cost estimates should be utilized as an initial tool in achieving the County's 20-year solid waste facility strategic asset management plan goal, which is to enhance planning capabilities by identifying and prioritizing recommendations for current and future solid waste infrastructure needs in a strategic and coordinated way to ensure high-quality service delivery in the most fiscally responsible manner.

The project team prepared planning-level cost estimates for each of the recommendations, categorized into the following project facilities:

- WARC
- Landfill
- Rainier/Rochester Sites

5.1 Estimated Cost Summary

The estimated 20-year Infrastructure Management Plan costs (in 2018 dollars) by project site are outlined in Table 5-1. A summary of recommended actions, project costs, and schedule for implementation are presented in Section 6.

Table 5-1. Facility 20-Year Estimated Costs (in 2018 \$)	
Project Facility	Estimated 20-Year Project Cost
WARC Site	\$18,694,435
Hawks Prairie Closed Landfill	\$3,990,910
Rainier/Rochester Drop Box Sites	\$3,618,980
Total All	\$26,304,325

6 Infrastructure Management Plan

Over the 20-year planning horizon, the County solid waste facilities are expected to need modifications and upgrades in order to meet and exceed future infrastructure requirements to continue high-quality service in a fiscally responsible manner. Development of this Infrastructure Management Plan is intended to enhance the County planning effort by identifying and prioritizing recommendations, timing, and anticipated costs in a strategically coordinated manner.

6.1 Capital Planning Methodology

In addition to the scoring system outlined in Section 4 Recommendations, timing of repairs and new construction is based on facility conditions from the site inspections, tonnage and population projections, regulatory requirements, and policy direction. Construction is planned to minimize the impact on the Division's customers and operations. The replacement or rebuilding of "rolling stock" is based upon periodic evaluations of maintenance history and projected economic life. The County should review the recommended actions and implementation schedule for each 2-year budget cycle to confirm adequacy with current waste generation rates and level of service.

6.2 Summary of Recommended Actions and Implementation Schedule

To identify a strategic implementation approach for capital improvements for the County solid waste facilities for the next 20 years, the recommended actions are presented in 2-year increments over the planning horizon to align with the County's budgeting process. The implementation schedule and estimated costs provided in Table 6-1 assume that the County will continue to maintain, as needed, the existing facilities and potential new facilities such that they will not encounter a reduction in serviceability due to further degradation of structures and equipment at each location.

Table 6-1. Implementation Schedule

Recommendation By Project		Implementation Years and Costs (Costs In 2018 \$)									
		2019	2021	2023	2025	2027	2029	2031	2033	2035	2037
		2020	2022	2024	2026	2028	2030	2032	2034	2036	2038
Capital Facility Prioritized Recommendations											
1	Landfill Flare Station Replacement (Replace 4 blowers at 10-year mark) ¹	\$1,242,150	-	-	-	-	\$50,700	-	-	-	-
3	Pump Station 002 Upgrades ¹	\$60,840	-	-	-	-	-	-	-	-	-
30	Rainier/Rochester Weigh Scales and Staff Booth Replacement	\$3,380,000	-	-	-	-	-	-	-	-	-
21	Improve Site Security	-	\$520,520	-	-	-	-	-	-	-	-
5	Pond Outlet Control (Shack 001) Upgrade ¹	\$400,000	-	-	-	-	-	-	-	-	-
18	Relocate Public Tipping Area, New Scales, and Scalehouses	-	\$7,182,500	-	-	-	-	-	-	-	-
4	Pump Station 003 (Hogum Bay) Replacement ¹	\$608,400	-	-	-	-	-	-	-	-	-
20	Consolidated Administration Building	-	-	\$5,120,700	-	-	-	-	-	-	-

Table 6-1. Implementation Schedule

Recommendation By Project		Implementation Years and Costs (Costs In 2018 \$)									
		2019	2021	2023	2025	2027	2029	2031	2033	2035	2037
		2020	2022	2024	2026	2028	2030	2032	2034	2036	2038
25	Recycling Area Electrical Upgrade	\$10,140	-	-	-	-	-	-	-	-	-
26	Goodwill Building Electrical Upgrade	\$10,140	-	-	-	-	-	-	-	-	-
12	Transfer Station Operational Capacity (Includes compactor overhaul in 2023, replacement in 2031 and repairs/maint.)	-	-	\$920,000	\$40,000	\$40,000	\$40,000	\$1,600,000	\$40,000	\$40,000	\$40,000
6	Condensate Sump Access Hatch Upgrade	\$54,080	-	-	-	-	-	-	-	-	-
2	Landfill SCADA System Replacement ¹	\$422,500	-	-	-	-	-	-	-	-	-
8	Routine Landfill Cover Monitoring ²	\$20,000	-	\$20,000	-	\$20,000	-	\$20,000	-	\$20,000	-
19	Scale and Scalehouse Differential Settlement Repairs ³	-	\$1,571,700	-	-	-	-	\$270,400	-	-	-
22	Improve Customer Queuing (See Project 19)	-	-	-	-	-	-	-	-	-	-
9	Stormwater Pond Pump Station Equipment Upgrade ¹	-	-	\$1,007,240	-	-	-	-	-	-	-

Table 6-1. Implementation Schedule

Recommendation By Project		Implementation Years and Costs (Costs In 2018 \$)									
		2019	2021	2023	2025	2027	2029	2031	2033	2035	2037
		2020	2022	2024	2026	2028	2030	2032	2034	2036	2038
17	Upgrades to Transfer Station Lower Bay Area	-	-	-	\$253,500	-	-	-	-	-	-
10	General Stormwater System Improvements	\$16,055	-	\$5,000	-	\$5,000	-	\$5,000	-	\$5,000	-
11	Transition Pond (TriPlex pump station) pump rail replacement ¹	-	\$30,000	-	-	-	-	-	-	-	-
32	Install Security Camera System at Rainier/Rochester ⁴	\$70,980	-	-	-	-	-	-	-	-	-
29	HazoHouse Security Camera Upgrade ⁵	-	\$8,450	-	-	-	-	-	-	-	-
28	HazoHouse Loadout Concrete Joint Sealing ⁶	\$13,520	-	-	-	-	-	-	-	-	-
15	Transfer Station Tipping Floor Resurfacing and Load Out Chute Repair	-	\$314,350	-	-	-	-	-	-	-	-
16	Covered Equipment Repair Area	-	-	-	-	-	-	\$240,000	-	-	-
23	Water Tank Replacement ⁷	-	\$52,390	-	-	-	-	-	-	-	-
7	Leachate Lagoon Bypass Vault	\$15,000	-	-	-	-	-	-	-	-	-

Table 6-1. Implementation Schedule

Recommendation By Project		Implementation Years and Costs (Costs In 2018 \$)									
		2019	2021	2023	2025	2027	2029	2031	2033	2035	2037
		2020	2022	2024	2026	2028	2030	2032	2034	2036	2038
	Maintenance and Repair										
14	Transfer Station Expansion ⁸	-	-	-	-	-	-	-	-	-	-
24	Drop Box O&M Program	-	-	-	-	-	\$60,000	\$60,000	\$36,000	-	-
31	Rainier/Rochester Drop-Box O&M Program	-	-	\$60,000	\$60,000	\$48,000	-	-	-	-	-
27	Repair HazoHouse Traffic Counter	-	\$16,900	-	-	-	-	-	-	-	-
13	Remove Transfer Station Sort Line ⁹	-	-	-	-	-	-	-	-	-	\$157,170
	Total Estimated Costs by Year	\$6,323,805	\$9,696,810	\$7,132,940	\$353,500	\$113,000	\$150,700	\$2,195,400	\$76,000	\$65,000	\$197,170
	Total 20-Year Infrastructure Master Plan Estimated Costs	\$26,304,325									

¹Projects to be accomplished in parallel with Project 2–SCADA System Replacement. Projects 9 and 11 will also require SCADA but not accomplished in parallel.

²Minor differential settlement grading on the landfill to be covered as regular post-closure maintenance.

³Project listed for one-time cost estimate purposes only. Scale realignment, repairs, and maintenance will incur ongoing costs over the planning period due to differential settlement.

⁴Project to be completed with Project 30–Rainier/Rochester weigh scales and staff booth replacement.

⁵Project to be completed with Project 21–Improve Site Security.

⁶Regulatory requirement per WAC 173-350-360 for MRW Facility operations.

⁷Project to be completed with Project 18–Relocate public tipping area scales and scalehouses.

⁸Project not expected to be implemented during this planning period.

⁹Cost to repair sort line \$1,047,800. Removal is not necessary during this planning period and repair is not recommended due to cost.

Appendix A.

Document Review and Staff Interviews Summary Memo

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Memo

Date:	Monday, October 30, 2017
Project:	Thurston County Solid Waste Facilities Assessment and Capital Planning
To:	Monica Gorman, Solid Waste Manager
From:	Olivia Williams and Wendy Mifflin, HDR; Michael Spillane, Herrera
Subject:	Task 2 - Document Review and Staff Interviews Summary Memo

1. Introduction

The purpose of this memorandum is to summarize the data collected and findings from preliminary project activities including review of available site documentation, Thurston County Solid Waste staff interviews and a facility walk-through. These initial efforts were conducted as the first steps in the solid waste facilities assessment and capital planning project in order to gain a comprehensive understanding of existing site and facility conditions and operations and performance for the Thurston County Waste and Recovery Center (WARC), including the transfer station and other onsite functions, and the Rainier and Rochester Drop-Off Centers.

2. Summary of Data Collection and Staff Interviews

Data Collection

On August 31, 2017, Thurston County Solid Waste, HDR and Herrera attended the Project Kick-off meeting. During that meeting, HDR presented the document and information data request. Thurston County subsequently provided available historical records, data, and reports generally including:

- Facility permits and operating plans
- Landfill environmental systems operational and monitoring data (i.e. landfill gas [LFG], leachate)
- Thurston County Solid Waste and Moderate Risk Waste Management Plans.
- Facility design and/or record drawings.
- Scale records for customer counts and tonnage by material.
- Transfer Station Development and Services Agreement.
- Contract for Waste Disposal.

These items were reviewed and questions were developed in preparation for the staff interviews.

Staff Interviews and Facility Assessment Walk-Through

Staff interviews and a facility walk-through were conducted at the WARC on September 27, 2017. HDR's and Herrera's notes from the facility assessment walk-through and staff interviews are included as Attachment A to this memo.

3. Key Findings

The following key findings were identified during the data review and staff interview process and are noted for inclusion in the upcoming facility assessment and capital planning activities:

- 1) Landfill
 - a. Landfill flare system oversized for range of projected future flows and migration control and inefficiencies due to lack of SCADA and manual monitoring required.
 - b. Landfill SCADA system failure and inability for future support due to aged software platform.
 - c. Landfill Data monitoring and system controls at Shed 001.
 - d. Landfill leachate lagoon controls not operable, have to be hand operated.
 - e. Landfill leachate lagoon, lift station pumps and equipment issues.
 - f. Landfill cover material settlement and inadequate/no landfill cover near asphalt pile.
- 2) Stormwater
 - a. Stormwater pumping station equipment aging and inefficient piping configurations for control and maintenance.
 - b. Site stormwater management, handling, sedimentation, channeling and clean-out.
- 3) Transfer station
 - a. Transfer station capacity to be evaluated.
 - b. Transfer station sort line functionality.
 - c. Transfer station load scale and scale footing deterioration.
 - d. Transfer station drainage and stormwater handling.
- 4) General/Site
 - a. Condition of public drop-off infrastructure.
 - b. Public drop-off area drainage.
 - c. Settlement at weigh scales.
 - d. Differential settlement at various locations onsite causing ponding and building settlement.
 - e. Site Security including lighting, cameras, fencing and access.
 - f. Customer queuing issues onsite.
 - g. Condition of water tanks.
 - h. Condition of staff booths at Rainier and Rochester Drop-Off Centers and need for scales.
- 5) HazoHouse
 - a. HazoHouse floor coating and joint epoxy repairs.
 - b. Hazohouse exterior vault leakage.

4. Next Steps

Following the completion of the final version of this memo, HDR will be conducting onsite field assessments of the existing solid waste infrastructure (scheduled for October 30th and 31st), noting in particular the key findings from the initial data collection efforts. The results of the field assessment will



be compiled and evaluated to develop a prioritized list of recommendations for the solid waste infrastructure capital plan to be developed as the final deliverable of this project in early 2018.

September 27, 2017

ATTACHMENT A:**THURSTON COUNTY SOLID WASTE
FACILITIES ASSESSMENT STAFF
INTERVIEW NOTES****Thurston County Waste and
Recycling Center (WARC)**
2420 Hogum Bay Road NE
Lacey, WA

Attendees:

Thurston County – Monica Gorman, Gerald Tousley, Judy Zygar, Mike Deacon, Tony Schall, Derek Davis, Jack Dandridge, John Cox (Waste Connections)

HDR Team – Olivia Williams (HDR), Wendy Mifflin (HDR), Michael Spillane (Herrera)

1. Closed Landfill/Site

- a. Park and Ride portion of landfill is a former burn fill. South portion of the site was preloaded, little settlement.
- b. 2" diameter gas wells. Pulling ~7" water column vacuum with main valve ½ closed, getting 50% methane. If opened wider, vacuum goes to 0. Header is near the road by the offices. When the main valve is opened wider the vacuum increases to ~8" water column.
- c. All of the sumps with condensate pumps are operational, some don't have pumps and are cleaned with vactor truck. Lots of infiltration when it rains. Have to vactor 1-2x/month in the winter.
- d. Area between offices and Cell 1 called "70 acres". Lots of settlement issues and ponding. Drainage in ditches is problematic. No visible issues with geomembrane.
- e. Seeing settlement in Cell 1. Boots need to be resealed, tops are not attached.
- f. HazoHouse to transfer station – no liner on hillside. CIP project previously identified to line the hillside, portion of the site with asphalt pile was leased out. County staff not aware of liner closure was designed or not.
- g. City of Lacey – potable water supply.
- h. Some fiber optic onsite; not to scalehouse or flare.
- i. Need better site lighting – especially at the public tipping area and toward the transfer station.
- j. No perimeter fence around the entire site. Manual gate at the lower entrance.

2. Landfill gas (LFG):

- a. LFG wells along west perimeter road not in operation, staff isn't sure if they are in waste. Currently operating 41 LFG wells. Have a spreadsheet for tracking and monitoring.

- b. Perimeter gas probes are nested at 10, 20, 40, and 60 ft. PMW-16 has seen hits as high as 10% (recent) at the 40-ft depth if the flare shuts off.
- c. Triangle area near PMW-16 may have a liner connection overlap resulting in a gap.
- d. Prior to balancing about this time last year, methane concentration was 17%, now running at 30%. Flare is running more consistently at 30% methane, however, the flare is turned down to using VFD's at 45% (3200 rpm to 1450 rpm).
- e. Two options for flare replacement have been evaluated. Two smaller utility flares and retrofit of existing flare with supplemental natural gas or propane. Supplemental gas would require approximately 350 gal/day to maintain flare operation. Specification for potential future utility flare was rated at 20% methane content.
- f. Telemetry on LFG system is not functional so staff does not currently have the ability to receive notification of flare shutdown, must manually verify. System takes a few days to rebalance when the flare is back on. Staff notice a large impact based on barometric pressure.
- g. Flare sees 9.3" vacuum, 130 cfm with consistent 30% methane.
- h. Cell 1 header is PVC aboveground, HDPE underground. Replacing flex connections as needed, checking condition monthly. See lots of flexing during temperature changes.
- i. Not throttling at the flare manually – doing it with the VFD.
- j. Flare #2:
 - a) Original location was inside the "green roof" building
 - b) Moved blowers to the enclosed flare, used as backup
 - c) Pilots don't work, highest efficiency rate report to be 70%
- k. More wells than necessary – have both wells and horizontal trenches. Have multiple wells pulling on same trench (example, T8X1 and T8X2). Currently operate by staggering one each side to balance field. Previous landfill study recommended installing additional vertical wells in deeper portions of the waste mass to increase gas quality (raise methane content). It was noted that many of the current vertical wells are at the perimeter where the waste thins and there is potential for air intrusion.

