Clark County Regional Solid Waste System Study
Scope of Work

6/17/19

Project Approach and Understanding

Project Understanding

The JRMA team understands the County wishes to complete a comprehensive review of the regional solid waste system to make important decisions regarding the future operations and facility needs. In Phase 1 review includes a **financial, operational and contractual assessment** of the current regional system to address both immediate needs and a strategy for the long-term management of solid waste over the state required 20-year planning horizon. As the term of the contract with Columbia Resource Company (CRC) approaches, we understand the sense of urgency to complete this study in light of current transfer and recycling facility improvements needs at the Central Transfer and Recycling Facility (CTR) as well as address the long-term ownership issues that impact future facility improvements in the system. Ultimately, the System Study results and recommendations will be incorporated into the 2020 update of the County Solid Waste Management Plan.

Background

In 1991, Clark County entered into a long-term contract with CRC, a wholly owned subsidiary of Waste Connections Incorporated (WCI), to operate transfer stations and recycling facilities and transport waste to either the Finley Butte Landfill or the Wasco County Landfill. To date the contract has been amended several times to meet changed conditions. This included building and operating the transfer station at the Port of Washougal to serve the eastern portion of the County and the Cities of Camas and Washougal. In 2016, CRC presented a proposal to extend the contract for 10 years until 2026. The parties executed a provision to extend the contract five years until December 2021. There are provisions that allows the parties to extend the contract another five years or until 2026 and, also for the County to take ownership of the transfer stations provided it notifies CRC of their intent by December of 2025. For the past 27 years, this contract provided the foundation for a good working relationship between the County and CRC.

During this 27-year period, extensive growth in the County and the demand for new services has impacted the capacity of the existing transfer station system. The facility most impacted has been the CTR. This facility accepts all waste collected by Waste Connections of Washington (WCW) and waste delivered by self-haul customers. Growth in the City of Battle Ground and the northeast portion of the County has resulted in increased self-haul traffic at CTR. In 2017, CTR received an average of 500 vehicles per day during the week and over 750 vehicles on weekends. Opened in 1992, CTR was not designed to handle the volume of traffic it currently receives. On weekends, traffic spills onto NE 117th, a four-lane highway that serves as the principal north -south arterial for this area. CRC has purchased property adjacent to the existing facility which led them to propose a possible expansion to relieve the traffic congestion. A key element of this study is to evaluate the options for serving this area including policy changes to reduce self-haul customer traffic.

Both the West Vancouver Transfer and Recycling Facility (WVAN) and Washougal Transfer Station (WTS) will be evaluated to determine what improvements or changes may be needed at these facilities. In the past three years, these two facilities have experienced a 23% and 31% increase in waste volumes respectively. In addition, the WVAN commingled material recovery system will need to be evaluated to determine what equipment is

needed to cost effectively process recyclables and meet the challenges of marketing materials under current, challenging commodity market requirements.

The above operational conditions and the fact that existing facilities are in need of improvements to address the increasing traffic and waste quantities, requires the County to take a comprehensive review of all aspects of the solid waste management regional system and determine what changes are needed to continue to provide services in an economically and sustainable manner.

Project Approach for Completing the Scope of Work

The RFP in Attachment E includes a well-defined and thorough scope of work of the tasks to be performed. The JRMA team has modified the work plan and scope of work, based on input from Clark County and stakeholders.

Work Plan Approach

The County has requested the scope of work be provided in three phases. Phase 1 will address the financial and institutional aspects of the Clark County regional solid waste system and possibly complete a feasibility analysis of how to address deficiencies at CTR.

The County has requested that certain tasks originally scheduled for Phase 2 will be performed in Phase 1. The revised Scope of Work describes those tasks and subtask that will be completed in Phase 1 and which work will be performed in Phase 2. This approach will result in providing the County and stakeholders important information needed to fully assess the issues regarding future ownership options.

Once a final report for Phase 1 and Phase 2 is endorsed by the Regional Steering Committee and the County, **the third phase** will use the results to update the 2015 SWMP as part of a 2020 Plan update. **The schedule will be finalized in our kick off meeting.**

PHASE ONE: FINANCE AND CAPITAL FACILITIES PLANNING

Task 1: Transfer System Financial Analysis

The Transfer System Financial Analysis is key to understanding the current cost of services for each operation and using this information to evaluate options, determine alternative fee structures and complete financial proforma analysis.

All transfer operations, material recovery, disposal, and transport revenue and expenses are consolidated and accounted for under one district by CRC. **Our approach is to detail the functions of each facility by type of operation and establish the specific parameters to allocate shared / combined costs.** Operational information will include incoming / outgoing waste and recycling tons, customer count by type, personnel, facility size, assigned equipment, regulatory requirements, through-put times, and span of management. Costs that are dedicated to a specific function, such as the transport cost from Washougal to the Wasco County Landfill will be directly assigned.

Another aspect of the calculating the costs is how to allocate between municipal collection and self-haulers / small commercial customers. Understanding the on-site operation of each facility and the labor required to service each customer will be thoroughly examined with Waste Connections and County staff to agree to the

allocation methods. Our transfer station operations team will perform on-site observation to support this assessment.

