REPORT

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August 2013

Solid Waste Transfer / Disposal Alternatives Analysis

Spokane County, Washington

HR



1116 W. Broadway Spokane, Washington 99260

August 2013

Solid Waste Transfer/ Disposal Alternatives Analysis



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Executive Summary

The Spokane Regional Solid Waste System (System) was created in 1988 by interlocal agreement between the City of Spokane and Spokane County. There are 14 member jurisdictions which represent all of incorporated and unincorporated Spokane County. Nearly all current interlocal agreements and contracts related to the System expire November 16, 2014, and may be terminated.

The current System is administered as a department of the City of Spokane. The System's facilities consists of four primary facilities: a waste-to-energy (WTE) facility, a transfer station in Spokane Valley (Valley Transfer Station), a transfer station in unincorporated northern Spokane County (Colbert, also known as North County, Transfer Station), and the Northside Landfill. All System facilities are currently owned and operated by the City of Spokane. The objective of this report is to evaluate potential operating scenarios that could be implemented either jointly or separately by the County and City of Spokane Valley to handle transfer and disposal of their municipal solid waste operations after November 16, 2014. This includes potentially adding a new West Plains Transfer Station for the cases where the WTE facility would not be used.

The scenarios were based on different transfer station acquisition scenarios aligned with potential haul and disposal options ranging from continuing with current truck haul operations to the WTE facility, truck haul to regional landfills for disposal, and truck haul to potential intermodal facilities (the existing BNSF Parkwater Intermodal or proposed Geiger Spur Intermodal) combined with rail haul to regional landfills. Operation of the transfer stations, haul, and disposal was assumed to be competitively bid, with the County/City of Spokane Valley maintaining ownership of the transfer stations. The costs for each scenario were developed based on existing information and operational requirements. The proforma was developed for the identified combinations. The following solid waste projections were consistently utilized in the cost center models and financial proformas to calculate annualized costs for comparison of all options.

- □ Colbert Transfer Station 46,000 tons per year
- □ Valley Transfer Station 91,000 tons per year
- □ West Plains Transfer Station 20,000 tons per year

The disposal tipping fees were based on information provided by the landfill operators, and utilized the posted gate rate; bidding and long-term contracts for haul and disposal may result in lower fees. The regional landfill gate fees used in the analysis do not include the state of Washington's refuse tax of 3.6 percent and would be applied at the transfer station when the final disposal is a landfill. Based on this evaluation, disposal at the Roosevelt Landfill was the most cost effective combined with truck or rail haul, and was used for the proforma. A summary of the options evaluated is presented below.

Option	Transfer	Disposal	
1	Purchase Colbert and Valley Transfer Stations at fair market value	Α	All Waste to WTE
		В	Build West Plains Transfer Station and truck long haul to regional landfill
		С	Colbert Transfer Station and Valley Transfer Station truck long haul; City operates WTE TS
			D

Table ES- 1 Summary of Transfer/Disposal Options

Option	Transfer	Disposal	
2	Purchase Colbert and Valley Transfer Stations for minimal fee		All Waste to WTE at \$65/ton tip fee
3	Purchase Colbert and Valley Transfer Stations at fair market value Build West Plains Transfer Stations	Α	BNSF Intermodal, rail haul to regional landfill
		В	Build Geiger Spur Intermodal, rail haul to regional landfill
	Build replacement & new Transfer Stations (3)	Α	Truck long haul to regional landfill
4		В	BNSF Intermodal, rail haul to regional landfill

Based on the different scenarios identified, a ten-year projection was developed identifying the System gate fees for each matrix option.



Figure ES-1 System Gate Fees Projections

Between the end of 2014 and end of 2017, some of the options being considered would be in the developmental stages with facilities being sited, designed, permitted and constructed. Therefore, an interim operation of transfer and disposal at the WTE Facility was assumed for affected options during this period. The new configurations would be in operation by 2018. The systems costs increase based on escalation factors in following years.

Based on these projections, the lowest cost option for the long term is Option 2: the County/City of Spokane Valley take over the Colbert and Valley Transfer Stations at a minimal fee, the City of Spokane operates the transfer station at the WTE facility and waste continues to be disposed at the WTE at an agreed price starting at \$65 per ton.