3. Stormwater:

- a. All stormwater flows to north pond. Receives water year round. Has issues with sedimentation and channeling.
- b. Cleaned 2 years ago, but needs to be cleaned again. Anticipate it may be due the catch basins in the gravel area (former Lakeside). Took weeks of dump trucks hauling, County performed in-house.
- c. Allegedly Ecology indicated in that past that the pond is "waters of the state."

- d. 2,000 LF concrete pipe feeds pond from north side, County intends to camera, but work has not yet been scheduled.
- e. “Transition Pond” (South stormwater pond):
 - a) Three pumps at the bottom – operate in sequence depending on flow. All equally sized; pumped to large pond, 180’ head
 - b) Collects landfill slope and transfer station area.
 - c) Cleaned one year ago, likely need to clean out annual
 - d) Was originally a leachate pond; liner unknown
 - e) One pump failed last year, one this year – need backup redundancy
 - f) PumpTech does maintenance – repair to Permanent Stormwater Pond pump was approximately \$22K; repair to Transition Pond pump was about \$2,500. They were the original installer.
- f. Entrance road is the stormwater breakline. Surface water flows above ground around the corner to the stormwater pond (“permanent” or “perm” pond).
- g. Settlement is an issue in the ditches.
- h. “Permanent” (“Perm”) Pond (SE Stormwater pond):
 - a) Sends water to the north stormwater pond.
 - b) Uses turbines, staff would rather have submersible pumps; confined space issue. No platform, service from ladder – to service, standing in 2’ of water.
 - c) No influent valve control/isolation. Maintenance must be performed in dry season and water vacuored out of structure.
 - d) All stormwater pumps are different sizes and manufacturers. County contracts maintenance work over \$5,000 – hard to facilitate consistency with specific vendor or manufacturer.

4. Leachate:

- a. Cell 1 is the only cell with a bottom liner. Staff do notice influx of volume 1-3 days after heavy rain.
- b. Two alternating sideslope leachate pumps in Cell 1. 180’ down, then across cell. Controlled by bubbler pressure sensor. Have pulled pumps previously, no major maintenance required.
- c. Leachate Lagoon:
 - a) Riprap on bottom. Tried to drain two years ago, would have cost \$40k. Did not perform work.

- b) Can only discharge 50k gall/day for the entire site to LOTT. Can go up to 100k with pre-approval.
 - c) Manually adjusting flow with electronic actuator valve, not on SCADA.
 - d) V-notch weir seems to be accurate. Data is logged and sent via SCADA. However, system runs on Windows-97 and at the end of 2018 the system will no longer be supported. SCADA only records up to 10,000 gallons.
 - e) Used to have 3 aerators, reduced the size of the lagoon, now have one aerator. Have one as a spare in good condition.
 - f) Formerly ran aerator 24/7. Use a timer now, ½ hr. on/1 hr. off (used to be 1 hr. on/3-4hrs off). Taking dissolved oxygen readings. Do have some odor if aerator isn't running; may consider trying this next summer.
 - g) Only issue was ammonia exceedance in August when lagoon was stagnant, no discharge. This shouldn't be an issue moving forward as sampling is not required when not discharging.
 - h) While onsite, observed water level was at low point.
- d. Shed 001
- a) Valves for sampling are 10' down in pit.
 - b) PLC in shed, tied to Shed 003. There is not a dedicated backup generator at 003.
 - c) No SCADA at 003, not working at 001.
 - d) Client noted this area as a priority for the project.
 - e) Installed actuator valves. 4" and 1 ½".
 - f) Inline strainer in vault, have to manually clean – on the discharge force main, classified as confined space. Verify continued function and need for strainer.
 - g) Vault before isolation vault, access challenged – have to lean over wheel valve.
- e. Shed 003:
- a) Leachate and sanitary sewer combined and leaves site to WWTP. No way to isolate sewer flow at influent.
 - b) This is the compliance point for sampling.
 - c) The pump station is a duplex system with redundant pumps.
 - d) In poor condition – lining is flaking off, rail system for pumps has corroded (1 ½" or 2"), air relief valve leaks and is located 2' down into pit, effluent pumping drains back into pit.
 - e) Electronics are 20+ years old, no PLC – just on/off with local alarm and pager.
 - f) If power fails, temperature alarm goes for notification.

5. Public Drop off:

- a. Asphalt pavement and retaining walls separating due to settlement; current pads that boxes are located on are degrading.
- b. LeMay would like to be able to accommodate trailers or larger drop boxes. (Currently 40 yd. boxes).
- c. Stormwater issues – car oils drain into stormwater system. Previous project considered to improve this area was \$600k – only moving forward with a portion of the work – current stormwater only project underway; catch basins will tie into tank, then into leachate system.
- d. Lower bay area under water in winter due to drainage issues.
- e. Customer traffic flow issues to the drop box area.

6. Scale Plazas:

- a. Traffic:
 - a) Outbound queuing will block yard waste and public tipping areas when busy. Queues occur at scales and at commercial unloading.
 - b) Open Sundays, but little commercial traffic on the weekends.
 - c) Staggered scales confuse customers, people will bypass the scales.
 - d) Crossing after scales required for trucks with cards and public customers. Bypass also a conflict point.
- b. Cash, checks, and credit cards accepted at all three locations.
- c. Lower outbound scale is moving during weigh out which causes vehicle weights to require manual input.
- d. Biggest staff concern is slipping outside the scale house.
- e. Paradigm scale software isn't linked to the credit card system; staff have to do entirely separate transactions – Monica/County currently working to address this. Use "Point and Pay" treasury system. Using this at Rochester and Rainier.
- f. City of Olympia, Pacific Disposal, and LeMay transfer trucks have cards/accounts to weigh in but not out.
- g. Two main scale houses have restrooms; kiosks do not. Limited counter space in scale houses. Uses Comcast cable, can't take credit cards when the system is down.
- h. Area around scales is settling – the two smaller scales have leveler adjustments but tools and access are an issue. Large scales are on piles with a concrete approach – transition getting steep with settlement. Scale ramps are raised with asphalt each year. Scales are all original, installed in 2000.

- i. Generator on concrete pad; but settling so pulling on cables, septic clogging issues.

7. Transfer Station

- a. SSI compactor, new last year. Used open top bay when compactor was down. Also use for roofing, decant grit, starch (from GP), and boats. Open top designed for 45' trailers, not using 48's. Want to be able to use 53' eventually.
- b. 28 tons/compactor load – 32-33 for open top. Axle scale for open top bay.
- c. Had knuckle boom crane for loading, then developed excavator bridge.
- d. Sort line hasn't been used in years. Biggest commodity was wood, some metal. All commingled material went to conveyor. 10% diversion wasn't achievable, contract required 5%.
- e. Operator likes the grade separated unloading for operational efficiency.
- f. Building is not tall enough to accommodate all vehicle unloading.
- g. Need more unloading bays to accommodate traffic flow.
- h. Tipping floor is asphalt and includes 2-3" of sacrificial thickness. Re-asphalt every couple of years; completed in August 2017 (confirm).
- i. Air system operates OK, wall fans. Dry fire suppression system.
- j. Starlings cause issues in roof insulation.
- k. Boxes from Rainer and Rochester dumped over the wall onto the floor; have tonnage volumes.
- l. No space for maintenance; do some in the breezeway.
- m. Have hose reels up top, water truck.
- n. Push walls were steel plated at the low height, added 2nd level for more protection.
- o. Have drainage issue outside entrance to tip floor level. Drains via gravity to OWS.
- p. Office area is in good condition, contractor states it is not big enough.

8. HazoHouse

- a. Facility is new, 2012 construction– no major issues with infrastructure. Have record drawings.
- b. Staff issue noted – in the oil container building ("A" fuel room) the floor surface is slippery – epoxy coating is peeling off.
- c. Sensors installed at ground level; wouldn't necessarily pick up gases of concern.
- d. Regulatory concern about cracks in epoxy – just replaced front coating.
- e. Exterior vaults leak, pumping groundwater (?).

- f. 319 small quantity generators; use small scale inside to weigh.
- g. Loadout once every 2 weeks; Stericycle.
- h. Bulking is non-regulated.
- i. Have container for swap shop but rarely used.
- j. Propane tank to fill Public Works vehicles, forklift.
- k. H2 room vent/fan runs 24/7.
- l. One camera for recycling on HHW column no cameras for HHW.

9. General:

- a. Landfill technicians work 6-4 onsite every day, rotate who is on call.
- b. Total area is 140 acres.
- c. County has in-house survey if needed.
- d. Quite a bit of illegal dumping occurs at recycling area; limited visibility.

10. Miscellaneous Structures

- a. Green Roof Building
 - a) Original flare building, now hold main computer server. Receives radio from flare, CO2/LEL monitors. Servers reportedly route to courthouse and back. Not able to get cell back up to cable, which is an issue.
 - b) Building also holds larger equipment, tools, and lumber; has backup generator. No settlement issues with this building.
 - c) Communication issue between green roof building and flare, not sure if PLC issue. Not antennae/radio issue. Tetrattech was hired to look into this, but issue was not resolved. P&ID missing.
- b. Small Building (Blue Roof)
 - a) Small equipment storage and mower.
 - b) Building is settling – 3-4” gap from the inside, originally thought this building was not located on waste. Have adjusted door multiple times.
 - c) Building has power, no water – radio not connected.
- c. Office Building
 - a) Inadequate to serve the site; 20-25 employees. Small break room, no lunch room or locker rooms. Very limited parking. Group of 7 staff dedicated to education and outreach. Challenging traffic pattern near scale entrance.
 - b) Settlement issues; just modified ADA ramp.

- c) Roof replaced 5-6 years ago, electric head.
- d) Water has sandy grit, sinks are stained.
- e) Employee Trailer
 - i) 3 employees – Tony, Derek, and Bill.
 - ii) Does have restroom, pipes break under the trailer, have to be heat traced, ejector pump to sewer, pump to lift station.
 - iii) Catch basin near ejector pump has unknown discharge location. Need to camera line to verify discharge.
- d. Green Waste Area:
 - a) Receives material from residential and small business; managed by LeMay.
 - b) Grinding and blending onsite by contractor; material was going Silver Springs with lower quality material to Lenz, now contamination is removed and sent to the transfer station and material hauled only to Silver Springs beginning Feb 2017. Lemay separates contaminants into box and takes to transfer station.
 - c) Mixed organics – gets food waste from City of Olympia (heavy with paper and waxed cardboard).
 - i) Monica working with Olympia to improve waste stream.
 - d) Settlement observed in this area – poles, fences.
 - e) Receives quite a bit of blowing litter from the public drop off.
 - f) Fencing is in poor condition.
 - g) L-shaped trench collects drainage into pits, old grinder pumps that discharge to the leachate system. No storage if pumps go down.
 - h) Metal collection grate doesn't address fines. Mike discussed example ecology blocks with filter fabric.
 - i) Would like to retrofit with chopper pumps, need to manage total suspended solids (TSS).
 - j) LeMay (Waste Connections) manages the green waste area.
- e. Maintenance Building:
 - a) On piles; steps replace and ramp has settled.
 - b) Propane heat, shop has crane.
 - c) Loft over office area – staff doesn't know the load rating so aren't using.
 - d) Compressor is loud; condensate drain purges hourly – consider compressor shed
 - e) 2 restrooms, one office.

- f) Large equipment storage pad; money set aside to cover equipment storage area.
- f. Decant Pad
 - a) Used by Public Works and stormwater groups.
 - b) Pumps into leachate lagoon, also collects all the surface water that collects on the pad (uncovered). This is metered – magmeter (previously sonic).
 - c) Decant pad is regulated through local Health Department.
- g. Trailer Staging Area:
 - a) Granular surfacing– suspect contributor of fines into stormwater system. No flow monitoring. Heard that internal County group conducted storm calculation if area were paved.
 - b) Have run off issues from transfer station area – area has grit chamber accessed by a grate in the side wall – not effective. Water travels down slope into catch basins. Containers arrive full of water, overflows to storm. Using catch basin inserts, but expensive.
 - c) Flow is grit chamber to lift station to sanitary sewer.
- h. Water Tanks:
 - a) Groundwater supply well, used to fill trucks for dust control (by LeMay). Well was repaired, tanks filled, then discovered leaks in both. One leaking from the bottom, the other from a pinhole approx. 5 ft. above grade. Staff would like to be able to use the well and tanks, which is also important to retain water rights.
 - b) Tanks left over from asphalt operations. 23-24' tall.
 - c) 50 GPM pump has float switches but using transducer. Pump is 220-240' deep, well reported to be 360-400' below grade. Panel inside building.

11. Rainier and Rochester Drop-Off Centers

- a. Staff booths are inadequate, not sufficiently sized, not enough room for equipment and paperwork. Electric heat and A/C, restroom.
- b. No scale – customers charged by the cubic yard; visual. Staff would like weigh scales. Loads logged as the come to WARC from the drop off sites.
- c. Tonnages have increased at both sites – both were open 2 days/week, now 3 days/week. Staff think the sites need to be larger or open more days/week. Facilities take recycling and trash, no yard waste. Consider scrap metal collection.
- d. No major issues with infrastructure at either site.

- e. Rainier is landscaped with irrigation system fed by well water. Had to put in a filtration system as there were color/odor issues.
- f. Both sites use non-potable water; water heater at both sites replaced every couple of years; heater works fine, venting isn't great.
- g. Comment regarding grade difference, Ecology block wall, concern with staff mowing/maintaining.
- h. Rochester has small shed, not at Rainier.
- i. Rochester doesn't have functional cameras, Rainier has newer system. Rainier has newer lighting, Rochester OK.
- j. Both sites have Paradigm software with DSL connection, no real issues other than system is slow.
- k. Issues with illegal dumping in recyclable material collection area at both sites.
- l. Recycling up front then drive back to the tipping area, not visible by staff – circulation issue. Don't collect commercial recycling; goes to Waste Connections' facility on Hogum Bay Road.
- m. Dumping into 40-yard containers. Containers surrounded by 70' booms. Rainier stormwater drains into an infiltration ditch and Rochester stormwater is directed to a stormwater pond.
- n. County operates site, Pacific/Waste Connections hauls materials. Recycling in 20 yd. and smaller bins (based on contractor desired mix for facility. Material collected separately but taken to same Waste Connections facility – consider commingled collection?

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Appendix B.

Gap Analysis Memo

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Memo

Date:	Monday, April 02, 2018
Project:	Thurston County Solid Waste Facilities Assessment and Capital Planning
To:	Monica Gorman, Solid Waste Manager
From:	Olivia Williams and Wendy Mifflin, HDR; Michael Spillane, Herrera
Subject:	Final Task 4 - Evaluation of Facility Condition Data – Gap Analysis Memo

1. Introduction and Background

Thurston County (County) contracted with HDR and their teaming partners to conduct a facility condition assessment, perform a capital needs analysis of the County's solid waste facilities and to prepare a Solid Waste Facility Condition Assessment and Infrastructure Management Plan. In October 2017, field assessment activities were conducted at:

- WARC located at 2420 Hogum Bay Road NE, Lacey, WA 98516
- Rainier Drop-off Center located at 13010 Rainier Acres Road, SE, Rainier, WA 98576
- Rochester Drop-off Center located at 16500 Sargent Road, Rochester, WA 98579

The objective of the field assessments was to document existing conditions and confirm operations and performance for various elements of the solid waste facilities for capital planning purposes. The following structures and site features were evaluated:

WARC site, Drop off sites:

- Condition and operation of fences, barriers, roadways, parking lots, exterior storage areas, and concrete and asphalt pads.
- Condition and operation of the security systems.

Transfer Station, HazoHouse, Miscellaneous Buildings

- Condition and operation of all buildings and building components and systems, structure, roof/envelope, and associated infrastructure.
- Condition and operation of the vehicle scales and associated components.
- Condition and operation of the customer service and unloading areas and infrastructure including the roll-off/rail containers.

Closed Landfill

- Condition and operation of the landfill environmental systems including the leachate collection system and lagoon, gas collection system and flare, ground water monitoring system, and stormwater collection system and lift stations.
- Condition and operation of the programmable logic controller (PLC) network wireless and wired connections and hardware.

The purpose of this memorandum is to review the data collection findings from the field assessments and to conduct a gap analysis to guide the development of recommendations. This gap analysis will identify areas of unmet needs and where improvements are required to meet future goals including areas for repair or improvements in providing the level of service to customers, shortcomings in the existing facilities, and strategies for improvement.

