Chapter 3

Garbage, Recycling, and Organics Infrastructure and Operations

The Clark County Solid Waste Management Plan provides the community with goals and policies for evaluating and modifying existing and developing new solid waste management programs. This chapter addresses the collection, processing, and disposal infrastructure for garbage, recyclables, and organic material streams.

3.1 Material Collection and Diversion

3.1.1 Background and Existing Conditions

Garbage Collection

Solid Waste Collection

The following agencies are responsible for the management of solid wastes within Clark County: Washington Utilities and Transportation Commission (WUTC), Clark County, and the cities of Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal, and the town of Yacolt (see Chapter 1 for details on administration and enforcement). Clark County Public Health issues permits for solid waste storage, collection, transfer, and disposal according to RCW 70.95, WAC 173-350, and Clark County Code Chapter 24.12. Clark County Public Health has authority over public health and safety for garbage collection in all of Clark County, including the cities and towns.

State law provides the following three categories under which garbage collection services (excluding recyclable materials collection) are administratively authorized and controlled:

State-Certified Collection

The Washington legislature decided in 1961 that garbage collection services should be available to all residents of the state at rates that were fair, just, and reasonable. The legislature passed RCW 81.77, directing the WUTC to supervise and regulate private solid waste collection companies in the State of Washington. RCW 81.77 requires a company to obtain a certificate from the Commission declaring that public convenience and necessity require the establishment and operation of a collection service in a specific area. These *Certificates of Public Convenience and Necessity* require proof that a company is qualified, willing, and able to provide service, and then specify categories of solid waste that can be collected and the geographic area in which a company can operate.

These certificated collection companies provide services under WUTC regulation. As part of its legislative mandate, the Commission audits these companies for fair rates, proof of adequate insurance, operational safety, and requires annual reports. Any solid waste collection company, including certificated companies, may also provide service under contract with an incorporated city or town. In that case, the Commission does not regulate. The WUTC's authority covers private collection companies that operate in unincorporated areas of a county and in incorporated municipalities where the city chooses not to regulate through other means. City-contracted collection services are not subject to WUTC control. Collection systems directly operated by city crews and equipment are exempted from regulation by the WUTC.

The WUTC establishes collection fees (rates) for certificate holders based on operating costs and revenues. Every certificated collection company files a tariff with the WUTC, showing rates and charges applicable to the collection,

transportation, and disposal of solid waste in its service area. The WUTC may approve or modify the requested rates. Certificated companies cannot alter their rates or charges without WUTC approval.

The WUTC requires certificated collection companies to "use rate structures and billing systems consistent with the solid waste management priorities set forth under RCW 70.95" and provide minimum levels of solid waste collection and recycling services according to local solid waste management plans and municipal ordinances. The WUTC has no direct authority or rate-setting responsibility for solid waste transfer or disposal facilities.

Since the early 1900s, the Commission has regulated the transportation of property (including nonresidential recyclable materials) for hire over public roadways under the authority of RCW 81.80. The regulation was essentially the same as that of solid waste collection companies. Commercial recycling is regulated under RCW 81.80 because it has been designated as property, not solid waste. However, the passage of the *Federal Aviation Administration Authorization Act* (FAAAA) of 1994 pre-empted state or local regulation of transportation of property (including nonresidential recycling), in terms of where a company can operate, how much they can charge, and what kinds of property they can transport. At that time, the legislature moved the Commission's responsibility for a safety inspection for common carriers to the Washington State Patrol. The Commission is responsible for issuing permits and verifying insurance for common carriers. Common carrier permits allow companies to transport general commodities, including nonresidential recyclable materials.

City-Controlled Collection

Cities have the authority to make collection mandatory in all or part of their incorporated boundaries. Mandatory collection means that all waste generators must subscribe to and pay a minimum collection fee even if they do not use the service.

WUTC-Certificated Collection. A city can delegate management authority and responsibility to the WUTC. Under this option, collection services are provided within the city by a certificated private company supervised and regulated by the WUTC. WUTC certificates and operating requirements may be supplemented within cities by licenses (or "franchises"). Under a licensed collection system, collection rates charged by city-licensed but WUTC-certificated private companies are set by the WUTC, with any city-imposed licensing tax added on top of, or factored into, rates. It is the collection company's responsibility to collect fees for services rendered and to remit a licensing fee, franchise tax, or fee based on gross receipts to the city. The license, therefore, benefits the city by generating revenues. However, the WUTC remains the regulatory authority for licensed collection.

Contracted Collection with a Private Service Provider. A city can contract with any private collection company for residential and non-residential collection services within all or part of its incorporated area. Thus, a city can control collection activities without operating its municipal collection utility. This is the only avenue for non-certificated private collection companies to become involved in collection services in the State of Washington. The service areas for these private collection companies are limited to the contracted municipal boundaries and are not subject to regulation by the WUTC. Under a contracted collection system, management and regulation of the system are the responsibility of the city. The contract regulates operating conditions, rates, and billing practices. The collection of fees for services is the responsibility of either the city or the collection company. Typically, a city ordinance would set forth the level of collection service provided, rate structures, and operating requirements.

Municipal Collection systems can also be operated by a city as a municipal service with its equipment and personnel. A city with municipal collection determines its rate structure, operating requirements, and levels of service. In addition, the city is usually responsible for customer billing.

County-Controlled Collection

Statutory restrictions imposed upon counties by RCW 36.58A limit a county's authority concerning solid waste collection. A county currently may provide collection services itself or through direct contract only if no qualified private company is willing or able to do so. In addition, a county may not provide service in an existing certificated

area unless it acquires rights by purchase or condemnation. Except in the circumstances stated above, the county is prohibited from directly managing or operating solid waste collection systems. It is unlikely that such a combination of circumstances would ever occur within Clark County.

However, a county may exercise limited control of solid waste collection services in unincorporated areas through the adoption of service-level ordinances. Service-level ordinances can establish the types and levels of services to be provided to both residential and non-residential customers. In addition, such ordinances can encourage rate structures that promote waste reduction and recycling activity.

A county may also exercise some control of collection activities within its unincorporated areas by establishing solid waste collection districts. Within such a district all solid waste generators could be required to subscribe to and pay for collection services; the private service provider and the collection rates would be regulated by the WUTC. Solid waste collection districts are limited to unincorporated areas of a county, although with consent from the legislative authority of a city or town, collection districts can include areas within the corporate limits of the city.

If a county were to form such a district, the WUTC would investigate whether the existing certificated collection companies were willing and/or able to provide collection services. If the existing certificated collection company could not or would not provide the service, then the WUTC could issue a certificate to another collection company. A county can directly provide collection services within these districts only after notification by the WUTC that no qualified collection companies are able and/or willing to perform said service. If a collection district is established, a county may be asked to collect fees from delinquent customers should the private collection company be unable to do so.

Table 3.1.1: Summary of Differences in Solid Waste Collection Systems

Solid Waste Collection System Characteristics (Under State, City, and County Control)

System Type	State Controlled	City-Controlled			County-Controlled
		State Authority	Contract	Municipal	Solid Waste Collection District [a]
Collector	Private	Private	Private	Municipality	Private [b]
Operating and Conditions and Review Authority	WUTC [c]	WUTC [c]	Municipality	Municipality	WUTC [c]
Rate Approval Authority	WUTC	WUTC [d]	Municipality	Municipality	WUTC
Subscription to collection Service	Voluntary	Voluntary or mandatory	Voluntary or mandatory	Voluntary or mandatory	Voluntary
Billing Responsibility	Collector	Collector	Municipality or collector	Municipality	Collector [e]

[a] Only in unincorporated areas, or incorporated areas with consent of the legislative authority of the city or town.

[b] If no certificated hauler can provide service, the county may provide service.

[c] Although municipal governments can adopt service-level ordinances, the Washington Utilities, and Transportation Commission (WUTC) is the authority charged with enforcing compliance.

[d] City has the authority to include licensing tax.

[e] County must collect fees if users are delinquent.

Current Collection Practices

Solid waste in Clark County is currently collected by both private companies and municipal government agencies which are regulated and operating under the authorities previously described. **Table 3.1.2** summarizes the collection entities in Clark County currently providing garbage collection services.

Table 3.1.2: Garbage Collection Entities in Clark County

Service Provider	Parent Company	WUTC Certificate Number	Address
Waste Connections of Washington	WCW	G-253	9411 N.E. 94th Avenue, Vancouver, Washington 98662
Waste Connections of Washington	None	G-101	P.O. Box 148 Kelso, Washington 98526
City of Camas	None	None	616 N.E. 4th Avenue, Camas, Washington 98607
Basin Disposal Inc (inactive)	None	G-118	PO Box 3850 Pasco, Washington 99302-3850

Table 3.1.3: Garbage Collection Service Characteristics - Residential and Non-residential

Area and Jurisdiction	Regulatory Authority	Service Provider	Mandatory Collection?	Billing Responsibility
City of Vancouver	City-contracted	WCW	Yes	Service provider
City of Camas	City	City of Camas & WCW	Yes	City and service provider
City of Washougal	City-contracted	WCW	Yes	City
City of Ridgefield	WUTC	WCW	Yes	Service provider
City of Battle Ground	WUTC	WCW	No	Service provider
City of LaCenter	WUTC	WCW	No	Service provider
Town of Yacolt	WUTC	WCW	No	Service provider
Unincorp. Clark County	WUTC	WCW	No	Service Provider

Note: Waste Control Inc. is now owned by Waste Connections of Washington

The unincorporated areas of the County, as well as the cities of Battle Ground and La Center and the town of Yacolt, do not have a mandatory collection. Waste generators have the choice of either subscribing to collection services provided by their WUTC-certificated company or self-hauling to permitted disposal or transfer facility. In addition to the collection service providers described in **Table 3.1.3,** generators can self-haul solid waste to the CRC Transfer Station, or other processing and disposal facilities out of the region. Large self-haulers in Clark County include the Vancouver School District and the Battle Ground School District.

Minimum Collection Service Levels

Minimum collection service level options include:

- Recycling for all garbage customers in Clark County unincorporated and rural areas.
- Garbage (and recycling) for all customers in urban growth areas.
- Commercial recycling would also make an impact on local jobs.

Requiring residential recycling for existing garbage customers would add 5,000 customers in the rural area which would equate to one to two new driver jobs. Based on the available data the additional 5,000 rural recycling customers would generate an additional 2,000 tons of recycling. 1,000 tons of materials create a net of 2.27 additional jobs versus landfilling the same 1,000 tons. This could lead to an additional 4 to 5 jobs (not all these jobs would be in Clark County). If garbage service were made mandatory along with recycling, additional customers would be added. For example, the City of Battle Ground has about 1500 customers that don't subscribe to garbage or recycling services. Note that some recycling would be offset by a reduction of self-hauled drop-off recycling. There are about 3,000 commercial Waste Connections customers that don't have a recycling service (they may drop off or use another service provider). **Table 3.1.4** on the next page provides a high-level summary of residential service offerings throughout the County.

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Table 3.1.4: Residential Service Offerings

Jurisdiction	Service Provider	Garbage Mandatory		Recycling Services		Yard Debris / Organics Service		Bulky Item Service	
		Yes	No	Bundled	Subscription	Bundled	Subscription	Bundled	On-Call Fee
Vancouver	WCW	X		X [1]			X		X
Camas	City Garbage, WCW – Recycling and YW	X			X [1, 2]		X		X
Washougal	WCW	X		X [1]			X		X
Ridgefield	WCW	X			X		X		X
La Center	WCW		X	X [1]			X		X
Woodland Vicinity (NW Clark County)	WCW		X		X		X		X
Urban Growth Boundary (Battleground & Yacolt)	WCW		X		X [2, 3]		X		X
Rural	WCW		X		X	Not Available			X

[1] A separate fee is charged for recyclable material processing.

[2] Garbage and recycling are included in the base services, but the rates are not bundled.

[3] Recycling collection is mandated within the Clark County urban growth boundary for customers with weekly waste collection service or greater.

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Bulky Items

Furniture, appliances, electronics, or tires can be picked up curbside for a cost. This service is available in Vancouver, Ridgefield, Washougal, and the rural areas of Clark County. The Waste Connections Rates page provides a detailed list of accepted items. Camas residents can call the City's Utility Customer Service line at 360.834.2462 for details on microwave and small furniture pick-ups. Vancouver households within city limits that have active garbage service are eligible for one (1) free appliance pick-up per year. One to two weeks advance notice to schedule pick-up is recommended for customers serviced by WCW.

Per https://www.cityofvancouver.us/publicworks/page/bulky-item-pickup, all single-family residents within the City of Vancouver who have active garbage service with Waste Connections are eligible for one curbside disposal of up to five bulky items, each item weighing less than 100 pounds, for free.

Rate Structures

Rates or fees charged for garbage collection in Clark County vary by area and service provider. Because of the way the rates are structured, municipal rates (e.g., the City of Vancouver) often provide more incentive to reduce waste than WUTC service area rates.

Table 3.1.5 below summarizes who provides collection services throughout the County.

Table 3.1.5: Summary of Collection Services

Municipal Solid Waste (Garbage) Collection				
Area/ Jurisdiction	**Regulatory Authority**	**Service Provider**	**Mandatory Collection**	**Contract Term**
City of Vancouver	City-contracted	WCW	Yes	Current Term Date: April 30, 2030 Final Term Date: April 30, 2032
City of Camas	City	City of Camas	Yes	N/A
City of Washougal	City-contracted	WCW	Yes	Current Term Date: March 22, 2024 Final Term Date: March 22, 2044
City of Ridgefield	City-contracted	WCW	Yes	Current Term Date: December 31, 2029 Final Term Date: December 31, 2039
City of Battle Ground	WUTC	WCW	No	December 31, 2023
City of La Center	WUTC	WCW	No	December 31, 2023
Town of Yacolt	WUTC	WCW	No	December 31, 2023
Unincorporated Clark County	WUTC	WCW; Waste Control Inc. (owned by WCW)	No	N/A

Recycling Collection				
City of Vancouver	City – contracted	WCW	Yes	Current Term Date: April 30, 2030 Final Term Date: April 30, 2032
City of Camas	City – contracted	WCW	Yes	Current Term Date: December 31, 2029 Final Term Date: December 31, 2033
City of Washougal	City – contracted	WCW	Yes	Current Term Date: March 22, 2024 Final Term Date: March 22, 2044
City of Ridgefield	City – contracted	WCW	Yes	Current Term Date: December. 31, 2029 Final Term Date: December 31, 2039
City of Battle Ground	County – contracted	WCW	No	Current Term Date: December 31, 2023
City of La Center	County – contracted	WCW	No	Current Term Date: December 31, 2023
Town of Yacolt	County – contracted	WCW	No	Current Term Date: December 31, 2023
Unincorporated Clark County	County - contracted	WCW; Waste Control Inc. (owned by WCW)	No	Current Term Date: December 31, 2023
Yard Debris Collection				
City of Vancouver	City – contracted	WCW	No	Current Term Date: April 30, 2030 Final Term Date: April 30, 2032
City of Camas	City – contracted	WCW	No	Current Term Date: December 31, 2029 Final Term Date: December 31, 2033
City of Washougal	City – contracted	WCW	No	Current Term Date: March 22, 2024 Final Term Date: March 22, 2044
City of Ridgefield	City - contracted	WCW	No	Current Term Date: December 31, 2029 Final Term Date: December 31, 2039

City of Battle Ground	County – contracted	WCW	No	Current Term Date: December 31, 2023
City of La Center	County – contracted	WCW	No	Current Term Date: December 31, 2023
Town of Yacolt	County – contracted	WCW	No	Current Term Date: December 31, 2023
Unincorp. Clark County	County - contracted	WCW	No	Current Term Date: December 31, 2023

Note: WCW's office is located at 12115 NE 99th St #1830, Vancouver, Washington, and the City of Camas office is located at 616 NE 4th Avenue, Camas, Washington; Basin Disposal, Inc. has an inactive permitted WUTC service area in and near Camas.

Recycling Collection

Recyclable Material Collection

The collection of recyclable materials from residential and nonresidential generators is regulated differently than the collection of general solid wastes in the State of Washington. However, the WUTC, Clark County, and cities in Clark County are still involved in the regulatory process. The self-hauling of recyclable materials by generators to recycling centers, transfer stations, or other locations is not regulated.

Residential Collection for Recycling

The collection and transportation of recyclable materials and yard debris from single-family and multifamily residences are regulated under RCW 81.77 and RCW 36.58. Under these statutes, counties have the authority to directly regulate the collection of source-separated recyclable materials. Local government jurisdictions, including both counties and cities, have the option to either contract directly with a private collection company to provide residential recyclable materials collection services or delegate the responsibility to the WUTC. If the local government contracts directly with a collection company, then it thereby regulates collection activities and the WUTC is not involved. However, if the authority is delegated to the WUTC, then a WUTC-certificated collection company would provide the collection service, with WUTC regulating the activity as previously described in this chapter. In addition to these two options, cities have the option of providing recyclable collection services within their jurisdictional boundaries by using city personnel and equipment.

Currently, WCW has contracted with the County and the cities of Battle Ground, La Center, and Yacolt to provide residential recycling collection services (both single-family and multifamily) within those cities and in all the unincorporated areas of Clark County. The City of Vancouver contracts for residential recycling collection services (both single-family and multifamily) with WCW. The cities of Camas, Ridgefield, and Washougal have separate contracts with WCW to collect recyclable materials from both single-family and multi-family residences within their jurisdictions.

Residential Recycling Collection Service

In 2009, the County transitioned to a roll cart-based collection system for both single-family and multi-family residences. The carts are for commingled paper, plastic, and metal recyclables; glass bottles are collected separately, in a bin next to the cart. In Vancouver and the rural unincorporated areas, recycling is collected biweekly; in all other cities and the urban unincorporated area, it is collected weekly. 65-gallon roll carts are provided to customers with weekly collection; 95-gallon roll carts are provided to customers with biweekly

collection. Smaller roll carts are available to customers upon request. For single-family residences only, used motor oil, antifreeze, and household batteries are to be contained in a Ziplock baggie and placed on top of the recycle cart lid. The goal is to eventually discontinue this practice but will be addressed more in-depth later in the chapter. These items are not collected at multifamily complexes; otherwise, materials collected, and sorting requirements are the same for all residents. Multi-family collection schedules are set to meet the requirements of each complex and are provided with weekly or twice-weekly collection as appropriate. Weekly collection services are provided for single-family residents in Battle Ground, Camas, Ridgefield, Washougal, and the unincorporated Urban Service Area. Every-other-week collection services are provided for single-family residents in La Center, Vancouver, Yacolt, and the unincorporated Rural Service Area.

In 2022, to accommodate the County's growth for the next five to seven years, Waste Connections rerouted the entire County and customers were notified of their new service dates in preparation for the service and truck transition to automated residential garbage collection. Service date changes did not apply to residential customers in Vancouver city limits, Camas, Ridgefield, and Washougal as they have individual collection contracts with Waste Connections. Waste Connections began the transition from customer-provided garbage carts to convenient 95-gallon roll carts (at no cost to customers) in the Rural Service Area and Cities Service Areas (Cities of Battle Ground, LaCenter, and the Town of Yacolt), and in 2023, will complete the transition to automated garbage carts in the Urban Growth Area of Clark County. Upgrading garbage carts in these select areas allows the drivers to operate safely from the cab instead of out on busy roadways, thereby reducing injury and accidents.