Our analysis shows that the next lowest cost option can either be Option1A, where the County/City of Spokane Valley purchase the existing transfer stations at fair market value, and all waste is transferred and disposed at the WTE plant at a gate fee of \$65 per ton; or Option 3A: the County/City of Spokane Valley purchase the existing transfer stations at fair market value, build the proposed West Plains Transfer Station, and rail haul through the existing BNSF Intermodal Yard for disposal at a regional landfill. It should be noted that the resultant all-inclusive transfer and disposal fee for Option 3A must include an additional 3.6% associated with the Washington Refuse Tax, which increases the base gate fee to \$117 per ton.

Competitive bidding and negotiations may lower the fees for these options. In addition, review of transfer station operations and reductions in hours of operation based on tonnage and use could further reduce costs.

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Section 1 Introduction

1.1 Background

The Spokane Regional Solid Waste System (System) was created in 1988 by interlocal agreement between the City of Spokane and Spokane County. The City of Spokane Valley joined the System in 2003 when it incorporated. There are 14 member jurisdictions which represent all of incorporated and unincorporated Spokane County. Nearly all current interlocal agreements and contracts related to the System expire November 16, 2014.

The current System is administered as a department of the City of Spokane. The System's facilities consists of four primary facilities: a waste-to-energy (WTE) facility, a transfer station in Spokane Valley (Valley Transfer Station), a transfer station in unincorporated northern Spokane County (Colbert, also known as North County, Transfer Station), and the Northside Landfill. All System facilities are currently owned and operated by the City of Spokane. The Colbert Transfer Station and Valley Transfer Station began operation with the implementation of the System's program in late 1991; and the acceptance date of the WTE Facility is November, 1991. While the Northside Landfill discontinued the receipt of waste and disposal operations on December 31, 1991, a waste cell was activated in early 1992 to provide emergency solid waste disposal capacity and to manage materials considered non-processible at the WTE Facility. The bonds issued to finance the construction of the System facilities were refunded in 2011.

1.2 Purpose

With the expiration of the interlocal agreements and contracts approaching, Spokane County and the City of Spokane Valley (County/City of Spokane Valley) desire to jointly investigate and evaluate alternative transfer and disposal options for their respective municipal solid waste streams. As such, HDR was selected to provide an initial evaluation of the existing transfer system and regional transfer/disposal options and develop opinions of cost for financial comparison of alternatives evaluated.

1.3 Scope and Methodology

The scope of services associated with the overall evaluation is to be conducted in three phases, with HDR's initial work assignment related to Phase I. The other phases will be added by either change order or contracted separately. The following is a general statement of the scope of services for each phase.

PHASE I – Initial evaluation of transfer/disposal alternatives and opinions of costs.

PHASE II – Development of detailed option analysis.

PHASE III – Implementation of the selected option.

As noted above, the initial work related to this study covers the Phase I effort. This effort provides an analysis of calculated gate fees for the proposed options to be analyzed for transfer and disposal of solid waste in comparison to the actual gate fees being charged by the System. Gate fees are the fees charged inclusive of all transfer, haul, and disposal costs and system fees required for the receipt and safe disposal of municipal solid waste (MSW) by the System for a selected alternative. These fees are charged by the ton. The gate rate for MSW does not subsidize the cost of service for yard waste disposal. Prior to initiating the study, HDR visited the transfer station sites to observe operations, perform a conditional assessment overview, and identify opportunities for reducing operations and maintenance (O&M) costs based on similar facility operations. The project team for the Phase I effort included staff from HDR, Spokane County, the City of Spokane Valley, and the Spokane Regional Solid Waste System. The project team developed a matrix of proposed alternatives for transfer and disposal to be evaluated. The infrastructure requirements were identified, costs for implementation and O&M developed, and financial models created to perform a comparative analysis of all selected transfer and disposal options.

