FACILITY MASTER PLAN

for the

ORCAS ISLAND TRANSFER STATION (OITS),
MANAGED BY ORCAS RECYCLING SERVICES

MARCH 5, 2014

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1. INTRODUCTION

1.1 Existing Transfer Station

San Juan County (SJC) owns, and historically operated, the Orcas Island Transfer Station (OITS), where waste and recyclables are consolidated into larger payloads for hauling by transfer trailer on the Washington State ferry system to out-of-county disposal or recycling facilities. In 2011, SJC began a multi-year transition to turn over operation of OITS to another entity. The County is now in an administrative position over the management of solid waste in SJC. In September 2013, Orcas Recycling Services (ORS) signed a contract with SJC to lease and operate the OITS and to arrange for the transportation and disposal and/or recycling of its solid waste.

County-wide, garbage tonnage has been decreasing steadily since late 2008. Solid waste is generated by residences, businesses, institutions and commercial sources; there are no significant industrial sources of solid waste in San Juan County.

In September 2012 SJC approved a new Solid and Hazardous Waste Management Plan (SWMP) that serves as a road map for managing solid waste in the county.

The OITS typically serves 25 to 150 self-haul vehicles and 3 to 4 commercial franchise garbage trucks on a daily basis. In general, vehicle traffic and waste tonnage increases during the warmer months and tourist season. The primary facilities and structures at OITS are a scalehouse, a vehicle scale, a Z-wall where self-haulers drop off of garbage and recyclables, a Transfer Building where larger loads are deposited, site roadways, and parking areas for solid waste vehicles. **Figure 1** illustrates the general layout of the site at present.

1.2 Overview of Proposed Future Operations and Upgrades

In accordance with the Sept. 2012 SWMP, this Master Plan for the OITS is consistent with:

- Safe and environmentally sound transfer of solid waste and transportation off Orcas Island for disposal or recycling.

- The principles of waste reduction, reuse and recycling as detailed in Chapter 4 of the 2012 SWMP. These can include waste diversion and minimization, as well as the reuse, recycling, composting, and product stewardship of a wide variety of materials.

2. PROPOSED TRAFFIC CIRCULATION REVISIONS

2.1 Existing Traffic Circulation

Figures 2-4 illustrate the existing traffic pattern for various vehicles: Self-haulers, Commercial Haulers and Transfer Trailers.

These existing traffic patterns pose a number of difficulties, both on and off the site:

- Because of the short onsite queuing distance (length of roadway where vehicles wait to unload at either the Z-wall or the Transfer Building), self-haul traffic frequently backs up onto the shoulder of Orcas Road, a public roadway. This presents safety and traffic congestion problems both on and off the transfer station site.
- Entering and exiting the site via the southwest or southeast gates can be dangerous due to the curve in Orcas Road southwest of the site, and limited sight distances.
- Drivers may be confused about who has priority to drive onto the scale, and when.
- Before the Exchange burned down in the summer of 2013, its customers sometimes parked in a haphazard manner that restricted traffic flow to the Transfer Building and the trailer area on Parcel C, thereby creating traffic congestion.

The following sections discuss proposed roadway upgrades and revisions to traffic.

2.2 New Self-haul Traffic Pattern

Offsite queuing on Orcas Road is considered to be the Number One traffic issue at OITS. To reduce or eliminate offsite queuing, a number of options were considered. Some of these options involved relocating the scale to create more queuing space onsite, or adding a second scale. Relocation of the scalehouse was also considered.

After thorough study by the ORS Board of directors, ORS staff and former staff, and with the input from a series of open community meetings, a proposed new roadway and traffic pattern was developed by consultant and engineer Terrill Chang. Please refer to **Figures 5 and 6.**

The proposed traffic pattern incorporates the following elements:

- All self-hauler customers will enter through the main (southwest) entrance and be routed through Parcel B, where they have their choice of actions including disposing of garbage only, recycling only, dropping off or purchasing reusable items at the Reuse Center, or any combination thereof.
- A new ramp and roadway on the east side of the site will return self-haulers from Parcel B to the scalehouse or the self-haul exit.
- A new "two way" scalehouse will be located to serve both inbound customers on its north side and outbound customers on its south side.
- Some trees and other landscaping will be removed from the south side of the existing scalehouse to make room for the new outbound (eastbound) exit lane.
- The existing combination entrance/exit in the southeast corner of the site will be converted to "exit only".
- Signage will be significantly improved to facilitate traffic flow, and minimize driver confusion.