When the cost of each service for each facility has been calculated, the necessary fee that would be required is calculated. The unknown is the operating margin that would be expected and /or allowed, which will be a point of discussion between the County and Waste Connections. The outcome of this task is the calculation of the rate, or a combination of rates, that would be charged to cover the cost of service.

For example, the tipping fee for municipal collections would be a combination of the cost of the scale house operations (transaction fee), transfer operations, transport from the transfer station to the landfill, disposal cost at the landfill, and the allowable operating margin. Other considerations on the tipping fee include the allocating the cost of HHW operations and County / City costs. Each of these costs (Transaction, Tipping Fee for MSW and C&D, Self-haul, HHW/Special Waste, Recycling Processing, and Other) will be detailed so County and City officials can decide how to combine to pay for the solid waste and recycling services.

Once the cost of service is calculated, projecting the costs over the expected planning period is the next logical step to aid the County in the planning process. Inflationary factors will be decided by County / City and service provider staff to provide the assumed costs that will be utilized to update the County's solid waste plan. An industry pro-forma will be utilized to detail each facility cost by primary expense to include the cost on a per-ton basis.

The table to the right provides a visual depiction of proposed pro-forma. The sum of the three transfer stations and the MRF will be totaled, so the combined financial performance can be compared to each operation.

	Total Revenue	**Revenue/Ton**
Revenue:	**$1,235,000**	**$85.00**
Expense Items:	**Costs**	**Cost/Ton**
Disposal	$291,460	$20.06
Transport	$321,100	$22.10
Direct Labor	$86,450	$5.95
Misc. Ops.	$111,150	$7.65
Maintenance	$92,625	$6.38
Depreciation	$74,100	$5.10
Management	$43,225	$2.98
Administration	$55,575	$3.83
Taxes	$12,350	$0.85
Total Expense	**$1,088,035**	**$74.90**
Net Income	**$146,965**	**$10.10**
Operating Margin	**11.90%**	

Comparable costs such as disposal cost per ton, transport cost per ton and per mile, self-haul and HHW program cost per customer, municipal program administration per waste ton, and other information generated from Tasks 1.1 and 1.2 will be compared on a unit basis to neighboring systems.

Deliverables:

1. Complete cost of services for each transfer station
2. Allocate use of services to each customer
3. Provide cause analysis / comparison to other jurisdictions for similar services.

Task 2: CSWMP Table Updates - Waste Generation Projections

We will use established population projections to determine how much solid waste, recyclables and other agreed upon waste streams will be generated over the next 20 years. Such projections will be used to analyze capacity needs at current transfer stations, assess transportation economics associated with a potential new

transfer station consider other options for providing the most cost-effective services. The information will also be used in financial proforma and rate analysis**.**

In addition to population projections we will examine growth data for future housing from both cities of Camas and Washougal as it impacts waste delivered to the Washougal Transfer Station. In the northern of the County growth in the Battleground and Ridgefield area is expected to exceed the population in the Camas and Washougal areas by 2035. The projections including future housing and available economic forecasting will be updated.

A critical aspect of the volume increases is the additional drive time, by city / area, that will be incurred to deliver collected waste and recycling to their respective facilities. This data can be used to determine the feasibility or cost benefit of constructing additional transfer sites and/or relocating the recycling processing to a more central location. While costs may increase for the new infrastructure, collection efficiencies will be realized for reduced off-route travel time. We will examine the cost impacts to the system i.e. What is the net benefit to the rate payers? What are the additional benefits such as reduced vehicle miles traveled and the reduction in vehicle emissions?

Estimating the growth and waste generation combined with the strategic locating of future facilities is a critical task of this project. In completing these first two tasks we will have assembled the primary baseline data to be used in the remaining tasks.

Deliverables:

1. Complete updated waste generation projections
2. Establish future projections of waste by service areas for each facility

Task 3: Operational Efficiencies and Impacts from Traffic and Public Self-Haul

Evaluate current operational parameters to determine what policy or administrative procedures may be implemented to improve safety, traffic and overall customer services. These changes will not include capital improvements but can include rate incentives, hours of operations and / or changes in collection services. We will consider experience with facilities operations to identify the methods that have and have not worked for other jurisdictions. We will contact other jurisdictions and operators to formulate a list of ideas for consideration. Some considerations include:

- Restricting hours of operation at Transfer Stations
- Minimum load requirements and fees to encourage customers to use collection services
- Special collection events (e.g. for bulky waste and yard waste)
- Require subscription to collection services in areas of a certain density

The analysis will examine impacts of the current minimum load requirements in conjunction with minimum fees for services. From the research completed, we will present options the County can consider to customers to consolidate waste into larger loads or to utilize weekly waste collection services to reduces traffic and costs.

Subtask 3.1 – Existing Capacity and Subtask 3.2 Future Impacts

Self-haul data from the County will be combined with waste generation projection from Task 2, to calculate the estimated self-haul activity over the planning period. While the current facilities are under the permitted capacities, the expected waste tons by year and customer (municipal and self-haul) will be projected to determine when each one will be at capacity. We will develop a performance / cost model to project the expected status quo performance and the various scenarios requested by the County to compare the expected results.