For recycling customers of the Urban Service Area of Clark County, including the City of La Center and the Town of Yacolt, the recycling service was changed from weekly to every-other-week service to hold rates at the current level. Customers in Vancouver city limits, Battle Ground, Camas, Ridgefield, and Washougal already have every-other-week recycling service.

The Contract Term Date for the County's Recyclables Collection Contract with Waste Connections is December 31, 2023. The execution date for the Restated Contract is January 1, 2024. **Table 3.1.5** provides a summary of Contracted Collection Services in Clark County.

Residents may also deliver their recyclable materials to public drop-off centers at transfer stations, private buy-back recyclers, or drop-off. Public drop-off sites include:

- CRC's three transfer stations are open to the public.

Recycling collection events may be scheduled periodically throughout the year and may include the collection of household hazardous waste. The County provides online resources www.recyclingA-Z.com to provide residents with current information on recycling a wide range of items.

A summary of curbside recycling collection tonnages and operational statistics (e.g., monthly setout rates, lbs./setout, etc.) by jurisdiction can be found in **Table 3.1.6** below. The operational statistics data is discussed further in Section 3.4.2 Needs and Opportunities.

Table 3.1.6: Curbside Recycling Tonnage and Operational Statistics

Clark County					
Metrics	**2017**	**2018**	**2019**	**2020**	**2021**
Drivebys	253,523	269,183	306,612	294,453	299,106
Setouts	193,981	127,446	143,926	119,555	121,028
Tons/month	1,730	1,725	1,647	1,828	1,823
Annualized tons	**20,756**	**20,697**	**19,769**	**21,937**	**21,875**
Customers	61,712	62,974	65,030	67,353	69,078

Monthly Setout Rate (%)	76.5%	47.2%	47.1%	40.7%	40.5%
Lbs./Setout/Customer	19	28	23	32	31
Lbs./Month/Customer	56	55	51	54	53
City of Vancouver					
Drivebys	94,378	98,431	99,412	100,609	101,735
Setouts	55,656	57,561	66,318	70,889	74,712
Tons/month	1,058	1,029	961	1,023	1,007
Annualized tons	**12,699**	**12,353**	**11,528**	**12,277**	**12,090**
Customers	43,413	45,570	46,024	46,578	47,100
Monthly Setout Rate (%)	63.3%	58.5%	66.7%	70.5%	73.4%
Lbs./Setout/Customer	36	36	29	30	28
Lbs./Month/Customer	49	45	42	44	43
City of Camas					
Tons/month	207	231	186	200	206
Annualized tons	2,486	2,772	2,235	2,397	2,477
Customers	7,306	7,371	7,476	7,611	7,618
Lbs./Month/Customer	57	63	50	52	54
City of Ridgefield					
Ave. Monthly Tonnage	N/A	N/A	N/A	N/A	79
Customers/Month					3,657
Lbs./Month/Customer					43.2
City of Washougal					
Tons/month	144	154	124	137	140
Annualized tons	1,725	1,848	1,490	1,639	1,677
Customers	5,071	4,914	5,233	5,203	5,182
Lbs./Month/Customer	57	63	47	52	54

What Can Be Recycled?

Clark County's Health Department website (see Residential Recycling Service | Clark County (wa.gov)) includes a thorough list of materials that can be recycled. Evaluation of this list is ongoing. Criteria include the potential for waste diversion; collection efficiencies; processing requirements; market conditions; market volatility; local market availability; continuity with existing programs; and Oregon recycling certification requirements. All curbside recyclables in the county are delivered to the West Van Materials Recovery Center for sorting and processing.

Three major changes have occurred in the curbside recycling program since its inception in 1991. In 1995, the County and cities added all plastic bottles to the list. In 2002, antifreeze, household batteries, and aerosol cans were added. In 2009, plastic tubs and buckets were added, and the collection method was changed from three stacking bins to a rolling cart for commingled materials plus a bin for glass. Concurrently with the 2009 change, the contracted processor significantly upgraded the sort line at the West Van Materials Recovery Center, to expand capacity and accommodate the changed collection method. Improvements to the facility are ongoing.

Clark County recycling collection programs are considered mature, and the following materials will be considered "designated residential recyclables" to meet the Washington Department of Ecology planning guidelines:

Eligible Recyclable Materials

Recyclable Item	Curb	Call-In	Handling Instructions	Limitations
Aluminum: Clean aluminum foil, containers: cans, trays, pie tins, food receptacles	X		Place in recycling receptacle	Empty and clean
Corrugated Cardboard: All corrugated cardboard boxes	X		All boxes smaller than three (3) feet square place in or next to recycling receptacle. Boxes larger than three (3) feet square must be flattened	Corrugated pizza boxes OK if no food/grease residual.
Glass Containers: All colors or clear jars and bottles, rinsed, with lids removed	X		Empty, remove lids, and place in glass recycling bin	Must be clean and empty with no food or beverage residue
Household Batteries: Single Use: AA, AAA, C and D-Cell, 9-volt, and button cells	X		Tape ends of cylinder and 9-Volt batteries, place in sealed plastic bags along with loose button batteries. Place bag on top of recycling receptacle.	Single family only unless arranged with complex management.
Motor Related Fluids: Used motor oil and antifreeze (contained in sealed clear plastic jugs)	X		Place in screw-top clear plastic jugs and placed next to the customer's recycling receptacle.	Up to three (3) gallons of motor oil per week that is free from contaminants. Single family only unless arranged with complex management.
Paper: All clear mixed wastepaper, newspaper, colored paper, magazines, phone books, catalogues, advertising supplements	X		Place in recycling receptacle.	Shredded paper should be taken to transfer stations for drop off recycling.
Plastic Containers: All narrow neck plastic bottles and jugs, yogurt, and margarine tubs. Plastic buckets and nursery pots 5 gallons or less	X		Empty, clean, place in recycling receptacle	Plastic bottles, jugs, tubs that have contained hazardous or toxics products such as motor oil or pesticides are excluded.

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Polycoated Cartons and Boxes: All plastic-coated milk cartons, and drink boxes (aseptic containers)	X		Empty, clean, and place in recycling receptacle	Empty and clean – don't place in plastic bags
Scrap Metal: All ferrous and non-ferrous scrap metal no longer than 24" in any dimension or heavier than 35 lbs.	X	X	Medium size items: Place in recycling receptacle. Large items: Call Waste Connections to request Bulky Item Pickup, or self-haul to transfer station drop off area	No items less than 2" x 2", including nuts and bolts, no sharp items. 35 lbs. max and less than 5% non-metal parts. Items larger than 2'x2' call Waste Connections to request bulky item pick-up. Single family only.
Tin Cans: All clean food & beverage steel and tin cans including empty aerosols and tin lids	X		Place in recycling receptacle. Crimp lids inside can. Labels OK.	Empty and clean

Yard debris is separately collected from single-family residences, on a subscription basis.

In addition to the materials previously listed as "designated residential recyclables", the following items are also recycled through ongoing or seasonal programs and specially scheduled collection events within Clark County: chlorofluorocarbons, e-waste (predominately through the E-Cycle Washington program), fluorescent tubes, latex paint, lead-acid batteries, mercury (including mercury-containing products), oil filters, tires (limited recycling, based upon available markets), other plastics, and white goods (e.g. dryers, refrigerators, washers).

Additional materials will be considered on a case-by-case basis, as emerging markets become available. Potential additions include household food waste, textiles, ceramics, and (non-container) glass. The County's recycling collection and processing contracts have provisions for adding materials to the residential curbside collection program. The County will also notify the WUTC of such changes.

Non-Residential Collection for Recycling

The collection and transport of recyclable materials from nonresidential generators are regulated by the WUTC under RCW 81.80. Three types of authorities are established in RCW 81.80, including common carriage, contract carriage, and private carriage. Counties have no authority to regulate the collection and transportation of nonresidential recyclable materials. Cities may enter non-exclusive contracts with providers of non-residential recycling services or may establish a regulatory framework to direct the nature of their activity and services within the jurisdiction. Local businesses, however, may choose to make other collection arrangements.

Common carriers are permitted by the WUTC and can collect a specific commodity (or commodities) within a designated geographic territory. Common carriers do not own the commodity being hauled; they are simply providing a transportation service for the owner. For example, a private company hauling cardboard from nonresidential generators to an independently operated recycling facility would be a common carrier. Common carriers are required to provide collection and transportation services to anyone requesting the service within the collection territory. Fees are negotiated between the carrier and the customer.

Contract carriers are permitted by the WUTC and can collect a specific commodity (or commodities) from a single nonresidential generator. For example, an independent company collecting cardboard from a single manufacturing company would be a contract carrier. Contract carriers negotiate the tariff or fee paid for the service with the waste generator without WUTC involvement.

The City of Vancouver has established a licensing program that pertains to common carriers collecting recyclable materials within the city limits. A key purpose of this requirement is to obtain data on recycling activities within the jurisdiction.

The City of Vancouver regulates commercial recycling haulers. All recycling collectors obtain from the city a license which is renewed annually. Licensed recyclers must comply with the code requirements and are only to collect source-separated recyclables. An annual report on tons or cubic yards collected is required at the end of each year. Clark County will be developing a similar program for registering commercial recycling haulers.

Clark County has a competitive commercial recycling environment, with commercial recycling services provided by a variety of service providers. Some operators specialize in paper fibers such as office paper or corrugated cardboard, or wood wastes, while others offer a full array of services for most commodities. The County actively supports commercial recycling through technical assistance programs and promotional educational materials. The degree of source separation required varies by vendor. Source-separated recyclables may be commingled (combined with other source-separated recyclables) to increase collection efficiencies. Waste collection systems can readily adapt to changes in customers served with additional equipment, manpower, and periodic adjustments to route schedules. As collection service within the regional area is performed under contract, these contract rates take into consideration increases in the customer base. WUTC also can review rates for G-certificated haulers which also incorporates a review of the customer base.

Processing and Recovery

The County contracts CRC for the processing of residentially collected recyclables and all such recyclables in the county are delivered to the West Van Materials Recovery Center for processing. CRC also processes recyclables collected from other areas at this same facility. Recyclable materials received through the curbside and multi-family collection programs are marketed by CRC and a portion of the revenue generated from the sale of these materials is returned to the County, City of Vancouver, and contract hauler.

The cities of Camas, Ridgefield, and Washougal have contracts in places that do not include provisions for recycling revenue share. CRC's transfer and disposal contract with the County requires the company to recover and recycle a minimum of 10% of the incoming disposal stream.

CRC meets its minimum annual recycling requirement by recovering materials from selected loads on the tipping floor. Most recovery is wood and metal, pulled from loose drop-box or self-haul loads. Very little is recovered from compacted loads of mixed waste, due to contamination and operational difficulties. Source-separated materials delivered to CRC drop-off recycling facilities by self-haulers are counted toward the minimum annual recycling requirement; however, materials recovered through CRC's source-separated recycling collection services and materials collected by County and city recycling collection contractors are not included.

Organics Collection

Yard Debris Collection

Separate collection of yard debris is currently offered by subscription on a bi-weekly, on-call, or seasonal basis. It is available to residents of Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal, Yacolt, and the southern unincorporated areas of the county which are subject to outdoor burning restrictions.

Urban Residential Organic Waste

Organic waste (or "organics") is a broad term that includes yard debris, pre-and post-consumer food waste, and other potentially compostable source-separated materials. Organics are different from other recyclable materials in that they often can be managed and used at home by residents. The County actively promotes backyard composting (including vermicomposting) as a waste reduction method, as described in Chapter 2: Education and

Outreach. Backyard composting avoids the economic and environmental costs and risks of operating collection and transport systems and centralized processing facilities.

However, not all residents have the ability or desire to compost their yard debris and/or other organics at home. For those residents, collection services are important. All single-family residences within the County's defined Urban Growth Area and the Southwest Clean Air Agency's Burn Ban area have yard debris collection available on a subscription basis.

A summary of curbside yard debris collection tonnages and operational statistics (e.g., monthly setout rates, lbs./setout, etc.) by jurisdiction can be found in **Table 3.1.7** below. The operational statistics are discussed further in Section 3.4.2 Needs and Opportunities.

Table 3.1.7: Curbside Yard Debris Tonnage and Operational Statistics

Clark County					
Metrics	**2017**	**2018**	**2019**	**2020**	**2021**
EOW Customers	22,458	22,815	23,453	24,108	25,171
On-Call Customers	8,601	9,084	9,776	10,557	11,482
Total Yard Debris Customers	31,059	31,899	33,229	34,665	36,652
Total Stops	**51,309**	**25,073**	**14,741**	**17,118**	**19,634**
On-Call Pick-Ups	3,560	3,280	2,503	3,952	5,002
Yards Collected	3,427	4,198	4,260	4,418	3,604
Ave. Tons Collected/Month	1,285	1,574	1,598	1,657	1,352
Annualized Tons	15,422	18,889	19,171	19,880	16,224
Lbs./Month/Customer	96	115	113	113	87
Weight per Setout in Pounds	50	126	217	194	138
City of Vancouver					
EOW Customers	19,273	19,915	22,548	27,899	28,455
On-Call Customers	7,232	7,650	5,350	-	-
Total Yard Debris Customers	26,506	27,565	27,898	27,899	28,455
Total Stops	**44,869**	**22,289**	**21,048**	**27,337**	**30,799**
On-Call Pick-Ups	3,018	3,239	1,938	102	0
Yards Collected	2,374	3,799	3,392	3,447	2,693
Ave. Tons Collected/Month	890	1,425	1,272	1,293	1,010
Annualized Tons	10,681	17,095	15,264	15,514	12,120
Yard debris Subscription Rate	59%	60%	60%	59%	59%
Lbs./Month/Customer	77.8	120.0	100.9	92.7	71.0
Weight per Setout in Pounds	39.7	127.8	120.9	94.6	65.6
City of Camas					
Compacted cu. Yards/Month	305	305	558	415	534
Annualized Cubic Yardage	3,659	3,659	6,694	4,984	6,410
Estimated Annual Tonnage*	1,171	1,171	2,142	1,595	2,051
Customers	3,032	3,176	3,236	3,608	3,788
Cu. Yards/Month/Customer	201	192	345	230	282
Estimated Lbs./Month/Customer*	64	61	110	74	90

City of Ridgefield					
Metrics	**2017**	**2018**	**2019**	**2020**	**2021**
Ave. Monthly Tonnage	N/A	N/A	N/A	N/A	75.5**
Customers/Month					366
Estimated Lbs./Month/Customer					412.5
City of Washougal					
Compacted cu. Yards/Month	376	376	598	289	400
Annualized Cubic Yardage	4,515	4,515	7,175	3,466	4,804
Estimated Annual Tonnage*	1,445	1,445	2,296	1,109	1,537
Customers	2,713	2,638	2,734	3,114	3,307
Cu. Yards/Month/Customer	277	285	437	186	242
Estimated Lbs./Month/Customer*	89	91	140	59	77
* Using the US EPA 4/19/2016 Weight Conversion Factors data, the assumed density of compacted mixed Yard debris is 640 lbs./ cubic yard. ** Yard debris weekly collection program started April 2021.					

Non-residential (Commercial) Recycling and Yard Debris

Under current law, all non-residential recycling and collection of yard debris for composting may occur in a competitive marketplace. Solid waste haulers, disposal companies, private recyclers, private composters, and individual collectors are allowed to make collection arrangements with non-residential generators, adhering to jurisdictional licensing requirements.

The County is currently working with school districts, restaurants, and institutional entities in the development of food waste collection programs. Food waste is a part of the garbage waste stream. More details on food scrap collection are discussed in Chapter 4: Organics Management.

3.1.2 Needs and Opportunities

There are several opportunities to explore enhancements to garbage, recycling, and yard debris collection services. Chapter 3 of the Phase 1 RSWSS Report examined how changes in policies and/or collection services could potentially reduce traffic at the transfer stations, primarily at CTR. However, the program options analyzed can apply to all transfer stations in Clark County. Options were analyzed in three categories as shown below:

- Strategies to Modify Collection Services
  - Expand Universal Services
  - Bundle Bulky Waste w/ Standard Collection
  - Conduct Bulky Waste Collection Events
  - Eliminate on call service in urban areas with the implementation of organics collection
- Strategies to Modify Rates
  - Maintain the current rate policy at the transfer station.
  - Establish Rates Based on the cost of services
  - Set Minimum Rate
- Revise Hours and Day of Operations
  - Maintain current hours of operation
  - Modify Hours at CTR and other transfer stations, as necessary.
  - Modify days of operations at transfer stations

Strategies to modify rates and days and hours of operation at the transfer stations are discussed further in Section

3.4.2.

Given the March 2022 passage of Washington's new organics law per House Bill 1799, Organics Materials Management, there's a need to evaluate the expansion of collection programs for yard debris and food scraps from residential and commercial customers.

Garbage Collection

Expand Universal Services. All cities in the County, except for a few jurisdictions, have universal collection services for garbage. Every jurisdiction has the authority to adopt universal services. As areas of the County become denser and more urban, the County could require universal service that will provide public health and safety benefits and potentially reduce traffic at the transfer stations.

An advantage of universal services is to reduce unnecessary traffic on public roads. Collection trucks are already traveling in neighborhoods to pick up from households that do subscribe to services. Picking up additional households along the route reduces trips to the transfer station and provides routing efficiencies for the waste hauler.

Under this option, the County would expand universal services to the urban areas of the County. One approach for implementing this alternative is for the County to establish a Solid Waste Collection District, under the Revised Code of Washington (RCW) 36.58A.010. Administrative rules enacted by the District could specify that areas meeting minimum household densities be required to subscribe to collection services. The level of services must be uniform to all service areas and must comply with requirements established by the UTC. Other approaches to setting up universal services could include revising local codes or establishing a service-level ordinance.

All cities in the County, except the jurisdictions of Battleground, La Center, and Yacolt, have universal collection services for garbage. These jurisdictions have the authority to adopt universal services if they wish. As areas of the County become denser and more urban, requiring universal service to the urbanized County as well as these cities benefit the system and potentially reduce traffic at transfer stations.

Bundle Bulky Waste w/ Standard Garbage Collection. Bulky wastes are discrete items of garbage of size or shape that preclude collection in regular automated collection receptacles. Unlike curbside garbage and yard debris collection services, on-call services for appliances are more expensive than the rates charged at the transfer stations. Oftentimes, self-hauling bulky materials to the transfer station may be more convenient since households can dispose of the items on their schedule. Currently, it is not permissible to blend the bulky waste collection with standard MSW collection services in WUTC franchised areas. Cities that negotiate individual collection service contracts may adopt programs specifically for their jurisdiction**.**

Special Collection Events. Special collection events offer periodic community-wide collection events specifically to capture bulky waste items. For example, the City of Camas holds annual spring clean-up events. The City of Vancouver partners with its service provider and offers one free curbside pickup of up to five items too large or bulky to fit in a garbage cart. Eligibility for this event is open to Vancouver residents who have active garbage service from Waste Connections.