The net effect will be to greatly increase the queuing space for self-haulers headed to the Scalehouse for either Z-wall (flat fee) or Transfer Building (weight-based fee) transactions. Benefits of this improvement will include the following:

- By providing increased onsite queuing space, the changes will reduce or eliminate queuing of vehicles out onto Orcas Road, thereby increasing vehicle safety off site.
- Eliminate the congestion and safety hazard on Orcas Road from self-haul vehicles that currently must exit the site and then re-enter so that they can pay at the existing "one-way" scalehouse.
- Self-haul vehicles will be better separated from larger commercial vehicles such as garbage trucks, increasing site safety.

- It will allow customers to park for longer periods of time to drop off materials, make purchases, or attend educational events, without creating traffic congestion on shared site roadways. This will provide an important social benefit to the community.
- OITS can continue to use a single scale and avoid either having to relocate it or add a second scale, at least for the foreseeable future.
- The longer roadway on Parcel B provides additional space for bins (known as tipplers) or areas to receive recyclables (e.g. cardboard, cans, bottles, paper, etc.) or reusables, which means that more types of materials could potentially be accepted.

2.3 Reconfigure S.E. Entrance/Exit to Exit-Only

Historically the southeast corner has been both an entrance and an exit, creating a traffic bottleneck and unsafe conditions on Orcas Road. Converting it to "exit only" will reduce congestion caused by the current two-way traffic and improve safety. There may be sufficient room for two exit lanes, one turning east and one turning west. It is suggested that the County install a sign east on Orcas Road just east of the site that warns westbound traffic with words similar to "Caution--Vehicles Entering Roadway."

2.4 Scalehouse Area Improvements

The existing scalehouse has numerous shortcomings, including window placement that it make it ergonomically difficult for the attendant to monitor the Z-wall and the scale. Due to its small size, it is also cramped, with insufficient space for office equipment and supplies. It is recommended that a new scalehouse be designed and constructed. It will serve inbound self-haul vehicles using the Z-wall or headed west to the scale and Transfer Building. It will also serve outbound self-haul vehicles weighed after unloading in the Transfer Building and headed east to the exit. Desirable features would include windows with a view of the southwest entrance, the scale, and vehicles leaving the site, as well as powered sliding windows for transactions with inbound and outbound self-haul customers.

It is proposed that a strip of landscaping and trees on the south side of the current scalehouse be removed to make way for a new eastbound exit lane. This will allow self haul customers who choose to use the scale to pay at the south window of the new scalehouse prior to exiting the site at the southeast corner.

2.5 New Office

The exiting scalehouse could be relocated to the newly-cleared area south of the new exit lane. It could be reconfigured for repurposing as an administrative office and would provide space for meetings, office equipment, file storage, and storage for supplies and small equipment and tools.

3. PROPOSED UTILITY UPGRADES

3.1 Utilities

Currently, the site is served only by Orcas Power and Light Co (OPALCO) and CenturyLink. Other utilities including water and wastewater are minimal or non-existent. There is no natural gas service to the site. See **Figure 7** for utility locations.

3.2 Potable Water

Most transfer stations are served by a public water system that supplies both their domestic (potable) water needs and service water (washdown, irrigation, etc.) needs. Unfortunately, there is no public water main in the vicinity of OITS and there is no onsite well, due to the station's proximity to the closed landfill. Therefore, small quantities of potable water are trucked to the site for various domestic and service water uses.

For the long-term viability of the station, it is recommended that ORS and the County secure a piped-in potable water supply to serve OITS. In November 2013, Cold Spring Resources provided ORS with a technical memorandum (Potable Water Plan, 2013). This plan noted that it is not legal to drill a new well within 1,000 feet of the closed landfill on the northern half of the County property, and suggested a partnership with the Orcas Grange Hall property (parcel 272734004000) to the east of OITS.

The water plan indicated that the Grange has a very strong Class A/B well that could, with some modifications, be used to supply the transfer station, as well as future facilities including a new reuse facility. This would require upgrades to the Grange well and pumping system, new water lines to the north edge of Orcas Road, and then west to the southeast corner of the OITS property. New lines on the OITS site could then run north, alongside other existing utilities. New equipment that might be required at OITS may include a storage tank, backflow preventer, water meter, hydropneumatic tank, and booster pump.

If an agreement between ORS, the County, and the Grange cannot be reached, negotiations with other nearby property owners would be necessary.

3.3 Fire Protection Water

Most transfer stations are served by a public water system that can also supply sufficient quantities of water for fire protection sprinklers and hydrants. However, even if potable water is piped from a nearby well, it is unlikely that there will be sufficient flow for firefighting purposes. Therefore, OITS will continue to rely on staff vigilance and prudent operating practices to minimize danger from fire. Currently there is a 1,500 gallon tank of filtered catchment system water on site, with an electric pump, capable of providing limited water service to two locations on site. Complete fire safety plans may be found in the most recent versions of the OITS Safety & Emergency Plan.