Subtask 3.3 – Minimum Service Level Ordinance

The two zip codes that had the highest self-haul customer counts were predominantly in the County were weekly collection is provided under the regulation of the UTC, but not mandated. According to the self-haul tonnage data, approximately 37.6% of the incoming loads are less than 300 pounds. It is assumed most of these visits are customers that do not subscribe to weekly waste collection or bulky waste service. Areas that had the lowest number of self-haulers were from Washougal, Camas, and Vancouver where service is mandatory.

Under the current rate structure, the cost to dispose of 200 pounds at transfer station is $19.32; however, the cost for waste collection in the County is $19.71 for two garbage cans collected weekly. We will evaluate impacts of revising minimum service to actual cost of services for self-haulers.

Subtask 3.4 – Comparable Fees

All waste facilities within the Portland / Vancouver have a minimum fee, either by dollar amount or tonnage amount. We will request non-franchised transaction data from Metro to compare to Clark County. If available, we will also request data from private facilities. Minimum fees from other public systems in the Puget Sound area is readily available and will be used if requested.

Subtask 3.5 – Transaction Fee Scenarios

Using the model developed for these tasks, we will calculate the impacts of each scenario to include the expected incoming customers, tons, and revenues.

Subtask 3.6 – Minimum Weight Structure

Using incoming transaction data from self-haulers, we will calculate the expected revenue generated and the incoming tonnages using incremental costs and customer counts. The objective of this task is to minimize low weight transactions and to calculate the expected revenue generated. This same approach is utilized by Portland Metro; therefore, data is available to define the assumptions within the model. Utilizing the cost of service developed in Task 1 as well as traffic inflows from each facility, we will calculate the costs and the additional increase in the fees for each service. Considerations include the expected customer and tonnage volumes at the extended times compared to the additional variable costs.

Subtask 3.7 to 3.9 – Increased Hours / Days of Operation and the Cost

We will examine the current days and hours of operations to evaluate if changes may improve overall operations or possibly result in increased customer traffic. The evaluation will entail obtaining data from other facilities, review impacts to neighbors and traffic conditions as well as any land use restrictions. This evaluation will consider other services such as HHW and recycling drop off operations. Our team will also consider impacts to the overall efficiency of operations such as providing space to reduce double handling of materials or reducing labor.

Subtask 3.10 – Prepare a Presentation Matrix
We will prepare a matrix of options that will be linked to the model to amend / update the variables as directed to be responsive to the needs of the County.

Deliverables:

1. Evaluation of policy and fee structure alternatives that may impact self haul users
2. Matrix Summary of Alternatives for Self Haul Customers

Task 4: Capital Improvements at CTR

Based on direction from the County, JRMA has modified the scope to include facility planning work as part of Phase 1. The JRMA team will address the immediate need for improvements or other options at the CTR facility. The following tasks and subtasks include, updating the traffic data at CRC and designing the necessary traffic access improvements and remedial actions to address these impacts at CTR. We will also perform a condition assessment for all three transfer stations to identify the repair and replacement expenses that might be incurred as input to preparing the 20 Capital Plan in Task 6. This Task will include the following related to completing the access improvements for CTR:

1. Assess on site traffic and operations to evaluate options
2. Complete evaluation of options to review with WSDOT
3. Prepare final construction document and obtain permit from WSDOT

Note: These activities have been incorporated into the Task 1 work.

Subtask 4.1 – Evaluate Access Proposals
We have reviewed the plans for a dedicated deceleration lane for a right turn in and right turn out access to CTR. We will consider the results in Task 1 to implement rates that might reduce the self-haul traffic as well as the option to expand CTR along with the impacts to queue space with or without expansion. An analysis of the options to increase scale house capacity to reduce offsite queue issues will be performed.

Evaluate onsite queue and options to eliminate
We will assemble the latest customer data for average daily and peak operations. The information will be used to review the scale capacity and operations, onsite queue issues and unloading capacity. We will coordinate with CRC to review options for modifications to CTR. The review and analysis will be used to consider facility and operations changes that can be made to eliminate off site queueing. The analysis and alternatives will be reviewed by our traffic engineer to model CTR traffic in conjunction with updated off site traffic data. We will develop a list and concept drawings of proposed on site improvements to address prevailing issues. These will be reviewed with CRC and the County to gain concurrence and approach to completing design and construction. The results will be part of gaining approval from WSDOT.

Subtask 4.2 – Evaluate Options and Alternative Strategies for Serving the Northern Part of the County We will complete an evaluation of the options to expand CTR, build a new station or possible an alternative strategy that best suits the long-term needs of the system and results in providing most cost-

effective services over the planning period. This will include preparing concept plans for review by the County and stakeholders, along with capital cost. If this approach is selected the information can be incorporated into the 20-year capital plans.

In completing this Task as part of Phase 1 we will provide important information that could impact other decisions in the final Phase 1 Study Report.

Subtask 4.3 – Complete assessment of CTR expansions or retrofits

JRMA will complete the options to provide services to the central and the northern portion of the County. This could include expanding CTR, siting a new transfer station to service the northern most portion of the County, or some combination. Our analysis will take into account the investments needed to expand CTR as compared to other alternatives that will ensure long term, cost effective service to this area.

