Supplemental Alternatives Analysis (SAA)

March 6, 2009

Introduction

The purpose of the Supplemental Alternatives Analysis (SAA) is to provide a comparative summary of site conditions. When considered along with the State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS), the SAA provides information that can be helpful to decision-makers in developing a final recommendation for a preferred site. As such, it is a summary of information that the Solid Waste Advisory Committee (SWAC) and County Council members may need in order to inform their final decision. The SAA includes summary data addressing:

- physical site attributes and constraints;
- planning level costs;
- funding options; and
- neighborhood/customer acceptance issues.

The physical site attributes and constraints are primarily physical conditions present at each site. Planning level costs were derived by a civil engineering consultant that is very familiar with San Juan Island and has experience with a number of solid waste facilities in other areas. Funding option information was made available by pertinent federal and state agencies. Acceptance issues will be further defined as comments on the Draft EIS are received from the public.

Physical Site Attributes and Constraints

Background

In 2006, the San Juan County SWAC evaluated a range of solid waste transfer and disposal options, user options, and types of services desirable at a new transfer station. Based on the SWAC process and input from San Juan County Solid Waste staff, it was determined that the transfer station should have the following features where practical:

- Queuing space for recycling and disposal customers.
- Separate customer inbound and outbound scales to reduce queuing.
- Fully enclosed transfer and recycling areas, including doors, to secure the buildings after hours.
- A flat tipping floor with room for customers to back into place, unload their waste under cover onto the floor, which would be pushed into the transfer trailer located at the back of the building.
- Transfer trailer bay floors approximately 15 feet below the tipping floor so that waste could be pushed into the trailer using a small loader.
- Drive-through transfer trailer bays for disposal and recycling for drivers to safely enter and exit the trailer bay with less potential for damaging the building envelope.
- Where practical, transfer trailer traffic separated from customer traffic.
- Scales in the trailer bays to help maximize transfer trailer payloads and reduce congestion at the scales.
- Stormwater controls to manage stormwater consistent with Washington State Department of Ecology's (Ecology) Western Washington surface water management guidelines, as adopted by San Juan County.
- Process wastewater collection, storage and disposal or treatment for processing areas that may be uncovered, such as a composting pad or construction and demolition debris processing.

Conceptual layouts for the site alternatives were developed with these features in mind. Relevant physical attributes for each conceptual site layout are listed in the attached matrix.

Useable Area

For all the sites the minimum front or road setbacks are 40 to 45 feet; rear and side setbacks are 15 feet. Maximum building height dimension is 35 feet. Maximum area of impervious surface is 10 percent. Minimum required open space or landscaped area is 30 percent. In addition, the presence of the capped landfill on the Sutton Road site removes a sizable portion of the otherwise useable area.

Easements

There are no easement issues for any of the sites. The following discussion is a summary of background information on the easements and other relevant paperwork associated with each site.

No documents on the assessor's website for the Sutton Road site. There is one warranty deed from 1946 from private owners to convey and warrant to Town of Friday Harbor.

For the Beaverton Valley Road Site there are two statutory warranty deeds, a boundary line adjustment, and right of refusal and option to purchase on assessor's website. There is a 2005 statutory warranty deed with easement granting San Juan County all necessary slopes for cuts and fills and easement granting Orcas Power and Light Company the electric transmission and/or distribution line, together with necessary appurtenances. A quit claim deed and utility easement are also on file.

Easement documentation for the Egg Lake Road site includes a notice of removal from designated forest land, statutory warranty deed, boundary line modification, and deed of trust found on assessor's website. There is also a boundary line modification on file on the assessor's website for a 2nd parcel and a boundary line modification for both parcels, a 1989 statutory warranty deed, and a 2nd boundary line modification.

For the Golf Course Road Site there exist two statutory warranty deeds, a special power of attorney, a deed of trust, a full reconveyance, two notices to land title of land use permits, and a simple land division. A shared well agreement, a statutory warranty deed, and a deed of trust were found on the assessor's website for the second parcel. There also exist a simple land division, a statutory warranty deed with an easement for San Juan County to have the right to maintain slopes, and a quit claim deed. There is also a statutory warranty deed for the parcel 352343008 with easements for San Juan County to access all necessary slopes for cuts and fills, utilities, conservation area, stormwater retention facility, and limited access area for all lots.