Bulky Waste Collection as Part of a Franchise/Contracted Service (a.k.a. Bundled Services). Bundled bulky waste means the cost of providing this service at some pre-determined frequency e.g., 1x/year, 2x/year, etc.) is included in the customer's garbage billing rate. Customers are not charged a separate fee for this service. Currently, it is not permissible to blend bulky waste collection with standard MSW collection services in WUTC-franchised areas. However, Cities that negotiate individual collection service contracts may adopt programs, such as an annual bulky waste collection event for their jurisdiction. Also, the County could include bulky waste collection as part of the transfer station operations contract.

Recycling Collection

Expand Universal Services. A good opportunity to expand Universal Services in residential collection services could include yard debris in the service package currently offered to residential customers and they would not be required to pay a separate "subscription" fee for the service (as is our current state). The 2023 subscription fee for a Basic Subscription Service in the Urban Service Area is $8.44. The current Yard Debris Collection Contract is scheduled to be revised and Project Staff may consider including Yard Debris in their collection services and determine if this diversion supports the County's efforts to meet the requirements of HB1799.

All cities in the County, except the jurisdictions of Battleground, La Center, and Yacolt, have universal collection services for garbage. These jurisdictions have the authority to adopt universal services if they wish. As areas of the County become denser and more urban, requiring universal service to the urbanized County as well as these cities benefit the system and potentially reduce traffic at transfer stations.

Another advantage of expanded universal services is to reduce unnecessary traffic on public roads and thus reduce air-quality impacts. Collection trucks are already traveling in neighborhoods to pick up from households that do subscribe to services. Picking up additional households along the route will reduce trips to the transfer station and provide routing efficiencies for the waste hauler. When garbage or yard waste is collected, it is placed in fully enclosed containers and emptied into a fully enclosed compaction chamber in the truck, thus eliminating fugitive litter. The above factors all result in benefits for the local community.

The RSWSS Phase 1 Report notes over 80% of households in urbanized areas of the unincorporated County subscribe to recycling services. With this knowledge, and If this is an indication of the total households that also subscribe to the collection of waste, which is logical. Collection services offered by WCW, under contract with the cities, provide access for residents and businesses to manage waste and recyclable materials effectively. In the cities of Vancouver, Camas, Washougal, and Ridgefield, collection services are universal, meaning all residences and businesses must subscribe to receive the suite of services.

A disadvantage of expanding Universal Services to residential recycling customers would include a significant amount of time adhering to administrative procedures and requirements necessary to receive approval to expand Universal Collection Services in Clark County. For example, the County could expand universal services to the Urban Service Area of the County identified as unincorporated areas within the Urban Growth Boundaries of the Cities of Battle Ground, LaCenter, the Town of Yacolt, Camas, Ridgefield, Vancouver, and Washougal as designated in the Clark County 20-Year Comprehensive Growth Management Plan as it now exists. One approach for implementing this alternative is for the County to establish a Solid Waste Collection District, under the Revised Code of Washington (RCW) 36.58A.010. Administrative rules enacted by the District could specify that areas meeting minimum household densities be required to subscribe to collection services. The level of services must be uniform to all service areas and must comply with requirements established by the WUTC. Other approaches to setting up universal services could include revising local codes or establishing a service-level ordinance. This alternative to the County's current Yard Debris Collection Program for Single Family and Multifamily customers would require extensive administrative work and clear, consistent communications to the ratepayers, elected officials, and formal outreach to the Cities and the Urban Service Area.

Bundled Bulky Items as Part of a Franchise/Contracted Service (a.k.a. Bundled Services Bundled Bulky Items. Bulky Items are discrete items of size or shape that precludes collection in regular automated collection receptacles. Bulky Items include large appliances such as refrigerators, freezers, stoves, dishwashers, clothes washing machines or dryers), water heaters, mattresses, and furniture.

Bundled bulky items require the contractor to identify a cost for providing a collection service schedule at a pre-determined frequency (e.g., 1x/year, 2x/year, etc.). As markets allow the contractor will seek to recycle or divert these items from landfilling. Bulky items do not include piles of debris, car parts, construction or demolition debris,

any item that would be considered hazardous waste, or stumps. The cost is included in the customers garbage rate. Customers are not charged a separate fee for this service.

The advantages of providing regularly scheduled bulky item collections days are to reduce illegal dumping, potentially reduce trips to the transfer stations, and reduce self-haul customer traffic at transfer stations. Another advantage is (i) unlike scheduled curbside collection of household garbage, recyclables and yard debris, on-call services for appliances are more expensive than the rates charged at the transfer stations.

The purpose of expanding collection services to offer standard universal collection services for bulky waste items and/or yard waste would be to provide a higher level of collection services potentially and reduce self-haul customer traffic at transfer stations. There would be an incremental increase in the monthly rate for all residences to provide this service. However, without more information, it is not known how many households would take advantage of this service or may not even require it.

A perceived disadvantage of scheduled collection of bundled bulky Items is the customer pays the cost of providing this service and is included in the garbage rate. Customers are not charged a separate fee for this service.

Bulky Item Collection Events. This approach offers periodic community collection events. Such events would likely increase the total amount of items collected compared with subscription services. To implement any of the collection service options the County would need to comply with certain requirements established by WUTC. The first requirement is to ensure that the services are offered universally, that are available equally to all customers throughout the regulated areas. For items covered under the bulky waste services, the rates would need to be equally applied for all sizes and weights. If the rates are different, then there is a level of unpredictability in setting rates that is not acceptable to WUTC.

Assuming the program can be designed to address WUTC concerns, the County would need to amend the restated Recyclables Collection Contract with WCW and the Clark County Solid Waste Management Plan and adopt this program. This would establish the program to permit the collection company to include in their cost of services and apply to the WUTC for a fixed rate. Because it is difficult for collection companies to predict the cost and revenues in conjunction with requirements for such services from the WUTC, there are few if any jurisdictions in the State that offer this service. Jurisdictions, like the City of Vancouver, which regulate collection rates have the authority to implement these programs if they desire. These same conditions apply to bundling yard waste collection services. Currently, it is offered as a subscription service but is not a universal service in any part of Clark County.

Organics Collection

Organics is defined as any organic waste material that is source-separated for processing or composting, such as yard debris and food scraps generated by residential or commercial customers.

In contrast to recycling collection, organics collection services are offered on a subscription basis throughout the County, except in the rural service area. Currently, the City of Vancouver and the City of Ridgefield have transitioned their yard debris collection programs to a new organics collection service. Currently, about 60% of residential Vancouver customers subscribe to this service, which now allows them to include food scraps along with yard debris for every-other-week collection. Putting food scraps into your organics cart instead of your garbage cart is voluntary and up to the customer. Other cities with this service have not reported concerns about attracting pests.

3.1.3 Evaluation of Alternatives

Garbage Collection

Universal collection service in urban communities has the benefit of maximizing route efficiency, reducing greenhouse gas emissions, and reducing the overuse of self-haul services at the County's three transfer stations. It also works on economies of scale and helps keep rates low by increasing the participation that spread fixed costs over a larger population. As mentioned earlier, all cities except Battleground, La Center, and Yacolt currently have universal collection services. The County could work with these cities to help them adopt universal service.

Illegal dumping and the burden it puts on communities have a direct impact on the County's collection system. Bulky waste, couches, mattresses, etc. are frequently a result of inconvenient collection, lack of options for education, or the avoidance of costs. There are many ways and examples the County could develop a bulky waste pickup service for its residences. Vancouver offers a free collection service through Waste Connections for up to five items a year and Tacoma offers a twice a year call collection service called Call 2 Haul. Other cities offer set-out dates throughout the year when people can set items out for collection. Another option that could be considered to reduce illegal dumping is special collection events, covered later in this section.

The County could work with its cities to develop a collection program that works for all jurisdictions and is consistent, benefiting residents that move throughout the County. It could also consider including these costs in the paid monthly fees, also known as bundling.

Bundling is when the price a residence or business pays for collection service includes more than one service such as garbage, recycling, and/or yard debris/organics. Bundling promotes greater participation and helps increase recovery rates. It also creates route efficiencies like those of universal collection services. By spreading these costs over greater numbers of people, bunding helps to keep rates affordable.

Special collection events are a way of collecting materials that are exceptions to regular collections services. This can be bulky items, HHW, or special recycling material such as ridged plastics or polystyrene. Special collection events work well when built around other events to create awareness synergies. These can be annual city festivals, the County fair, or neighborhood-scale events. Special collection events are also a great time to partner with other organizations such as reuse and repair, green gardening groups or even community health organizations.

Recycling Collection

Bundle pricing as mentioned in the Garbage Collection promotes greater participation in collection, drives greater recovery, and spreads costs to keep them manageable. Recycling services are the most commonly seen as being bundled with garbage service and is considered a best practice in solid waste collection policy.

Also mentioned in Garbage Collection, special collection events provide a great way to collect hard-to-recycle items. In rural areas of the County, these events can supplement recycling collection for standard items as well. Special collection events provide very clean streams of materials due to active monitoring and therefore offer better market value for source-separated material which can help offset costs associated with hosting an event.

Product stewardship programs are effective approaches to material recovery that ensure that all those involved in the lifecycle of a product share responsibility for reducing its health and environmental impacts, with producers bearing the primary financial responsibility. The Northwest Product Stewardship Council (NWPSC) is a coalition of government agencies in Washington and Oregon that work together to develop and improve Producer Responsibility and Product Stewardship policies and programs.

The NWPSC, with support from the WA Department of Ecology, has been instrumental in establishing statewide programs such as E-Cycle (electronics recycling), LightRecycle (mercury-containing lights), Safe Medication

Return (drug takeback), and PaintCare (unused paint). Clark County should support NWPSC efforts with future product stewardship legislation.

Organics Collection

With no jurisdiction in the County offering residential yard debris collection as part of a bundled package or universal collection, bundling in an urban community in the County offer the best opportunity for expanding collection and reducing yard debris that ends up in the collection of garbage and ultimately the landfill. Methane is a powerful greenhouse gas and is more than 25 times more potent than carbon dioxide according to the EPA. Methane is created in landfill when organic material decomposes in an anaerobic setting. Getting organic material out of garbage will greatly help the County on a journey to achieve a reduction of greenhouse gasses and reduce the amount of material being sent to landfills. Bundling services also help residents see garbage, recycling, and organics as a system and not just discreet components.

Currently, residents in Vancouver and Ridgefield who sign up for yard debris collection may also add food waste to their bins. Expanding residential organics collection with yard debris in other urban areas of the County will continue with the benefits of reducing material going to the landfill and the creation of methane.

Vancouver currently has a commercial food collection program. Participation has been slow to gain traction. The County in partnership with Vancouver could evaluate barriers to participation in Vancouver's commercial collection program. This could look at pricing, frequency of collection, and education about the program to food waste-producing businesses such as restaurants, hotels, hospitals, and schools.

While Chapter 3 focuses specifically on infrastructure and operations, Chapter 4 Organics Management, goes into much greater focus on prevention, education, programs, and technologies used in the management of organics.

3.1.4 Findings, Recommendations, and Timeline

Garbage, Recycling, and Organics Collection

Table 3.1.8 below provides recommendations based on the alternative analysis in section 3.1.3. Some actions are beneficial for garbage, recycling, and organics and can be identified by the success measure identified. Costs identified are primarily connected to the staff needed to develop and administer the actions apart from collection costs which will vary based on rates at the time of collection and volumes of materials collected. Changes to customer rates were not identified and would require further analysis.

Table 3.1.8: Findings and Recommendations

Actions	Target Date	Costs	Responsible Party	Success Metric
Adopt Universal Collection in urban areas	2024-28	Programmatic costs for SWEO staff time	TBD	Increased participation in collection programs
Bundle pricing in urban areas, Non-WUTC and City contracts for garbage, recycling, and organics	2024-28	Programmatic costs for SWEO staff time	TBD	Increased recovery of recyclables and organics

Pilot special collection events in communities	2024-25	Programmatic costs for SWEO staff time and disposal costs	TBD	Track data on participation, collection of material and qualitative metrics on any partnership opportunities
Bulky waste collection as part of garbage service	2024-28	Operational costs incurred by CRC/WCW	TBD	Reduction in illegal dumping. Reduction in self-haul customers at transfer stations.
Work with WA Dep. Of Ecology and NWPSC to promote product stewardship bills	2024-28	Programmatic costs for SWEO staff time	TBD	Bills are passed that increase collection of materials and recycling and disposal costs are borne by producers of those materials

3.2 Material Transfer and Material Recovery (Processing)

3.2.1 Background and Existing Conditions

Introduction

This section of Chapter 3 addresses the Clark County solid waste transfer and processing system.

Transfer stations serve as centralized collection points for solid waste customers, including for commercial vehicles (e.g., route trucks that serve residents and businesses, roll-off trucks, etc.) and customers that self-haul their waste. With the evolution of collection services beyond solid waste to include recyclables and organic waste, these facilities also receive source-separated materials that are processed onsite or shipped to another facility for processing. A transfer station often provides other services such as drop-off of recyclables, household hazardous waste (HHW), electronic waste, bulky items, etc. All the materials received at a transfer station are consolidated by material type, loaded into larger transfer vehicles, and shipped offsite for processing and/or disposal.

Disposal sites are typically long distances from where materials are generated, combining significant amounts of waste at a transfer station can minimize haul times and costs for certificated/contracted haulers, self-haulers, and municipal collectors.

A material recovery facility (MRF) is like a transfer station because it's a centralized location for receiving materials from various customers. However, it differs because materials are processed onsite. The type and complexity of processing methods vary across different MRFs. Materials are received at the facility, and then mechanically and manually sorted by material type (e.g., paper, plastic, metals, glass, etc.). Once sorted or separated, materials are baled or compacted and then shipped to a secondary processor or mill for preparation into a finished good or a feedstock for a product or packaging.

WAC 173-350, Minimum Functional Standards (MFS) for Solid Waste Handling, is the primary state regulation governing the design and operations of transfer stations in the State of Washington. Clark County Code Chapter 24.12, Solid Waste Management, is the primary local statute governing transfer stations.

Background

Leichner Landfill, which had previously received most of the municipal solid waste (MSW) in Clark County, was closed in December 1991. Anticipating the closure, the County and cities had planned, and implemented, a waste transfer and disposal system to provide long-term handling of municipal solid waste (MSW). In 1988, after a long and unsuccessful landfill site selection process, the County and cities used a competitive selection process to find a provider for MSW recycling, transfer, transport, and out-of-county disposal services.

In April 1990, the County and the City of Vancouver entered into a long-term contract with CRC, a wholly owned subsidiary of Waste Connections of Washington, with services that began in January 1992. The contract has been amended three times, most recently in December 2022 to run through December 31, 2027 (amendment #3). The previous amendment (amendment #2) provides the opportunity for the County to purchase all three transfer facilities for a purchase price of one dollar ($1) per transfer facility. Notice of exercise of this purchase option shall be delivered to CRC no later than December 31, 2026. Concerning the Washougal Transfer Station, such County purchase rights are subject to such rights as may be held by the City of Washougal to purchase such facility.

In addition to the above, the contract provides:

- Operating three or more privately owned transfer stations in Clark County (see **Figure 3.2.1**)
- Annually diverting a minimum of 10 percent of the incoming waste stream from disposal
- Transport and disposal of non-recycled and non-hazardous waste from the West Van Materials Recovery Center and the Central Transfer and Recycling Center, (primarily by containers transported on barges) to the Finley Buttes Landfill in Morrow County, Oregon (see **Figure 3.2.2**)
- Transport and disposal of non-recycled and non-hazardous waste primarily by truck from the Washougal Transfer Station to Wasco County Landfill in Wasco County, Oregon (**see Figure 3.2.2**)
- Processing and marketing of recyclable materials from the county/city curbside collection programs
- Providing public drop-off facilities for source-separated recyclable materials
- Operating HHW drop-off facilities at each transfer station
- The contracted solid waste facilities are designated as essential public facilities and are an integral part of Clark County's regional solid waste management system.

The three transfer stations operated by CRC are listed below and more details are described in this document. See **Figure 3.2.1** below for a local map of the transfer station locations.

1. West Vancouver MRF and Transfer Station (West Van), located at 6601 N.W. Old Lower River Road at the Port of Vancouver (West Van)
2. Central Transfer and Recycling Center (CTR), located at 11034 N.E. 117th Avenue, Vancouver.
3. Washougal Recycling and Transfer Station (Washougal), located at 4020 Grant Street, Washougal

DRAFT

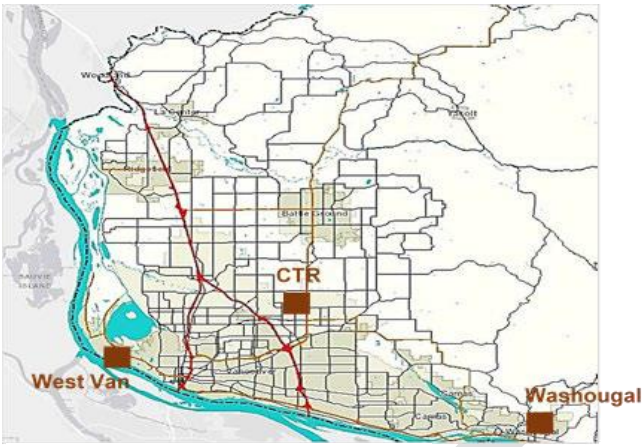


Figure 3.2.1: Local Facility Map

Figure 3.2.2 below shows a regional map of the entire transfer and disposal system, inclusive of the two disposal sites owned and operated by CRC.

Flow Control

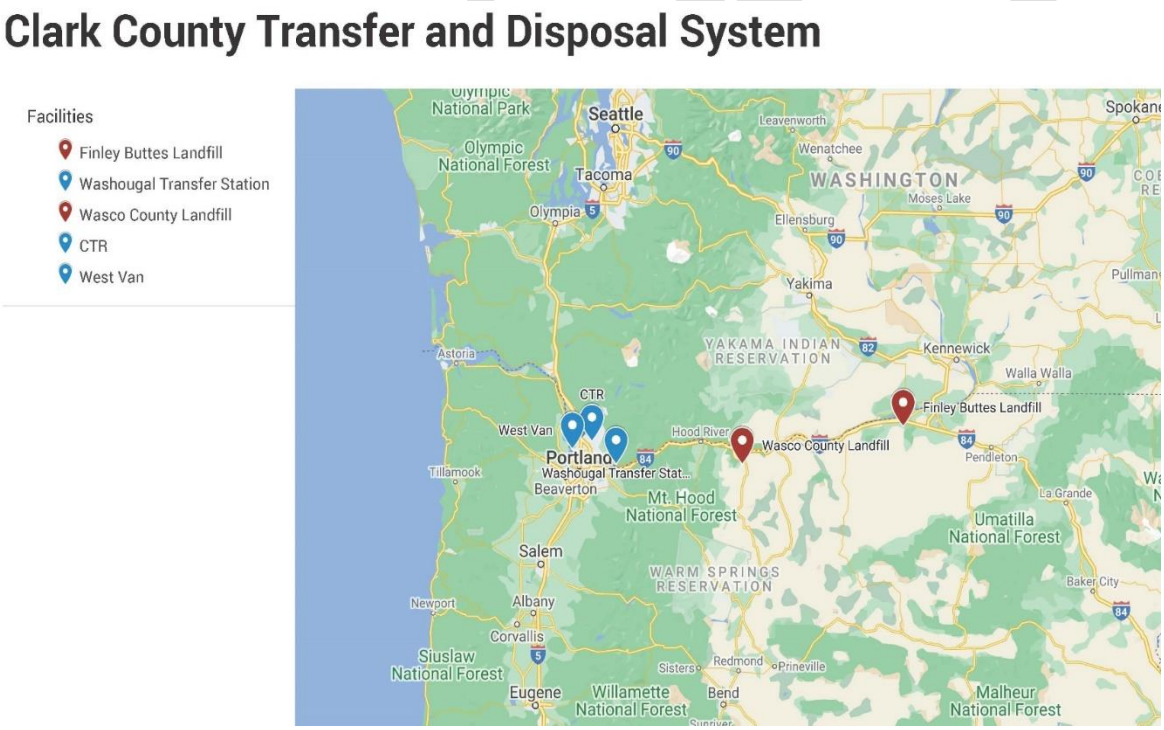


Figure 3.2.2: Regional Facility Map

The U.S. Supreme Court ruled in 1994 in Carbone that flow control - state or local laws that direct where waste should be processed or disposed of - violates the "dormant" Commerce Clause. Since that decision, several exceptions to this general principle have developed. MSW in Clark County is directed to the County contracted, privately owned facilities through contractual agreements between the haulers and municipalities or interlocal agreements between the County and municipalities.