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Section 2 System Overview

2.1 Facility Descriptions

The overall System consists of transfer stations, landfills, a waste-to-energy plant and a compost facility. This study conducted by HDR focused on operations of the two existing transfer stations, transfer operations performed at the WTE plant, and the overall services included and related to the safe transfer and disposal of solid waste. The following provides a description of each of these facilities.

- □ Colbert (North County) Transfer Station handles solid waste, recycling, household hazardous waste and yard waste. The facility is comprised of two scalehouses, three scales, a free recyclables drop-off area, transfer building that serves public and commercial customers, administration building, household hazardous waste area, and white goods area. The transfer building is an open, three-sided metal building structure with one full grade separated hopper for loadout. The Colbert Transfer Station has 8,600 square feet of covered tipping floor area. Waste loads are spread and compacted by a fixed tamping crane installed on a pedestal at the center of the loadout hopper. The tamping crane is utilized to spread the waste during loadout, and achieve legal load limits for transfer vehicles.
- □ Valley Transfer Station handles solid waste, recycling, household hazardous waste and yard waste. The facility is comprised of two scalehouses, three scales, a free recyclables drop-off area, transfer building that serves public and commercial customers, administration building, household hazardous waste area, and white goods area. The transfer building is an open, three-sided metal building structure, with one, full grade separated hopper for loadout and a hopper fed compactor unit which direct feeds into trailers for truck haul. The compactor-fed trailers can also be directed to the BNSF Parkwater Intermodal Facility located in Spokane Valley for rail haul to a regional landfill. The Valley Transfer Station has approximately 15,700 square feet of tipping floor under roof.
- □ The tipping area of the WTE plant has been segregated to handle solid waste, recycling, household hazardous waste, and yard waste. The tipping floor has been configured to separate collection vehicle traffic headed to the waste storage pit from the commercial and citizen traffic utilizing the transfer area.

All three facilities went into operation in 1991. The primary purpose of the transfer station facilities is to provide locations for all users of the System to recycle, drop off household hazardous waste, yard waste and dispose of municipal solid waste (MSW). The waste is consolidated and hauled to one of three destinations:

- 1. the WTE facility for thermal processing,
- 2. BNSF Parkwater Intermodal Yard (BNSF) for rail transport for disposal, or
- 3. Northside Landfill for disposal of non-processible waste.

The ultimate destination of the transfer trucks is primarily dependent on the type of material (i.e. noncombustibles are directed to a landfill) and the availability of the WTE facility. The general operations of the transfer stations are similar; all facilities are open for business seven days per week, with operating hours from 7:30 am to 5:00 pm daily.

2.2 Historical Waste Data and Projections

The transfer station study included the comparison of the development of replacement transfer station facilities by the County/City of Spokane Valley in lieu of the purchase/takeover of the existing Colbert and Valley Transfer Stations. These replacement facilities will be necessary in the event that the

County/City of Spokane Valley are unable to assume the ownership of the existing transfer stations, or selects an option of functioning independent of the City of Spokane. Prior to initiating the sizing of a transfer facility, the estimated quantity of waste material components to be processed was evaluated. To do that, HDR reviewed the waste delivery quantities for all of the existing transfer operations managed by the System for the last four years. This period was selected to include an operational year (2008) prior to the downturn in the economy. The state of the economy directly effects waste generation, so it is necessary to capture a peak waste generation period to properly size any facility once the economy and waste generation returns to normal levels.

Based on data provided by the City of Spokane, HDR summarized the waste and yard waste quantities received the last four years at the Colbert, Valley and WTE transfer operations. This information is summarized in Table 2.1 below.