There exists for the Daniel Lane site a simple land division, deed of trust, and a statutory warranty deed. For a second parcel a notice of lis pendens, a statutory warranty deed, and a deed of trust exist on the assessor's website. There is also a statutory warranty deed for the parcels that has easements for ingress, egress, public utilities and roads, cuts and fills, and well and water pipeline.

Utilities

Complete utility services (power, water supply, sanitary sewer, and stormwater collection and piped conveyance systems) exist within Town of Friday Harbor (Friday Harbor) limits, the Friday Harbor Landfill property, the nearby Hillview Terrace subdivision, and other densely developed areas adjacent to Friday Harbor. The candidate sites are generally in less developed areas without stormwater, sanitary, or water utilities.

At the Sutton Road Site, power and telephone services are available on site, as is water and limited stormwater controls, mostly in the form of catch basins, pipes, and ditches. Stormwater detention or water quality treatment features are not on this site. Sanitary sewer service is not available n the existing leased site.

At the other sites, power and telephone lines exist along roads and, thus, are available nearby. Sanitary sewer services are not available at these sites.

The Golf Course Road Site has a detention pond in a lot specifically set aside for this purpose. The Beaverton Valley Site has a large pond that was reportedly constructed to provide enough volume to meet fire flow requirements for development of the property, and may have enough volume also to meet detention needs. Sizing calculations of either pond were not available to verify the design capacity or the basis for the design. The site also has a well that provides potable water onsite.

The Daniel Lane and Egg lake Sites do not have stormwater controls on site. A section of the Daniel Lane Site has a constructed wetland area, reportedly developed to meet mitigation requirements of nearby development.

Funding Sources

There are two types of funding sources available to cover the planning, design, and construction of this project: (1) local revenue sources where funds are raised by the local community; and (2) government grants and loans (which ultimately still depend on the local community for repayment).

Local revenue sources can include bonds, including revenue bonds and Limited Tax General Obligation (LTGO) Bonds. Disposal District(s) could be set up and taxes could be levied as part of the local sales tax for instance. Surcharges could be levied and tipping fees could be raised.

However, outside funding may be available to ease the financial burden on the community for a new facility. A number of potential funding sources could help pay for all or a portion of a new transfer station on San Juan Island. At the federal level, some of these sources include a variety of grant and loan programs offered by the Environmental Protection Agency (EPA). Some state funding sources include Ecology's Coordinated Prevention Grant (CPG) Program and the state's Public Works Trust Fund (PWTF).

The PWTF can make low-interest or interest-free loans to local governments for the purpose of financing public works projects. This program can also pledge monies to repay obligations issued by local governments to finance these facilities.

As all of the alternatives, as currently envisioned, would be equally eligible for funding consideration under these programs, funding source consideration is not useful in helping distinguish an advantage of one site over another. However, it is useful to consider that the final cost of the facility will not be entirely borne by the community

Comparative Planning Level Costs

Relative Cost Comparison of Candidate Sites

Candidate Sites for a new transfer and recycling facility to serve San Juan Island are:

- Sutton Road
- Beaverton Valley
- Daniel Lane

- Golf Course Road
- Egg Lake

The attached table summarizes major factors associated with site development for each candidate site. The factors can be divided into: a) those that are generally common to all sites and not expected to create major cost differences between sites, and b) those that differ enough that they may add significant cost to site development, based on current knowledge. These are briefly discussed below.

What is common between candidate sites?

All can potentially fit, have, and/or need:

1. Buildings: scales and scalehouse, transfer, recycling, household hazardous waste (HHW), and a material exchange or thrift store.
2. Empty and full transfer trailer parking
3. Drop-off areas for compostable or C&D
4. On-site queuing space for customers
5. Power available on site or nearby
6. Septic or other sanitary services nearby or on site, or available by using portable toilets.

What are major differences that may affect costs to develop each site?