We will calculate the financial impacts of the various facility locations within the Clark County. Consider the fixed and operational costs of the facility compared to the reduction in non-productive drive time. Consider the following aspects of the project:

1. Facility operational costs
2. Review scalehouse data to determine daily waste volume and trips
3. Consider the impact of reduced unproductive time on collection operations
4. Consider collection route changes
5. Review findings with County staff and amend as directed

Deliverables: Technical Memorandum – Evaluation of CIP for CTR and Options for Serving North County

Task 5: CTR Access Plans

Upon completing a review of the onsite traffic queue and considering options to eliminate any off-site queue, the JRMA team will work with the county and CRC to evaluate the alternatives and select the approach to make modifications to the access off HWY 503.

Subtask 5.1 – Update traffic data

The County assigned traffic engineer will collect turning movement counts and observations at the existing SR 503 site driveway during weekday AM, weekday PM, and Saturday mid-day peak periods. The traffic counts will be summarized and used to quantify existing driveway performance. Near-term and long-term (20-year) future driveway performance will then be analyzed for the three periods assuming driveway turn movements are restricted to right-turns only. The driveway performance will be assessed without and with the southbound right-turn lane, including projected southbound right-turn queue. A summary memorandum will be provided, including documentation of the site driveway volumes relative to WSDOT's right-turn lane criteria. **The budget assumptions for this work includes:**

- Attend 2 in-person meetings with WSDOT and/or the project team in Vancouver.
- Visit the site and summarize the existing physical and operational characteristics of the site access.

- Collect weekday AM (7-9 AM), weekday PM (4-6 PM) and Saturday mid-day (11 AM-1PM) peak traffic count data at the existing site access to SR 503.
- Summarize the traffic counts and model existing traffic operations and queuing during the weekday AM, weekday PM and Saturday mid-day peak hours at the site access.
- Model traffic operations and queueing under proposed right-in/right-out access during the weekday AM, weekday PM and Saturday mid-day peak hours at the site access.
- Obtain in-process development and funded transportation improvement information from Clark County.
- Obtain base and 2040 future year travel demand model for SR 503 from the Southwest Washington Regional Transportation Council (RTC).
- Model 2040 future year traffic operations and queueing under proposed right-in/right-out access during the weekday AM, weekday PM and Saturday mid-day peak hours at the site access.
- Conduct a right-turn lane analysis at the site access.
- Prepare a draft traffic memorandum for documenting the traffic analysis. Revise memorandum per County comments and finalize the memorandum in PDF format.
- Participate in up to two project team coordination meetings and/or conference calls.

The results will be a traffic report that can be used to develop access improvements and to obtain permits from WSDOT.

Subtask 5.2 – Evaluate Access Alternatives

We will use the updated traffic analysis and the results of the on-site improvements to address off- site queue issues. The access improvements will be evaluated with the considerations for relocating utilities and addressing WSDOT stormwater management requirements. Our scope and budget reflect the fact that AKS has recently obtained approval from WSDOT regarding access off HWY 503 on another project. The scope recognizes the importance of involving WSDOT early in the discussions as alternatives are being developed. The information and process for securing the approvals have similar requirements. AKS will lead this task and will include the following activities:

- Coordinate with County, CRC and assigned traffic engineer to develop right turn lane improvement based on trip generation and WSDOT standards.
- Coordinate with JRMA regarding internal traffic improvements to develop strategy for right turn lane proposal to WSDOT.
- Review the options with the County and CRC to select a preferred approach to address queueing and WSDOT concerns.
- Prepare Conceptual plans for right turn lane stormwater mitigation
- Two meetings with WSDOT
- Two meetings with Waste Connections/CRC

Subtask 5.3 – Prepare Design/Construction Documents and obtain permits from WSDOT and the County

Upon gaining concurrence upon acceptable approach to addressing access improvements at CTR, JRMA will as directed by the County complete engineering and prepare construction documents for WSDOT approval and for bidding. The work will include:

- Design level topographic and property boundary survey within limits of right turn lane
- Property boundary surveying to support WSDOT right-of-way dedication for right turn improvements.
- Two meetings with WSDOT
- Coordination with WSDOT review engineers and real property staff to permit right turn lane construction
- Preparation of right turn lane civil construction documents including plans and stormwater drainage report
- Preparation of traffic control plan
- Stormwater pond retaining wall design and permitting
- Dry utility coordination – includes on site meeting with WSDOT and CPU
- Prepare engineer's cost estimate

Deliverables: The deliverable from Task 1 – Subtask 1.2 and 1.3 will include:

1. Evaluations of onsite modifications to reduce off site queue
2. Updated traffic study
3. Evaluation of the options to address off-site queue to be reviewed with WSDOT
4. Complete construction documents for bid by the county and permits from WSDOT.
5. Evaluation of the alternatives for serving the northern part of the county.

Task 6: Capital Improvements to Transfer System

In order to prepare a comprehensive analysis of the current solid waste system and provide information to evaluate System Ownership options, the JRMA team will complete a review of existing transfer stations. This work will entail evaluating capital improvements needed to maintain operations including repairs and replacements and those needed to provide cost effective services over the 20 year planning period. This includes completing a conditions assessment of each transfer station and the MRF. Also, it will include completing an assessment of the major capital improvements that are expected over the next 20 years at both West Van and Washougal. An assessment of CTR will be completed in Subtask 4.3 as part of determining the final access improvements. However, the assessment of these facilities will result in identifying the improvements needed to handle expected increase in traffic and waste handling from expected growth and those improvements associated with new or expanded services. For instance, if food waste is collected separately or recycling facilities need to be expanded we will define the needs and list the capital investments that will may be necessary of over this period.