3.4 Wastewater

Because there is no public sanitary sewer available nearby, Orcas Sewage Design was retained to perform soil percolation tests and develop a preliminary conceptual layout for an onsite septic tank and drainfield (see Appendix). Test pits dug in the northeast corner of Parcel B perked adequately. The proposed initial design criteria are a single employee (non-public) restroom to serve a staff of 5, with a toilet, sink, and shower. This wastewater flow (240 gallons per day) is equivalent to a two-bedroom house. The system could include a two-compartment 1,000-gallon tank, conveyance piping, and a drainfield consisting of two 4-inch diameter, 30-foot long pipes.

Final design of a septic system would also consider the capability of expansion to handle wastewater from a future Exchange facility and the possibility of disposing of washdown water from the tipping floor. This wastewater would be fairly diluted, but would be contaminated by contact with garbage. Note that chemicals spilled on the floor would not be removed by washing the floor but would instead be picked up with absorbent pads or granules.

A composting toilet to serve employees only could also be considered as an interim alternative to a septic system. It could be located in the vicinity of the new scalehouse and office.

3.5 Stormwater

Conservation District Engineer Tom Slocum prepared a comprehensive Stormwater Pollution Prevention Plan (SWPPP) (attached). It was prepared for the site in February 2014. It describes the facility, industrial activities, materials and associated pollutants, and best management practices. It includes a sampling plan, worksheets, and monthly inspection report forms.

3.6 Electrical

Orcas Power and Light (OPALCO) supplies the site with electrical power and recently identified the 480-volt power supply location near the abandoned glass crusher. The utility locator service identified the 120/240-volt power supply locations, which were subsequently spray-painted and staked. All these locations have been placed on the site CAD drawing (see attached) using actual survey coordinates and/or field measurements.

Near-term wiring needs include power to the proposed stoplights to control traffic on and off the scale; the proposed new scalehouse; and the relocated old scalehouse which will be converted to an office.

4. PROPOSED FACILITY UPGRADES

4.1 Trailer Parking

OITS provides for receiving, transfer and processing of municipal solid waste and recyclables. The approximate daily capacities are about 24 tons of garbage and 200 cubic yards of commingled recyclables. The transfer station has the capacity to process about twice the current volume of municipal solid waste, allowing for the short-term accommodation of equipment failures, lack of empty trailers or containers, or out-shipment delays. As such, the facility has sufficient capacity to meet current and anticipated solid waste handling needs for the foreseeable future.

Currently trailer storage is located on parcel C, near the glass crusher. ORS is studying the possibility of moving trailer storage to the grassy area west of the Tipping Floor building. This would allow for the staging of as many as five 48-foot trailers.

4.2 Roadway Changes

If the traffic circulation improvements (Section 2) are to be made, the following roadways will need to be designed:

- One or more new roadways through Parcel B to allow materials drop-off and pickup
- Parking associated with the future Exchange
- A north-to-south exit roadway along the east property line.
- Changes to the southeast exit
- A new roadway on the exit (south) side of a new scalehouse.
- Widening of the roadway adjacent to scale that is used jointly for trailer access and entrance to Parcel B.

Roads would be designed in accordance with San Juan County and WSDOT standards. Roadways may be chip-seal or asphalt-concrete. Design criteria for onsite roadways at OITS will be selected so that the new roadways:

- Facilitate the desired traffic pattern.
- Are compatible with property line setbacks, site topography, and site soils.
- Promote traffic safety, with adequate sight lines and turning radii.
- Optimize the amount of cut and fill required.
- Are economical to construct.

A proposed concept for roadway changes is shown in Figures 5 & 6.

5. THE EXCHANGE REUSE CENTER

According to the *2012 San Juan County Solid Waste Management Plan*, the Orcas Exchange was founded at the Orcas Island Solid Waste Transfer Station by the non-profit Orcas Recycling Services organization in 1983. Acting as a "good stuff" filter for the waste stream, the Exchange was open the same days and hours as the transfer station for convenient drop-off of reusable items such as household furnishings, clothing, books, small appliances, electronics, sports equipment, toys, building supplies, hardware, and tools. The Exchange, with a combination of volunteers and paid staff, screened items prior to accepting them. Materials were sorted, stored, tested and repaired, and then displayed for reuse. Trading and contributions were accepted for these goods and any funds collected helped to defray the cost of operating the facility and for education programs.

Materials accepted at the Exchange that proved not to be reusable on-island were either salvaged through organizations on the mainland such as the Salvation Army, or were handled as recyclables or garbage. In 2009, the Exchange also became a registered E-Cycle Washington collector of designated recyclable electronics such as desktop and laptop computers, monitors, and televisions. In the summer of 2013, the Exchange burned down. Island residents have since expressed an interest in having a new Exchange that as a minimum performs the same reuse and recycling functions as the old Exchange.

There appears to be significant support for replacing the Exchange in the near future.

6. FIGURES

7. APPENDICES