The costs to develop the sites to a similar level of service (including processing areas for compostables and C&D debris) appear influenced by five major factors:

1. Space needs for processing pads for C&D debris and/or compostables
2. Quantity of rock versus soil excavation and the total quantity of cut and fill in order to construct the facilities, materials drop off and processing pads, access roads, and other infrastructure
3. Impervious area, as a percentage of property size
4. Stormwater detention
5. Water supply

The general impacts these factors may have on the candidate sites are summarized below.

1. Space for Processing Pads (C&D debris and/or compostables):
    a. Beaverton Valley, Daniel Road, and Egg Lake: Space is available on site and the sites could be graded to create level areas for the pads.
    b. Sutton Road: The site lacks level or gently sloping ground for developing level processing areas; the cost to create processing areas would require major cuts, fills and retaining.
    c. Golf Course Road: This small site does not have space to add these in addition to the buildings or material drop-off pads.

2. Rock and soil excavation, and total excavation and fills:
    a. Except for excavation at Golf Course Road, the balance of total excavation and fill quantities are similar for at each site this level of conceptual detail.
        i. Egg Lake and Beaverton Valley vary from relatively level to sloping sites. Facility locations can generally take advantage of these variations to reduce excavation and fill quantities.
        ii. Sutton Road has level ground in existing developed areas, and is generally moderately to steeply sloping elsewhere. Facilities such as materials processing pads and trailer parking areas require relatively level ground. Developing level areas at the Sutton Road site is expected to require large amounts of cut and fill.

iii. Daniel Lane is relatively level and expected to require mostly grading with small quantities of excavation and fill.
iv. Golf Course Road is expected to require a large amount of excavation and a small amount of fill to create enough level areas for trailer parking, turning, and aligning, scales, and buildings within this small site.

b. Excavations are expected to encounter conditions that range from mostly soil to mostly rock, depending on the site. Rock excavation costs can be as much as four to five times more than the cost of soil excavation, based on construction costs from County projects and other projects.
   i. Sutton Road and Egg Lake have exposed bedrock or thin soil cover. Excavations for roads, buildings, pads and stormwater detention are expected to encounter primarily hard rock that would require chipping, blasting or rock saw to remove.
   ii. Daniel Lane and Golf Course Road are expected to encounter soil in excavations.
   iii. Beaverton Valley is expected to encounter approximately equal amounts of rock versus soil during excavation.

3. Impervious Area, assuming construction of buildings, roads, and pads:
   a. Egg Lake is expected to have a low percentage of impervious developed area (approximately 14-19%) relative to the size of the property (approximately 40 acres).
   b. Beaverton Valley has an existing impervious area (e.g., pond, a small building, and access road) on this approximately 27-acre site. These combine with new facilities and infrastructure to yield an estimated 20-25% total impervious area.
   c. Daniel Lane is approximately 17 acres, with an estimated impervious area of approximately 27-33% once facilities are constructed.
   d. Sutton Road is approximately 24 acres (excluding the existing capped landfill), and contains the existing transfer and recycling buildings, old incinerator building, other buildings, gravel parking and access roads, and a capped landfill. With new facilities added, the total impervious area is estimated at 27-33%.
   e. Golf Course Road is approximately 5 acres, with an estimated impervious area of approximately 65-70% once facilities are constructed.

4. Stormwater detention, which will be required based on impervious area:
   a. Beaverton Valley has an existing pond that may have adequate capacity.
   b. Daniel Lane, Egg Lake, and Sutton Road would need stormwater detention facilities constructed (e.g., ponds, tanks, etc.)
      i. Daniel Lane is relatively level, has space available for a detention pond, and is expected to be straightforward to construct. It may also be possible to divert stormwater to the wetland mitigation project adjacent to the site.
      ii. Egg Lake may require two or more stormwater collection points, depending on how the site is developed, one by Egg Lake Road and one where trailer parking/transfer and recycling might be located. In these potential downstream collection areas, the site is either narrow or slopes and has shallow bedrock, affecting the level of effort and cost of construction.
      iii. Sutton Road has relatively level space near Roche Harbor Road, where the powerlines cross the property. AMEC, the County's EIS consultant, has identified this area as a potential wetland. Development at this location may require wetland mitigation.
   c. Golf Course Road has two small detention ponds: one on the uphill side of the site and one close to Golf course road. The upper pond, by itself, does not appear to have detention capacity for the entire developed site, and would require pump station(s) to convey stormwater from a downhill collection point up to the pond. The second pond

would likely be backfilled and relocated so the site could be efficiently developed. These characteristics complicate, and are expected to impact the cost of, stormwater detention for this site.