The results will be summarized to be considered in the analysis of the ownership options. JRMA will prepare more detailed concept plans and planning level cost estimates to be used in the 20-year CIP in Phase 2.

Subtask 6.1 – Complete Conditions Survey

JRMA will complete a conditions survey for the three transfer and recycling centers. This assessment will examine facility conditions to determine existing useful life of elements of each facility and prepare estimated cost of repair and replacement of primary physical assets associated with each facility.

- *CTR*
- *West Van / MRF*
- *Washougal*

The conditions survey will include the following steps.

1 – Project Launch

The survey teams will conduct site visits and observations. Each survey visit is to be coordinated with the required County and CRC staff in advance. These coordination calls with County and site operators will be used to address operational requirements, hours of operation, and access requirements that can impact gathering survey data, paving the way for a smoother survey effort.

2 – Data Collection and Storage Architecture

Using information gathered during the kick-off session, our team will collaborate with the County to further define the data to be collected during the survey process. This includes developing process standardization and procedures for hierarchy of assets, asset types, level of detail per system, naming and rating criteria, as well as costing, and prioritization approach.

For Facilities, JRMA recommends that the following nine building systems, in accordance with ASTM E1557, Uniformat II, shall be included in the assessment at a minimum:

- B20 Exterior Enclosures (Exterior walls, windows and doors)
- B30 Roofing (Visible roofing elements, gutters, downspouts)
- G20 Site Improvements (parking lots, air field paving, guardrails, barriers)
- G30 Site Civil/Mech Utilities (Wells, pump and lift stations, treatment plants, septic tanks)

3 – Existing Data Review

A critical component of this effort involves gathering historical information about known asset issues, maintenance activities, upgrades, and cost information. For facilities the preliminary documentation would likely include engineering studies, roofing studies and existing floor plans or similar general configuration documentation. If there is prior condition assessment data, we would review that data to determine what is still valid or usable. This early data allows our assessment team to develop a baseline understanding of the sites and the range of conditions and issues, fostering more informed and efficient site visits.

In addition to reviewing files, the teams will interview on-site facility and maintenance staff to capture ongoing or recurring maintenance issues currently or potentially impacting performance.

With this information, our team will review system performance issues and highlight areas of potential improvement. Lastly, JRMA will identify gaps where existing data (electronic drawings, images, systems equipment inventory, etc.) is insufficient, inaccurate, or missing items, requiring additional data collection.

4 – Field Data Collection

Our team will identify the existing asset condition and provide data necessary to properly outline the items needed for repairs, maintenance, and modernization.

The condition assessments will be conducted using a rapid, visual inspection or "direct" inspection method. This method requires assessing equipment visually and noting any visual or audible deficiencies. It does not include destructive or non-destructive testing of the equipment, unless directed by the County.

Our team will record, photograph, and catalog each asset, including deficiencies and required renewals within a 10-year period, provide an overview description of each system and deficiency, identify and estimate the cost of repairs needed for each deficiency using industry standard repair and replacement procedures.

5 – Data Analysis

The existing and collected data will be compiled, analyzed, and entered into the established spreadsheet. Based on the analyzed data, JRMA will compile a prioritized list of recommended work, following the priorities and goals established at the beginning of the project.

Our teams will use the latest version of RS Means and other developed cost databases to generate these estimates. Our costs will be in alignment with industry practice and will include local cost factors and mark-ups (where appropriate). The estimates generated will provide enough detail to support the capital planning aspects of Clark County asset management plan.

6 – Prioritization

After the preliminary data analysis, our experts will begin a detailed analysis of asset deficiencies. Our team will review notes and photographs to determine which systems are failing and which repairs or replacements are most critical. Our team will also flag items that have been marked as life/safety "urgent" and immediately bring them to the attention of the County.

7 – Database Development

Data collected in the field will be uploaded to a spreadsheet for the analysis and reporting aspects of the project. These files will be formatted and structured to meet the needs of Clark County. Data will be fully sortable, filterable and searchable for ease of use.

8 – Reporting

Reports are to be generated for each of the sites. The site-specific reports will include which will focus on key systems or structures which may need immediate repair or are foreseen to require major expenditures over time (10 years on all systems) and will be in general compliance with the guidelines established by ASTM Standard E 2018 - 15. Reports will include general descriptions of each asset or system, identified deficiencies and capital projects, judgements on overall condition and photographic documentation.

The draft reports can be reviewed by the County and CRC to verify that the physical needs of each facility are well established. The final results will be used to prepare a Repair and Replacement Schedule for each facility. This information will address capital needs for maintaining the facilities to provide basic services. Results can be included into a Capital Improvement Plan and schedule. It will not include larger scale capital investments for expanding facilities or adding new services. This will be part of Phase 2.

Subtask 6.2 – Evaluate the Expansion Needs of the Washougal Transfer Station

The Washougal Transfer Station began operation in 2009 and serves the eastern portion of the County. The site is located on 4 acres in the Port of Washougal. It accepts waste collected by WCW and is open to self-haul customers On Wednesdays, Fridays and Saturdays only. In completing our assessment, we will observe operations to document current deficiencies and determine future needs. Using waste projection data and considering other policy alternatives that may impact potential customer traffic our team will consider the capacity of the station to address services for the next 20 years.