2. Gap Analysis

As part of the field assessments conducted in October 2017, each assessor documented onsite conditions for infrastructure, equipment and systems. Forms were organized by structure (i.e. transfer station) and discipline (i.e. structural). Specific items were identified based on preliminary site walks and the data/document review. A Facility Condition Assessment Inventory was completed and approved by Thurston County.

As part of the Facility Conditions Assessment Inventory, specific onsite conditions were scored as follows:

Condition Score	Rating	Scoring Description
0	New	New or near new condition, fully operable, and performs consistently at or above required level of service.
1	Very Good	Sound physical condition. Asset likely to perform adequately without major work for 25 years or more for structures and for 10 years or more for mechanical and electrical assets.
2	Good	Acceptable physical condition. Minimal short-term failure risk, but potential for deterioration in medium- to long-term (10 years plus for structures and 5 to 10 years for mechanical and electrical assets). Only minor work required, if any.
3	Fair	Significant deterioration evident for structures and deterioration beginning to be reflected in performance and higher attendance for maintenance for mechanical and electrical assets. Failure unlikely within next 2 years, but further deterioration likely and major replacement likely within 10 years for structures and within 5 years for mechanical and electrical assets. Minor components or isolated sections of the asset need replacement or repair now, but asset still functions safely at adequate level of service. Work required, but asset is still serviceable.
4	Poor	Failure likely in short-term. Likely need to replace most, or all, of asset within 2 years. No immediate risk to health or safety, but work required within 2 years to ensure asset remains safe. Substantial work required in short-term, asset barely serviceable.
5	Very Poor	Failed or near failure. Immediate need to replace most, or all, of asset. Component effective life exceeded and excessive maintenance costs incurred. A high risk of breakdown with serious impact on performance. Health and safety hazards exist which present a possible risk to public safety, or asset cannot be serviced/operated without risk to personnel. Major work or replacement required urgently.

Items from the Facility Conditions Assessment Inventory that were ranked as a safety/critical item or received a score of 3 – Fair, 4 – Poor, or 5 – Very Poor have been evaluated for this gap analysis.

Attachment A identifies those items that are safety/critical items needing repair or replacement and Attachment B identifies items that ranked as Fair, Poor or Very Poor from the Facility Conditions Assessment Inventory. Attachment A and Attachment B include recommended actions for maintenance, repair or replacement of items identified. Both attachments are organized by facility/sub-facility/system (i.e. WARC-Transfer Station-Plumbing).

3. Key Findings

The following key findings were identified as part of the gap analysis and are noted for inclusion in the preliminary capital and O & M recommendations and rankings for the 20 year planning horizon in the capital needs analysis. Key findings are based on safety, efficiency, operational functionality and level of service needs for the future planning period:

1) Landfill

- a. The landfill gas (LFG) flare system is oversized with regards to the quantity and percent methane generated within the waste mass. The flares and blowers are not reliably able to operate at the current and projected lower future flow rates and methane concentrations for treatment and migration control. There are inefficiencies as manual monitoring is required due to lack of SCADA. The flares and associated components are in relatively good condition and should be maintained to manufacturer's specifications until the flare stations are replaced. A correctly sized flare system should be designed and installed.
- b. The landfill SCADA system has failed due to an aged software platform. This system should be replaced and operational.
- c. Upgrades to Pump Station 002 should be undertaken. The pump rails are broken, conduit and valves are corroded, there is no local alarm and piping connections need repairs.
- d. Landfill leachate lagoon and conveyance controls are not easily accessible or operable, and have to be manually operated. These should be repaired or replaced.
- e. The Landfill cover material is settling causing changes in surface drainage paths, slopes, pipelines and ponding. Settlement points should be located and surveyed and an overall survey completed so the site can be re-graded for positive drainage, to prevent ponding and assist in pipeline alignment.

2) Stormwater

- a. The stormwater pumping station equipment is aging and inefficient for piping configuration control and maintenance and should be upgraded.
- b. Site stormwater management, handling, sedimentation, channeling and clean-out are being impacted by the differential settlement on the site. The stormwater facilities need regular maintenance to maintain functionality. The stormwater outfall in the compost area had fines and windblown litter in it and should be replaced with a functioning outfall.

3) Transfer Station

- a. Transfer station capacity is limited due to a single loading chute (conservative average throughput for stationary compactor =650 tons/day based on a 10 hour operating day:

$(10 \text{ Hours} \times 60 \text{ Minutes/Hour}) / (25 \text{ Minutes/Load}) \times (27 \text{ Tons/ Load})$

Load out capacity will need to be increased to accommodate future demands.

- b. The transfer station sort line includes a Keith Walking floor which is not currently in use. The majority of the structure has experienced moderate corrosion. None of the hydraulic components were visible but are assumed to be original and in need of replacement. A number of the magnetic separators that serve the sorting line would require replacement prior to operation. While the sort line may be brought back to functionality with repairs and maintenance, it may not be cost effective to operate and should be evaluated based on the County's goals and objectives for material diversion.
- c. Opportunity for material diversion on the tipping floor is limited as the sort line is not in use and has not been maintained. Tipping floor area is fully utilized for material unloading and storage, operational vehicular movement, and loadout – no additional area for manual sorting or separated material storage.
- d. The transfer station load out chute, while functional, had considerable damage to both the steel liners as well as the concrete behind, exposing rebar. Some wear liners were no longer functional due to bucket damage. These items will need to be repaired or replaced.
- e. The transfer station drainage and stormwater handling areas should be regularly inspected, maintained and repaired.
- f. There is currently no covered area on site for heavy equipment repairs and maintenance. A covered area should be constructed for heavy equipment repairs and maintenance on site.
- g. The lower bay area of the transfer station is unpaved with ponding and mud. The area has limited lighting for security. Both should be upgraded.

4) General/Site

- a. The Public Tipping area is an uncovered area with below grade drop boxes for the general public to unload their waste. The area is experiencing differential settlement in the concrete Z-walls and surrounding pavement due to settlement of the closed landfill. Traffic flow and customer queuing to and from the area needs upgrades and improvements, drainage and ponding occurs, there is limited site security and lighting and residential and small business dump trailers cannot be accommodated at the site. Relocating the Public Tipping Area along with the compost area and recycling area should be evaluated.
- b. The Scales and Scalehouse area are experiencing differential settlement causing scales to settle. Pile capacities need to be re-tested, assess tilt or deformation and review construction installation. The scales are experiencing excessive axial sway when handling large vehicles due to the guide bumpers being out of alignment due to ramp settlement.
- c. Differential settlement at various locations onsite is causing ponding and building settlement including the compost area, scalehouse area, "blue roof" building, maintenance building and various areas around the site that are located on the closed landfill.

- d. Site Security including lighting, cameras, fencing and access control need to be improved across the site as unauthorized parties currently have access before and after hours due to lack of fencing and uncontrolled access through the lower gate.
- e. Customer queuing issues are occurring onsite both to and from the Transfer Station area and the Public Tipping area. Relocation of the Public Tipping area away from the Transfer Station area should be considered to alleviate the queuing issues at the scales.
- f. The water tanks are currently not suitable for use due to significant corrosion and small holes in the tanks. Repair is not expected to be cost-effective and replacement should be considered for increased safety and functionality.
- g. The drop boxes in the recycling and public drop off areas are in need of repairs, maintenance and paint.
- h. Electricity supplied to the recycling area trailer had a traffic cone over conduit out of the electrical vault. Needs to be code compliant.

5) HazoHouse

- a. There is an electrical extension cord to the Goodwill building exposed. Need to replace with code compliant electrical.
- b. The automatic traffic counter is not functional and needs repair.
- c. Concrete joints in the load out area need to be sealed.
- d. The security camera system is not currently accessible from the HazoHouse and needs to be repaired for site safety and security.

6) Rainier and Rochester Drop Box Sites

- a. The staff booths are inadequate, not sufficiently sized, not enough room for equipment, paperwork and cash counting. The staff booths should be replaced with locations chosen for future installation of scales at the sites to accommodate population growth.
- b. All recycling drop boxes on site are in need of repairs and paint.
- c. The security camera systems at both sites were not functional and need to be repaired for site safety and security.

4. Next Steps

Following the completion of the final version of this memo, HDR will develop preliminary recommendations for maintenance, repairs and replacement, upgrades and improvements of facility infrastructure and landfill systems focused on operational, technology and energy-savings improvements for ranking and discussion. The results will be compiled and prioritized for the Solid Waste Infrastructure Capital Plan to be developed as the final deliverable of this project in 2018.

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Attachment A –Safety/Critical Items Repairs and Replacement

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
S1	WARC	Maintenance Building	Plumbing	3	75%	8	With few exceptions (normal wear items like drive belts), these units do not have components that can be repaired cost-effectively.	Maintain	This is the air dryer associated with the building's compressed air system and instrument air for a nearby LFG valve station. The unit is currently at an elevated risk of spill and/or mechanical damage due to being mounted on the floor. The unit should be elevated and guarded from nearby equipment and activities.
S2	WARC	Scale Plaza (Outbound)	Mat. Handling	3	30%	9	Worn driving surfaces and the overall coating system on the unit can be repaired as deficiencies develop. The coating system should be repaired to make sure no further deterioration occurs. Settling of the ground around the unit (including the inbound and outbound ramps) poses a threat to accelerating wear and of the unit's critical components.	Repair	This is the commercial/southern scale. The driving surface of the scale was worn, but generally in good condition. There as some pitting on the surface near the main scale house. The unit was also subject to excessive axial sway when handling large vehicles. The guide bumpers at either end appear to be out of adjustment likely due to settlement of the ramps. The coating system on the painted components of the scale were also deteriorating, leading to minor surface corrosion. Scale operators also reported substantial reading errors in windy conditions on this scale.
S3	WARC	Scale Plaza (Outbound)	Mat. Handling	3	30%	9	Worn driving surfaces and the overall coating system on the unit can be repaired as deficiencies develop. The coating system should be repaired ASAP to make sure no further deterioration occurs. Settling of the ground around the unit (including the inbound and outbound ramps) poses a threat to accelerating wear and of the unit's critical components.	Repair	This is the residential/northern scale. The driving surface of the scale was worn, but generally in good condition. There are also a number of areas under the scale where soils have settled around the pile caps, causing voids. The unit was also subject to excessive axial sway when handling large vehicles. The guide bumpers at either end appear to be out of adjustment likely due to settlement of the ramps. This settlement is causing additional sway when the front lip of the scale is bumped by approaching vehicle tires. The coating system on the painted components of the scale were also deteriorating, leading to minor surface corrosion. Scale operators also reported substantial reading errors in windy conditions on this scale.
S4	WARC	Scale Plaza (Inbound)	Mat. Handling	3	30%	9	Worn driving surfaces and the overall coating system on the unit can be repaired as deficiencies develop. The coating system should be repaired ASAP to make sure no further deterioration occurs. Settling of the ground around the unit (including the inbound and outbound ramps) poses a threat to accelerating wear and of the unit's critical components.	Repair	This is the residential/southern scale. The driving surface of the scale was worn, but generally in good condition. There as some pitting on the surface near the main scale house. The unit was also subject to excessive axial sway when handling large vehicles. The guide bumpers at either end appear to be out of adjustment likely due to settlement of the ramps. The coating system on the painted components of the scale were also deteriorating, leading to minor surface corrosion. Scale operators also reported substantial reading errors in windy conditions on this scale.
S4	WARC	Scale Plaza (Inbound)	Mat. Handling	3	30%	9	Worn driving surfaces and the overall coating system on the unit can be repaired as deficiencies develop. The coating system should be repaired ASAP to make sure no further deterioration occurs. Settling of the ground around the unit (including the inbound and outbound ramps) poses a threat to accelerating wear and of the unit's critical components.	Repair	This is the commercial/northern scale. The driving surface of the scale was worn, but generally in good condition. There are also a number of areas under the scale where soils have settled around the pile caps, causing voids. The unit was also subject to excessive axial sway when handling large vehicles. The guide bumpers at either end appear to be out of adjustment likely due to settlement of the ramps. This settlement is causing additional sway when the front lip of the scale is bumped by approaching vehicle tires. The coating system on the painted components of the scale were also deteriorating, leading to minor surface corrosion. Scale operators also reported substantial reading errors in windy conditions on this scale.
S5	WARC	Scale Plaza (Inbound)	Foundation	3	70%	Maintain	Central - Appurtenant elements adjusted/leveled, as needed. Concrete generator pad should be replaced and the electrical cables repaired/secured. Concrete pad foundation could be connected to adjust pile foundation to reduce settlement. North -Appurtenant elements adjusted/leveled, as needed. Asphalt ramp to concrete entrance steps to be raised to match current grades.	Repair	Central scalehouse foundation on leveling system. Concrete generator pad broken up and tilting away from building due to settlement, pulling electrical cables and wires from electrical panel. North scalehouse foundation on leveling system. Asphalt ramp to concrete entrance steps settled.
S6	WARC	Compost Area	Security	4	0%	0	There is no lighting in the compost area.	Replace	As a safety issue, lighting should be installed in the compost area.
S7	WARC	Public Drop-Off Area	Security	4	0%	0	Additional lighting needs to be installed in the public drop off area for customer and worker safety.	Replace	Limited lighting in the public drop off area.
S8	WARC	Public Drop-Off Area	Misc	3	0%	0	The pad, stairs and area surrounding need drainage so the area is not underwater during a weather event. This is a safety issue. Repairs and replacement should be accomplished for the safety of workers.	Replace	The pad and stairs had no drainage. Lower stair area is underwater during weather events.
S9	WARC	HazoHouse	Electrical	5	0%	0	Need to immediately replace with code compliant electrical. This is a safety issue.	Replace	Electrical extension cord to Goodwill Building was exposed. The electrical runs microwave, heater/air conditioner and would not be in compliance with code requirements.