5. Water supply:
    a. Sutton Road has municipal water supply in the existing developed area. No additional water supply should be needed, unless the Town of Friday Harbor elects to terminate service.
    b. Beaverton Valley has potable water available on site.
    c. Daniel Lane, Golf Course Road, and Egg Lake would need water supplied, using wells, on site storage tanks or other means for both potable water and fire flow.

Relative Costs By Category

The following table shows the relative cost ranges for major development factors that may have a significant cost impact in developing each candidate site based on the conceptual site layout. These cost ranges are provided only for the purposes of relative comparison. The costs presented below will change based on detailed design and current costs of materials, labor, fuel, commodities, and incidentals at the time a facility is constructed. Cost elements not accounted for in these major cost categories include, and are not limited to:

- Property acquisition
- Economic factors (e.g., inflation, discount rate, etc.)
- Permitting
- Public process, and similar factors
- Utilities
- Leachate holding tanks for the transfer station, which are typically small in volume and an incidental cost
- Fire flow
- Electrical
- Mobilization, design or construction management, or a contingency

Summary by Major Category	Beaverton Valley	Egg Lake	Daniel Lane	Golf Course Road	Sutton Road
Buildings, Roads, Scales	$2 – 3 million	$2 – 3 million	$2 – 3 million	$2.4 – 3.5 million[2]	$2 – 3 million
Excavation, Fill & Site Preparation	$0.6 - 0.8 million	$0.7 – 1 million	$0.3 – 0.4 million	$0.4 – 0.6 million	$1.3 – 1.9 million[4]
C&D and/or Composting Pads	$1.6 – 1.8 million	$1.6 – 1.8 million	$1.5 – 1.7 million[1]	$0.6 – 0.7 million[3]	$1.6 – 1.8 million
Stormwater Detention[5]	$0	$0.3 – 0.5 million	$0.3 – 0.5 million	$0.3 – 0.5 million	$0.3 – 0.5 million
Combined Category Costs	$4.2 – 5.6 million	$4.6 – 6.3 million	$4.1 – 5.6 million	$3.7 – 5.2 million	$5.2 - 7.1 million

Notes:

1. Smaller pad than Beaverton Valley or Egg Lake sites.
2. Transfer and Recycling building costs higher than other sites because of double-wide transfer trailer pull through.
3. C&D and compostables drop off only; pad not sized for processing.
4. C&D and compostables drop off and processing requires large cuts, fills and retaining walls.
5. Stormwater detention assumes a pond or tank and a similar control release rate for each site without benefit of design.