On April 30, 2007, the U.S. Supreme Court ruled in United Haulers Association Inc. v. Oneida-Herkimer Solid Waste Management Authority that local governments are permitted to engage in flow control to government-owned disposal facilities or government contracts in specific circumstances. The Court concluded that flow control laws that favor government-owned disposal facilities do not discriminate against interstate commerce and are reviewed under a more lenient balancing test. The Court's decision narrows the impact of the Court's Carbone decision in 1994.

Within Clark County, the Solid Waste Management Plan, interlocal agreements with the cities, and city collection contract all direct MSW collected by the contracted hauler to be delivered to County designated transfer facilities operated by CRC under contract with Clark County. Waste Connections of WA provides the majority of MSW collection services within the County either through a contract or a franchise granted by the WUTC. The County contract with Waste Connections of WA requires the company to deliver MSW collection under the WUTC franchise or through a contract to the designated County transfer system.

Central Transfer and Recycling Center (CTR)

Operations began at this site in 1985 as the R&R Transfer Station. The facility wasteshed is primarily to the west and north of Vancouver. The facility was designed to receive and transfer up to 1,000 tons per day of solid waste under the current operations schedule, though no formal documentation has been found to corroborate this.

CRC purchased this facility in 1990 to use as one of the two transfer stations it was required to provide by contract with the County. Under CRC ownership the site has been upgraded and improved to handle increased traffic and waste flows and to accept HHW.

Figure 3.2.3: CTR Existing Site Plan

During the second half of 1991, CRC reconstructed and expanded the old R&R site to include a new 40,000 sf transfer building with a hydraulic compactor unit. The old transfer building was expanded to 13,000 sf and converted for use as a drop-off facility for recyclable materials. New entry and scale house facilities were also added. The new transfer station building began operating in January 1992. **Figure 3.2.3** above shows the existing site plan.

In addition to MSW, CTR accepts commercial waste including construction and demolition wastes, source-separated recyclable materials, HHW, and other special wastes. Special wastes such as asbestos, petroleum-contaminated soils, ash, certain sludges, and bulky wastes can be delivered to CTR with advance notice and completion of a special waste application issued by CRC.

CTR recovers both source-separated and non-source-separated recyclable materials. Source-separated materials are delivered to a public drop site separate from the main CTR tipping floor. Non-source-separated recyclable materials are recovered by CRC staff from selected loads on the tipping floor. Most tipping floor recovery occurs from drop-box and self-haul loads including construction and demolition (C&D) sourced materials, not from compacted loads of mixed residential and commercial wastes. These recovered materials include corrugated cardboard, wood, metals, and other materials deemed economically recoverable. Recycled materials accumulated

at CTR are either delivered directly to secondary markets or transferred to CRC's West Van facility for further processing.

MSW delivered to CTR is either top-loaded into transfer trailers or end-loaded by hydraulic compactor units into shipping containers. Solid wastes that are top loaded are less compacted and could be transported to the West Van facility for processing to divert additional recyclable materials. Solid wastes that are compacted into shipping containers are transported by truck directly to the barge-loading facility at Tidewater Barge Lines in the Port of Vancouver. They are then shipped upriver via barge for final transport to the Port of Morrow and to the Finley Buttes Landfill. Tidewater Barge Lines is the contracted transport company that manages all transportation segments from the transfer station to the landfill (at times of the year when river locks are being serviced, the containers are delivered the entire distance by truck).

As required by the contract, HHW is accepted from residential self-haulers in the receiving area of the recycling/HHW building on designated days each week (i.e., Friday, Saturday, and Sunday 8:00 am to 4:00 pm). HHW is received, sorted, and packaged before its removal from CTR by a licensed contractor and transported directly to a state-permitted treatment, storage, and disposal facility (TSDF). There is a limit of 25 gallons or 200 pounds per day per customer on an applicable day.

Other hazardous materials accidentally or illegally disposed of with regular waste are also removed from MSW by CRC personnel when seen on the tipping floor. Load check spotters, equipment operators, and other station personnel have been trained to identify and isolate unacceptable and/or unauthorized wastes for proper handling and disposal, separate from MSW.

CTR is the busiest of the three transfer stations and received 251,847 tons or 62% of all waste generated in the County in 2021. It also receives the most customer traffic with almost 223,000 inbound trips in 2021. **Tables 3.2.1 and 3.2.2** summarize solid waste tonnage and customer (vehicle) trips made annually to CTR over the past six years.

Table 3.2.1: CTR Annual Solid Waste Tonnage by Customer Type

Solid Waste Tons	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	45,141	52,866	48,117	49,859	58,328	62,813	**54,397**	**23%**
Commercial	22,775	27,344	23,775	23,883	19,072	22,051	**23,225**	**10%**
Route Trucks	107,382	112,176	116,143	113,338	112,886	119,174	**114,743**	**49%**
WCW Drop Box	39,272	41,868	45,009	41,956	42,140	47,809	**43,756**	**19%**
Total Tons	**214,570**	**234,254**	**233,044**	**229,036**	**232,426**	**251,847**	**236,121**	

As shown above, solid waste tonnage growth year over year has been somewhat flat until this past year with an 8.4% increase.

Table 3.2.2: CTR Annual Customer (Vehicle) Trips

Inbound Trips	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	142,288	133,144	136,773	135,293	176,438	182,098	**152,749**	**79%**
Commercial	14,462	15,929	14,172	13,879	11,442	12,678	**13,620**	**7%**
Route Trucks	11,957	12,025	14,063	13,635	13,741	14,419	**13,577**	**7%**
WCW Drop Box	10,681	11,131	12,695	12,175	11,789	13,535	**12,265**	**6%**
Total Trips	**179,388**	**172,229**	**177,703**	**174,982**	**213,410**	**222,730**	**192,211**	

The tonnage and customer trip trends are graphically captured in **Figure 3.2.4 below.**

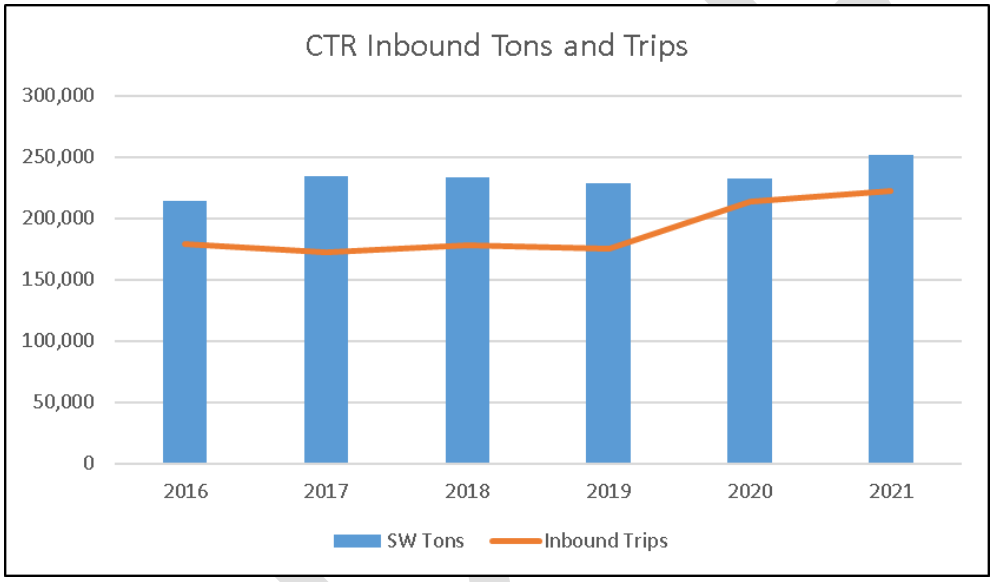
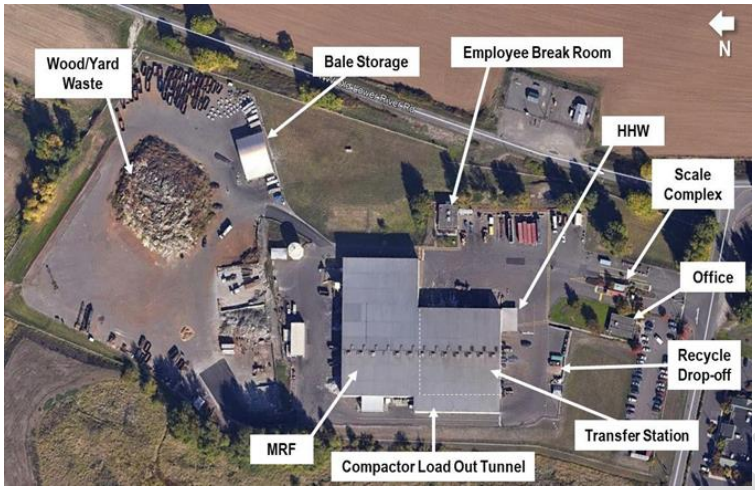


Figure 3.2.4: CTR Inbound Tons and Trips 2016-2021

Cash (public) customer trips have increased significantly over the years as witnessed by the ongoing challenges with vehicle back-ups at the site. CTR does have significant challenges regarding ingress, egress, and on-site traffic management. The number of vehicles delivering waste has increased by 24% in just the past six years. This is discussed further in the Needs and Opportunities, Evaluation of Alternatives, and Findings and Recommendations sections of this document.

The Washington Department of Transportation also plans in the next few years to place a traffic barrier on N.E. 117th Avenue. This is expected to prevent a left turn into the facility (traveling north on 117th Avenue) and a left turn out of the facility.

West Van Materials Recovery Center (West Van)



West Van is located on a 21+ acre site off Old Lower River Road at the Port of Vancouver. The property includes a large 91,100 sf pre-engineered metal building (PEMB) that receives MSW from both self-haul customers and WCW collection trucks servicing residential and commercial accounts. This is the original transfer station structure that was constructed in 1992.

The facility was designed to receive and transfer up to 1,000 TPD of solid waste under the current operations schedule.

Figure 3.2.5: West Van Existing Site Plan

Residual wastes are pushed into a compactor for loading into shipping containers. The containers are then transferred less than one-half mile to the Tidewater Barge Lines barge loading facility for shipment upriver for final transport to the Finley Buttes Landfill. There have been no major renovations or expansions to the facility. **Figure 3.2.5** captures an aerial photo of the existing site operations.

West Van also houses the equipment used to process source-separated recyclable materials collected through county/city curbside and multi-family collection programs as well as the commercial commingled recycling collection programs (Vancouver Recycles and Clark County Recycles) and delivered by the contracted operator This is the only MRF facility operating in Clark County and was significantly updated in 2009 when the County switched to a cart-based collection system. Recyclable materials are trucked to end markets. A more detailed description of the MRF can be found in **Appendix L, RSWSS Phase 1 Report, Chapter 7**.

In addition to these primary functions, West Van includes several other facilities necessary to provide the full range of services. This includes the following:

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1. Scale house complex with inbound/outbound scales
2. Recycle drop off for bulky items such as tires, appliances, and scrap metal
3. Household hazardous waste drop-off on specified days (i.e., Fridays and Saturdays 8 am to 4 pm) and a limit of 25 g applicable day.
4. Wood waste/yard debris area
5. C&D drop-off area
6. Special waste handling such as tires/ appliances /asbestos
7. Waste oil/glass drop for collection trucks
8. Administration office
9. Employee break building

In accordance with the operations plan, organics/food waste from residential customers from the cities of Vancouver and Ridgefield and commercial generators may be reloaded within the transfer station building for delivery to permitted composting sites or transfer facilities located beyond Clark County.

In 2021 West Van received nearly 117,000 tons or 29% of MSW generated in the County. The transfer station received about 90,000 trips this same year. As shown in **Figure 3.2.6** on the next page shows that the number of trips and waste continues to increase at the facility. **Tables 3.2.3 and 3.2.4** below summarize solid waste tonnage and customer (vehicle) trips made annually to CTR over the past six years.

Table 3.2.3: West Van Annual Solid Waste Tonnage by Customer Type

Solid Waste Tons	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	15,683	19,732	17,694	17,841	22,742	26,620	**20,926**	**19%**
Commercial	43,564	44,380	38,335	30,361	16,107	18,971	**29,631**	**25%**
Route Trucks	21,172	22,955	21,838	31,495	51,765	42,128	**34,036**	**31%**
WCW Drop Box	22,379	23,798	19,925	25,602	34,633	28,999	**26,591**	**25%**
Total Tons	**102,798**	**110,865**	**97,792**	**105,299**	**125,247**	**116,719**	**111,184**	

As shown above, solid waste tonnage growth has been trending upwards but did drop in 2021 vs. 2020.

Table 3.2.4: West Van Annual Customer (Vehicle) Trips

Inbound Trips	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	39,003	42,805	43,299	45,674	66,591	64,556	**52,585**	**69%**
Commercial	10,951	11,425	11,197	10,802	10,839	11,247	**11,102**	**15%**
Route Trucks	2,766	2,877	2,926	4,134	6,430	5,585	**4,390**	**6%**
WCW Drop Box	6,340	6,569	5,809	7,465	9,839	8,599	**7,656**	**10%**
Total Trips	**59,060**	**63,676**	**63,231**	**68,075**	**93,699**	**89,987**	**75,734**	

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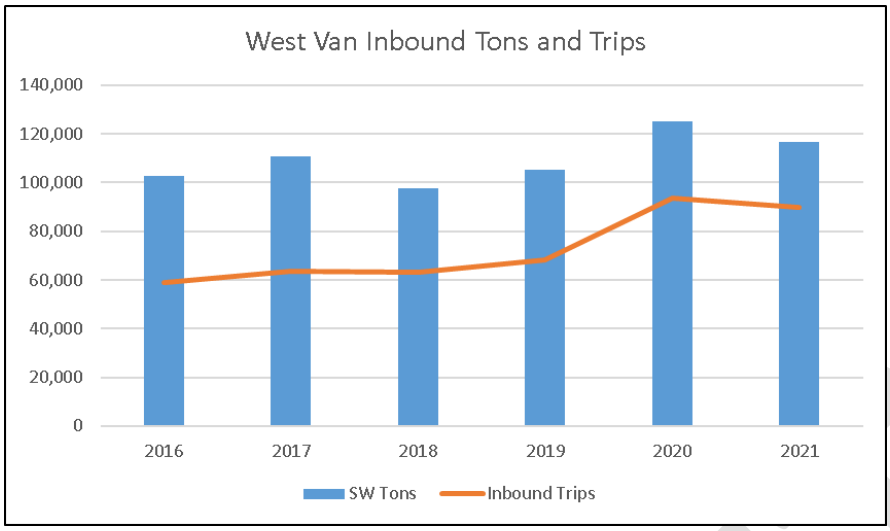

Figure 3.2.6: West Van Inbound Tons and Trips 2016-2021

In addition to the MSW delivered, West Van also received 73,000 tons of commingled recycled materials and yard debris was collected throughout the entire County. Further details on curbside recycling and yard debris collection programs are provided in Section 3.1 of this Chapter. Also, CRC receives another 12,000 tons of commingled materials from out-of-county sources. These materials are processed at the MRF which is co-located with the transfer station.

Washougal Transfer Station (WTS)

WTS began operations in 2009. The facility is located on a 4.6-acre site in the Port of Washougal. Customers enter from Grant Street to a scale house complex that includes one inbound scale and one outbound scale. Each customer must be weighed, and fees are assessed based on the total waste disposed of. It includes a 75-by-60-foot transfer station building (4,500 sf) with a depressed tunnel for loading transfer trucks and trailers. The station operates as a lift-and-load, meaning the bottom of the tunnel is only eight feet below the tipping floor.

The layout of the facility is shown in **Figure 3.2.7** below.

Figure 3.2.7: Current Washougal Site Plan

This facility functions as a transfer station for MSW from self-haul and commercial customers, public recycling drop-off facility, and an HHW collection site (one day per month). WTS serves the eastern portion of Clark County, including the cities of Camas and Washougal. though some material is from Skamania County. Unlike the other transfer stations, this site operates for the public on a limited schedule but is available for use by collection vehicles on all days that collection routes operate.

Waste received at this facility is transported via truck from the transfer station to a landfill in Wasco County, Oregon.

WTS received 38,638 tons in 2021 representing about 9-10% of the County's waste. As shown in **Figure 3.2.8** on the next page both the trips and total tons received have increased steadily over the past three years. Total waste received increased by almost 20% over the past two years while the number of trips increased by nearly 32%. This has occurred even though the station is open to receive waste from self-haul customers only

three days per week (Wednesday, Friday, and Saturday). **Tables 3.2.5 and 3.2.6** summarize solid waste tonnage and customer (vehicle) trips made annually to WTS over the past six years.