Attachment A –Safety/Critical Items Repairs and Replacement

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
S10	WARC	Recycling Area	Electrical	5	0%	0	Code compliant electrical needs to be installed for customer and worker safety.	Replace	Electrical supplied to the recycling area trailer had a traffic cone over conduit out of the electrical vault. This is a safety hazard.
S11	WARC	Tech Office/Job Shack	Misc	4	50%	12.5	This represents a safety issue as the stairs may tip over.	Repair	East stairs are not anchored to ground.
S12	WARC	Tech Office/Job Shack	Misc	4	20%	5	This represents a safety issue as the stair may tip over.	Repair	West stair is rusted and not affixed to foundation. Potentially able to topple over under live loading.
S13	WARC	Tech Office/Job Shack	Foundation	3	50%	20	During a seismic event the building may slide off of the foundation blocks, which may result in overturning or collapse.	Repair	Foundations: it appears that the building is not positively attached to the foundation
S14	WARC	Tech Office/Job Shack	Electrical	5	0%	0	Code compliant electrical needs to be installed for customer and worker safety.	Replace	There is a heavy-duty cord that runs from the lift station to an outlet under the trailer. This is a safety hazard.
S15	WARC	Transfer Station	Frame	4	20%	10	Floor beam damaged between west and central chutes. Repair would consist of removal of damaged concrete, repairing damaged reinforcing using rebar couplers, removing rust from reinforcing and coating with rust resistant coating and filling with concrete grout.	Repair	The floor beams between the west and central chutes are significantly damaged, with concrete spalled from the bottom of the beam, and longitudinal and stirrup reinforcing is broken. The beam damage significantly weakens the beams capacity.
S16	WARC	Transfer Station	Misc	4	50%	25		Replace	The steel chute at central opening is generally in good condition. The SE corner of the chute has a large hole due to vehicular impact.
S17	WARC	Transfer Station	Frame	4	40%	20		Repair	Framing supporting the sorting conveyor has some significant rust.
S18	WARC	Transfer Station	Frame	4	40%	20		Repair	Tipping floor west of west chute has a significant chunk and cracking below the chute metal plate. There is exposed reinforcing,
S19	LF	Landfill	Misc	5	10%	1.5	Typical of 8 sumps. Unsafe - risk of falling in. Have had at least one incident related to this sump configuration. Sump access hatches should be replaced and grating added to mitigate fall risk. Replace with CT6WV (Open Channel flow is retrofit manufacturer - 1-855-481-1118).	Replace	Manual pumping. 2" vactor drop tube connection (couple feet off bottom). Monthly visual inspection in summer, weekly in winter. Typical of 8 sumps. Unsafe - risk of falling in. Have had at least one reported incident related to this sump configuration
S20	LF	Pump Station 001	Landfill Leachate	5	50%	5	Function of valve station needs to be upgraded. Upgrade both isolation valve vault and flow meter/actuated valve vault access and configuration.	Replace	Location of manual isolation valves (which need to be modified for safety). Access to Isolation valves requires confined space entry. Valves for sampling are 10' down in pit. PLC in shed, tied to Shed 003. Recommend backup generator for 003 pump station. No SCADA at 003.
S21	LF	Pump Station 001	Landfill Leachate	2	50%	5	General upgrade is needed to address access and maintenance. SCADA control is needed for solenoid actuation. Currently valves are actuated by scaled hand control in Shack 001. Inline strainer in vault, has to be manually cleaned – on the discharge force main which requires a confined space entry. Verify continued function and need for strainer.	Replace	1.5" and 4" mag meters and Solenoid actuated valves. In-line strainer in vault (4") requires quarterly cleaning. Access is classified as confined space. Meters in relatively good condition. Meters and piping have been modified. General upgrade is needed to address access and maintenance.
S22	LF	Pump Station 003	Landfill Leachate	4	10%	1.5	Upgrade wetwell, pumps, rails and control system to be automated with Leachate pond and isolation/effluent pond valves. Include isolation valves on influent side. Pump station design should include upgrade to compliance monitoring sampling equipment and shed.	Replace	Combined effluent Hogum Bay. Need to develop as built and update drawings. Air vac leaks, needs replacement. Wet Well undersized. Doesn't communicate w/001, has generator pig tail. Broken stanchion. Sampler needs to be upgraded for environmental safety. Alarm needs upgrade - requires manual reset every time power fluctuates. Leachate and sanitary sewer combined and leaves site to WWTP. No way to isolate sewer flow at influent. The pump station is a duplex system with redundant pumps. In poor condition – lining is flaking off, rail system for pumps has corroded (1 ½" or 2"), air relief valve leaks and is located 2' down into pit, effluent pumping drains back into pit. Electronics are 20+ years old, no PLC – just on/off with local alarm and pager. If power fails, temperature alarm goes for notification.
S23	LF	Landfill	Stormwater	2	70%	10.5	Maintain and install isolation valves to allow maintenance of shaft drive pump. Valves will also allow easier construction for submersible pump and modifications to wet well.	Maintain	No outlet isolation valves. Need isolation valve to be able to service shaft drive pumps. Large amounts of water goes through pond, pond works fine.
S24	LF	Landfill	Stormwater	4	10%	3	Maintain until replacement can be made. Consider submersible pump design to allow pump removal without confined space entry. Install	Replace	Control panel, transfer switch, wet well. Access to vault/wetwell for shaft drive pumps requires confined space entry. Maintenance and repair of shaft drive pumps is expensive.



Attachment A –Safety/Critical Items Repairs and Replacement

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
							outlet isolation valves to allow servicing of shaft drive pumps and to allow for easier installation of submersible pump. Add influent wet well isolation valves. Station upgrade estimated to be		
S25	LF	Landfill	Stormwater	4	10%	2	Inspect quarterly. Maintenance per manufacture recommendations. Replace when station is upgraded.	Maintain	40 HP, 200 Amp, 480/120 Volts 3phase. \$24,000 to repair pump. Dutymaster A-C motor. Yoemans pump. 4,040 hrs. PumpTech does maintenance – recent repair to Permanent Stormwater Pond pump was approximately \$22K
S26	LF	Landfill	Stormwater	4	10%	2	Inspect quarterly. Maintenance per manufacture recommendations. Replace when station is upgraded.	Maintain	40 HP, 200 Amp, 480/120 Volts 3phase. \$24,000 to repair pump. Dutymaster A-C motor. Yoemans pump. 1,250 hrs.
S27	LF	Flare Station	Landfill Gas	2	70%	7	Blowers are in generally good condition. Issue is that they are oversized for the flows generated within the landfill. Maintain blowers and control by throttling using VFD until flare station upgrades can be made.	Replace	Hoffman-lamson blower Model 4203. Operational runs around 1,450 to 1,550 rpm at 9.3” vacuum, 130 cfm (with consistent 30% methane). Rated for 3515 or 600 CFM. Flare is running more consistently at 30% methane however the flare is turned down to using VFD’s at 45% (3200 rpm to 1450 rpm).
S28	LF	Flare Station	Landfill Gas	4	30%	3	Blowers are in generally good condition. Issue is that they are oversized for the flows generated within the landfill. Maintain blowers and control by throttling using VFD until flare station upgrades can be made. Address and repair communication issue as part of SCADA fix in interim until flare statin is upgraded.	Replace	Hoffman-lamson blower Model 4203. Communication problem (10-12 hours then comm. fault). Operational runs around 1,450 to 1,550 rpm at 9.3” vacuum, 130 cfm (with consistent 30% methane). Rated for 3515 or 600 CFM. Flare is running more consistently at 30% methane however the flare is turned down to using VFD’s at 45% (3200 rpm to 1450 rpm).
S29	LF	Flare Station	Landfill Gas	3	50%	10	Knockout vessel and associated piping is fair condition. Maintain during continued use of existing flares and blowers until flare station upgrade is completed. Assess continued use with minor repairs to seal any leaks and upgrades for new flare system to be assessed during design.	Repair	Knockout vessel-w/ removable bottom (leak potential). Fiberglass.
S30	LF	Flare Station	Landfill Gas	3	50%	5	Knockout vessel and associated piping is fair condition. Maintain during continued use of existing flares and blowers until flare station upgrade is completed. Assess continued use with minor repairs to seal any leaks and upgrades for new flare system to be assessed during design.	Repair	Knockout vessel-w/ removable bottom (leak potential). Fiberglass.
S31	LF	Flare Station	Landfill Gas	1	70%	14	Flare is in relatively good condition but oversized. Maintain per manufacture recommendation until flare station is upgraded. Flare could be salvaged and reused or sold when station is upgraded. Install two new skid mount utility flares with flow range approximately 20-350 scfm at a methane content of 25%. The dual system would allow redundant contingency flare capacity with ability to operate independently with separate controls. Reuse existing knockout vessels, condensate system, and compressor. Modify inlet and outlet piping to allow construction of the new flare system adjacent to the existing system to allow uninterrupted service. Upgrade SCADA. Flares would have integrated panels. Electrical modifications would be needed in MCC to coordinate generator backup for power and automatic transfer.	Replace	Flare 1 and 2 alternate running every other month. Flare 1 selector switch currently doesn't work. Temp threshold is 1,600 F. Flare rated for 5MM BTU/hr - currently running at 2.5MM BTU/hr. Callidus Combuster 301-1; 5-25 MM Btu/hr; installed in 2001. Insufficient methane being generated to operate flare within stated parameters. Alternate running between flares on monthly basis. Currently operating with 9.3” vacuum and 130 cfm (with consistent 30% methane) at flare station.
S32	LF	Flare Station	Landfill Gas	4	20%	Replace	Note that flare station should be maintained until correctly sized flare system is designed and installed. Note that flow meter should be calibrated annually. For documentation purposes, this flow meter should be used to report flows and compare to anemometer readings for check. Consider replacing flow meter with upgraded flare station that can be calibrated more easily.	Replace	KURZ Meter is on 12" header 46" upstream of 8" pipe. Needs calibration spec. Read out in control room.

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Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
R1	Landfill	Landfill	Stormwater	5	0	0%	Following repair and replacement, inspect annually. Routine maintenance per manufacturer recommendations.	Repair	Pump #1 at Transition Stormwater Pond. Pump is 20HP, 460V, 90A. High head. 2335 hrs. Offline, being repaired/ replaced.
R2	Landfill	Compost Area	Landfill Leachate	4	0	0%	It was not clear that this panel was used or not. If not used, the Division could remove this to eliminate confusion. This should be a cosmetic change only and low on the priority list.	Replace	Compost control panel 5 (CP-5). Old panel. Abandoned?
R3	Landfill	Landfill	Landfill Leachate	4	2	10%	003 Pump Station Hogum Bay. Pump station bypass vault and valving should be replaced as part of Pump Station upgrade/replacement.	Replace	Walls heavily corroded.
R4	Landfill	Flare Station	Landfill Gas	4	1	10%	Abandoned, oversized and not functional. Salvage components such as motors, flame arrestors, and blowers.	Replace	Two utility flares with two blowers and capacity of 3500 SCFM. Blowers 15 HP Motor NY Blower, Varec flame arrestor, PVC pipe. Pilot system is not functional. Not needed for today's landfill, could be rehabbed and sold. Yellow jackets in control panel.
R5	Landfill	Infiltration Pond	Instrumentation and Controls	3	6	30%	The Division should come to an agreement about consistent labels and tag number for each site/panel/device. Inconsistent labeling can lead to a multitude of errors. The rust on the panel should be monitored and addressed if the panel becomes compromised. The panel can be stripped of rust and painted or re-skinned to prevent further deterioration of the enclosure. Communications paths should be researched and identified for future SCADA improvements.	Maintain	This control panel is labeled as "PERMANENT POND" (label not included in list... might be associated with the wrong "BLDG/Sub-Facility"). The exterior of two of the panels are severely rusted. There does not appear to be any issues with the panel due to this rusting. It is unclear how this communicates to the Green Roof Building. The controls themselves are dated; but appear to be in decent condition.
R6	Landfill	Pump Station 003	Instrumentation and Controls	3	0	40%	The Division should come to an agreement about consistent labels and tag number for each site/panel/device. Inconsistent labeling can lead to a multitude of errors.The high temp alarm is currently used as a general alarm for loss of power. . This isa fail-safe mode where the normal, powered status of the alarm contact is open and it closes on loss of power. This can be addressed with some logic changes and/or some re-engineering of the intent of the system. Overall, this is probably a lower priority and can be addressed as part of a larger SCADA upgrade.	Repair	The panel appears to be in decent shape. This is also called the "Hogum Bay Pump Station". Every time there is a power loss, this station reports an overheat alarm.
R7	Landfill	Landfill	Security	3	9	90%	Chain link fencing should be regularly inspected and repaired as needed. The 3-strand barbed wire fencing should be replaced with chain link for site security.	Repair	Perimeter fencing was observed around the full site (where visible with heavy vegetation in some areas). Fencing on the east and south sides was 3 strand barbed wire with wire down in places. Fencing around the remainder of the perimeter was chain link in good condition.
R8	Landfill	Landfill	Landfill Leachate	3	10	50%	Maintain inlet/bypass valve station for leachate lagoon. Clean and inspect sample ports and piping. Ensure nothing is leaking. Exercise valves quarterly. Check O&M plan for piping configuration and consider labeling pipe and valves for normal and bypass operation.	Maintain	Check valve & air relief valve upstream. Butterfly valve downstream. 2 lines in, 2 lines out. Saddle tap sample port with brass corp stop ball valve.
R9	Landfill	Pump Station 001	Landfill Leachate	3	7.5	50%	See SCADA Section for 001 Effluent Shack.	Repair	Shack houses controls for solenoid actuated valves and flow meter panels. Valves control flow out at 1.5" and 4" valve. 2700-3300 gpd in winter. Rating of 5 for SCADA - needs upgrade. There is reportedly a hardwire SCADA connection between 001 and 003. Need to confirm.
R10	Landfill	Pump Station 002	Landfill Leachate	3	6	40%	Repair piping connections. Repair pump rails and replace conduit and valves. Add local alarm.	Repair	Control panel, transfer switch, isolation valves, mag meter and sample port. Fernco repair/replacement necessary. Pump rails broken. Conduit and valves corroded. No local alarm. Need to check data logger capacity #203089 64k.
R11	Landfill	Landfill	Stormwater	3	6	30%	Pump Station 002 “transfer station” pump. Drain to inspect condition of pump. Maintain per manufacture recommendations. Consider upgrading to duplex station for backup contingency.	Maintain	Receives flow from Northline and Green roof. Pumps ditch to ditch. Single pump. Transfer switch.
R12	Landfill	Landfill	Stormwater	3	6	30%	Northline Pump Station. Drain to inspect condition of pump. Maintain per manufacture recommendations. Consider upgrading to duplex station for backup contingency.	Maintain	Triangle pump. 3 horsepower, 480 volt, 11255 hours.
R13	Landfill	Landfill	Misc	3	10	50%	Monitoring well lids should be repaired with hinges or replaced with lids that seal and provide security.	Repair	Numerous wells around perimeter. Lids could be improved. Currently have to be lifted off manually.
R14	Landfill	Landfill	Misc	3	0	0%			Based on the Cell 1 Closure Report MFA, 2001): The two primary phases of the anticipated settlement behavior are primary consolidation and secondary compression. Primary consolidation is typically a short-term behavior, requiring on the order of days or, at most, weeks to complete. Secondary compression is

Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
									<p>settlement resulting from long-term behavior of the waste, including decomposition.</p> <p>Maximum [secondary compression] settlement on the order of 30-feet near the central portion of the fill is projected for the end of the post-closure period, based on the data measured to date...If necessary, landfill surface grading will be adjusted prior to construction.</p> <p>Differential settlement occurring throughout landfill and adjacent areas causing changes in surface drainage paths, slopes, pipelines, and ponding; no slope instabilities or seepage were observed around the landfill perimeter or have been noted by staff; ponding occurring in depressions primarily at benches or base of slopes that are saturated year-round with standing water after precipitation; no significant issues noted on LiDAR imagery.</p> <p>Settlement points should be located and surveyed to measure amount of secondary compression settlement; overall survey should be completed so site can be re-graded for positive drainage, prevent ponding and saturated soil patches, and to assist in realigning pipelines, identify areas with likely future erosion or issues, and compare initial assumption of performance to actual performance.</p>
R15	Rainier	Public Drop-Off Area	Security	3	0	0%	The current camera system is not functional. Camera system should be repaired for site safety and security.	Repair	7 cameras were visible on site. These cameras do not record and do not send images back to the main office at the WARC.
R16	Rainier	Public Drop-Off Area	Misc	3	7.5	50%	The current toll booth is utilized as a bathroom, kitchen, and break room and customer money collection area. The building is small for the number of employees on site and while functional, should be enlarged to have separate areas for bathroom, cooking and break areas.	Replace	The toll booth is small for the number of employees on site. The bathroom is also used as the kitchen for employees on site and contains a microwave and refrigerator.
R17	Rainier	Recycling Area	Mat. Handling	3	3.5	50%	All drop boxes are in need of repairs, maintenance and paint.	Repair	<p>8 - 40 yd boxes</p> <p>14 - mesh cardboard boxes</p> <p>4 - 20 yard boxes</p> <p>All boxes are in need of repairs and paint.</p>
R18	Rainier	Recycling Area	Mat. Handling	3	4	80%	Oil collection containment regular inspection, repairs and maintenance. Consider replacement in 5 years.	Maintain	There is a customer oil collection containment system on site. This tank is double walled.
R19	Rochester	Public Drop-Off Area	Security	5	0	0%	The camera system should be repaired or replaced for functionality, site security and safety.	Repair	The camera system is not functional.
R20	Rochester	Public Drop-Off Area	Mat. Handling	3	3.5	50%	All drop boxes are in need of repairs, maintenance and paint.	Repair	<p>8 - 40 yd drop boxes</p> <p>6 - 30 yd drop boxes</p> <p>14 - 10 yard mesh cardboard boxes</p> <p>Boxes are in need of repairs and paint.</p>
R21	Rochester	Public Drop-Off Area	Misc	3	7.5	50%	The toll booth includes a bathroom, kitchen, break room all in one area. The booth should be expanded or re-located for employee use and for security in cash handling.	Repair	The toll booth is small for the staff located at the site. It includes a cash counting area up front and bathroom/break/kitchen area.
R22	Rochester	Public Drop-Off Area	Misc	3	9	60%	The metal storage building should be maintained with repairs made to the interior of the building.	Maintain	Metal storage building on site is in fair condition.
R23	WARC	Blue Roof Building	Plumbing	5	0	0%	The building's bathroom is no longer in use (no fixtures are installed), as the intended use of the building has changed. There was no indication of deficiencies with the plumbing system.	Maintain	The building was originally constructed with a single bathroom, but no fixtures were installed at the time of the inspection.
R24	WARC	Blue Roof Building	HVAC	3	10	50%	Use of the building has changed from its original intended purpose. The heater did not appear to be in use at the time of the inspection, but if it were to be put back in service, a minor cleaning would be required prior to safe operation.	Repair	The building was originally constructed with a single bathroom that included an in-wall unit heater. The unit was visually in good condition, but didn't appear to have been used in some time.
R25	WARC	Blue Roof Building	Foundation	4	10	20%	Most damage has to do with foundation settlement.	Replace	Floor slope has large cracks with spalling. 2" of settlement across a 16' door and it appears that the lean-to roof foundation is sinking as well.
R26	WARC	Blue Roof Building	Foundation	4	0	0%		Replace	Building foundation settled several inches on west side, foam sealant placed in gap; building tilting from settlement; garage door warped; roof line bent and separating; water drains toward building.

Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
									Foundation can be jacked and lifted or full replacement with a shed that can be leveled as needed; water should be drained or diverted away.
R27	WARC	Compost Area	Security	5	0	0%	There are multiple breaks in the fencing around the compost area due to impact damage. The fencing should be replaced.	Replace	Multiple breaks in the fencing around the Compost area. Fence has been hit by vehicles and equipment. This fence is also utilized for litter control so currently litter bypasses breaks in fenceline.
R28	WARC	Compost Area	Stormwater	3	0	0%	The stormwater outfall structure does not appear to be functioning properly. There is no way to control fines and windblown litter into the structure. The structure should be replaced with a functioning outfall structure.	Replace	The Compost Area Stormwater Outfall structure is surrounded by a sock system to control debris. The structure had fines and windblown litter in it.
R29	WARC	Compost Area	Misc	3	4.5	30%	The compost area paving has settling that is causing cracks and ponding and curbing is broken due to vehicle impacts. The area should be graded, repaved and curbing repaired.	Repair	The Compost Area paving is settling causing breaks in the asphalt and localized ponding. Some curbing needs repairs.
R30	WARC	Compost Area	Mat. Handling	3	5	50%	All drop boxes on site need regular repairs and maintenance including repairs due to equipment damage, painting and welding.	Repair	2 - 40 yard drop boxes and 2 20 yard drop boxes located on the compost area for metal collection and other items. Some equipment damage to boxes was noted.
R31	WARC	Compost Area	Misc	3	10	100%	Regular maintenance and area clean up.	Maintain	Noted glass stockpiled in a bunker area. Broken glass outside the bunker.
R32	WARC	Decant Facility	Security	3	3.5	50%	Additional lighting should be installed in the decant facility area for customer and worker safety. Lighting should be repaired and maintained on a regular basis.	Repair	There were 2 light poles located in the decant facility area. This provides limited lighting to the area.
R33	WARC	Decant Facility	Misc	3	5	50%	The drainage conveyance should be inspected and maintained on a regular basis. Repairs should be made so the system is functional.	Repair	The decant facility drainage conveyance was not functioning. Water was backed up throughout the site from a vehicle decanting. Liquids were observed entering the discharge structure but were not running into the leachate lagoon.
R34	WARC	Green Roof Building	HVAC	4	1	10%	These units are typically not designed to be repairable (cost-effectively). In general, replacement is the only option. In this particular case, the unit protects critical SCADA components so a more substantial system should be considered when replaced.	Replace	This unit serves the building's PLC/telecom/server room. The unit was not functional at the time of the inspection, resulting in a high ambient temperature in the room. It had been unplugged for the winter months. A more substantial air conditioning system should be considered for the critical services it's protecting.
R35	WARC	Green Roof Building	HVAC	3	6	30%	The unit heaters in this building appeared to be nearing the end of their useful service life. The fan motor is the only wear item in the unit and is most likely to fail. Due to the construction of the unit, it's far easier and likely cheaper to replace the unit as a whole.	Replace	The building featured two ceiling-mounted, 120V unit heaters in the main shop area. The units were dated, but appeared in good condition with no major visible deficiencies.
R36	WARC	Green Roof Building	HVAC	3	15	50%	There are no major replaceable components on a tank of this configuration. From a safety perspective, it's advisable to replace the tank outright when nearing end of life.	Maintain	This is the propane tank that serves the backup generator for the building. The unit had minor moisture damage and weathering and was not located on a concrete pad, but was otherwise in good condition. Piping between the tank and the generator was not properly supported.
R37	WARC	Green Roof Building	HVAC	3	10	50%	There were no visible deficiencies with this unit. With few exceptions, these units are designed to be repaired in situ. As this unit powers critical SCADA components, regular maintenance should be a priority.	Maintain	This is the propane backup generator for the building, manufactured in 2008. There was some minor moisture and debris ingress in the enclosure, but no signs of corrosion or major animal/insect damage.
R38	WARC	HazoHouse	Security	5	2.5	50%	The automatic traffic counter need to be functional or replaced if it cannot be repaired. The control box needs to be vermin proof.	Repair	The automatic traffic counter is reported to not be functional; or the staff otherwise need training to implement. This is a Phoenix 2 system. The exterior control box had evidence of housing vermin.
R39	WARC	HazoHouse	Misc	3	15	100%	Regular maintenance with sealing of the joints.	Maintain	HazoHouse Load out area concrete was in good condition. The joints need to be sealed.
R40	WARC	HazoHouse	Security	3	3.5	50%	The camera system need regular maintenance and should be accessible to the Hazohouse office for security and safety.	Maintain	There are 2 cameras located in the Hazohouse (not identified in the field but observed the output at the scale plaza camera system). This system is not accessible from the Hazohouse office.
R41	WARC	Irrigation Wellshed & Tanks	Plumbing	5	0	0%	Repair of these units is not likely cost-effective. Replacement will allow for increases safety and functionality.	Replace	These are the two outdoor irrigation water storage tanks. The coating system on the tanks has mostly failed, causing significant corrosion over approximately 20% of the exterior. In some places, severe corrosion has caused small holes in the tank wall. Many of the pipes, ports and valves around the base of the tanks are partially buried and inaccessible. The hardware for the water truck fill nozzle

Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
									is severely corroded and did not appear to function. In general, the tanks are not suitable for use.
R42	WARC	Irrigation Wellshed & Tanks	HVAC	3	8	40%	These units are not designed to have repairable parts and are usually replaced at end of life. Regular cleaning of the grille can increase service life and reduces safety hazards.	Replace	This is the in-wall unit heater that serves the building. There were no major deficiencies found on the unit, with the exception of dirt in the grille. The unit appeared to be functional.
R43	WARC	Irrigation Wellshed & Tanks	Plumbing	3	8	40%	With few exceptions (normal wear items like drive belts), these units do not have components that can be repaired cost-effectively.	N/A	This is the air compressor that serves the building. This air compressor is not in use and not part of the current system. The unit is hard-piped to the structure and serves components associated with the well system.
R44	WARC	Main Office (2420)	HVAC	4	4	20%	Small wall-mounted HVAC units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement. Exceptions to this can be drive belts or primary fan motors.	Replace	This is the primary wall-mounted 3-ton (estimated) HVAC unit. The unit has some minor corrosion on the condenser coils as well as subleasing on the exterior casing. Building occupants did not mention any major concerns.
R45	WARC	Main Office (2420)	Plumbing	3	15	50%	There were no visible deficiencies with the system. Repair is often cheaper than all-out replacement for piping systems.	Repair	This is the domestic water piping for the building. The asset was not directly visible for inspection, but had no obvious leaks or capacity issues. There was some floor damage by the kitchen sink indicating a previous leak.
R46	WARC	Main Office (2420)	Envelope	3	12	30%		Replace	Connections are rusted. Panel is in good condition
R47	WARC	Main Office (2420)	Envelope	3	20	50%		Replace	Office foundation vents: rusted screws holding vent on.
	WARC	Main Office (2420)	Envelope	3	20	50%		Repair	Wood sister @ SE corner for electrical vertical has potential dry rot and connection rust.
R48	WARC	Maintenance Building	HVAC	4	4	20%	These units are generally not designed with repairable components and are often replaced at end of life.	Replace	This is the through-wall air conditioner on the office exterior. It has an approximate capacity of 1 ton. There was some minor mechanical damage to the interior controls of the unit as well as evidence of a clogged filter. No date was found on the unit, but it appears to be from the 1980s or 1990s, which puts this unit near the end of life. The room this unit serves has some networking equipment in it, so a more substantial air conditioning system should be considered assuming this equipment is operation-critical.
R49	WARC	Maintenance Building	HVAC	3	8	40%	These units often have replaceable motors that will dramatically increase service life due to the simplicity of the design. Cost effectiveness and ease of replacement should be considered prior to repair.	Maintain	This is the wall-mounted exhaust fan on the North wall of the building. The fan is direct drive, approximately 1000 CFM and though dirty, appeared to be in fair condition.
R50	WARC	Maintenance Building	Plumbing	3	15	50%	Functional life of the unit can be achieved with regular maintenance.	Maintain	Lavatories were fully functional and had only minor corrosion and light deterioration of the coating system. There was no evidence of leaks.
R51	WARC	Maintenance Building	Plumbing	3	10	50%	Unless a problem arises with the flushing mechanism, it is often more cost effective to replace the unit as a whole.	Replace	Toilets in the building were fully-functional, but had minor staining and some corrosion at base hardware and deterioration of caulking.
R52	WARC	Maintenance Building	Foundation	3	40	80%		Repair	According to Thurston Co. Solid Waste Staff, the foundation is supported on piles. There is a possible flexural crack in the middle of slab, and other shrinkage cracks. There are a few 1" deep gouges in the concrete surface.
R53	WARC	Public Drop-Off Area	Security	4	0	0%	The fencing in the public drop off area has multiple breaks, broken posts and fencing that is not connected. The entire area should be re-fenced.	Replace	Fencing in the public drop-off area shows multiple breaks, broken posts and fencing not connected. Needs repair/replacement.
R54	WARC	Public Drop-Off Area	Foundation	3	4.5	30%	The walls in the public tipping area are separating due to settlement with damage due to vehicle and drop box impacts. Temporary repairs could be made to the area including regrading, repaving and construction/repairs to the tip walls due to the settlement. Consideration should be given to re-locating to an area that will not continue to settle due to placement on old landfill. Given the repairs needed and continued settlement, the area should be relocated.	Replace	The walls in the Public Tipping Area are separating due to settlement. Relatively minor damage due to impacts from vehicles and drop boxes. The current guardrail system at the top of the tip walls is frequently impacted by customer vehicles and waste causing breaks in the foundation. An alternate guardrail system design should be considered that is able to sustain these impacts.
R55	WARC	Public Drop-Off Area	Misc	3	4.5	30%	This area is settling due to placement on the existing closed landfill and settlement will continue. Due to area usage by customers, repairs needed to the entire area, it is recommended that the area be relocated off of the closed landfill site.	Repair	The paving and curbing in the Public Drop-Off area are settling and cracking in multiple areas due to settlement issues (upper level asphalt).
R56	WARC	Public Drop-Off Area	Security	3	1.2	40%	The Public Drop-Off area should have additional cameras located around the site for security and safety. The 2 cameras that are located at the site should be maintained/replaced on a regular basis.	Maintain	2 cameras were noted in the Public Drop-Off area. These cameras provide limited views of the area.



Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
R57	WARC	Public Drop-Off Area	Foundation	3	0	0%			Z-Wall surrounding drop off area with gaps between wall units and at the corners; gaps filled in with soil and debris; new guardrail along top of wall; informed it is a cantilever wall with the base rotated outward, particularly on the ends. Wall could have tie-back anchors and brackets installed to stabilize wall and reduce deformation; would require explorations to determine anchoring strata.
R58	WARC	Public Drop-Off Area	Foundation	3	0	0%		Replace	Paved area below Z-wall where bins are placed failing mainly along tracks. Pavement could be repaired be cutting along paths and replaced with concrete.
R59	WARC	Recycling Area	Security	3	3.5	50%	Additional lighting should be installed in the area for customer and worker safety. Lighting should be regularly repaired and maintained.	Repair	Limited lighting in the recycling area.
R60	WARC	Scale Plaza (Inbound)	Frame	4	15	30%		Repair	Kiosk floor framing was not directly observed; operator noted that there is a soft spot at the SW corner
R61	WARC	Scale Plaza (Inbound)	Misc	3	8	40%	With few exceptions, these units are designed to be repaired in situ. As this unit powers the inbound scale house, regular maintenance should be a priority.	Repair	This is the standby propane generator that powers the building. The enclosure was locked, but the unit appeared to have typical weathering and minor moisture/debris damage.
R62	WARC	Scale Plaza (Inbound)	HVAC	3	6	30%	Small condenser units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Replace	This is the split system heat pump unit associated with the kiosk. The unit had some minor moisture and moss damage, but was reported fully-functional by building occupants.
R63	WARC	Scale Plaza (Inbound)	HVAC	3	10	50%	Small condenser units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Replace	This is the split system heat pump associated with the scale house. The unit has moderate corrosion over 75% of the exterior condenser guard as well as typical weathering and moss growth.
R64	WARC	Scale Plaza (Inbound)	Envelope	3	30	60%		Repair	inbound kiosk has a leak at the window
R65	WARC	Scale Plaza (Inbound)	Foundation	3	24	60%	<p>SCALES (N): Should re-test pile capacities, assess tilt or deformation, and review construction installation. Depending on results of these evaluations, piles may need to be braced or replaced. Assuming loads remain similar, the piles should be able to remain in-place to support replacement scales over-time. Pile testing should occur the next time the scales are being removed/replaced.</p> <p>At some point, ramp grades may become too steep for vehicles to safely navigate to the scales. The ramps and approaches may then need to be lengthened to flatten the grade. Capital expenditures should be set aside for this eventuality. Concrete cracks and gaps should be continually sealed as these appear.</p> <p>SCALES (S): Should re-test pile capacities, assess tilt or deformation, and review construction installation. Depending on results of these evaluations, piles may need to be braced or replaced. Assuming loads remain similar, the piles should be able to remain in-place to support replacement scales over-time. Pile testing should occur the next time the scales are being removed/replaced. At some point, ramp grades may become too steep for vehicles to safely navigate to the scales. The ramps and approaches may then need to be lengthened to flatten the grade. Capital expenditures should be set aside for this eventuality. Concrete cracks and gaps should be continually sealed as these appear and the spalling and broken concrete areas should be repaired.</p>	Repair	<p>SCALES (N): Scale on piles with concrete pile caps with concrete abutment and concrete ramps; HMA ramps connect to the entry and exit concrete abutment ramps that continually settle and raised to match grades; scale structure appears separated at joints and from the concrete abutments up to 1 inch; voids present at most pile caps; possible pile tilting.</p> <p>SCALES (S): Scale on piles with concrete pile caps and concrete abutment concrete ramps; HMA ramps connect to the entry and exit concrete abutment ramps that continually settle and raised to match grades by several feet; adjacent HMA deformed and tilted away forming gap up to 8 inches from concrete pile caps or wall; scale structure appears separated at joints and from the concrete abutments up to 1 inch; exit end of scale concrete abutment ramp spalling and broken at bracket; voids present at most pile caps; possible pile tilting.</p>
R66	WARC	Scale Plaza (Outbound)	Foundation	4	20	40%		Repair	Kiosk Framing is no longer anchored to foundation. According to Thurston County Solid Waste personnel, this is a result of the ground sinking below kiosk in relation to the scale (which is on piles)
R67	WARC	Scale Plaza (Outbound)	Misc	3	8	40%	With few exceptions, these units are designed to be repaired in situ. As this unit powers the outbound scale house, regular maintenance should be a priority.	Repair	This is the standby propane generator that powers the building. The unit currently has 350 hours of run time on it. Deficiencies include minor corrosion of hardware in the body of the unit due to moisture and debris ingress. A Thurston PM Service tag indicates the unit was last serviced in July of 2009 (at 159 hours) however the unit's oil filter is labeled 2015-10-23.



Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
R68	WARC	Scale Plaza (Outbound)	HVAC	3	6	30%	Small condenser units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Replace	This is the split system heat pump unit associated with the kiosk. The unit had some minor moisture and moss damage, but was reported fully-functional by building occupants.
R69	WARC	Scale Plaza (Outbound)	HVAC	3	10	50%	Small condenser units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Replace	This is the split system heat pump associated with the scale house. The unit has moderate corrosion over 75% of the exterior condenser guard as well as typical weathering and moss growth.
R70	WARC	Scale Plaza (Outbound)	Foundation	3	24	60%	<p>SCALES (N): Should re-test pile capacities, assess tilt or deformation, and review construction installation. Depending on results of these evaluations, piles may need to be braced or replaced. Assuming loads remain similar, the piles should be able to remain in-place to support replacement scales over-time. Pile testing should occur the next time the scales are being removed/replaced. At some point, ramp grades may become too steep for vehicles to safely navigate to the scales. The ramps and approaches may then need to be lengthened to flatten the grade. Capital expenditures should be set aside for this eventuality.</p> <p>SCALES (S): Should re-test pile capacities, assess tilt or deformation, and review construction installation. Depending on results of these evaluations, piles may need to be braced or replaced. Assuming loads remain similar, the piles should be able to remain in-place to support replacement scales over-time. Pile testing should occur the next time the scales are being removed/replaced. At some point, ramp grades may become too steep for vehicles to safely navigate to the scales. The ramps and approaches may then need to be lengthened to flatten the grade. Capital expenditures should be set aside for this eventuality</p>	Repair	<p>SCALES (N): Scale on piles with concrete pile caps and concrete abutment concrete ramps; HMA ramps connect to the entry and exit concrete abutment ramps that continually settle and raised to match grades; scale structure appears separated at joints and from the concrete abutments up to 2 inches; voids present at most pile caps; possible pile tilting.</p> <p>SCALES (S): Scale on piles with concrete pile caps and concrete abutment concrete ramps; HMA ramps connect to the entry and exit concrete abutment ramps that continually settle and raised to match grades; scale structure appears separated at joints and from the concrete abutments up to 1 inch; exit end of scale concrete abutment ramp spalling and broken at bracket; voids present at most pile caps; possible pile tilting.</p>
R71	WARC	Tech Office/Job Shack	HVAC	4	4	20%	Small wall-mounted HVAC units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement. Exceptions to this can be drive belts or primary fan motors. The corrosion on the body of this unit cannot be repaired cost-effectively.	Replace	This is the primary wall-mounted 3-ton (estimated) HVAC unit. The unit has corrosion on the outer casing and the seal between the unit and building exterior wall has failed in many places. Building occupants reported the unit's capacity was insufficient during the summer months and a supplemental window-mounted air conditioner is being used.
R72	WARC	Tech Office/Job Shack	Plumbing	4	6	20%	The unit was fully-functional, though aesthetically dated. Replacement is often more cost effective than repair when deficiencies develop.	Replace	This is the lavatory in the restroom. The unit was fully functional, but was stained over 50% of the basin and had some minor corrosion.
R73	WARC	Tech Office/Job Shack	Plumbing	3	15	50%	There were no visible deficiencies with the system however staff reports pipe breaks in winter months. Pipes should be insulated and skirting added.	Repair	This is the domestic water piping for the building. The asset was not directly visible for inspection, but had no obvious leaks or capacity issues. There was some floor damage by the kitchen sink indicating a previous leak. Potable water and sewer lines are attached under the trailer exposed to the elements resulting in frozen lines in the winter months.
R74	WARC	Tech Office/Job Shack	Plumbing	3	12	40%	There were no visible deficiencies with the unit. Replacement is often more cost effective than repair when deficiencies develop.	Maintain	This is the laboratory sink located on the west side of the trailer. Aside from minor mildew build-up and light corrosion around the base of the unit, there were no deficiencies.
R75	WARC	Tech Office/Job Shack	HVAC	3	6	30%	Small window mounted AC units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Replace	This is a window-mounted air conditioner that serves the unit. Building occupants note the primary HVAC unit is under-capacity, so this unit has been added as supplemental. The unit has minor mold and moisture damage as well as light mechanical damage to the condenser.
R76	WARC	Tech Office/Job Shack	Envelope	5	0	0%	According to staff, the trailer is over 40 years old, all windows leak, frequent rodent infestations, mold on walls and sitting on concrete blocks that move due to settlement.	Replace	Rusted screws throughout
R77	WARC	Transfer Station	Misc	5	0	0%	The non-potable frost free hydrants were not operational. Potential fire suppression, these hydrants could be repaired and put back in service.	Repair	In the lower Transfer Station trailer staging area 2 non-potable frost free hydrants were located. Neither were operational.
R78	WARC	Transfer Station	Mat. Handling	4	6	20%	The majority of the structure below the walking floor as well as much of the visible chassis has experienced some moderate corrosion. The coating system has completely failed on the top 50% of the support structure. None of the	Replace	This is the Keith Walking floor at the upstream end of the sorting line. The unit is not currently in use. The top of the unit was mostly obscured by fugitive material from the tipping floor. The structural members that were readily visible

Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
							hydraulic components were visible at the time of the inspection, but are assumed to be original and in a similar condition. The cost of this replacement would need to include a new supporting structure and chute work above.		under the unit had moderate levels of corrosion. There were no holes or major concerns with the chute walls.
R79	WARC	Transfer Station	Mat. Handling	4	6	30%	The system can continue to function as intended, but additional mechanical damage to the chute work may accelerate deterioration of the concrete. Concrete should be repaired to the greatest extent possible. If removal of portions of the platework is necessary, those sections should be straightened (bucket damage repaired) or replaced with new to minimize the potential of further damage.	Repair	This is the west chute in the tipping floor. The chute work was functional, but there was considerable damage to both the steel liners as well as the concrete behind. In areas, concrete has deteriorated enough exposing rebar around the edges.
R80	WARC	Transfer Station	Mat. Handling	4	6	30%	The system can continue to function as intended, but additional mechanical damage to the chute work may accelerate deterioration of the concrete. Concrete should be repaired to the greatest extent possible. If removal of portions of the platework is necessary, those sections should be straightened (bucket damage repaired) or replaced with new to minimize the potential of further damage.	Repair	This is the center chute in the tipping floor. The chute work was functional, but there was considerable damage to both the steel liners as well as the concrete behind. In areas, concrete has deteriorated enough exposing rebar around the edges. There were also a number of places where wear liners were no longer functional due to bucket damage.
R81	WARC	Transfer Station	Mat. Handling	4	6	30%	The system can continue to function as intended, but additional mechanical damage to the chute work may accelerate deterioration of the concrete. Concrete should be repaired to the greatest extent possible. If removal of portions of the platework is necessary, those sections should be straightened (bucket damage repaired) or replaced with new to minimize the potential of further damage.	Repair	This is the east chute in the tipping floor that serves the compactor. The chute work at the tipping floor level had moderate bucket damage, but was functional. Aside from expected surface corrosion, the lower portion of the chute did not appear to have any damage.
R82	WARC	Transfer Station	Security	4	0	0%	Lighting should be installed in the lower bay area of the transfer station of employee safety and security.	Replace	There is no exterior pole-mounted yard lighting outside of the transfer station. Limited lighting provided on building exterior.
R83	WARC	Transfer Station	Security	4	3.5	50%	Additional lighting should be installed for employee safety and security with current lights inspected and maintained on a regular basis.	Repair	4 lights were observed in the lower trailer staging area of the transfer station. Due to the size of the area, these lights are not adequate to provide visibility after dark.
R84	WARC	Transfer Station	Envelope	4	10	20%		Repair	The steel plates above the concrete wall on the east side of the tipping floor are bent, with broken steel clips. This damage also impacted the exterior cladding on the east wall of the tipping floor.
R85	WARC	Transfer Station	Mat. Handling	3	12	40%	The sorting line conveyor could likely be brought back into service with relatively minor maintenance. There was some light corrosion on some of the chute work and plate components, but nothing that appeared to hinder the operation of the unit. A number of the return idlers that were visible from under the unit were caked with build-up that should be cleaned (or replaced) prior to restarting. There were no visible deficiencies with the drive system. The Belt had some longitudinal streaking possibly indicating a stuck idler or material jam, but this was not found during the assessment. None of the streaks appeared to have damaged the belt to the point of repairs.	Repair	This is the first of the sorting line conveyors, just downstream of the walking floor. The unit is currently not in use. The return idlers visible from below had a considerable amount of buildup. The chute work and guards on the unit had minor mechanical damage and the structural members that were readily visible had some light corrosion where paint has failed. The output shaft on the speed reducer appeared to have a minor leak at the seal.
R86	WARC	Transfer Station	Mat. Handling	3	12	40%	The sorting line conveyor could likely be brought back into service with relatively minor maintenance. There was some light corrosion on some of the chute work and plate components, but nothing that appeared to hinder the operation of the unit. A number of the return idlers that were visible from under the unit were caked with build-up that should be cleaned (or replaced) prior to restarting. The drive system was located such that it was not readily available for assessment.	Repair	This is the second of the sorting line conveyors. The unit is currently not in use. The return idlers visible from below had a considerable amount of buildup. The chute work and guards on the unit had minor mechanical damage and the structural members that were readily visible had some light corrosion where paint has failed.
R87	WARC	Transfer Station	Mat. Handling	3	12	40%	The sorting line conveyor could likely be brought back into service with relatively minor maintenance. There was some minor mechanical damage to the tipping floor side of the conveyor, but nothing that appeared to hinder the operation of the unit. A number of the return idlers that were visible from under the unit were caked with build-up that should be cleaned (or replaced) prior to restarting. The drive system was located such that it was not readily available for assessment.	Repair	This is the third of the sorting line conveyors that is reversible and can feed either the compactor bay or a discharge bin below. The unit is currently not in use. The return idlers visible from below had a considerable amount of buildup. The chute work and guards on the unit had minor mechanical damage and the structural members that were readily visible had some light corrosion where paint has failed.



Attachment B – Thurston County Onsite Conditions Ranking (Fair, Poor, Very Poor)

Line	Facility Name	Sub-Facility	System Name	Rating	Remaining Life	Remaining Service Life	Recommendation Detail	Recommended Action	Notes
R88	WARC	Transfer Station	Mat. Handling	3	6	30%	The hydraulic power unit was located in close proximity to the main chassis of the walking floor, so the unit was subject to some moderate corrosion. Units like this are modular and generally intended to be repaired in place, but given the level of corrosion on the reservoir, a full replacement would be more cost-effective as well as providing new features and improved reliability.	Replace	This is the hydraulic power unit associated with the Keith walking floor. The unit had moderate corrosion over 50% of the exterior casing and minor corrosion at points of mechanical damage. The unit is not currently in use.
R89	WARC	Transfer Station	Mat. Handling	3	12	40%	The primary deficiency for this unit is corrosion on the exterior casing, which cannot easily be repaired in situ with the rest of the unit. The interior of the unit is likely oil-filled for cooling, so containing corrosion is critical to reliability. Ancillary items such as the lower belt bearings are easily accessible and can be repaired in place.	Replace	This is the magnetic separator that serves the sorting line. The unit was not in use at the time of the inspection. The unit had moderate corrosion over 75% of the exterior casing. The lower belt bearings also had evidence of prior seal damage.
R90	WARC	Transfer Station	HVAC	3	7.5	50%	These units often have replaceable motors that will dramatically increase service life due to the simplicity of the design. Cost effectiveness and ease of replacement should be considered prior to repair. The harsh duty of this environment will likely reduce the expected service life of this equipment.	Replace	These are the primary wall-mounted axial exhaust fans located around the tipping floor and in the compactor bay. The units all appeared to be in functional condition, though most of the units were missing the guard shrouds to prevent animal ingress.
R91	WARC	Transfer Station	HVAC	3	6	30%	Split system heat pump units like this typically do not have components that can be repaired cost-effectively when compared to all-out replacement.	Maintain	This is the outdoor heat pump that serves the upstairs office. There was some minor mechanical damage to the condenser fins as well as mild corrosion to the exterior body of the unit.
R92	WARC	Transfer Station	Plumbing	3	18	60%	Insure the unit's inspections are current. If major leaks develop that are not associated with the piping, it's often more cost effective to replace the unit as a whole.	Maintain	This is the backflow preventer in the lower transfer station mechanical room. There was mild corrosion over 50% of the body of the unit and minor mechanical damage to the surrounding insulation.
R93	WARC	Transfer Station	Plumbing	3	18	60%	There were no visible deficiencies with the unit. Replacement is often more cost effective than repair when deficiencies develop.	Maintain	This is the mop sink in the transfer station's lower office. The unit had moderate abrasive wear and staining over 75% of the basin. The unit was fully-functional.
R94	WARC	Transfer Station	Plumbing	3	12	40%	There were no visible deficiencies with the unit. Replacement is often more cost effective than repair when deficiencies develop.	Maintain	These are the showers that serve the transfer station's lower office. Fixtures in the showers had minor plating damage and hose deterioration as well as light staining over 20% of the basins.
R95	WARC	Transfer Station	Misc	3	2.5	50%	The trailer staging area should be graded and rock added to control ponding and pot holes. If budget allows, consider paving.	Repair	The Transfer Station trailer staging area is a dirt area with limited gravel. Ponding and pot holes were observed in the area.
R96	WARC	Transfer Station	Mat. Handling	3	3.5	50%	All drop boxes are in need of maintenance, repairs and painting.	Repair	Transfer Station Trailer Staging Area 3 White Drop boxes 16 - 40 yd Drop Boxes Drop boxes were observed with rusting, holes, damaged floors, peeling paint and outside damage to some of the boxes.
R97	WARC	Transfer Station	Stormwater	3	10	100%	Stormwater collection area is in need of regular inspection, maintenance, clean-out and repair.	Maintain	Reviewed pond/2 inlets and ditches in the lower trailer staging area. Ponding was occurring in the ditch. Ditches were in need of clean-out.
R98	WARC	Transfer Station	Frame	3	30	60%		Repair	East wall has several large gouges due to vehicular damage. In addition, the north end of the east wall has significant damage that includes exposed and damaged reinforcing. This exposed and damaged reinforcing is covered with steel plates.
R99	WARC	Transfer Station	Frame	3	25	50%		Repair	Push wall at west edge of tipping floor is scraped. There is also some damage to the steep plating around the wall.

Appendix C.