Based on information provided by the County we will consider other services that may be needed at the Station in the future. We will identify space needs based on operational parameters to clearly identify the needed improvements.

In completing the analysis, we will meet with the Port to determine potential limitations or impediments for expending the facility. Also, we will meet with both the Cities of Camas and Washougal to review facility needs and future expansions. The results will be a list of expected improvements / expansion that are to be considered in the final 20-year CIP.

Subtask 6.3 – Subtask Evaluate Proposed Expansion of West Van

West Van has operated as the primary central receiving and transfer station for loading containers to be barged to the Finley Butte Landfill. Based on information provided by the County we will consider other services that may be needed at the Station in the future. We will identify space needs based on operational parameters to clearly identify the needed improvements. In addition to considering the capacity of the station to handle customer traffic and waste quantities for the next 20years we will consider the following:

1. Modifications to include a top load for handling organics (i.e. food waste and yard debris)
2. Possible top load operations to handle emergency loading conditions
3. Other facilities or services identified in Phase 1.

JRMA will prepare concept drawings demonstrating possible options for addressing the expansion of West Van. Preferred concepts selected for consideration in the 20-year CIP will be identified. The final layouts will be use do in Phase 2 to develop capital costs for the CIP.

Subtask 6.4 – Evaluate Opportunities for the MRF facility at West Van

Changes in the recycled materials commodity markets has caused many MRF operators to rethink their current processing systems. Our approach will be to assess the current equipment line and review performance data related to throughput and material quality. Rick Kattar will conduct an inventory of existing equipment and issue his findings. From this assessment we will determine what equipment may have value in planning for a more efficient processing system.

Working with the County and CRC, we will consider what waste streams and recovery goals are desired. For instance, is the County interested in expanding the recovery of materials by processing select high graded commercial loads? We will use waste projections data to estimate future quantities of source separated materials and consider where these materials will be generated over the long term. This information will be used to conduct a feasibility analysis for a new MRF at possible locations including staying at the current site. Our team has current, actual operating data and knowledge on MRF processing systems and costs. The analysis will

consider impacts of recovery more materials and financial impacts of avoided cost to transport and dispose of these materials.

Our team can assist the County to develop a plan to provide the needed infrastructure to meet the needs and goals of your recycling plan. The results of the feasibility analysis will be presented to the County and to key stakeholders to gain consensus on the best approach. The analysis will also consider the best location for a future MRF facility considering where the materials are generated and access to markets.

Deliverables:

1. Conditions Assessment Report for each Transfer Station to be used as basis for preparing a 10 Yr. Repair and Replacement (R/R) Schedule and budget
2. Preliminary Report presenting an inventory and list of long-term improvements for each transfer station needed to address capacity and potential new services over the next 20 Yrs.
3. Evaluation of MRF Options to address long term processing needs for the system.

Task 7: Potential System Structures for Public Ownership of Transfer System in 2027

Given the need to make certain capital investments in the existing facilities, we understand the County wishes to evaluate the ownership options for the transfer stations prior to when the current contract with CRC is due to expire. In Task 4, our team will work with the County to determine the key factors in considering ownership of facilities considering a regional system approach. Options to consider may include Public Ownership and Operation; Public ownership and private operation and Private ownership and operations or status quo. Key considerations could include but are not limited to: control over when and if investments in facilities are made and capital requirements; ongoing maintenance and repairs of facilities to ensure most cost-effective services; ability to make changes in services and control over the cost of improvements; level of operational expertise; and complexity of contracting arrangements or procurement needs. For each factor we will consider the risk and benefits of each.

With each option we will consider various approaches listed in the subtask 4.1. This includes public ownership and operation of gatehouses (similar to Metro); having a single operations contract or separate contracts for each transfer station and/ or ownership by local jurisdictions.

In addition to the ownership considerations will be an analysis of the institutional structure that could be used. There are several options that might be considered.

1. Establish a Joint Powers Board comprised of elected officials from representative jurisdictions similar to Spokane Regional Solid Waste System
2. Establishing a Disposal District under RCW 36.58.100. This entity can operate as part of the County but does have separate taxing authority
3. Interlocal Government Agreements (structured to provide sufficient financing using revenue bonds)

In our evaluation, we will complete a thorough analysis of the risk factors and the benefits associated with each option. Key factors will be if the County or a comparable organization is established who will operate the facilities and how will large capital investments be financed. This can be compared to maintaining the current private / public partnership.

Deliverables:

1. Evaluation of primary Public/Private Institutional Arrangements considering risk and policy factors determined by County and Stakeholders
2. Summary Matrix of Public /Private presenting results of Alternatives

Task 8: Recommendations and Prepare Presentations to Stakeholders for Tasks 1 - 4

In the initial kickoff meeting, we will work with the County to identify the key stakeholder groups and establish a timeframe when information will be presented to them. We understand SWAC is an important group that can provide input and guidance in developing the system study. We also understand the importance of the RSCWSSC for gaining consensus in the preferred strategies. Other stakeholder groups can be identified and a schedule for their input created.