Table 3.2.5: WTS Annual Solid Waste Tonnage by Customer Type

Solid Waste Tons	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	3,318	4,263	4,446	5,177	6,700	6,598	**5,437**	**16%**
Commercial	220	421	397	836	335	442	**486**	**1%**
Route Trucks	14,539	14,914	15,090	15,104	16,776	18,579	**16,093**	**47%**
WCW Drop Box	13,295	13,816	11,987	11,209	12,756	13,019	**12,557**	**36%**
Total Tons	**31,372**	**33,414**	**31,919**	**32,326**	**36,566**	**38,638**	**34,573**	

Table 3.2.6: WTS Annual Customer (Vehicle) Trips

Inbound Trips	2016	2017	2018	2019	2020	2021	5-Year Ave. (2017-2021)	% Ave. of Total
Cash	14,923	17,542	19,678	21,703	28,411	29,669	**23,401**	**78%**
Commercial	328	416	364	512	291	582	**433**	**1%**
Route Trucks	1,701	1,769	1,976	1,931	2,163	2,305	**2,029**	**7%**
WCW Drop Box	3,841	4,049	3,938	3,855	4,202	4,333	**4,075**	**14%**
Total Trips	**20,793**	**23,776**	**25,956**	**28,001**	**35,067**	**36,889**	**29,938**	

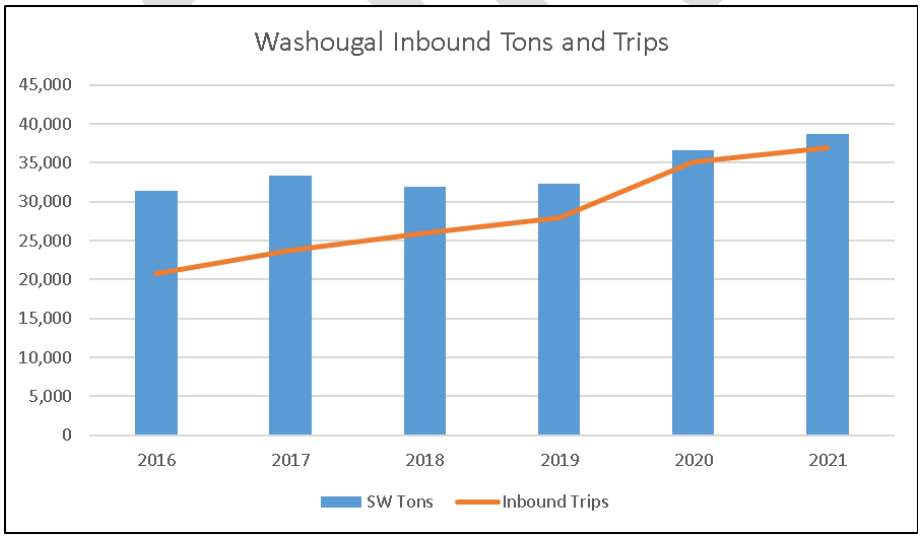

Figure 3.2.8: WTS Inbound Tons and Trips 2016-2021

In the RSWSS Phase 1 Report, it was noted that the Washougal transfer station will need to be expanded soon. However, the County is currently considering the option to expand the number of days Washougal is open to

receive self-haul customers. It is expected to help relieve some of the traffic issues at CTR. It may also impact the timeframe for expanding the existing Washougal transfer station.

Potential site improvements identified in the Phase 1 Report are discussed further in the Needs and Opportunities, Evaluation of Alternatives, and Findings and Recommendations sections of this document.

English Pit Transfer Station (Closed)

The former English Pit Transfer Station was located at 912 N.E. 192nd Avenue in Eastern Clark County. The facility is owned by Clark County and was operated as a transfer station from 1978 to March 1989. The facility consisted of a 6,000 sf transfer building, a pay booth, and an administration building. The Roads and Maintenance Division of the Clark County Department of Public Works is currently using the facility for equipment and material storage.

Future Transfer Station Needs and CTR Traffic

The existing system of the three transfer stations can be modified or upgraded, as needed and as possible, to maintain or improve existing levels of service. The existing contract with CRC provides the option to determine if a fourth transfer station is needed. If a fourth transfer station is to be developed, the contract provides for the option to allow CRC to site, construct and operate this station for the County.

Existing interlocal agreements with the cities require any rate increase that may result from the implementation of the recommended alternative to be approved by the County only after notice to, and consultation with, the affected cities.

An extensive analysis of the existing transfer station's needs, improvements, and additional transfer and processing infrastructure was addressed in the **RSWSS Phase 1 Report which can be found in Appendix K**. Key findings from this Phase 1 Report are captured in the Needs and Opportunities, Evaluation of Alternatives, and Findings and Recommendations sections of this document.

3.2.2 Needs and Opportunities

The current transfer stations were developed in the early 1990s and since that time the only major change was the opening of the Washougal facility in 2009. New services and programs for managing waste and recyclables have been implemented, but facilities have not been expanded. There have been recent improvements to the MRF processing equipment at West Van to utilize more efficient technology.

Since West Van (opened in 1993) and CTR opened in 1992, the County's population has doubled, and waste disposed of increased by 167% from 173,000 TPY to 419,000 TPY in 2021. Significant population and tonnage increases are expected to continue as shown in the two tables below.

Table 3.2.2.1: Clark County Population Projections

City or Area	2010 Census	2020 Census	Growth	2040	% Increase
Battle Ground	17,571	20,743	18.05%	29,698	43.2%
Camas	19,355	26,065	34.67%	37,712	44.7%
La Center	2,800	3,424	22.29%	5,060	47.8%
Ridgefield	4,763	10,325	116.78%	16,716	61.9%
Vancouver	161,791	190,915	18.00%	272,837	42.9%
Washougal	14,095	17,039	20.89%	24,140	41.7%
Woodland (part)	0	84		119	42.0%
Yacolt	1,566	1,668	6.51%	2,344	40.5%

Incorp. Clark County	**221,941**	**270,263**	**21.77%**	**388,625**	**43.8%**
% Incorporated	52.2%	53.7%	2.91%	54.0%	0.5%
Unincorp. Clark County	**203,422**	**233,048**	**14.56%**	**331,503**	**42.2%**
% Unincorporated	47.8%	46.3%	-3.18%	46.0%	-0.6%
Clark County	**425,363**	**503,311**	**18.33%**	**720,128**	**43.1%**

Source: Washington State - Office of Financial Management, Forecasting, and Research Division

Table 3.2.2.2: Clark County - Municipal Solid Waste (MSW) Projections

City or Area	2021	2040	% Increase
Battle Ground	16,790	23,565	28.7%
Camas	21,321	29,924	28.7%
La Center	2,861	4,015	28.7%
Ridgefield	9,451	13,264	28.7%
Vancouver	154,256	216,497	28.7%
Washougal	13,648	19,155	28.7%
Woodland (part)	67	95	28.7%
Yacolt	1,325	1,860	28.7%
Incorporated Clark County	**219,720**	**308,374**	**28.7%**
% Incorporated	**54.0%**	**54.0%**	**0.0%**
Unincorporated Clark County	**187,484**	**263,048**	**28.7%**
% Unincorporated	**46.0%**	**46.0%**	**0.0%**

Note: Projected Waste Generation Rate equals 1,587 pounds/capita /yr.

Additional data is provided on population and waste projections in **Chapter 2 of the RSWSS Phase 1 Report which can be found in Appendix K.**

With increasing population has come increased tonnage and vehicle traffic into each of the three facilities. These trends will continue, particularly with the expected growth in the northern areas of the County, much of which is currently serviced by CTR.

The two tables below summarize solid waste tonnages and customer traffic at the facilities from 2016-2021. All the facilities have experienced double-digit increases in tonnage amounts during this period, and more significant increases in traffic volumes. Both West Van and WTS have experienced more than a 50% increase in customer vehicle trips. CTR's 24% increase in traffic volume is also notable and has seriously impacted local traffic circulation.

Table 3.2.2.3: Annual Solid Waste Tonnage 2016-2021

Annual Solid Waste Tonnage by Facility							
Facility	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**% Increase 2016-2021**
CTR	214,570	234,254	233,044	229,036	232,426	251,847	**17.4%**
West Van	102,798	110,865	97,792	105,299	125,247	116,719	**13.5%**
WTS	31,372	33,414	31,919	32,326	36,566	38,638	**23.2%**

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Table 3.2.2.4: Annual Customer (Vehicle) Trips

Annual Customer (Vehicle) Trips by Facility							
Facility	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**% Increase 2016-2021**
CTR	179,388	172,229	177,703	174,982	213,410	222,730	**24.2%**
West Van	59,060	63,676	63,231	68,075	93,699	89,987	**52.4%**
WTS	20,793	23,776	25,956	28,001	35,067	36,889	**77.4%**

The age of the facilities and the increased need for expanded customer services for recycling and HHW has also created significant opportunities for facility improvements.

As part of completing the RSWSS Phase 1 Report (**please see Appendix K**), a detailed operations and conditions assessment was completed for each facility and included in Chapter 4 of the Report. The findings from these assessments are summarized for each facility and form the basis for defining the specific needs and opportunities for improvements.

Related work was also completed (please see Chapter 3 of Phase 1 RSWSS that examined how changes in policies and/or collection services could potentially reduce traffic at the transfer stations, primarily at CTR. However, the program options analyzed can apply to all transfer stations. Options were analyzed in three categories as shown below:

- *Strategies to Modify Collection Services*
  - Expand universal services
  - Bundle bulky waste w/ standard collection
  - Conduct bulky waste collection events
- *Strategies to Modify Transfer Station Rates*
  - Maintain the current rate policy at the transfer station
  - Establish rates based on the cost of services
  - Set minimum rate
- *Revise Hours and Day of Operations for Transfer Stations*
  - Maintain current hours of operation
  - Modify Hours at CTR and other transfer stations, as necessary.
  - Modify days of operations at transfer stations

The analysis of collection-related options is included in Chapter 3, Section 3.1.3.

The potential changes in transfer station operating hours and days and changes to minimum rates are discussed under the alternative analysis.

Central Transfer and Recycling Center

Considering the significant increase in volume and number of self-haul customers, CTR is currently operating at capacity. This operating capacity is based on current waste quantities and hours of operation at about 900 TPD. If the waste exceeds the capacity, CRC will process the waste to ensure it is removed from the tip floor and not stored overnight. There were several observed deficiencies during the consultant team's site visits and review of data in

2020. It is important to understand that these deficiencies are a result of the physical conditions and limitations of the original design. CRC executes day-to-day operations to manage the current waste streams and traffic safely and efficiently, given these physical constraints.

Operational Assessment

Based on the assessment of current operations, the following site constraints and deficiencies were noted (as shown in **Figure 3.2.2.1** below).

1. **Scale capacity:** CRC is currently planning to add a second inbound scale to increase the queuing for inbound traffic. This is a high priority and work is underway to secure approval from the Washington Department of Transportation.
2. **Tipping Floor Space:** The current facility does not have sufficient space for vehicles to unload. This occurs on busy days during the week and regularly on weekends for most of the year. Also, collection trucks must unload next to self-haul vehicles. CRC does a good job of monitoring and managing traffic to avoid accidents, but as customer traffic has increased in the past few years, this condition is less desirable.
3. **Congestion at Exit Lanes:** All traffic exiting the site must make a left turn onto two outbound lanes. Transfer trucks are subjected to a hairpin-like turn and therefore use both lanes to access one outbound scale. The competition for the outbound scale and exiting is not a desirable condition and is exacerbated by the increase in waste quantities and increase in self-haul traffic.
4. **Compactor Load-Out Capacity:** With the current operating hours (12 per day), the compactor can only load out about 900 tons per day. CTR averages between 800 and 900 TPD. There are some days during peak periods CTR receives between 900 and 1,100 TPD. CRC reported that on occasions when waste over this capacity is received, they will load this material to ensure it is not stored overnight.

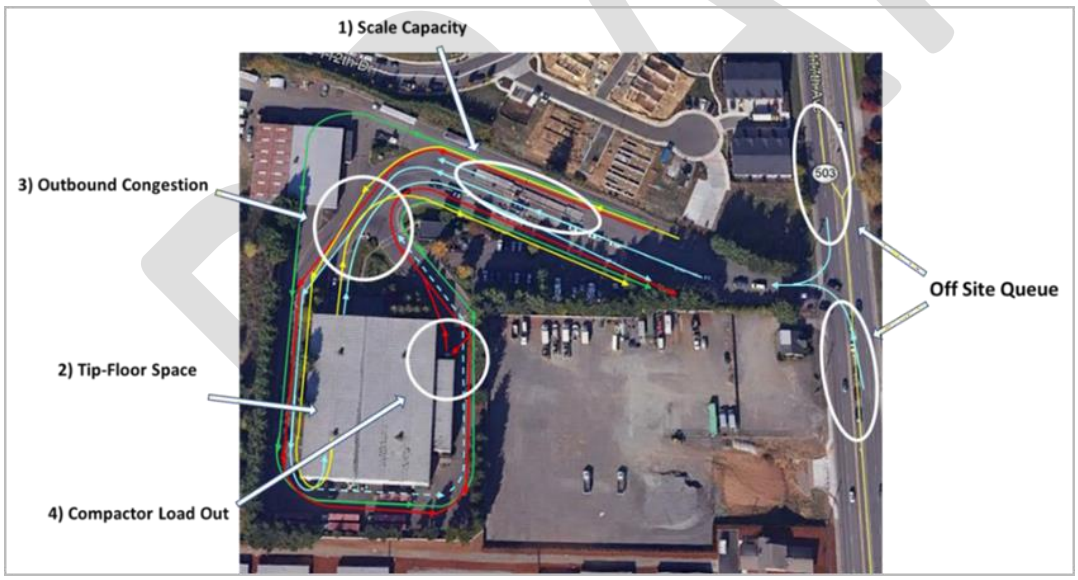

Figure 3.2.2.1: CTR Operations Assessment

Conditions Assessment

A limited structural and site improvement condition assessment revealed that most of the assets at the site are in fair to good condition, except for the recycling building, paved areas east of the boundary retaining wall, and the infiltration portion of the stormwater system. The complete report is included in the **RSWSS Phase 1 Report Appendix B, *Conditions Assessment Report (please see Appendix K)***. A summary of the key points is as follows:

- In the transfer station and HHW buildings **(see Figure 3.2.2.2** below) the north boundary retaining wall and the south boundary retaining wall are in **good** overall condition.
- The recycling building next to the HHW building is in relatively **poor** condition. We recommend that a detailed structural investigation be implemented as part of the planning process when considering public ownership of the site.
- The drive aisles that course through the site are paved with asphalt concrete pavement. Some areas of the paving are in very **poor** condition and require rehabilitation. We recommend that worn surface areas be repaired or replaced.
- The east boundary buffer is in **poor** condition due to the trees and tree roots impacting the pavement section and curb. The pavement section and the damaged curb should be repaired or replaced.
- The existing pump station for the sanitary sewer system is a duplex pump system with two pumps that alternate pumping discharge of the sanitary sewer effluent. According to facility staff, one of the pumps failed in September 2019 and was replaced in the fall of 2019. CRC provides routine maintenance of equipment. The pump station is in **good** condition.
- The scale house and the scale booth were not assessed since they were to be replaced shortly (it was replaced in December 2019). The domestic water system was not assessed since it is owned and maintained by Clark County Public Utilities.

The structural and civil condition assessments were limited to those areas that are readily accessible and visible to the field staff. Concealed conditions that become exposed in the future may change our current recommendations. A repair timeline will be provided as part of the facility alternatives analysis (see Section 3.2.5).

Figure 3.2.2.2*: Current CTR Site Plan*

West Van Materials Recovery Center

West Van was the second of the three facilities put into service to receive MSW from commercial collection trucks and self-haul customers in 1993. The facility serves the majority of the City of Vancouver and its' central business district. It is the oldest of the three transfer stations operating in the County.

Over the 28 years of operation, the West Van site has added various operations to handle yard debris and wood waste, HHW, and special waste, however, the primary structure and site circulation are primarily the same as originally designed.

Operational Assessment

Considering the 28 years of operational wear and tear it is in good condition. The layout of the buildings and support structures are situated in a manner to accommodate the ever-changing needs of the solid waste system. CRC has been able to adapt the facility to address these needs while preserving the safety and operational efficiencies inherent in the original design.

Given the site is located on 21-plus acres, West Van provides a valuable asset for managing various waste streams, recycled materials, and organics. There are no immediate improvements required to enhance current transfer operations. In the future with added traffic, there may be a need to increase capacity at the scale house by adding a second inbound scale or a dedicated scale for commercial collection trucks. This is something that can be monitored and there is adequate space to increase the capacity.

One consideration would be to consider developing a long-term master site plan. This plan would be prepared as part of the completion of Phase 2 of the RSWSS. Key items to be addressed in the master plan include:

1. Construct a new MRF to be in a central location to both collection routes and provide transportation access to regional markets. One option could be to convert CTR to a MRF if the County decided to build a new transfer station at a new location.

2. If the MRF is relocated, it will free up a large building that could be repurposed for other service needs. One concept could be to provide a construction/demolition recycling facility.

3. Bay 1 has limited space and therefore additional space inside the transfer station will be needed to receive mixed organics (i.e., food waste and yard waste with food scraps) as these programs are expanded. There may be space available assuming the MRF processing equipment is relocated. Another option would be to construct a separate receiving building that can receive and process materials to be transported offsite. The operation could also be co-located with the yard waste grinding operation.

Conditions Assessment

Our limited structural and site improvement conditions assessment reveals that most of the assets at the site are in good condition. Areas of pavement are in fair condition.

- The transfer station and MRF process building are both in **fair** condition. Many columns in the public unloading and commercial unloading areas were damaged. The column damage is considered structural and should be repaired. A schedule should be prepared to have these repaired within the next 12 months. The siding near the public and commercial unloading bays is damaged. The damage is not structural and is not critical. However, the damaged siding should be repaired to prevent any potential corrosion problems due to moisture penetration.

- The scale house and scales, recycling shelter, pump house, and used oil storage facility are in **good** overall condition. No short-term action is needed.

- The administrative building, employee facility, and maintenance building are in **fair** overall condition. No short-term action is needed.

- The upper yard and lower yard areas are paved with asphalt concrete pavement. In general, the paving is in **fair** condition except for in heavy traffic areas, which are in **poor** condition. We recommend the worn surface areas be repaired or replaced to prevent extensive damage to the subgrade.

- The stormwater facilities are in overall **good** condition. No short-term action is needed.

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- There is no sanitary sewer serving this facility. Offices and conditions spaces are serviced by a septic system. Drainage and washdown water in the transfer station and MRF are collected in sumps and pumped to a storage tank. When tanks are full, wastewater is transported to the wastewater treatment plant.

Our structural and civil conditions assessments were limited to those areas that are readily accessible and visible to field staff. Concealed conditions that become exposed in the future may change our current recommendations. The complete conditions report is included in the **RSWSS Phase 1 Report Appendix C, *Conditions Assessment Report (*please see Appendix K)**.

West Van MRF

Given the critical importance of the MRF in processing all source-separated recyclables in the County, a separate conditions report was completed for this operation. The full assessment of the MRF equipment can be found in the **RSWSS Phase 1 Report Appendix E, MRF Conditions Assessment *(*please see Appendix K)**.

Over the past 20 years, CRC has adapted the equipment needed to process the recycled materials with the existing physical structures and available space to manage these materials as needed. In reviewing the daily operations there is adequate space to receive the materials and to store them for processing. The tip floor space allocated is not ideal for unloading but CRC has created dedicated areas to avoid contamination with MSW stored in Bays 6 through 9. Also, they have created areas where source-separated materials can be unloaded in locations to provide access to the conveyors to feed balers directly.

The current processing system that was installed in 2009 was configured to fit with the structures without major expansions. As such the conveyor system includes several 90-degree turns that are less than ideal when processing recyclable materials. Because of this configuration, there are obvious material flow issues that challenge yield opportunities for downstream sorters and create more opportunities for spillage that can increase maintenance and some losses of material at conveyor transitions. These conditions are a result of the equipment being designed to fit the space provided and as acknowledged in the Condition Assessment, CRC does a good job of keeping this system operating with an up-time performance level of over 90%.