Solid Waste Capital Project Scoring Sheets

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Project Number 1

Project Name Landfill Flare Station Replacement

Landfill	The landfill gas (LFG) flare system is oversized with regards to the quantity and percent methane generated within the waste mass. The Flares and blowers are not reliably able to operate at the current and projected lower future flow rates and methane concentrations for treatment and migration control. There are inefficiencies as manual monitoring is required due to lack of SCADA . The flares and associated components are in relatively good condition and should be maintained to manufacturer’s specifications until the flare stations are replaced. A correctly sized flare system should be designed and installed. Replacement of the LFG flare station should be accomplished in parallel with the landfill SCADA system replacement project (#2).	4.7	Recommendations include: S27, S28, S29, S30, S31, S32, R4		
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none">• Required to meet current regulatory mandates such as permits, court orders, and consent decrees• Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling)	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	5	Regulatory mandate to flare gas.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Employee safety risk flare cannot operate consistently within current parameters.
Meets Current Operational Needs	<ul style="list-style-type: none">• Decreases system vulnerability• Increases or enhances operational performance & resiliency• Decreases disruptions in service by replacing defective or aging equipment• Improves system knowledge•Directly maintains and improves customer Level of Service	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	5	Will increase performance and resiliency
Meets Future Operational Needs	<ul style="list-style-type: none">• Increases or enhances options for Operations to maintain system service• Increases or enhances options for Maintenance to maintain assets• Improves system ability to adapt to changing demand and future expansion• Increases ability of system to serve additional customers and population growth•Directly maintains and improves customer Level of Service	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	5	
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Current flare station does not operate correctly. New flare station will create efficiency and save staff time and money.
	TOTAL	100%			

Project Number 2

Project Name Landfill SCADA System Replacement

Landfill	The landfill SCADA system has failed due to an aged software platform. All environmental systems at the site should tie into this platform. This system should be replaced and operational. Replacement of the SCADA system should be accomplished in parallel with the landfill gas flare station replacement project (#1).	3.8	Recommendations Include: S20, S21, R5, R6, R9
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Employee safety risk due to non-operational SCADA software.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	SCADA system is currently non-operational and requires employees to manually operate the system with no alarms.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	An operating SCADA system would help optimize future system needs.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Saves staff time and money by not requiring manual/visual operations.
TOTAL		100%			

Project Number 3

Project Name Pump Station 002 Upgrades

Project Category	Project Description	Project Score			
Landfill	Upgrades to Leachate Pump Station 002 should be undertaken. The pump rails are broken, conduit and valves are corroded, there is no local alarm and piping connections need repairs.	3.0	Recommendations Include: R10, R11		
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none">Required to meet current regulatory mandates such as permits, court orders, and consent decreesNeeded to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling)	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Operating pump is required to meet regulatory requirements
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Broken pump rails, conduit and valve corrosion and no local alarm can be employee safety issues.
Meets Current Operational Needs	<ul style="list-style-type: none">Decreases system vulnerabilityIncreases or enhances operational performance & resiliencyDecreases disruptions in service by replacing defective or aging equipmentImproves system knowledgeDirectly maintains and improves customer Level of Service	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Upgrades are needed to meet operational needs.
Meets Future Operational Needs	<ul style="list-style-type: none">Increases or enhances options for Operations to maintain system serviceIncreases or enhances options for Maintenance to maintain assetsImproves system ability to adapt to changing demand and future expansionIncreases ability of system to serve additional customers and population growthDirectly maintains and improves customer Level of Service	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	This is a critical process to the closed landfill which needs upgrades and repairs.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Local alarm non-operational which requires on-site employee to monitor. Project would improve costs and efficiency.
	TOTAL	100%			

Project Number 4

Project Name Pump Station 003 (Hogum Bay) Replacement

Project Category		Project Description		Project Score	
Landfill		Replace Pump Station 003. Upgrade wetwell, pumps, rails and control system to be automated with Leachate pond and isolation/effluent pond valves. Include isolation valves on influent side. Pump station design should include upgrade to compliance monitoring sampling equipment and shed.** LINK TO SCADA PROJECT		4.2	Recommendations Include: S22, R3
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Compliance point. Need generator and SCADA control for continuous monitoring and control.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Automated control and ability to bypass will ensure no overflows due to uncontrolled drainage to facility or due to malfunction to discharge.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	5	Significantly decreases system vulnerability due to power failure, pump failure or fitting/valve failure.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	5	Will improve and meet future operational needs.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Will improve operational efficiency and maintenance efficiency.
TOTAL		100%			

Project Number 5

Project Name Pond Outlet Control (Shack 001) Upgrade

Project Category	Project Description	Project Score
Landfill	Function of valve station needs to be upgraded. Upgrade both isolation valve vault and flow meter/actuated valve vault access and configuration. General upgrade is needed to address access and maintenance. SCADA control is needed for solenoid actuation. Currently valves are actuated by scaled hand control in Shack 001. Inline strainer in vault, has to be manually cleaned – on the discharge force main which requires a confined space entry. Verify continued function and need for strainer.	4.3 Recommendtions Include: S20, S21

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Project will greatly improve control of discharge and mitigate the potential for spill due to downgradient failures.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	5	Significant improvement in safety by mitigating confined space entry to maintain and or operate valves.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Will improve operational control and improve system efficiency. Limits system vulnerability.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Will provide control to allow contingency storage/control in the event of a power failure or equipment failure.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Provides operational and maintenance efficiency by working with other integrated conveyance system controls and monitoring.
TOTAL		100%			

Project Number 6

Project Name Condensate Sump Access Hatch Upgrade

Project Category Project Description

Project Score

Landfill	Typical of 8 sumps. Unsafe - risk of falling in. Have had at least one incident related to this sump configuration. Sump access hatches should be replaced and grating added to mitigate fall risk. Replace with CT6WV (Open Channel flow is retrofit manufacturer - 1-855-481-1118).	4.0	Recommendations Include: S19
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	2	Meeting regulatory control currently but will extend life.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	5	Greatly improves operator safety by mitigating fall and tip hazard.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	5	Significantly improves operational needs and improves ability to maintain.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	5	Significantly improves operational needs and improves ability to maintain.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	2	Slight increase in operational efficiency by reducing time to work around if fall threat is removed.
TOTAL		100%			

Project Number 7

Project Name Leachate lagoon bypass vault maintenance and repair

Project Category	Project Description	Project Score			
Landfill	Maintain inlet/bypass valve station for leachate lagoon. Clean and inspect sample ports and piping. Ensure nothing is leaking. Exercise valves quarterly. Check O&M plan for piping configuration and consider labeling pipe and valves for normal and bypass operation.	2.3	Recommendations Include: R8		
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	1	Currently meets regulatory requirements.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Minimizes need to enter confined space if repairs are made and life is extended.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Decreases system vulnerability by allowing an operable bypass option in working condition.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Decreases system vulnerability by allowing an operable bypass option in working condition.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	1	Minimal improvement in efficiency.
TOTAL		100%			

Project Number 8

Project Name Routine Landfill Cover Monitoring

Project Category Project Description

Project Score

Landfill	The Landfill cover material is settling causing changes in surface drainage paths, slopes, pipelines and ponding. Settlement points should be located and surveyed and an overall survey completed so the site can be re-graded for positive drainage, to prevent ponding and assist in pipeline alignment. Establishment of a routine survey for data collection for post-closure termination should be established.	3.8	Recommendations Include: R14
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Permit requires landfill cover be maintained. The County will not get approval for final closure of the Landfill without surveying, regrading and prevention of ponding.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Mitigates a safety risk to employees.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Project would increase operational performance of closed landfill site.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	In order to receive final closure approval for the landfill from DOE, the County will need to complete this project.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Upon final closure of the landfill, the County would have minimal expenses for monitoring the site if this project is completed.
TOTAL		100%			

STORMWATER

Project Number 9

Project Name Stormwater Pond Pump Station Equipment Upgrade

Project Category Project Description

Project Score

Stormwater	The stormwater pumping station equipment is aging and inefficient for piping configuration control and maintenance and should be upgraded.	3.7	Recommendations Include: S23, S24, S25, S26, R12
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	A large volume of water goes through the ponds due to system inadequacies.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Not a life safety risk to the public but does required confined space entry for employees
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Upgrades needed for control system with isolation valves installed.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	This is a critical process to the site and upgrades are needed.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	
TOTAL		100%			

STORMWATER

Project Number 10

Project Name General Stormwater System Improvements

Project Category	Project Description	Project Score
Stormwater	Site stormwater management, handling, sedimentation, channeling and clean-out are being impacted by the differential settlement on the site. The stormwater facilities need routine maintenance to maintain functionality. The stormwater outfall in the compost area had fines and windblown litter in it and should be replaced with a functioning outfall. **Consider adding infiltration pond maintenance and repair - check database	3.5 Recommendations Include: R28, R33

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Required to meet regulatory requirements for stormwater management.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Improvement in system function requiring less maintenance in structures and in ditches.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Regular maintenance, repair and replacement of the stormwater outfall would increase operational performance.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	This is a critical process needed to meet stormwater management requirements in future.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Improvement in system function and efficiency.
TOTAL		100%			

STORMWATER

Project Number 11

Project Name Transition Pond (TriPlex pump station) pump rail replacement

Project Category Project Description

Project Score

Stormwater	Transition Pond (TriPlex pump station) pump rail replacement/repair.	3.5	Recommendations Include: R1
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Meets regulatory needs.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Minimizes need to access wetwell to make repairs.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Improves system redundancy.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Improves system operation and maintenance efficiency. Minimizes wear on pump and shoe.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Improves system operation and maintenance efficiency. Minimizes wear on pump and shoe.
TOTAL		100%			

Project Number 12

Project Name Transfer Station Operational Capacity

Project Category Project Description

Transfer Station	Transfer station capacity is limited due loadout single compactor and single open top loadout chute. Load out capacity will need to be increased to accommodate future demands. Operational efficiencies on the tipping floor should be reviewed for measures to implement for additional capacity requirements. Includes compactor overhaul in 2023, replacement in 2031 and repairs and mtnc.			Project Score	
				4.0	Recommendations Include: R90
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	5	In order to meet future regulatory requirements for waste handling, the transfer station capacity will need to be increased.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	2	Public/Employee safety risks were not noted based on this project.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Increasing current load out capacity will alleviate the current stockpiling of waste on the tip floor and increase current operational performance. Operational efficiencies can be achieved by different operational actions on the tip floor.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	5	Increase load out capacity will insure the waste handling system meet future population growth and improves customer LoS.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Project will improve material throughput and create new efficiencies.
TOTAL		100%			

TRANSFER STATION

Project Number 13

Project Name Remove Transfer Station Sort Line

Project Category	Project Description	Project Score
Transfer Station	The transfer station sort line includes a Keith Walking floor which is not currently in use. The majority of the structure has experienced moderate corrosion. None of the hydraulic components were visible but are assumed to be original and in need of replacement. A number of the magnetic separators that serve the sorting line would require replacement prior to operation. While the sort line may be brought back to functionality with repairs and maintenance, it may not be cost effective to operate and should be evaluated based on the County's goals and objectives for material diversion.	0.7 Recommendations Include: S17, R78, R79, R80, R81, R85, R86, R87, R88, R89

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	This project is not a regulatory requirement
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	1	Not a safety or security risk.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	0	The sort line is currently not operational and therefore does not meet current operational needs.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	1	Restoring the sort line to operations could provide flexibility to the system for handling of recyclable materials dependent on the County goals and objectives.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	2	Restoring the sort line could enhance recycling.
TOTAL		100%			

Project Number 14

Project Name Transfer Station Expansion

Project Category	Project Description	Project Score
Transfer Station	Opportunity for material diversion on the tipping floor is limited as the sort line is not in use and has not been maintained. Tipping floor area is currently fully utilized for material unloading and storage, operational vehicular movement, and loadout – no additional area for manual sorting or separated material storage. Expand tipping floor to increase operational area.	1.8 LoS Recommendation

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	0	Not a site security and safety issue.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Expansion of the tipping floor to sort and separate materials for recycling could increase operational performance and resiliency and improve customer LoS.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Providing space on the tipping floor for recyclable materials would provide the County with an alternative that improves the system and improves customer LoS.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Expansion of the tipping floor would create new efficiencies for sorting of recyclables at minimal O&M cost.
TOTAL		100%			

TRANSFER STATION

Project Number 15

Project Name Transfer Station Tipping Floor Resurfacing and Loadout Chute Repair

Project Category	Project Description	Project Score
Transfer Station	The transfer station load out chute, while functional, had considerable damage to both the steel liners as well as the concrete behind, exposing rebar. Some wear liners were no longer functional due to bucket damage. The tip floor will need to be resurfaced and the load out chute repaired.	3.0 Recommendations Include: S15, S16, S18, R84, R98, R99

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Safety issue to employees and workers due to degradation of the damaged chutes.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Repair and replacement of the load out chutes will allow for continue current operations.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Repair and replacement of the load out chutes enhances future operational needs by extending the life of the current transfer station.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Material throughput is enhanced with the repair and replacement of the chutes.
TOTAL		100%			

Project Number 16

Project Name Covered Equipment Repair Area

Project Category Project Description

Transfer Station	There is currently no covered area on site for heavy equipment repairs and maintenance. A covered area should be constructed for heavy equipment repairs and maintenance on site.	Project Score	2.9	Not directly tied to a current facility assessment. Noted onsite.
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	1	
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Construction of a shop would provide a secure area for employees to make repairs to equipment.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Construction of a covered shop area will increase operational performance by providing a secure area to make repairs and maintain the heavy equipment necessary to solid waste operations.
Transfer Station				3.0	Recommendations Include: S15, S16, S18, R84, R98, R99
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Safety issue to employees and workers due to degradation of the damaged chutes.
	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency 		5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance		

Project Number 17

Project Name Upgrades to Transfer Station Lower Bay Area

Project Category Project Description

Transfer Station The lower bay area of the transfer station is unpaved with dust, ponding and mud causing impacts to the stormwater collection system. The area has limited lighting for security. Both should be upgraded.

Project Score

3.7

Recommendations Include: R95

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Stormwater management is a regulatory requirement. Dust and mud generated impacts the stormwater system.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	There is currently no security in the lower transfer station area. No lighting and unpaved with ponding is a safety risk to employees.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Paving the lower bay area would increase current operational performance by eliminating water ponding and soft areas.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Paving would meet future system needs and improve the system ability to meet changing demands and future expansion needs.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Provides additional efficiencies to the system.
TOTAL		100%			

Project Number 18

Project Name Relocate Public Tipping Area, Scales and Scalehouses

Project Category Project Description

Project Score

General Site	The Public Tipping area is an uncovered area with below grade drop boxes for the general public to unload their waste. The area is experiencing differential settlement in the concrete Z-walls and surrounding pavement due to settlement of the closed landfill. Traffic flow and customer queuing to and from the area needs upgrades and improvements, drainage and ponding occurs, there is limited site security and lighting and residential and small business dump trailers cannot be accommodated at the site. The Public Tipping Area along with the scales and scalehouses, compost area and recycling area should be relocated to improve customer service, reduce customer queuing issues and traffic conflicts.	4.2	Recommendations Include: S8, R54, R55, R56, R57, R58
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Providing a public area for safe waste disposal is a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	The current Public Tipping area has multiple safety issues including limited site lighting, settlement issues, traffic flow and customer queuing issues and limited ability to accommodate various types of loads.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	5	Relocating the Public Tipping Area would increase current operational performance, decrease disruptions to service and improve the customer level of service. Currently the queuing issues on site are incompatible due to multiple customer crossing traffic patterns.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Relocating the Public Tipping Area would increase future operational performance, decrease disruptions to service and improve the customer level of service. Maintaining or repairing the current location would require ongoing repairs due to differential settlement. The current site exhibits customer capacity issues during peak days.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Project would enhance material throughput.
TOTAL		100%			

Project Number 19

Project Name Scale and Scalehouse Differential Settlement Repairs

Project Category	Project Description	Project Score
General Site	The Scales and Scalehouse area are experiencing differential settlement causing scales to settle. Pile capacities need to be re-tested, assess tilt or deformation and review construction installation. The scales are experiencing excessive axial sway when handling large vehicles due to the guide bumpers being out of alignment due to ramp settlement.	3.8 Recommendations Include: S2, S3, S4, S5, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Regulatory requirement that scales utilized for customer charges are assessing weights correctly.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	3	Project protects the scales which are a critical infrastructure to the Solid Waste Division.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Project will decrease system vulnerability and increase current operational performance.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Project will decrease system vulnerability and increase future operational performance by weighing and assess tip fee by weight correctly..
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Project could create additional revenues if scales are not currently weighing correctly due to axial sway.
TOTAL		100%			

Project Number 20

Project Name Consolidated Administration Building

Project Category Project Description

General Site	Differential settlement at various onsite structures is causing building settlement and damage including the “blue roof” building, tech trailer, main office building. Recommend demolishing these three structures and replacing with consolidated Administration Building.	Project Score	4.0	Recommendations Include: S11, S12, S13, S14, R23, R24, R25, R26, R29
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Control of ponding and differential settlement is a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Differential site settlement is a safety risk to employee and customers on the site.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Correction to the differential settlement issues and/or locating facilities away from the closed landfill area will increase current operational performance and resiliency and increase customer LoS.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Correction to the differential settlement issues and/or locating facilities away from the closed landfill area will increase future operational performance and resiliency and increase customer LoS.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	The project would improve current efficiencies and result in future O&M savings.
TOTAL		100%			

Project Number 21

Project Name Improve Site Security

Project Category Project Description

General Site	Site Security including front gate, lower gate, by-pass lane, lighting, cameras, fencing and access control need to be improved across the site as unauthorized parties currently have access before and after hours due to lack of fencing and uncontrolled access through the lower gate.	Project Score 4.3	Recommendations Include: S6, S7, R7, R27, R32, R53, R56, R59, R82, R83
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Controlled access to the site is a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	5	Uncontrolled access to the site is a safety and security issue.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	The current solid waste system is vulnerable to theft, after hours site access and unauthorized/uncontrolled parties to the site. Upgrades are necessary to improve current system vulnerability.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	The future solid waste system is vulnerable to theft, after hours site access and unauthorized/uncontrolled parties to the site. Upgrades are necessary to improve current system vulnerability.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Increases O&M efficiencies.
TOTAL		100%			