The draft results of the Phase 1 and the CTR Feasibility Analysis will be reviewed by the County. Once comments are received presentations to the stakeholder groups will be conducted. We have shown six events on our Work Plan Diagram, but we expect to finalize these meetings with the County.

Deliverables:

1. Prepare presentation and attend for up to seven (7) stakeholder meetings

Task 9: 20 Year Capital Funding and Finance Plan

The project team will prepare a preliminary 20-year Capital Improvement Plan (CIP) with a schedule for making these investments to maintain existing facilities assuming CRC ownership until 2027. Since this is a 20-year CIP, we will use information from our system capacity analysis to identify capital improvements that may be necessary in the future. These will be updated when the Phase 2 work is completed. One key issue to evaluate is the condition of the compactors at CTR. The Harris compactor at West Van should be replaced and funding the $1.75 million replacement will need to be considered and scheduled. We will also complete an assessment of the MRF equipment to determine its useful life and what modifications are required to continue to process materials and the challenges for more stringent market conditions.

With the completion of the Conditions Assessment in Phase we will develop a Repair and Replacement schedule and projected expenditures that can be used by the County for financial planning purposes and for establishing a Repair and Replacement Fund. The information can also be used in the financial model to be used in projecting impacts to rates.

Deliverables:

1. Prepare a Draft 10 Yr. Repair and Replacement (R/R) Schedule and budget
2. Prepare a Preliminary 20 Yr. CIP using the results of Transfer Station and MRF needs assessment considering expansion for capacity and potential new services.
   Note: The CIP will use cost estimates based on similar type projects for this Phase. The CIP will be updated in Phase 2 using more site-specific information once Transfer Station conceptual master plans are prepared.

Task 10: Prepare a Phase One Report

The results of the Phase 1 Regional Study will be compiled into a single report that includes findings and recommendations. Presentations will be made to stakeholder groups as shown on the work plan and to the Board of Commissioners as requested.

Deliverables:

1. Prepare a Preliminary Draft Report to be reviewed by the County and stakeholders.
2. Prepare a Phase One Report for presentation to the Board of Commissioners

PHASE TWO: CAPITAL FACILITIES AND ENGINEERING SERVICES

Task 1: Long Term Capital Improvements to Transfer System

This work will be performed during Phase 2

Subtask 1.1 Update the 2014 Siting Study

CRC completed a siting study to locate a new site in Ridgefield that could relieve congestion and serve the fast-growing northern portion of the County. Our approach will be to revisit the previous siting study but to take the approach of examining the cost benefit of building a station in the north portion of the County. Projections suggest the combined population of the Cities of Battleground, Ridgefield and La Center could exceed 70,000 by 2035 which exceeds that of the cites of Camas and Washougal. How to best serve this area while considering what investments to make at CTR will be important. By considering the transportation cost impacts we can provide the feasibility analysis needed to determine what investment serves the long-term strategy.

- Meeting with JRMA and Clark County to determine needs
- Review existing siting study prepared by PBS
- Support JRMA during site identification process by considering site grading/drainage and utility issues related to preferred sites.
- Prepare planning level cost estimates related to site improvements and utilities for preferred sites to be used in comparing the estimated construction costs associated with estimate for civil infrastructure improvements

Our team will model the overall collection and transport system cost to determine the best options to serve this region. The financial analysis will allow the County to compare alternatives for serving this area. This analysis will allow us to determine a centroid for the optimum sites for a new facility in conjunction with options for expanding CTR. We will consider cost of constructing and operating as part of the financial analysis.

Once the optimal locations are identified our team will consider locations/ sites using the following criteria.

1. Centrality of Location
2. Size and Shape of parcels
3. Zoning and Land use conditions
4. Transportation Access – considering access by customers and access for transfer trucks
5. Site Development Issues (topography; environmental considerations; other)
6. Availability of Utilities

We will work with the County and local jurisdiction(s) to identify potential sites and evaluate them according to the criteria.

Deliverables:

1. Transfer Station siting report to identify primary location of new facilities
2. Review and Evaluation of Site Identified by County and research by our team.

Task 2: Additional Long-Term Capital Improvements to Transfer System

For Task 2 we will complete Facility Plans for Transfer Stations and the MRF. In Phase 1 our team will complete an assessment of facility needs and opportunities to address long term service requirements. In this task our team will prepare concept facility plans to address these needs. Each facility will consider expansion to provide needed capacity and new services. At this juncture a decision of whether to expand and /or site future facilities will be identified. Using the concept plans our team will be able to develop capital investments and the schedule for making these investments. The results will used to update and finalize a CIP.

Subtask 2.1 – Evaluate the proposed Expansion of the Washougal Transfer Station

The Washougal Transfer Station began operation in 2009 and serves the eastern portion of the County. The site is located on 4 acres in the Port of Washougal. It accepts waste collected by WCW and is open to self-haul customers On Wednesdays, Fridays and Saturdays only. In completing our assessment, we will conduct a conditions survey of the structures, roadways and other assets to establish if repairs and / or replacements of facilities should be planned. We will observe operations to document current deficiencies and determine future needs.