The MRF residential single stream (excluding glass) processing system is currently operating at a throughput rate of between 18 to 20 tons per run hour. The original design throughput of the system was higher as much as 30 tons per run hour. The reduction in original equipment manufacturers' (OEM) run rates is due to the dramatic change in quality standards related to all paper products. This has forced the operating team to reduce the system run rate by 30%, like many MRFs in the country that operate with equipment installed during this same period. Thus, to process the current inbound recycling streams the plant operates between 13-16 hours per day or two shifts. Shift one processes residential single stream (3,410 per month) at 20 TPH in eight hours over an average of 22 days per month. During shift one, any commercial direct bale materials received are processed in real-time. Shift two processes the Commercial stream that requires partial system processing and completes baling of "direct bale" materials (like cardboard). Each shift is eight hours with one hour for breaks. The processing time does allow for process interruptions typical in recycling process systems.

Since this system was installed there have been significant advances in equipment for processing recycled materials. Also, over the past three years, there have been significant disruptions to the markets due to the China Sword and general export market contractions. These market conditions have forced many MRF operators to consider retrofits to modernize their systems. These demands are occurring at the same time they are experiencing disruptions in the marketplace. And, because China has stopped purchasing many materials, there is an oversupply in the US market driving prices down. As an example, the average blended value for recycled commodities peaked at about $160 to as much as $180 per ton in 2015. At the time that this assessment was completed in early 2020, the average blended value ranged from $20 to $50 per ton depending on proximity to markets. Such market values have increased significantly in 2021.

The conditions assessment provided a report to CRC that details several suggested improvements mostly related to adding certain equipment to enhance the process line flow and yield/recovery capabilities. However, in the longer term, it will be necessary to purchase a new system that will result in decreased labor per ton, increased throughput per hour, and improved quality and quantity of materials recovered. In the short term, modest equipment and sorter process investments can be made that will derive immediate improvements to operational results. This equipment and sorter processes can later be incorporated into the new processing system design.

Washougal Transfer Station

The assessment of the transfer station operations was made on Wednesday, February 12, 2020. The site visit included a meeting with the site manager and a review of current conditions. This operations review focused on how the site manages traffic and waste handling and loading under the present conditions. The assessment will consider how the current facilities can manage future waste volumes and traffic to service the eastern portion of the County. During this same visit, a physical condition assessment was made by structural and civil engineers. A full report of the physical site conditions is presented in **RSWSS Phase 1 Report Appendix D, Conditions Assessment *(*please see Appendix K)**.

Operational Assessment

During the site visit, the site manager for CRC reported the facility has no significant operating deficiencies. At times, traffic can back up to the street, but it is not a routine condition. However, this is based on the number of customers and waste volumes having remained similar in the past few years. With moderate growth in customer traffic on Wednesdays and Saturdays, additional unloading stalls would be needed.

It was reported that commercial trucks will unload using the south door. Waste can then be pushed and lifted to dump into trailers on the east side of the building. Because the building is only 60 feet wide with only 45 feet available for storage of waste at certain times, some waste can spill out of the building temporarily. This is not a routine event but is an indication of the limited surge or storage capacity of the station. On days when self-haul customers are unloading, there could be interruptions from unloading until the waste is clear from the tipping floor to allow self-haul access to certain stalls.

The recycling and HHW drop-off areas are accessible from Grant Street, even when the station is closed to self-haul customers. The overall space is sufficient for managing the recycling needs of the community. Likewise, the HHW facilities are sufficient for managing materials dropped off. The only drawback is that when the HHW is open, traffic can back up and temporarily impede access to the recycling drop-off area. Fortunately, the HHW facility was designed to allow for two drive-through lanes for customers.

WTS is currently operating close to its capacity but with no critical operating deficiencies. The County may consider opening the station for self-haul customers for additional days of the week. Assuming this would result in distributing the current customers over a longer period, not increasing overall transactions, this may resolve any near-term needs to add more stalls. This is like what occurred when the CRC opened the station to self-haul customers on Fridays in 2018.

The only other minor improvement to consider would be to add a push wall to stack waste along the trailer tunnel. This could provide additional stacking for waste before loading and reduce spillage when loading trailers.

Conditions Assessment

The limited structural and site improvement conditions assessment reveals most of the assets at the site are in good condition except areas of pavement, which are in fair condition.

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- The transfer station is in **good** condition. Siding damage behind the trailer lift-and-load area was observed. The damage is not structural. However, the damaged siding should be repaired to prevent potential corrosion problems due to moisture penetration.
- The HHW canopy, the scale house, and the administration office are in **good** overall condition. No short-term action is needed.
- The gravel storage area is in **good** condition. No short-term action is needed.
- The public recycling area is in **good** condition. Small areas of cracked pavement were observed. No short-term action is needed. The cracked pavement should be repaired in the future.
- The drive aisles that course through the site are paved with asphalt concrete pavement. In general, the paving is in **good** condition except for in the truck maneuvering areas. We recommend the worn surface areas be repaired or replaced.
- The storm facilities, the sanitary system, and the water system are in overall **good** condition. No short-term action is needed.

The structural and civil conditions assessments were limited to those areas that are readily accessible and visible to field staff. Concealed conditions that become exposed in the future may change our current recommendations made here. The Conditions Assessment Report is included in **Appendix D of the RSWSS Phase 1 Report (see Appendix K)**.

3.2.3 Evaluation of Alternatives

Central Transfer and Recycling Center

Clark County has grown about 2% per year since 2010 (approximately 60,000 people from 2010 to 2019), and it is expected to continue at this rate for the next 20 years. The central and northern portions of the County, served by CTR, are expectedto experience the majority of this growth, as predicted in the Growth Management Plan. The projected growth for this area could result in more than 60,000 tons of additional waste being generated per year in the next 20 years.

Growth has resulted in increased development around CTR. The apartment complex on the northside of CTR expanded and now sits within a few feet of the north retaining wall. Property on thewest side of 112th Street is being platted and developed for new single-family houses. On the south side of the transfer station, a storage unit facility and private school are being constructed.CRC owns eight acres located on the west side of CTR, providing a buffer between the new residential development and the transfer station. A new scale complex designed to eliminate off-site queueing problems are proposed by CRC for this property. These recent changes in the development of adjacent properties will impact decisions for future changes to operations and future facility improvements.

Considering the increase in volume and number of self-haul customers, CTR is currently at operating capacity. This operating capacity is based on current waste quantities and hours of operation at about 900 tons per day. If the waste exceeds the capacity, CRC will process the waste to ensure it is removed from the tip floor and not stored overnight. There were several observed deficiencies when a consultant team conducted site visits and a review of data were performed for the Phase 1 RSWSS. It is important tounderstand that these deficiencies are a result of the physical conditions and limitations of the original design. CRC executes day-to-day operations to manage the current waste streams and traffic safely and efficiently, given these physical constraints.

Based on the assessment of current operations, the following site constraints and deficiencies were noted (as shown in **Figure 3.2.3.1** on the next page).

1. **Scale capacity:** CRC is currently planning to add a second inbound scale to increase thequeuing for inbound traffic. This is a high priority and work is underway to secure approvalfrom the Washington Department of Transportation.

2. **Tipping Floor Space:** The current facility does not have sufficient space for vehicles to unload. This occurs on busy days during the week and regularly on weekends for mostof the year. Also, collection trucks must unload next to self-haul vehicles. CRC does a good job of monitoring and managing traffic to avoid accidents, but as customer traffic hasincreased in the past few years, this condition is less desirable.

3. **Congestion at Exit Lanes:** All traffic exiting the site must make a left turn into two out- bound lanes. Transfer trucks are subjected to a hairpin-like turn and therefore use both lanes to access one outbound scale. The competition for the outbound scale and exitingis not a desirable condition and is exacerbated by the increase in waste quantities and increase in self-haul traffic.

4. **Compactor Load-Out Capacity:** With the current operating hours (12 per day), the compactor can only load out about 900 tons per day. CTR averages between 800 and 900 tons per day. There are some days during peak periods CTR receives between 900 and 1,100 TPD. CRC reported that on occasions when waste over this capacity is received, they will load this material to ensure it is not stored overnight.

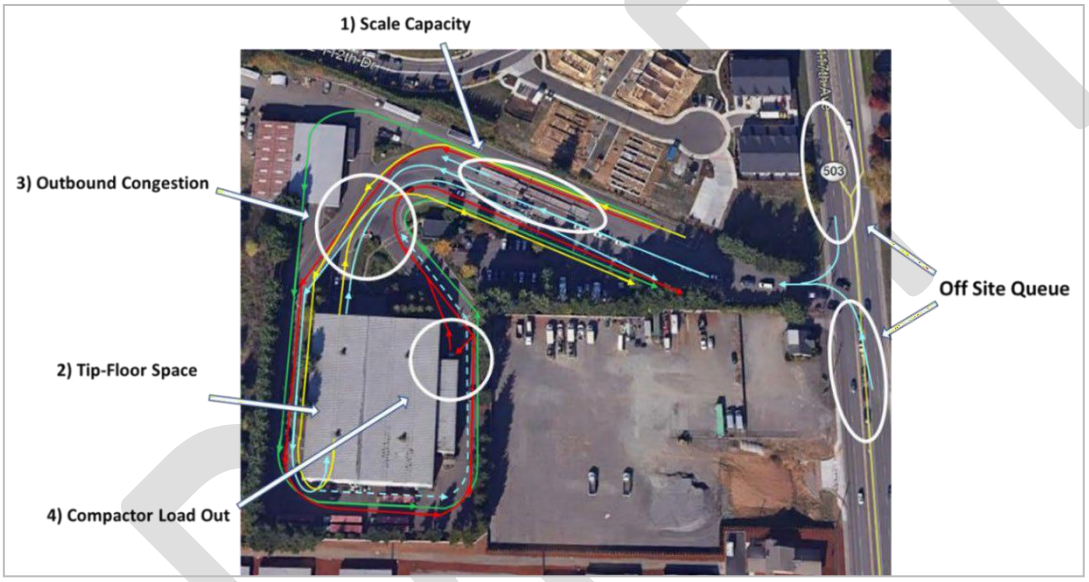

Figure 3.2.3.1: CTR Operations Assessment

West Van Materials Recovery Center

In the Phase 1 RSWSS, the general physical conditions were observed to be in general, good condition. There are some improvements to operations observed and direction on a new MRF and siting a new transfer station that impacts what those are.

Since the Phase 1 RSWSS assessment there have several new developments that need to be considered in preparing a master plan as follows:

1. Based on current negotiations with CRC it is expected the MRF will be relocated to another site.

2. The 2020 census data reveals the population in Clark County is higher than previous data and projections.

3. The number of stalls for unloading will need to be increased. The number of cash customers using the facility has increased significantly in the last two years. In 2021 the number of cash customers increased to about 65,000, an increase of 20,000 vehicles.

4. The State has passed new legislation requiring local governments to reduce the amount of food waste being disposed of in landfills.
5. The current food/yard waste collection programs in the City of Vancouver continue to grow and the City of Ridgefield has also started a similar program. This will require more space to be dedicated to handling food waste and/or mixed organics.
6. The City and County are considering public ownership options for the regional transfer station system.
7. The City has extended water service to this area. Assuming the facility can connect to provide water service the existing well and pump system can be replaced and relocated.

These new developments need to be included in updating the operational assessment and considered in preparing facilities plans for addressing the long-term service needs of the solid waste system.

Existing Tip Floor Operations

Since the facility was constructed in 1992 there has been no major expansion to the transfer station tip floor area. When the facility was first opened the total amount of waste generated in the County was 173,000 TPY or about 600 TPD. When CTR was opened in the early 1990s most of the County's waste was delivered to CTR. In 2021, West Van received over 116,000 tons of waste, or roughly 30% of all waste generated in the County. The percentage of waste received at West Van has remained fairly constant over the past six years. Assuming West Van continues to receive a similar percentage of the total waste generated, by 2040 the total waste delivered to West Van is estimated to be about 170,000 TPY or 600 TPD. This is consistent with the service area analysis presented previously.

The current tip floor arrangement shown in **Figure 3.2.3.2** on the next page demonstrates that the facility does have sufficient space to receive and temporarily store 600 TPD. However, the amount of space needed is dependent on the load-out capacity or time needed to remove all waste from the tip floor. A single compactor can load a container/trailer with 30 tons of waste in about 25 minutes or about 60TPH. The amount of waste for each container could be more or less than 30 tons depending on the materials being loaded. It would take eight hours of continuous loading operations to remove 600 tons and does not include interruptions in services whether it be equipment downtime or availability of containers to load. Also, West Van has no contingency if the compactor is out of service for extensive repairs.

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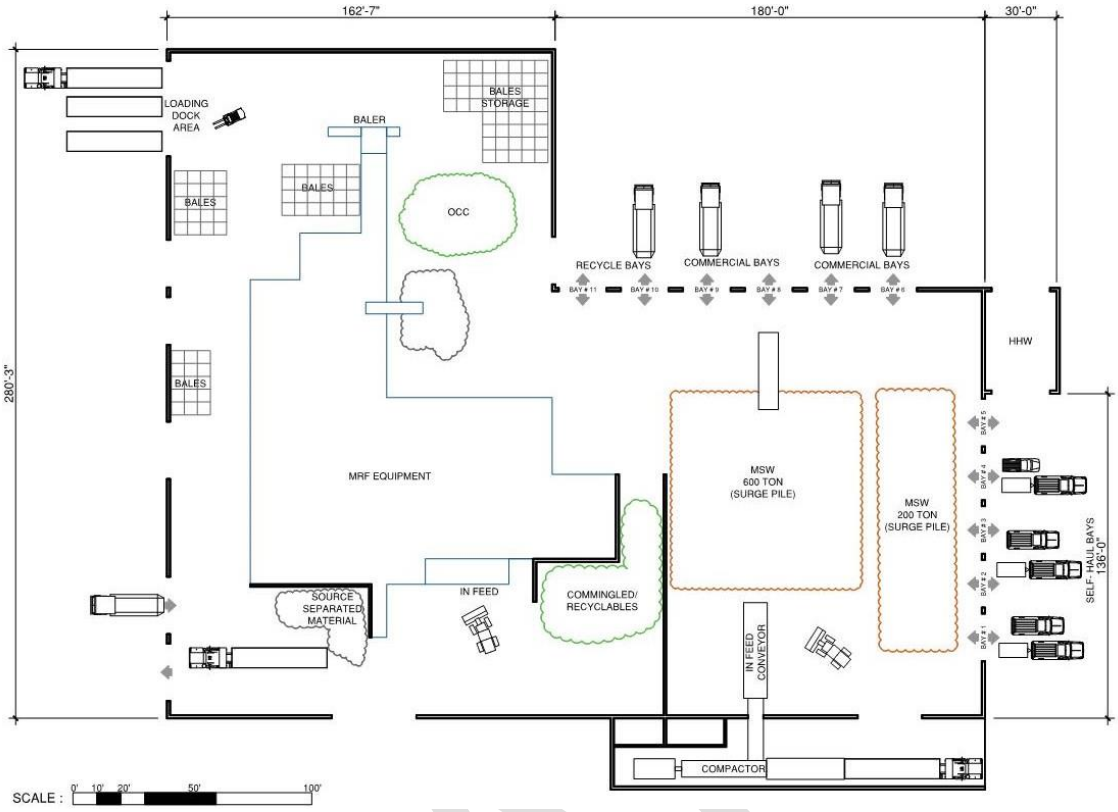

Figure 3.2.3.2: Existing West Van Floor Plan

Another factor related to the capacity of the transfer station is the number of stalls available for customers to unload. As shown in **Figure 3.2.3.2** there are currently 5 -20 ft. roll-up doors (referred to as Bays 1-5) located on the south side of the building for self-haul or cash customers to unload. Each door opening may accommodate two self-haul vehicles to unload thus providing 10 stalls to unload. However, the door farthest to the west (Bay 1) is currently dedicated to accepting mixed food waste and yard debris collected in both the Cities of Vancouver and Ridgefield and is not available for self-haul customers. Bay 5 is limited for unloading as it must remain unavailable when the HHW is open to accept materials. This leaves only three bays and six stalls that can be used to unload self-haul customers. Based on information in the Phase 1 RSWSS, during peak hours from 9 am to 3 pm, West Van experiences between 40 and 45 vehicles per hour. On average the typical self-haul customer will use 10 minutes to unload including the time to back in and exit. This means that a stall can handle five (5) vehicles per hour. With only 6 stalls available consistently, the facility can handle on average, 30 vehicles per hour, which is much less than what is needed.

The County is considering opening West Van to self-haul customers on Sundays which may result in spreading out the current volume. It could result in more traffic particularly if some of CTR's current customers decide to use West Van. If all doors are dedicated to accepting self-haul customers, it appears there would be 10 stalls available and sufficient to handle the current volume of customers. But changes to the circulation pattern should be considered to assure there is adequate queue space between the scales and the stalls.

On the east side of the transfer station, there are six (6) -20 ft. doors (referred to as Bays 6-11) for collection trucks to unload. One bay is used for access to the front loader equipment. All compactor and roll-off trucks hauling waste use three bays (Bays 7-9) thus providing four to six stalls to unload. These vehicles will unload in approximately five minutes thus, conservatively each bay can receive about eight vehicles per hour. Currently, 50 to 60 collection trucks enter the facility each day with possibly 16 vehicles at peak hours. Thus, a minimum of three stalls will need to be available.

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Bays 10 and 11 are used by trucks with commingled recyclables that serve the entire County. There are about 60 collection trucks with recyclable materials that arrive at West Van five days per week. A few trucks (less than 10) also deliver recyclables on Saturday. As long as the MRF continues to operate at West Van these stalls must remain dedicated to unloading the recycling collection trucks. If the MRF is relocated, then these stalls can be used by other customers.

Existing Traffic Circulation

Currently, traffic can back up off the service road and onto Old Lower River Road. Since this road has very little through traffic it does not create a significant congestion problem at the intersection, but it is not a desirable condition. The new scale serving the commercial trucks will help to relieve the potential for backup onto the Old Lower River Road.

All traffic including self-haul customers, collection trucks, transfer trailers, and commodity trucks must exit at this same entrance. Vehicles that need to weigh out use the outbound scale lane while other vehicles needing not weigh out can use the bypass lane.

The site circulation near the entrance is quite congested at times. This is a result of the proximity of the entrance to the main transfer station building and where vehicles unload. It is further complicated due to the location of the HHW and the recycling drop-off area. Site circulation for the various customers using the facilities has evolved over the many years of operations as new services and programs have been adopted. **Figure 3.2.3.3** captures the complexity of their traffic patterns.