Factor	Candidate Site				
	Sutton Road	**Beaverton Valley**	**Daniel Lane**	**Golf Course Road**	**Egg Lake**
Acreage	Approx. 24 acres (excludes existing landfill))	Approx. 27 acres	Approx. 17 acres	Approx. 5 acres	Approx. 40 acres
Ground Surface	Relatively level or benched in developed portions; except for closed landfill, generally slopes downhill to Roche Harbor Road.	Portions slope; portions are relatively level.	Generally level.	Slopes generally toward Golf Course Road.	High area formed by ridge; slopes away from ridge on both sides.
Property shape	Two parcels/Roughly rectangular	Approximately Rectangular	Rectangular	Rectangular	Irregular
Ability to Accommodate Services					
Transfer Station	Yes	Yes	Yes	Yes	Yes
Recycling Drop-off Station	Yes	Yes	Yes	Yes	Yes
Household Hazardous Waste Building	Yes	Yes	Yes	Yes	Yes
Material Exchange or Thrift Store	Yes	Yes	Yes	Yes	Yes
Compost Drop-off	Yes	Yes	Yes	Yes	Yes
Compost Processing	Yes - with large cuts, fills, and retaining walls	Yes	Yes	No	Yes
C&D Drop-off	Collection/Site slopes require major cuts/fills/retaining walls to create processing area.	Yes	Yes	Yes	Yes
C&D Processing	Yes - with large cuts, fills, and retaining walls	Yes	Yes	No	Yes
Trailer parking	Yes	Yes	Yes	Yes	Yes
On-site Queuing Capacity	Sutton Roar Access: Approx: 450 feet (20-22 cars) Roche Harbor Road Access: Approx. 900 feet (40-43 cars) to recycling + 60 feet (3 to 4 cars) for disposal only	Approx. 750 feet (33-35 cars) to recycling plus 400 feet (18-19 cars) for disposal only.	Approx. 1,000 feet (44-47 cars) to recycling plus 250 feet (11-12 cars) for disposal only.	Approx. 125 feet (6-7 cars) to scales plus 700 feet (31-33 cars) to recycling and disposal.	Approx. 500 feet (23-24 cars) to recycling plus 400 feet (18- cars) for disposal only.
Approx. Percentage Impervious Area (Buildings/Roads)	15-20%	10-15%	13-18%	50-55%	7-12%
Approx. Percentage Impervious Area (Buildings/Roads/Pads)	27-33%	20-25%	27-33%	65-70%	14-19%
Expansion Potential	Marginal to poor (depends on type of facility)	Possible	Possible	Poor	Possible
Site Preparation (Cut and Fill)					
Ratio Soil to Rock Excavation	Mostly rock excavation	Approx. equal rock and soil	Expected to be all soil	Expected to be all soil	Mostly rock excavation
Approx. Excavation Quantity (CY)	20,000-29,000	10,000-15,000	7,000-10,000	38,000 - 58,000 (create enough level area for traffic loop and parking)	10,000-15,000
Approx. Fill Quantity (CY)	20,000-29,000	9,000-19,000	7,000-10,000	3,000-5,000	10,000-15,000
Access Roads	Roche Harbor Road	Beaverton Valley Road	Cattle Point Road and private lane	Cattle Point Road	Roche Harbor Road & Egg Lake Road

Distance to Ferry	Approximately 2 miles	Approximately 1-1/2 miles	Approximately 2-1/4 miles	Approximately 2 miles	Approximately 6.5 miles
Utilities					
Stormwater	None	Existing fire flow and/or detention pond; may have enough capacity.	None	Two small ponds not well-located for site development; likely to be relocated and/or pump station required.	None
Sanitary Sewer or Septic	None	Yes - septic (may or may not be in right location or large enough).	None	None	None
Water Supply	Yes	Yes	None	None	None
Power	Yes	Available - powerline along road	Available - powerline along road	Available - powerline along road	Available - powerline along road

Notes:

1 Areas and quantities generally estimated in CADD and using conceptual level site grades and building/road/pad layouts.
2 Area, quantity and distance estimates appropriate for relative comparison.
Blue indicates major factors affecting cost of site development for comparison between candidate
3 sites.
4 Characterizations based on information provided by San Juan County, and field observation.
Buildings assumed similar size for all sites. Compost and C&D pads vary based on property size
5 and shape.

Planning-Level Cost Ranges for Transportation Mitigation

Traffic mitigation measures might be considered at the access road intersections for the alternative sites that fail to meet the County Sight Distance Standard. These measures fall into two categories: (1) operational mitigation options to lower speed limits and alert drivers to the transfer station access road, and (2) construction-related mitigation options that involve roadway realignment and widening and the establishment of bicycle lanes, where appropriate.

Operational Mitigation

Reducing the overall speed limit in the vicinity of each site is a potential low-cost mitigation option. An analysis was conducted to determine the speed limit required to meet the County Site Distance Standard.

Results of the analysis are found in the following table. For the No Action alternative to meet the County Sight Distance Standard the speed limit would need to be lowered by 10 mph. For the Egg Lake Road alternative to meet the County Sight Distance Standard the speed limit would need to be lowered by 15 mph. For the Beaverton Valley Road alternative to meet the County Sight Distance Standard the speed limit would need to be lowered by 10 mph. The Daniel Lane, Golf Course Road and Sutton Road alternatives currently meet the County Sight Distance Standard. No significant adverse environmental impacts would be associated with reducing speed limits or placement of additional signage as previously discussed.