Considering waste projections and other services being considered our team will evaluate options for expanding the current facilities to meet these needs. Our team will then develop concept plans to determine options for expanding the facility and to incorporate changes to improve operations as needed. In preparing concepts, we will meet with the Port to determine potential limitations or impediments for expanding the facility. We will review the concept plans with the County and based on selecting a preferred plan we will prepare renderings of the expanded facilities for review by key stakeholders and local agencies. Based on the expansion plan, we will then prepare a cost estimate of the improvements and determine the schedule for implementation.

Subtask 2.2 – Evaluate Proposed Improvements for West Van

In the scope the County has identified the need to provide facilities to better manage yard waste and organics received at the facility. In addition to these facilities our team suggest that a condition survey of the existing structures and physical features be completed and that we review operations to document current deficiencies. By completing this process, we can adequately assess the potential expansion plans while considering how these improvements can be integrated and improve overall operations.

With this information our team proposes to develop a site master plan to determine the best approach for adding a new top load. We will integrate these expansion plans into the site circulation and materials handling to avoid double handling and assure it will promote safe and efficient operations. This approach also considers

how future expansions can be implemented in a way that does not disrupt services. By working collaboratively with the County and CRC operations staff we will prepare a plan that addresses immediate needs and fits into a long-term facilities plan.

We will review the concept plans with the County and based on selecting a preferred plan we will prepare renderings of the expanded facilities for review by key stakeholders and local agencies. Based on the expansion. Plan we will then prepare a cost estimate of the improvements and determine to schedule for implementation.

Subtask 2.3 – Evaluate Opportunities for the MRF facility at West Van

Changes in the recycled materials commodity markets has caused many MRF operators to rethink their current processing systems. JRMA is keenly aware of these challenges. In the past 5 years, we have planned and assisted clients in procurement and layout of new processing systems that employ the latest technologies. Our approach will be to assess the current equipment line and review performance data related to throughput and material quality. Rick Kattar will conduct an inventory of existing equipment and issue his findings. **From this assessment we will determine what equipment may have value in planning for a more efficient processing system.**

Working with the County and CRC, we will consider what waste streams and recovery goals are desired. For instance, is the County interested in expanding the recovery of materials by processing select high graded commercial loads? We will use the project data from Phase 1 to estimate future quantities of source separated materials and consider where these materials will be generated over the long term. This information will be used to conduct a feasibility analysis for a new MRF at possible locations including staying at the current site. Our team has current, actual operating data and knowledge on MRF processing systems and costs. The analysis will consider impacts of recovery more materials and financial impacts of avoided cost to transport and dispose of these materials.

Our team can assist the County to develop a plan to provide the needed infrastructure to meet the needs and goals of your recycling plan. The results of the feasibility analysis will be presented to the County and to key stakeholders to gain consensus on the best approach. The analysis will also consider the best location for a future MRF facility considering where the materials are generated and access to markets.

Once we have confirmed the findings our team will prepare concepts drawings for each facility for review and a list of improvements. We will work closely with the County and key stakeholders to select a preferred site plan and a schedule of capital improvements that address the system priorities.

Deliverables:

1. Prepare concept Master Plans to show identify expansions/retrofits and or new facilities required for each transfer station.
2. Concept Plan for MRF and necessary processing systems

Task 3: Develop Recommendations for Capital Improvements to the Transfer System Facilities

The results of the transfer station and MRF feasibility analysis will be compiled into an initial presentation for the County to review. It will include a list of improvements, site plans and concept drawings, cost information

and results of the financial proforma. A list of recommendations for each facility will be included. Once approved by staff we will make an initial presentation to stakeholders to obtain feedback. With this input, a final presentation will be made to gain consensus on the recommendations.

Task 4: Update 20-Year Capital Funding and Finance Plan (Developed in Phase One - Task 6) to Incorporate Recommended Capital Improvements

The results of Task 3 will be used to update the 20-Year CIP for the transfer stations and MRF facilities. We will work with the County and key stakeholders to prioritize and prepare a schedule for these improvements. We will update the financial proforma model prepared in Phase 1.

Task 5: Prepare Phase One and Phase Two Regional System Study Report

The results of Phase 2 will be incorporated into the Phase I document to produce a single report. The reports will list the key findings from the comprehensive review and list the recommendations impacting each component of the solid waste system (i.e. collection; recycling services; transfer stations). The findings will identify the key policy recommendations to be considered by stakeholders.

Once we have received all feedback, the final report will be prepared in Word and in a PDF format consistent with the requirements in the RFP.

PHASE 3: SUPPORT UPDATES TO CLARK COUNTY COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN (CSWMP)

The County completed an Update of the Comprehensive SWMP in 2015. We understand the results of this system study and the recommendations provide changes to the overall system that will need to be documented and incorporated into the formal 2020 SWMP.

Some of the key elements that could impact the 2020 SWMP Update will include

1. Future ownership of facilities
2. Changes to the institutional framework and organization
3. Policy changes and changes required to address new regulations
4. Possible changes to expand collection services and need for self-haul customers to use transfer stations
5. Financial impacts due to new capital investments
6. Possible expansion of facilities to address growth in the County
7. Possible expansion to material recovery operations to increase recovery rates
8. Improvements and expansion of organics management

Using the findings and recommendations from the Regional System Study our team will work with the County to update chapters of the SWMP, meet with stakeholder's groups to review updated information and to adopt the final recommendations to be part of the 2020 Updated SWMP.