Year	2008						2009					
Station	Colbert Tra	nsfer Station	Valley Tran	nsfer Station	Waste-to-E	nergy Plant	Colbert Tra	nsfer Station	Valley Tran	sfer Station	Waste-to-Energy Plant	
Month	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste
January	3,008	13	7,092	51	13,150	38	3,534	11	9,059	47	13,850	34
February	3,159	17	7,464	60	12,860	80	3,149	19	6,569	97	11,917	75
March	3,890	273	8,160	777	15,043	962	4,077	187	7,603	554	14,640	670
April	4,584	772	8,966	1,552	16,099	2,129	4,797	975	9,179	2,196	16,339	2,676
Мау	4,759	1,324	9,964	2,785	17,732	3,579	4,860	1,338	9,159	2,735	16,462	3,090
June	4,658	1,157	9,688	2,406	15,612	2,904	4,820	1,108	9,173	2,442	16,312	2,640
July	4,452	958	9,478	2,098	16,667	2,287	4,588	829	8,704	1,810	15,948	2,147
August	4,264	947	8,808	1,837	15,469	1,858	4,436	810	9,012	1,796	13,412	1,886
September	4,450	745	8,814	1,622	15,808	1,732	4,537	831	8,607	1,767	15,375	1,804
October	4,453	859	8,833	1,709	15,955	2,301	3,883	841	8,222	1,910	15,902	2,499
November	3,805	711	7,706	2,092	14,043	3,619	3,986	763	7,688	1,887	14,103	2,616
December	3,268	85	6,706	297	12,855	841	3,961	66	7,628	207	12,518	331
Waste Total	48,749	7,862	101,680	17,286	181,293	22,330	50,627	7,778	100,601	17,447	176,776	20,467
Station Total	56,	612	118	,965	203	,623	58,	406	118	,048	197	,243
Year Total			379	,200					373	,696		
Year			20	010					20	11		
Station	Colbert Tra	nsfer Station	Valley Tran	nsfer Station	Waste-to-E	nergy Plant	Colbert Tra	nsfer Station	Valley Tran	sfer Station	Waste-to-E	nergy Plant
Month	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste
January	3,445	40	7,735	130	12,901	106	3,167	53	6,671	148	12,410	147
February	3,474	99	7,658	258	12,491	189	2,919	55	6,022	215	11,412	184
March	4,386	545	8,817	1,184	15,229	1,388	3,840	403	7,480	833	14,062	538
April	4,136	857	8,269	1,733	15,073	2,256	3,917	929	7,547	1,745	13,758	929
Мау	4,271	1,152	8,361	2,301	14,651	2,850	4,398	1,246	8,646	3,060	15,526	2,865
June	4,836	1,214	9,520	2,516	16,850	3,106	4,605	1,298	8,964	3,034	15,970	738
July	4,466	893	8,408	1,876	15,032	2,089	4,150	841	8,010	2,081	13,910	532
August	4,619	840	8,258	1,786	14,791	1,841	4,125	788	8,192	1,821	14,932	391
September	4,346	666	8,229	1,527	14,365	1,617	3,938	616	7,789	1,774	14,244	375
October	3,905	859	7,885	1,656	14,205	1,839	3,942	738	7,497	1,831	14,043	587
November	3,756	829	7,636	1,969	14,254	2,783	4,011	767	7,191	2,241	13,834	1,805
December	3,234	34	7,135	135	13,265	241	3,535	133	6,794	537	12,459	1,805
Waste Total	48,873	8,029	97,912	17,070	1/3,10/	20,303	46,54/	7,866	90,804	19,321	166,560	10,897
Station Lotal		902	245	,982	193	,410	54,	413	241	,124		,430
Tear Total			303	,274					341	,774		
Year			20	012								
Station	Colbert Tra	nsfer Station	Valley Trar	nsfer Station	Waste-to-E	nergy Plant						
Month	Waste	Yard Waste	Waste	Yard Waste	Waste	Yard Waste						
January	3,186	64	6,556	187	8,893	482						
rebruary	3,142	33	6,159	135	9,/64	89						
March	3,516	217	7,299	/61	12,/29	353						
April	3,956	983	7,960	2,415	14,010	905						
May	4,466	1,300	8,323	3,200	12,235	/22						
June	3,992	700	0,229	2,770	9,329	692 522						
JUIY	4,199	/ 0 9	0,203	2,370	12,/9/	332						
Sontombor	3,077	510	7 511	2,305	13,234	420						
Octobor	3,833	840	7,511	2 2 4 9	12725	431						
November	3 501	582	7,703	2,249	12,723	2 8 80						
December	3 0 6 1	70	6 4 8 9	2,721 474	10.784	2,000						
Waste Total	45,110	6,975	90,905	21,689	141.276	9,366						
Station Total	52.	084	112	,595	150	,642						
Year Total			315	,321								
R							1					

Table 2.12008-2012 Waste Quantity Summaries



To show the trending for each waste component, this information is graphically presented in Figures 2.1 and 2.2.