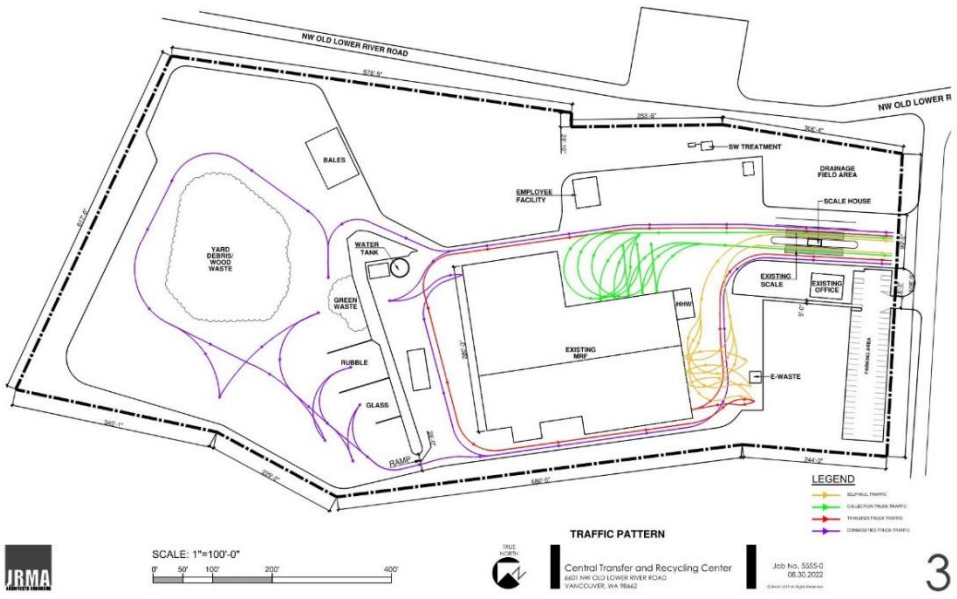

Figure 3.2.3.3: West Van Traffic Patterns

Near Term Issues

1. A critical need is to establish the location and facilities needed for top-loading operations. An immediate need is to have capabilities to top load food waste/mixed organics.
2. Extend the City waterline to provide water service and replace the current groundwater pump and tank system used for fire suppression.

3. Consider the location of the second compactor.
4. Develop plans to reduce congestion and eliminate offsite queue issues.
    a. Consider adding new access for transfer trailers/containers off Old Lower River Road.
    b. Consider a new exit road for containers being shuttled to the barge facility.

Longer Term Issues

The West Van facility is located on 21 acres. The back 7 acres are currently being used for receiving and processing yard debris and wood waste. It also includes a bale storage structure and container/ bin storage and other support activities. The County should consider how this space can be best used to provide waste management and recycling services in the future.

Also, the MRF processing operations are expected to be relocated to a new facility. Once the equipment line is removed the space can be used for other services. Options may include:

1. Receive and process C&D materials.
2. Process organics – including food waste, green waste, and wood waste.

Other operations as deemed necessary for providing waste management and recycling services.

Washougal Transfer Station

The Washougal Transfer Station is County's newest transfer station built in 2009. It is currently operating close to its capacity but with no critical operating deficiencies. The County could consider opening the station for self-haul customers for additional days of the week to reduce peak demand on the current operating days. This would likely result in distributing the current customers over more days without increasing overall transactions. Making this operational change would resolve any near-term needs to add more stalls. This is similar to what occurred when the CRC opened the station to self-haul customers on Fridays in 2018.

There are only six stalls available to unload the self-haul customers on the west side of the station, see **Figure 3.2.3.4** on the next page. Based on 2021 data, WTS receives about 200 self-haul customers per day over the three days of operation. This level of traffic suggests that six stalls are generally adequate for unloading this number of customers without causing major onsite queue issues. However, there could be certain times of the year when there are longer wait times to unload. During this period, the commercial trucks primarily unload on the south side of the station. And, although the data suggest that a single stall is nominally adequate for unloading commercial collection trucks it is more desirable to have at least two and preferably three stalls during peak hours.

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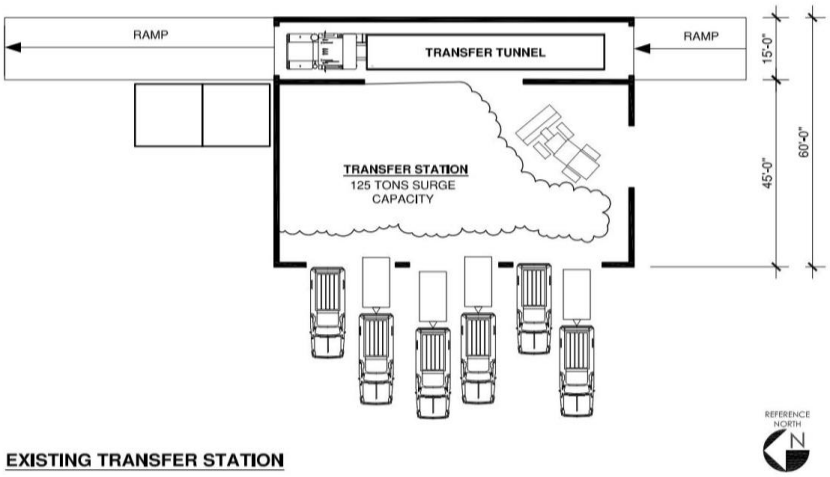

Figure 3.2.3.4: WTS Existing Transfer Station

The current size of the transfer building with its 6 self-haul spaces and one commercial bay suggests the transfer station could be expanded to increase both the surge capacity for waste and to add stalls for self-haul customers. By adding a new 4,500 sf building adjacent to the existing transfer station, the number of unloading stalls can be doubled to 12, allowing for as many as 70 vehicles per hour. This addition would also provide more surge capacity for waste volumes.

The only other minor improvement to consider would be to add a push wall to stack waste along the trailer tunnel. This could provide additional stacking for waste before loading and reduce spillage when loading trailers.

To address the overall needs of the facility to meet the needs of the service area, several improvements should be planned to provide more unloading stalls and to add tipping floor space.

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3.2.4 Findings and Recommendations

Central Transfer and Recycling Center

Traffic backing up on NE 117th Ave is the most pressing issue with the site. This site map in **Figure 3.2.4.1 b**elow shows four improvements to be included in the capital improvements plan for CTR.

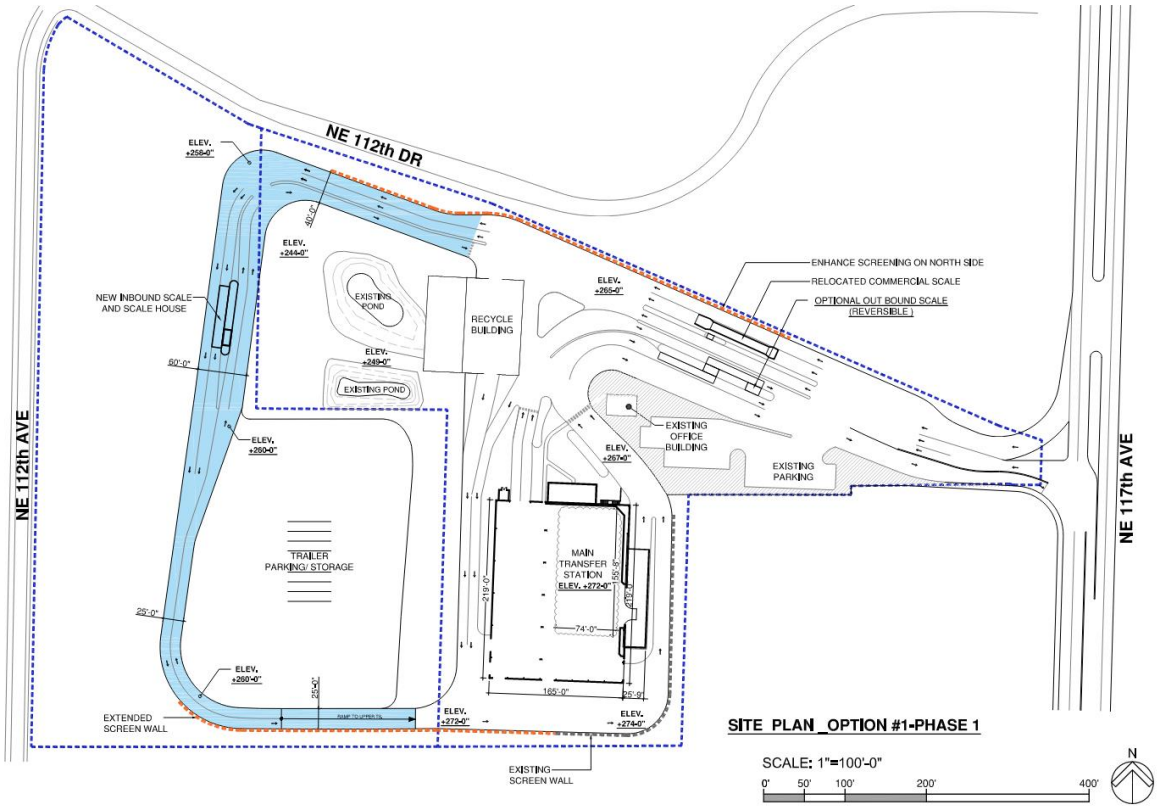

Figure 3.2.4.1: Site Map Showing Improvements

Phase 1

1. Add two new inbound lanes to a new scale house to increase the cuing length for vehicles entering the site. The road will extend and wrap around the landfill portion of the site and reduce traffic backing up on Hwy. 503.
2. Install a new scale (relocated) and scale house in the east portion of the new road improvement.
3. Extend concrete wall along the south site of site where improvements have been made.
4. Improve site screening along the north side of the property.

West Van Materials Recovery Center

Managing the anticipated increase in organics, separation of public and commercial traffic, and the question of where or if the MRF relocates drive these recommended changes. This site map in **Figure 3.2.4.2 on the next page** shows four improvements to be included in the Capital Improvements Plan for West Van.

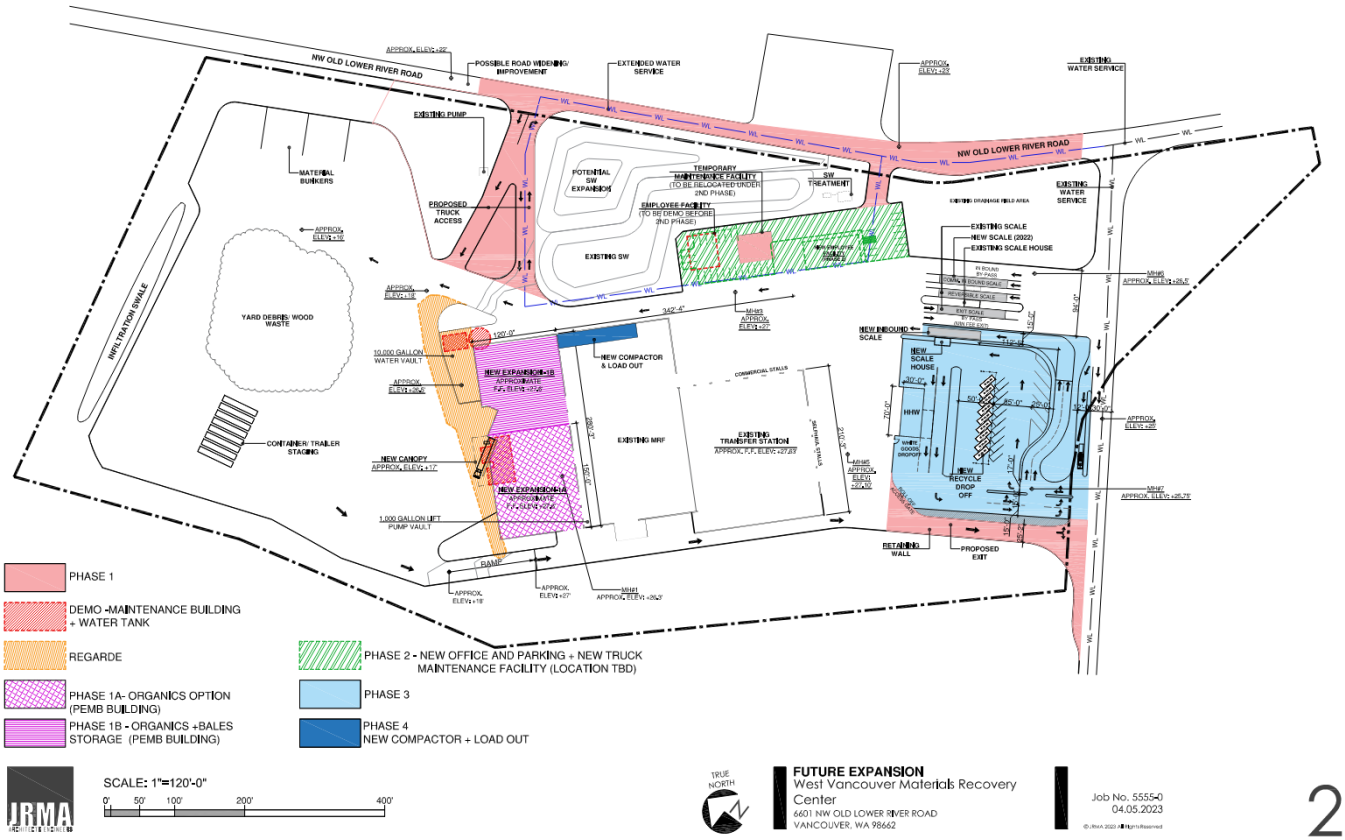

Figure 3.2.4.2: West Van Existing Transfer Station

Phase 1

1. Add a new commercial route truck entrance and exit NW Old Lower River Road.
2. Add a new staff entrance to a future new office.
3. Temporarily relocate the maintenance facility next to the employee facility.
4. Add an exit for the hauling truck going to Tidewater on the east private road.
5. Add a new water line to service the property and for fire service.
6. Remove the existing water tank and maintenance facility.
7. Regrade the area near the existing maintenance facility.

Phase 1A

8. Construct a new organics wing off the existing MRF with a partial enclosure to capture fugitive debris.
9. Collect water in existing water vaults.

Phase 1B

10. Option 1: Expand the organics wing to expand organics processing space and add bale storage if MRF stays on site.

Phase 2

1. Construct a new office facility and parking area.
2. Build a permanent maintenance facility (location TBD).

Phase 3

1. Build a new HHW and public recycling area.
2. Add a new public entrance and new scale option for public customers.

Phase 4

1. Add a new compactor and load out if MRF is relocated off-site.

Washougal Transfer Station

To address the overall needs of the facility to meet the needs of the service area, some improvements should be planned to provide more unloading stalls and to add tipping floor space. This site map in **Figure 3.2.4.3** below shows five improvements to be included in the Capital Improvements Plan for the WTS.

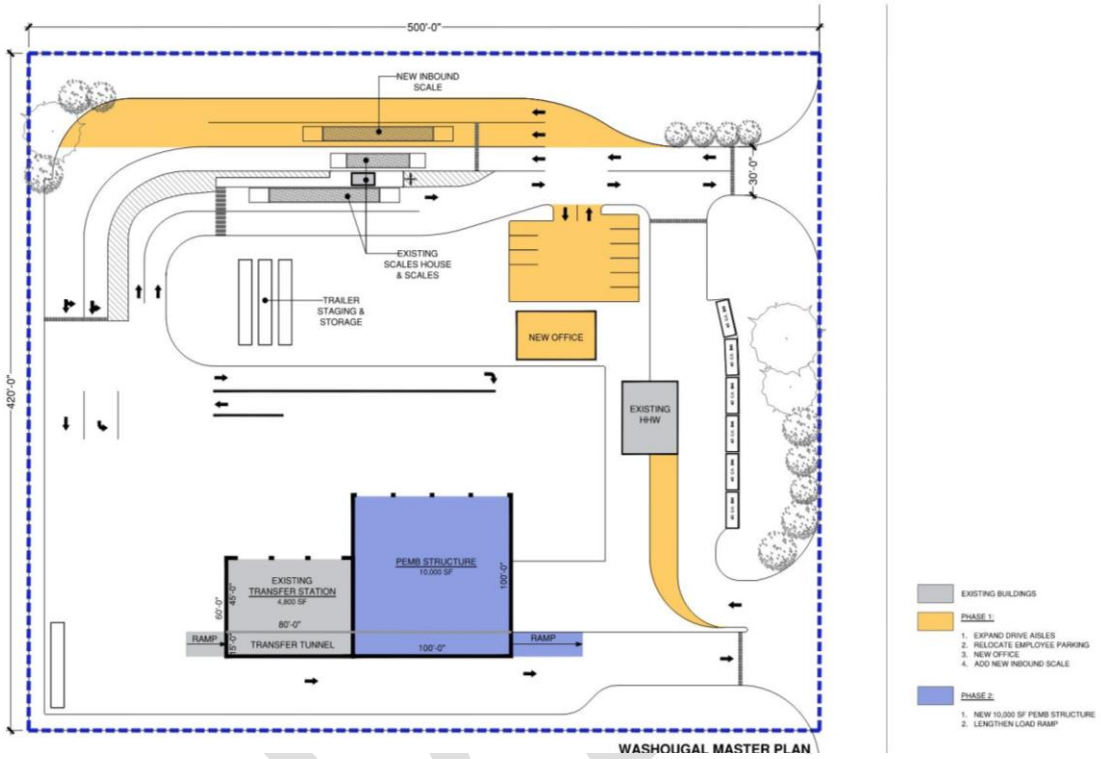

Figure 3.2.4.3: Site Map Showing Improvements

1. A short-term improvement mentioned by the operator was to expand the access lane to the HHW facility. This is a minor investment to improve traffic flow and safety and could be completed soon.
2. Add a steel backsplash and chute along the east side of the building in the load-out tunnel. This backsplash will protect the siding from damage caused by loading trailers. It should also reduce spillage of waste from the top-load operation. Also, consider adding a short push wall on the tip floor side to increase surge capacity.
3. Expand the transfer station building with a 10,000 sq ft addition and pave the yard to increase capacity including expanding below grade loading tunnel. The new building can include a lean-to on the north side to provide storage of special waste.
4. Expand the entrance road to increase the capacity of the scale complex and reduce the potential of traffic backing onto Grant Street.
5. Build a new office and parking, free up space for trailer storage and other storage.

3.2.5 Implementation Tasks and Schedule

Central Transfer and Recycling Center

Actions	Target Date	Responsible Party	Improvement
Two new inbound lanes	2024-26	CRC	Reduced vehicle spilling out on NE 117th Ave
New scale house and relocated scale	2024-26	CRC	Reduced vehicle spilling out on NE 117th Ave
Improve site screening on the north and south side of the property	2024-26	CRC	Improve visual aesthetic for neighbors

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West Van Materials Recovery Center

Actions	Target Date	Responsible Party	Improvement
Phase 1			
New commercial truck entrance		CRC	Improved traffic flow and safety
New staff entrance	2024-26	CRC	Prepare for phase 2 improvements
Relocate Maintenance Facility	2024-26	CRC	Make room for Phase 1A
New exit for Tidewater haul trucks	2024-28	CRC	Improved traffic flow and safety
New water line	2024-26	CRC	Improved water service to the site
regrade at the existing maintenance facility	2024-28	CRC	Prepare for Phase 1A
Phase 1A			
New organics wing		CRC	Processing capacity for material
Collect water in existing vaults		CRC	Manage stormwater on site
phase 1b			
expand organics wing		CRC	Increase capacity
Phase 2			
Build new office and parking		CRC	Improve working conditions and space
Build a permanent maintenance facility		CRC	Finalize location
Phase 3			
Build new HHW and public recycling area		CRC	Segregate activity and enhance service
Phase 4			
new compactor and load out in organics expansion wing		CRC	If MRF relocates, increased garbage and organics floor space

Washougal Transfer Station

Actions	Target Date	Responsible Party	Improvement
HHW Access Lane	2024-26	CRC	Improved traffic flow and safety
Steel backsplash and chute	2024-26	CRC	Protect siding and reduce garbage spillage
Push wall	2024-26	CRC	Increase surge capacity
Expand transfer station building	2024-28	CRC	Increase volume capacity
Expand entrance road	2024-26	CRC	Reduces backups on Grant St.
Build a new office	2024-28	CRC	Improved facility and frees up space for storage and containers

3.3 Landfill Disposal

3.3.1 Background and Existing Conditions

Regulatory Overview

This chapter describes the Clark County regional disposal system for MSW, including transportation to and landfill disposal at Finley Buttes and Wasco County Landfills in Eastern Oregon. The County's hierarchy of priorities for waste handling and disposal is discussed in Chapter 1. Construction and demolition waste disposal is discussed in Chapter 5, including a map of the facilities. Handling and disposal of hazardous waste are discussed in Chapter 6. Historical data on Clark County's landfills (Abandoned and Closed Landfills in Clark County) is in Appendix I. Solid Waste Handling Facilities siting guidelines are described in AppendixK.