Speed Limit Required to Meet County Sight Distance Standard

Alternative Site	Location	Direction	Current Speed Limit	Speed Limit to Meet County Standard
No Action Alternative	Sutton Rd/Roche Harbor Rd	West Leg	35	25
		East Leg	35	35
	Site Access	West Leg	35	35
		East Leg	35	35
Sutton Road	Sutton Rd/Roche Harbor Rd	West Leg	35	35
		East Leg	35	35
	Site Access	West Leg	35	35
		East Leg	35	35
Egg Lake Road	Egg Lake Rd/Roche Harbor Rd	North Leg	45	25
		South Leg	45	25
	Site Access	West Leg	35	20
		East Leg	35	35
Beaverton Valley Road	Site Access	West Leg	35	25
		East Leg	35	35
Daniel Lane	Daniel Lane/Cattle Point Rd	West Leg	45	45
		East Leg	45	45
	Site Access	North Leg	25	25
		South Leg	25	25
Golf Course Road	Golf Course Rd	North Leg	45	45
		West Leg	45	45
	Site Access	North Leg	25	25
		North Leg	25	25

In addition to lowering the speed limit in the vicinity of the access road intersections, is to post signs that indicate the limited sight distance and high vehicle activity area. This may be supplemented by street lighting, flashing signals, and other measures to identify a location where there may be a potential hazard.

Construction Mitigation

An alternative to posting reduced speeds and placement of other traffic signage is actual roadway realignment. Although no significant traffic impacts were identified, realignment is a mitigation option that the County may wish to explore. Details of potential roadway realignment mitigation for inadequate sight distance at access road intersections would be developed as part of detailed site design. Such mitigation would be designed to be sufficient to meet the County Sight Distance Standard. For all sites, appropriate warning signs, advisory speed limits and street lighting should be considered.

Potential planning-level cost ranges for both Operational and Construction related traffic mitigation measures are summarized in the following table. The need for either Operational or Construction Mitigation would be determined as part of subsequent design processes.

Mitigation Options and Ranges of Planning-Level Costs for Potential Traffic Mitigation

Alternative	Operational Mitigation Options	Operational Mitigation Planning-Level Cost Ranges	Optional --- Construction Related Mitigation Options	Construction-Related Mitigation Planning-Level Cost Ranges
No Action	Warning Signage/Speed Limit Lowering	$8,000 to $20,000	Roadway realignment and clearing.	$160,000 to $200,000
Sutton Road	Warning Signage/Speed Limit Lowering	$8,000 to $20,000	None /Operational Mitigation is sufficient.	$0
Egg Lake Road	Warning Signage/Speed Limit Lowering	$8,000 to $20,000	• Clear zone along the east of Egg Lake Road between the site access road and Bacon Lake Road. • Purchase right-of-way. • Realign Roche Harbor Road/Egg Lake Road.	$440,000 to $560,000
Beaverton Valley Road	Warning Signage/Speed Limit Lowering	$8,000 to $20,000	• Improvements along the south side of Beaverton Valley Road. • Widen the road to the south of the centerline to provide a 100-foot right-turn lane. • Erosion control and plantings.	$530,000 to $630,000
Daniel Lane	Warning Signage/Speed	$8,000 to $20,000	• 100-foot right-turn taper east	$80,000 to $120,000

	Limit Lowering		of Daniel Lane.	
Golf Course Road	Warning Signage/Speed Limit Lowering	$8,000 to $20,000	• 230-foot right-turn lane on Cattle Point Road. • Widen and upgrade 750 feet of Golf Course Road.	$540,000 to $690,000

Footnote: Impacts associated with the construction-related mitigation options are anticipated to be restricted to short-term effects to local stormwater runoff and air quality due to construction activities. These effects would be mitigated with standard onsite controls.

Neighborhood/Customer Acceptance Issues

Issues associated with customer and neighborhood acceptance of this project are very important to consider. The established process for collecting acceptance input and giving meaning to this issue is to consider the public comments that are submitted as part of the formal DEIS review process. These public comments were made available to decision-makers prior to their making a site recommendation.