Project Number 22

Project Name Improve Customer Queuing

Project Category Project Description

General Site	Customer queuing issues are occurring onsite both to and from the Transfer Station area and the Public Tipping area. Relocation of the Public Tipping area and organics area away from the Transfer Station area should be considered to alleviate the queuing issues at the scales. **LINK TO PUBLIC DROP OFF RELOCATION AND SCALEHOUSE REPAIR PROJECTS	Project Score 3.8	No assessments are connected to this recommendation. This is a LoS Recommendation based on visual assessment
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Customer queuing onsite is required by the regulations.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	There is currently a queuing issues at the scales which creates a safety risk to customers utilizing both the public tipping area and the transfer station.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Relocating the Public Tipping area away from the Transfer Station would alleviate the current queuing issue between commercial customers and self-haulers improving customer LoS.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Relocating the Public Tipping area away from the Transfer Station would alleviate the future queuing issue between commercial customers and self-haulers improving customer LoS.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Project would improve customer queuing and create new efficiencies.
TOTAL		100%			

Project Number 23

Project Name Water Tank Replacement

Project Category Project Description

Project Score

General Site	The water tanks are currently not suitable for use due to significant corrosion and small holes in the tanks. Repair is not expected to be cost-effective and replacement should be considered for increased safety and functionality.	2.8	Recommendations Include: R41, R42, R43
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	3	Project would make dust and fire suppression water available on site
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	2	Reduces safety risks due to fire.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Increases current operational performance on site by providing a designated source of water for cleaning, fire suppression and dust abatement.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Increases future operational performance on site by providing a designated source of water for cleaning, fire suppression and dust abatement.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Project improves O&M efficiencies by providing a designated water source on site.
TOTAL		100%			

Project Number 24

Project Name Drop Box O&M Program

Project Category Project Description

Project Score

General Site	The drop boxes in the recycling and public drop off areas are in need of repairs, maintenance and paint. A routine O&M program for repairs, painting and	1.8	Recommendations Include: R30, R96
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	1	Some drop boxes have damage that need repairs that could be a safety risk.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Repairing, maintaining and painting the drop boxes will increase operational performance and resiliency by having all drop boxes in service and operational. Provides additional LoS to customers using the recycling area.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Repairing, maintaining and painting the drop boxes will increase future operational performance and resiliency by having all drop boxes in service and operational. Provides additional LoS to customers using the recycling area.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Improves current efficiencies for the handling of self-haul recyclables.
TOTAL		100%			

Project Number 25

Project Name Recycling Area Electrical Upgrade

Project Category Project Description

General Site Electricity supplied to the recycling area trailer had a traffic cone over conduit out of the electrical vault. Needs to be code compliant.

Project Score

4.0

Recommendations Include: \$10

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	4	Does not meet current electrical code.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Safety risk to employees and the general public.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Improves current system operational performance by electrical code compliance.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Improves future system operational performance by electrical code compliance.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Provides O&M efficiencies.
TOTAL		100%			

Project Number 26
 Project Name Goodwill Building Electrical Upgrade
 Project Category Project Description

Project Category		Project Description		Project Score	
HazoHouse		There is an electrical extension cord to the Goodwill building exposed. Need to replace with code compliant electrical.		4.0	Recommendations Include: S9
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	5	Code compliant issue.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Safety risk to employees and general public.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Repair would provide code compliant electrical to the Goodwill building.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Would meet future operational needs
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	1	
		TOTAL	100%		

Project Number 27

Project Name Repair HazoHouse Traffic Counter

Project Category Project Description

HazoHouse The automatic traffic counter is not functional and needs repair.

Project Score

1.6

Recommendations Include: R38

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	1	This is not a regulatory issue.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	1	Not a health related/safety issue.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	1	Could provide needed information to Solid Waste Management regarding customer visits to the site.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Provides a method for future monitoring of customer visits to the Hazohouse.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Solid Waste Division would have accurate customer counts.
TOTAL		100%			

Project Number 28

Project Name HazoHouse Loadout Concrete Joint Sealing

Project Category Project Description

HazoHouse Concrete joints in the load out area need to be sealed.

Project Score

3.1

Recommendations Include: R39

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	5	This is a regulatory requirement for DOE due to the handling of hazardous materials.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	1	Not a public/employee health risk.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Increases operational hazards if chemicals spill in a non-sealed area.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Meets future operational requirements.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Results in potential savings if a clean-up has to be undertaken after a chemical spill.
TOTAL		100%			

Project Number 29

Project Name HazoHouse Security Camera Upgrade

Project Category Project Description

HazoHouse	The security camera system is not currently accessible from the HazoHouse and needs to be repaired for site safety and security.	Project Score 3.2	Recommendations Include: R40
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Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	1	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Non-functioning cameras are a site safety and security issue.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Installation of an operational camera system in the HazoHouse area would enhance performance and eliminate customer safety concerns.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Project would improve customer/employee efficiency.
TOTAL		100%			

Project Number 30

Project Name Rainier/Rochester Weigh Scales and Staff Booth Replacement

Project Category	Project Description	Project Score			
Rainier/Rochester	The staff booths are inadequate, not sufficiently sized, not enough room for equipment, paperwork and cash counting. Weigh scales should be added to accurately track the tonnage and revenue through the facilities. The staff booths should be replaced with scales and scalehouses to accommodate population growth. At the time of staff booth replacement, onsite utilities should be evaluated for upgrades due to age.	4.3	Recommendations Include: R16, R21, R22, LOS recommendation		
Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none">Required to meet current regulatory mandates such as permits, court orders, and consent decreesNeeded to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling)	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	5	The sites are currently charging customers by CY. The difference between CY and tons charged will trigger a St. Examiner's Audit if not resolved.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	4	Installation of staff booths and scales at both sites will reduce customer inconsistencies to charges for disposal.
Meets Current Operational Needs	<ul style="list-style-type: none">Decreases system vulnerabilityIncreases or enhances operational performance & resiliencyDecreases disruptions in service by replacing defective or aging equipmentImproves system knowledgeDirectly maintains and improves customer Level of Service	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Installation of scales will decrease the system vulnerability for cash handling and increase operational performance for customers.
Meets Future Operational Needs	<ul style="list-style-type: none">Increases or enhances options for Operations to maintain system serviceIncreases or enhances options for Maintenance to maintain assetsImproves system ability to adapt to changing demand and future expansionIncreases ability of system to serve additional customers and population growthDirectly maintains and improves customer Level of Service	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Installation of scales meets future operational needs.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	4	Installation of scales results in an increase in funds and O&M savings.
	TOTAL	100%			

Project Number 31

Project Name Rainier/Rochester Drop-Box O&M Program

Project Category Project Description

Rainier/Rochester All recycling drop boxes on site are in need of repairs and paint. A routine O&M program for paint, repairs and maintenance should be established.

Project Score

1.8

Recommendations Include: R17, R18, R20

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	0	Not a regulatory requirement.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	1	Some drop boxes have damage that need repairs the could be a safety risk.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	3	Decreases the chance of disruption to recycling services by replacing and repairing defective and aging equipment.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	3	Improves/enhances the drop boxes and gains extra years of service if repairs/replacement are accomplished.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	Project improves efficiencies due to drop boxes placed in service and operational.
TOTAL		100%			

Project Number 32

Project Name Install Security Camera System at Rainier/Rochester

Project Category Project Description

Rainier/Rochester The security camera systems at both sites were not functional and need to be repaired for site safety and security.

Project Score

3.4

Recommendations Include: R15, R19

Criteria	Description	Weight	Scoring Criteria	Score	Score Comments
Legal and Regulatory Requirements	<ul style="list-style-type: none"> Required to meet current regulatory mandates such as permits, court orders, and consent decrees Needed to meet upcoming regulatory requirements (e.g., regulatory updates for waste handling) 	25%	5 – Project directly contributes to meeting a regulatory requirement 3 – Project makes it easier to meet a regulatory requirement 1 – Project affects regulatory compliance very little 0 – No impact to regulatory requirements	1	Not a direct regulatory compliance issue.
Public and Employee Safety and Security	Reduces immediate, identifiable safety risk to the public and employees (e.g., protection of critical infrastructure, prevention of vandalism and theft)	25%	5 – Mitigates a life safety risk to the public and employees OR mitigates an acute safety risk in a frequently visited area of the system 3 – Mitigates safety risk in areas seldom visited by public or employees 1 – Improves quality of life for the public or employees by removing a non-health related nuisance 0 – No safety concerns at the outset of the project	5	A security camera system prevents theft, protects sites and prevents vandalism.
Meets Current Operational Needs	<ul style="list-style-type: none"> Decreases system vulnerability Increases or enhances operational performance & resiliency Decreases disruptions in service by replacing defective or aging equipment Improves system knowledge Directly maintains and improves customer Level of Service 	20%	5 – Significantly decreases system vulnerability and / or increases operational performance & resiliency to meet current operational needs 3 – Decreases system vulnerability and / or increases operational performance & resiliency to enhance current operational needs 1 – Provides anecdotal decreases to system vulnerability and / or increases operational performance & resiliency to maintain operational needs 0 – No tangible changes to system vulnerability and / or operational performance & resiliency	4	Would improve the customer LOS due to the ability to monitor customer site activity.
Meets Future Operational Needs	<ul style="list-style-type: none"> Increases or enhances options for Operations to maintain system service Increases or enhances options for Maintenance to maintain assets Improves system ability to adapt to changing demand and future expansion Increases ability of system to serve additional customers and population growth Directly maintains and improves customer Level of Service 	20%	5 – Provides redundancy or an alternate operating mode to a critical process in the system to meet or exceed future needs 3 – Provides redundancy or an alternate operating mode to a non-critical process in the system to meet future needs 1 – Provides a useful feature that allows additional flexibility in the system to maintain future needs 0 – Does not provide tangible improvements to system flexibility	4	Provides site security and enhances systems operations.
Improves Efficiency and Cost	Creates, increases, and enhances O&M and CIP development efficiencies Material throughput (acceptance, processing, and loadout).	10%	5 – Project creates new efficiencies or results in measurable O&M savings 3 – Project improves upon current efficiencies or results in moderate O&M savings 1 – Project enhances organizational effectiveness while creating minimal efficiencies or O&M savings 0 – Does not have recognizable contribution towards efficiencies or O&M savings	3	A security camera system would improve site efficiency and allow staff to monitor customer site access.
TOTAL		100%			

OVERALL SCORING

Project Number	Project Category	Project Name	Project Description	Project Score	Linked Project
1	Landfill	Landfill Flare Station	The landfill gas (LFG) flare system is oversized with regards to the quantity and percent methane generated within the waste ma	4.7	Recommendations include: S27, S28, S29, S30, S31, S32, R4
3	Landfill	Pump Station 002	Upgrades to Pump Station 002 should be undertaken. The pump rails are broken, conduit and valves are corroded, there is no lc	4.4	Recommendations Include: R10, R11
30	Ranier and Rochester	Rainier/Rochester	The staff booths are inadequate, not sufficiently sized, not enough room for equipment, paperwork and	4.3	Recommendations Include: S22, R3
21	General Site	Improve Site Security	Site Security including lighting, cameras, fencing and access control need to be improved across the site	4.3	Recommendations Include: S6, S7, R7, R27, R32, R53, R56, R59, R82, R83
5	Landfill	Pond Outlet (Shack)	Function of valve station needs to be upgraded. Upgrade both isolation valve vault and flow	4.3	Recommendations Include: S20, S21
18	General Site	Relocate Public Tipping	The Public Tipping area is an uncovered area with below grade drop boxes for the general public to	4.2	Recommendations Include: S8, R54, R55, R56, R57, R58
4	Landfill	Pump Station 003	Replace Pump Station 003. Upgrade wetwell, pumps, rails and control system to be automated with Leachate pond and isolatio	4.2	2 Recommendations Include: S19, S20, S21, S22, R2, R3, R8, R13
20	General Site	Consolidated	Differential settlement at various locations onsite is causing ponding and building settlement including	4.0	Recommendations Include: S11, S12, S13, S14, R23, R24, R25, R26, R29
25	General Site	Recycling Area	Electricity supplied to the recycling area trailer had a traffic cone over conduit out of the electrical vault.	4.0	Recommendations Include: S10
6	Landfill	Condensate Sump	Typical of 8 sumps. Unsafe - risk of falling in. Have had at least one incident related to this sump	4.0	Recommendations Include: S19
26	HazoHouse	Goodwill Building	There is an electrical extension cord to the Goodwill building exposed. Need to replace with code	4.0	Recommendations Include: S9
12	Transfer Station	Transfer Station	Transfer station capacity is limited due to a single loading chute. Load out capacity will need to be increased to accommodate f	4.0	Recommendations Include: R90
2	Landfill	Landfill SCADA System	The landfill SCADA system has failed due to an aged software platform. This system should be replaced and operational.	3.8	Recommendations Include: S20, S21, R5, R6, R9
8	Landfill	Routine Landfill Cover	The Landfill cover material is settling causing changes in surface drainage paths, slopes, pipelines and ponding. Settlement point	3.8	Recommendations Include: R14
19	General Site	Scale and Scalehouse	The Scales and Scalehouse area are experiencing differential settlement causing scales to settle. Pile	3.8	18 Recommendations Include: S2, S3, S4, S5, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70
22	General Site	Improve Customer	Customer queuing issues are occurring onsite both to and from the Transfer Station area and the Public	3.8	19, 24 No assessments are connected to this recommendation. This is a LoS Recommendation based on visual assessment
9	Stormwater	Stormwater Pond	The stormwater pumping station equipment is aging and inefficient for piping configuration control and maintenance and shoul	3.7	Recommendations Include: S23, S24, S25, S26, R1, R12
17	Transfer Station	Upgrades to Transfer	The lower bay area of the transfer station is unpaved with ponding and mud. The area has limited	3.7	Recommendations Include: R95
10	Stormwater	General Stormwater	Site stormwater management, handling, sedimentation, channeling and clean-out are being impacted by the differential settlen	3.5	Recommendations Include: R28, R33, R97
11	Stormwater	Transition Pond (TriPlex)	Transition Pond (TriPlex pump station) pump rail replacement/repair.	3.5	Recommendations Include: R1
32	Ranier and Rochester	Rainier/Rochester	The security camera systems at both sites were not functional and need to be repaired for site safety	3.4	Recommendations Include: R15, R19
29	HazoHouse	HazoHouse Security	The security camera system is not currently accessible from the HazoHouse and needs to be repaired for	3.2	Recommendations Include: R40
28	HazoHouse	HazoHouse Loadout	Concrete joints in the load out area need to be sealed.	3.1	Recommendations Include: R39
15	Transfer Station	Tipping Floor	The transfer station load out chute, while functional, had considerable damage to both the steel liners	3.0	Recommendations Include: S15, S16, S18, R84, R98, R99
16	Transfer Station	Covered Equipment	There is currently no covered area on site for heavy equipment repairs and maintenance. A covered	2.9	Not directly tied to a current facility assessment. Noted onsite.
23	General Site	Water Tank	The water tanks are currently not suitable for use due to significant corrosion and small holes in the	2.8	Recommendations Include: R41, R42, R43
7	Landfill	Bypass Vault	Maintain inlet/bypass valve station for leachate lagoon. Clean and inspect sample ports and piping.	2.3	Recommendations Include: R8
14	Transfer Station	Transfer Station	Opportunity for material diversion on the tipping floor is limited as the sort line is not in use and has not	1.8	LoS Recommendation
24	General Site	Drop Box O&M	The drop boxes in the recycling and public drop off areas are in need of repairs, maintenance and paint.	1.8	Recommendations Include: R30, R96
31	Ranier and Rochester	Rainier/Rochester Drop-	All recycling drop boxes on site are in need of repairs and paint.	1.8	Recommendations Include: R17, R18, R20
27	HazoHouse	Repair HazoHouse	The automatic traffic counter is not functional and needs repair.	1.6	Recommendations Include: R38
13	Transfer Station	Removal/Replacement	The transfer station sort line includes a Keith Walking floor which is not currently in use. The majority	0.7	Recommendations Include: S17, R78, R79, R80, R81, R85, R86, R87, R88, R89