Figure 2.1 Waste Quantities Summary



Figure 2.2 Yard Waste Quantities Summary

As noted in the figures above, the general trend of the waste quantities received at each of the facilities is down except for yard waste received at the Valley Transfer Station. In addition to the historical data noted above, HDR reviewed the waste quantities received for the current fiscal year. In review of the current fiscal data for the Valley and Colbert Transfer Stations, it was noted that the monthly accumulations for May 2013 were the highest or peak periods of waste and yard waste received at each transfer stations for the period of data under review.

This resulted in the following peak quantities (tons per day – tpd) utilized for sizing the proposed replacement transfer stations:

- Colbert TS 160 tpd (waste), 117 tpd (yard waste)
- □ Valley TS 335 tpd (waste), 233 tpd (yard waste)

These peak quantities include a 20% increase for system upsets and unplanned peak events or generation periods.

Should the County/City of Spokane Valley elect not to continue disposal at the WTE Facility and develop replacement transfer station facilities, it is estimated that an additional new transfer station may be required in the western part of Spokane County. This facility is referred to as the proposed West Plains Transfer Station. Based on population density and collection quantities, it is estimated that a new facility in this part of the County would receive approximately 20,000 tons of waste per year, or 60 tons per day. Assuming a 40% increase for peak periods, the facility would be sized for processing 84 tons per day.

The peak day throughput was assumed for sizing of the replacement facilities, given that the facilities need to be able to handle the busiest days without backing up traffic. Note that the financial analysis is based on an annual throughput which is discussed further in Section 3.

Section 3 Technical & Operational Analyses

3.1 Summary of Transfer and Disposal Alternatives

At the initiation of the study, the project team met and discussed available transfer and disposal options. These were paired to make combinations that included a variety of transfer and disposal scenarios. The transfer options include purchasing and transferring ownership of the Colbert and Valley Transfer Stations to the County/City of Spokane Valley and the development of new and/or replacement facilities. The disposal options include continuing disposal at the WTE plant, truck long haul to a regional landfill, and truck haul to a local intermodal facility for rail haul and disposal at a regional landfill facility. A complete description of the combination options is provided in Table 3.1.

	TRANSFER OPTIONS		DISPOSAL OPTIONS
1A	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley issue RFP for Operations & Disposal. City of Spokane maintains operation of WTE transfer station component. 	1A	 City of Spokane maintains operation of WTE facility and secures bid for disposal of all tonnage (157,000 TPY) from County/City of Spokane Valley.
1B	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley sites and builds new West Plains Transfer Station. County/City of Spokane Valley issues RFP for Operations and Disposal. 	1B	 County/City of Spokane Valley contracts disposal for truck long haul to regional landfill (157,000 TPY).
1C	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley contracts with City of Spokane for transfer station services at the WTE. 	1C	 County/City of Spokane Valley contracts disposal for truck long haul to regional landfill from the Colbert and Valley Transfer Stations (137,000 TPY).
1D	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley contracts with City of Spokane for transfer station services at the WTE. 	1D	 County/City of Spokane Valley contracts disposal for rail haul to regional landfill (137,000 TPY) using proposed Geiger Spur Intermodal Yard.
2	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for a minimal fee County/City of Spokane Valley issues RFP for Operations. City of Spokane maintains operation of WTE transfer station component. 	2	 County/City of Spokane Valley enter agreement for disposal at WTE at \$65/ton (157,000 TPY), with escalations for contract term.