The County and cities within the County (Cities) are committed to minimizing the amount of waste being disposed of through the implementation and maintenance of aggressive waste reduction (Chapter 2 Education and Outreach) and recycling and organics collection programs (described in Chapter 3). After waste reduction, reuse, recycling, composting, and energy recovery, the remainder of Clark County's waste is landfilled.

Landfill disposal is an essential element of the solid waste system. WAC 173-304 and WAC 173-350 define a landfill as "a disposal facility or part of a facility at which solid waste is permanently placed in or on land." A more descriptive definition of a landfill is "an engineered method of disposing of solid wastes on land in a manner that protects the environment, by spreading the waste in thin layers, compacting it to the smallest practical volume, and covering it with soil by the end of each working day."

The Guidelines for the Development of Local Solid Waste Management Plans and Plan Revisions (WDOE 10-07-005) defines "waste export" as the hauling of solid wastes generated within a planning area (Clark County) to processing and/or disposal sites outside of the planning area. As noted above, the landfill sites that receive Clark County waste are both outside of Clark County at distances of between 90 and 180 miles from our community. Additionally, both sites are in the state of Oregon so there are unique factors related to differing landfill regulations between the two states.

State Legislation and Regulations

Revised Code of Washington 70.95 Solid Waste Management Reduction and Recycling Act

RCW 70.95 requires that solid waste management plans include a "review of potential areas that meet the siting criteria as outlined in RCW 70.95.165, WAC 173-304-130 and WAC 173-350-400(2)."

Washington Administrative Codes 173-304 and 173-350, Minimum Functional Standards for Solid Waste Handling

RCW 70.95 directs the Washington Department of Ecology to develop standards for solid waste handling facilities. These standards, found in WAC 173-304 and WAC 173- 350, cover siting criteria, design, and performance standards, and closure and post-closure maintenance requirements for solid waste landfills and other handling facilities. The standards meet Subtitle D of the *Resource Conservation and Recovery Act* (RCRA) and provide additional protection.

Oregon Revised Statute 459.055, Solid Waste Control

Chapter 459.055, *Landfills in Farm Use Area*; Waste Reduction Programs requires out-of-state local governments to implement waste reduction and recycling programs that areat least as effective as programs in similar Oregon jurisdictions, before exporting wastesinto Oregon for landfill disposal.

Oregon Administrative Rule 340-93-97, Solid Waste Management in General

Oregon Administration Rule (OAR) 340-93-97 establishes permitting, closure, financial assurance, and engineering requirements for landfills, incinerators, composting facilities, sludge land application sites, and solid waste transfer stations. The standards are enforced by the Oregon DEQ.

MSW Landfill Disposal System

This section describes Clark County's current MSW landfill disposal system. This system includes the transporting of MSW from the County's largest transfer stations [Central Transfer and Recycling Center (CTR) and West Vancouver Materials Recovery Center (West Van)] primarily through barging to the landfill at Finley Buttes, for disposal. The Washougal Transfer Station (WTS) is in the Port of Camas/Washougal; MSW from WTS is transported by truck to the Wasco County Landfill. Since the MSW from all transfer stations is disposed of in Oregon, ORS 459.055 (waste reduction and recycling) and OAR 340-93-97 (landfill standards) apply to the County. The State of Oregon, under ORS 459.055, requires local governments outside of Oregon that transport waste to Oregon landfills to implement waste reduction and recycling programs which must be at least as effective as Oregon programs in similar jurisdictions. The local governments must apply to the Oregon DEQ and be accepted before waste can be exported to Oregon.

Waste Transport for Disposal

Clark County and the City of Vancouver have an ongoing contract with CRC, a wholly owned subsidiary of Waste Connections, Inc. to receive and process MSW and to transport and dispose of non-recycled MSW generated in Clark County. The initial term of the contract was for 20 years ending on December 31, 2011. In 2006, Clark County renewed the operating contract with CRC for solid waste, transfer, transport, and out-of-county disposal services CRC. The contract term was for ten (10) years, until December 31, 2016. The 2006 Agreement contained two five-year extension options and the purchase option. The first option was granted and extended the Agreement through December 31, 2021 ("First Extension" of the 2006 Agreement). The County has the right to extend the

Agreement ("Second Extension" of 2006 Agreement) for another five years through December 31, 2026, subject to providing formal notice to CRC by December 31, 2020. The County has notified CRC of its intent to extend the contract for the second five-year period.

Waste Connections, Inc. purchased CRC and the Finley Buttes Landfill, as well as an additional landfill in Wasco County, Oregon, in 1999. Since then, CRC, Finley Buttes, and Wasco County Landfill have been wholly owned subsidiaries of Waste Connections, Inc. The waste transfer and materials recovery elements of the CRC contracts are described in Chapter 3.

Some other MSW practices are known to exist in Clark County, including the following:

- Woodland area wastes are collected by Waste Control (the WUTC-certified collection company for that area) and transported to the Cowlitz County Headquarters Landfill in Castle Rick, WA.
- Some self-haul wastes generated in the eastern, northern, and southern portions of the County are transported into Skamania County, Cowlitz Counties, and the Portland, Oregon area, respectively.
- Some amount of commercially generated waste and waste from franchised and/ or WUTC-certified haulers in portions of Skamania County, Cowlitz County, and the Portland metro area is transported to Clark County transfer facilities. This waste is a minor portion of the waste stream received at these facilities.

Transport System

CRC is responsible, by a long-term contract, for the transportation of all "non-recycled" waste from Clark County to Finley Buttes Landfill in Morrow County, Oregon, and Wasco County Landfill in Wasco County, Oregon.

Waste collected at West Van is transported consistent with the County's current long-term contract, which requires transport to the Finley Buttes Landfill by barge or by rail, allowing truck transport only if specifically authorized by the County under unusual circumstances or certain economic conditions. See **Figure 3.3.1** for a map of the transfer station's locations.

Figure 3.3.1 Transfer Station Facility Map

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Table 3.3.1 below summarizes the disposed of tons by transfer station over the past four years.

Table 3.3.1: Disposed of Tons by Transfer Station

Solid Waste Tons	2018	2019	2020	2021	4- Year Ave.	% Ave. of Total
CTR	228,018	225,708	225,416	245,333	**231,119**	**59%**
West Van	117,984	120,906	118,986	135,915	**123,448**	**32%**
Washougal	32,020	32,260	36,696	38,244	**34,805**	**9%**
Total Tons	**378,022**	**378,874**	**381,098**	**419,492**	**389,372**	

The current process for transporting non-recycled MSW to final disposal at Finley Buttes Landfill is as follows:

- After the MSW is processed at CTR and the West Van facilities to recover recyclable materials, the remaining non-recyclable MSW is compacted and then sealed into shipping containers.
- The sealed containers are then hauled directly to the Tidewater M-5 barge loading facility where they are placed on barges.
- Tidewater Barge Lines transports the barges 180 miles upriver to the Port of Morrow in Morrow County, Oregon.

- At the port, the sealed containers are unloaded from the barges for later transport by trucks approximately 12 miles to the Finley Buttes Landfill.
- At the landfill, the containers are tipped and the MSW is emptied into the active cell of the landfill.
- Empty containers are then returned to the Port of Morrow for barge transport back to Clark County.

Each shipping container has an internal volume of approximately 90 cubic yards and holds about 30 tons of MSW. The staging yard behind the dock has a storage capacity of approximately 500 containers. Two sizes of barge systems are used for transport: the smaller barges carry up to 36 containers; the larger ones carry up to 80 containers. Based on the tonnage of non-recycled waste exported to Finley Buttes Landfill, the average number of loaded shipping containers transported upriver and through the Port of Morrow was about 1,000 containers per month in 2021

The loading and unloading capacity of the existing crane at the Port of Morrow is approximately 15 containers per hour or 330 containers per day during a three-shift workday. A surplus number of shipping containers are required by the CRC contract to temporarily hold up to six days of waste if waste transport services are interrupted. In addition, during the two weeks each year when the navigation locks on the Columbia River are closed for routine maintenance, or in the event of unanticipated lock closures, containers can be shipped by truck or train.

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The CRC contract was amended to include the Wasco County Landfill as the primary disposal facility for waste received at the Washougal Transfer Station. To eliminate double-handling, the waste at this site is top-loaded into trucks, tarped, and transported directly to the Wasco County Landfill for disposal, as follows:

- The routing of trucks from the WTS to the Wasco County Landfill goes by State Highway 14 east to the Dalles Bridge, over the bridge to Oregon, and then south on Highway 197 to the Wasco County Landfill.
- The alternate truck route from the WTS to the Wasco County Landfill is by State Highway 14 west to Interstate 205 south to Interstate 84 east to the Dalles and then south on State Highway 197 to the Wasco County Landfill.
- At the Wasco County Landfill, the waste is unloaded directly at the landfill face.

The barging system serves as the alternative transport system for waste from the Washougal Transfer Station to Finley Buttes Landfill. An updated Contingency and Emergency Plan included in this Plan's appendices describe designated alternative disposal sites if either Finley Buttes Landfill or Wasco County Landfill ceases operations, either temporarily or permanently.

Regional Landfill Disposal Sites

Finley Buttes Landfill

Finley Buttes Landfill is located approximately 180 miles east of Clark County in Morrow County, Oregon, at 73221 Bombing Range Road, Boardman, Oregon. The facility is privately owned and operated by Waste Connections, Inc. It is the primary designated disposal site for MSW generated within Clark County. The landfill is designed, constructed, and operated to comply with all requirements of the Oregon DEQ and EPA Subtitle D MSW landfill requirements.

Finley Buttes Landfill occupies a permitted 510-acre site. The projected life of the currently permitted landfill is 180 years, which exceeds the 20 years covered by this Plan. Currently, the site receives around 500,000 tons of MSW each year, more than half of which is from Clark County.

The design of the landfill incorporates features to protect groundwater and surface water, prevent soil erosion, provide fire protection, allow ease of access, and manage and control landfill gas and leachate. The site is designed to be compatible with the surrounding land use, both during the active life of the landfill and after the landfill closes. Special operating procedures are used to prevent nuisances and threats to human health and the environment by controlling litter, odors, birds, and vectors.

Since the end of 2007, the Finley Buttes site has benefited from the development and operation, under contract to Finley BioEnergy, of a combined heat and power (CHP) system that collects and utilizes landfill gas (methane) to power 3 generators that combined produce 4.8 MW of "renewable" electrical power for the grid (enough to power 3,500 homes). In addition, much of the waste heat from the electrical generating plantis utilized by Cascade Specialties (a nearby onion and garlic dehydration plant) reducingtheir need to purchase natural gas.

Together, this utilization of the landfill gas resulting from Clark County and other communities' wastes disposed at the site results in approximately a 75 percent efficient utilization of the methane's energy value. This compares favorably to systems at other landfills, which typically exhibit only 35% to 45% recovery efficiency when power aloneis produced. The gas collection system (a network that includes 3 or 4 total miles of piping) also aids in controlling and reducing methane emissions from the landfill (as required by regulations and the site's permit).

Wasco County Landfill

Waste defined and regulated as "hazardous" under Oregon and federal laws is prohibited from being disposed of at Finley Buttes. Personnel is trained to recognize and manage hazardous and other prohibited materials. Surveillance by landfill personnel and regulatory agencies, record-keeping, reporting activities, and shipping documentation requirements lower the potential for the disposal of hazardous wastes into the landfill. The contract with CRC indemnifies the County against any pollution-related liabilities associated with waste disposal at Finley Buttes Landfill. There is no evidence of significant legal exposure to Clark County from using this site.

Wasco County Landfill is a Subtitle D Regional Landfill located about five miles southeast of The Dalles, Oregon near the intersection of Interstate 84 and U.S. Route 197. The landfill site comprises 337 acres, with 213 acres of the site permitted by the Oregon DEQ for active landfilling. The landfill operator estimates that there are approximately 35 years before reaching capacity. The landfill is privately owned and operated by WasteConnections, Inc., is the designated disposal site for MSW from the Washougal Transfer Station and is a backup facility to the Finley Buttes Landfill.

The entire active landfill area is lined with a five-foot-thick composite liner system. The liner lies on compacted native soils and consists of an HDPE liner, a geotextile-wrappedperforated pipe, drainage sand, a geotextile fabric, two feet of highly impermeable recompacted soil/bentonite, a 60-mil high-density polyethylene membrane, and another layer of geotextile fabric. A one-foot-thick soil buffer serves to protect the entire liner system. This multi-layered liner system is designed to collect leachate so that it cannotenter the soil or contaminate groundwater. Leachate is pumped from the leachate collection and removal system and recirculated over the lined portions of the landfill. A network of groundwater monitoring wells surrounds the landfill. These wells are sampled semi-annually, and the results are reported to Oregon DEQ.

The landfill has implemented waste screening procedures to exclude prohibited waste and manage acceptable waste. Scale attendants visually inspect incoming loads to lookfor any hazardous or unacceptable materials. The field supervisor and equipment operators inspect each load as it is discharged and compacted into the landfill. Randomlyselected waste loads are to be emptied in a separate area and thoroughly screened. Special wastes are subject to additional evaluation and approval, with periodic laboratory testing. The County's long-term contract indemnifies the county against any pollution-related liabilities associated with the waste disposed of at the Wasco County Landfill.There is no evidence of significant legal exposure to Clark County from using this site.

Regional Landfill Disposal Sites in Clark County

Appendix J summarizes the known historic landfill/dumping sites in Clark County.

Rufener Landfill (a.k.a. Boise Cascade Landfill, Portside Landfill, Fruit Valley Landfill)

The limited-purpose Rufener Landfill on NW Lower River Road in Vancouver was owned by Boise Cascade and received clarifier solids from the Boise Cascade paper-making plant until April 1996. The site is decommissioned and will be put back to productive industrial use.

Leichner Landfill

The Leichner Landfill was the last MSW landfill that operated in Clark County; it accepted waste from 1937 through 1991 at a site located in the south-central part of the County. Owned by Leichner Brothers Land Reclamation Company (LBLRC), it was permitted to operate as a sanitary landfill and to receive MSW and some CDL waste.

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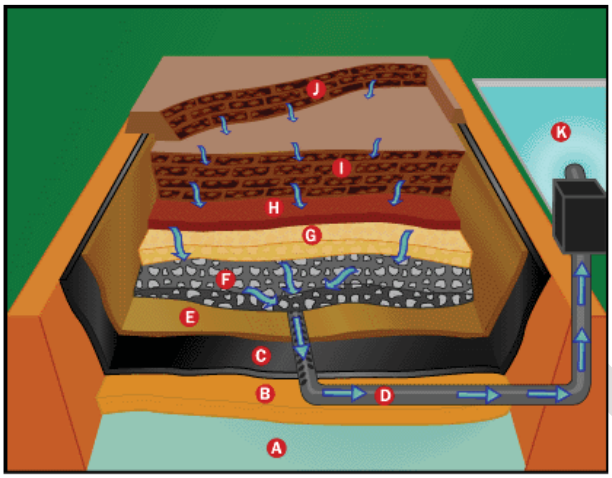
Under an order from the Washington Department of Ecology, the Leichner Landfill ceased operations on December 31, 1991.

Typical Landfill Construction System

A Ground Water
B Compacted Clay
C Plastic Liner
D Leachate Collection Pipe
E Geotextile Mat
F Gravel
G Drainage Layer
H Soil Layer
I Old Cells
J New Cells
K Leachate Pond



3.3.2 Findings and Recommendations

1. Utilize the existing contract for garbage export to Finley Buttes Landfill located near Boardman, Oregon, and Wasco County Landfill located near The Dalles, Oregon as the primary disposal sites for Clark County waste for the duration of the current disposal contract but consider alternative disposal options when considering any changes to the Agreement with CRC/Waste Connections.
2. No new MSW landfills are to be sited in Clark County. This limitation is due to the Sole Source Aquifer designation of the underlying Troutdale Aquifer. (M-2)

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3.4 Alternative Technologies

3.4.1 Background and Existing Conditions

Introduction

This section of the Chapter presents options for introducing alternative technologies as part of the County's solid waste system, to manage MSW as a resource thus reducing the amount of waste disposed at landfills. Options such as building an Energy from Waste Facility (EfWf) were discussed in the 2015 SWMP. The 2023 SWMP updates the 2015 options and includes a discussion of new and emerging technologies that may be considered; please see **Appendix R** for the detailed options that were considered. Consideration of these options is consistent with the State's adopted solid waste management hierarchy for managing MSW to reduce waste, recycle (including composting), recover energy, and lastly, landfill remaining waste.

Background

Since the passage of the Resource Recovery and Conservation Act (RCRA) in 1976, the solid waste industry has continued to pursue means to recover marketable commodities from MSW. It also promoted the development of technologies to potentially convert or transform waste that could not be recovered into a source of renewable energy. Alternative technologies include a range of chemical or biological processes to convert waste into an energy source. They include proven mass burn technologies as well as emerging technologies used to extract energy from the waste stream. These technologies do not necessarily compete with the ongoing efforts to recover marketable commodities such as paper, cardboard, plastic, and glass containers as they seek to convert or transform remaining materials for a higher use rather than disposing of them in landfills. The primary goal is to conserve natural resources and reduce sources of greenhouse gas emissions.

For the past 40 years, the County has implemented programs to reduce, reuse and recycle materials from the waste stream. The remaining MSW is loaded into barges for transport about 200 miles to the Finley Butte Landfill in Morrow County, Oregon. A limited amount of waste, primarily from the Washougal Transfer Station is trucked to the Wasco County Landfill owned by WCW.

Over the past 10 years, the population in the County grew 18.1 % or on average 1.8 % per year. In 2021 the County generated almost 502,000 tons of material of which 419,492 were transported and disposed of in landfills. Assuming the population continues to grow at a rate consistent with the past 10 years, waste projections presented in Chapter 3, suggest that by 2040 the amount of waste disposed of in the landfill could approach 570,000 TPY, an increase of 37%. Such a significant expected increase in the amount of MSW to be disposed of creates an opportunity for consideration of alternative technologies to handle tons that would otherwise be landfilled.

Continuing the current system to load barges and transport them to a regional landfill east of the Cascades is certainly a viable option. In addition to the Wasco and Findley Butte landfills, two other major regional landfills can accept the County's waste. In addition to barging the County has options to transport waste using trucks or rail. However, consistent with not only federal and state policies the County may consider options that can reduce the impacts of this strategy.

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