Table 3.1 Transfer & Disposal Options Matrix

(continued)

Table3.1 continued

	TRANSFER OPTIONS		DISPOSAL OPTIONS
3A	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley sites and builds new West Plains Transfer Station. County/City of Spokane Valley issues RFP for Operations and Disposal. 	3A	 County/City of Spokane Valley contracts disposal for rail haul to regional landfill (157,000 TPY) using existing BNSF facility.
3B	 County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. County/City of Spokane Valley sites and builds new West Plains Transfer Station County/City of Spokane Valley issues RFP for Operations and Disposal. 	3B	 County/City of Spokane Valley contracts disposal for rail haul to regional landfill (157,000 TPY) using proposed Geiger Spur Intermodal Yard.
4A	 County/City of Spokane Valley sites and builds new transfer stations to replace Colbert and Valley Transfer Stations. County/City of Spokane Valley sites and builds new West Plains Transfer Station. County/City of Spokane Valley issues RFP for Operations and Disposal. 	4A	 County/City of Spokane Valley contracts disposal for truck long haul to regional landfill (157,000 TPY).
4B	 County/City of Spokane Valley sites and builds new transfer stations to replace Colbert and Valley Transfer Stations. County/City of Spokane Valley sites and builds new West Plains Transfer Station. County/City of Spokane Valley issues RFP for Operations and Disposal. 	4B	 County/City of Spokane Valley contracts disposal for rail haul to regional landfill (157,000 TPY) using existing BNSF facility.

The option combinations were further broken down into cost centers so that each of the elements could be estimated for incorporation into the proforma developed for each option analyzed. The description and development of the cost centers are provided in Section 4.1 herein.

3.2 System Needs/Facility Sizing

Several of the options to be analyzed require an opinion of capital investment needs for the development of replacement and/or new transfer station facilities. As such, HDR determined system needs and estimated the facility sizes needed to manage the waste stream and continue providing services as the current level. This section describes the methodology employed to develop the capital opinions of construction cost utilized in the financial analysis.

The existing System is a comprehensive solid waste management system. The Sytem collects, manages and disposes of all solid waste generated by the City of Spokane, Spokane County and member communities. The system manages approximately 300,000 tons of waste annually, with almost 50% of the total material processed through the existing Colbert and Valley Transfer Stations. In review of historic waste quantities collected and processed by the system, it was noted that annual waste generation data trend was downward due to the economy. This was a common phenomena experienced throughout the United States.

Recent data suggests that waste generation is on the rise toward quantities similar to those prior to the economic downturn. This is certainly evident in review of the current fiscal year data provided by the City of Spokane. Utilizing this information, and accounting for growth over the planning period, future waste quantities for each of the transfer stations were estimated. In addition, an annual waste quantity was estimated for the proposed West Plains Transfer Station.

The following waste annual projections were developed for each of the facilities.

- □ Colbert Transfer Station 46,000 tons per year
- □ Valley Transfer Station 91,000 tons per year
- □ West Plains Transfer Station 20,000 tons per year

It should be noted that the annual waste quantity estimated to be processed at the proposed West Plains Transfer Station is the waste tonnage from the west county area, not including any MSW from the City of Spokane service areas. The above annual waste quantities were consistently utilized in the cost center models and financial proformas to calculate annualized costs for comparison of all options.

Transfer station sizing and design is based on waste received and processed on a daily basis. The number and type of customers also plays an important role. The design criteria for transfer stations includes provisions for storing all waste received daily on the tipping floor, the ability to process daily tonnage during normal hours of operation, and an adequate number of unloading stalls to handle expected traffic volumes. The System transfer stations receive commercial collection vehicles that collect from the City of Spokane and the member communities as well as smaller collection vehicles and public citizens who unload materials at the recycling area and/or the tipping floor. Because the smaller collection vehicles and citizens are allowed to access the tipping floor, the operations require more stalls for unloading to mitigate the larger number of vehicles/customers, and minimize the queue during peak periods. The Spokane County and City of Spokane commercial collection vehicle traffic is separated from the smaller commercial vehicle and citizen traffic for their approach to the tipping area and unloading for safety reasons. Signage directs the customers to their proper locations and spotters manage the traffic on the tipping floor.

To establish daily tonnage data, HDR reviewed the City of Spokane supplied waste quantities received at all of the facilities for the past four years of operation. In addition to the prior years' information, the waste quantities for the first half of 2013 were reviewed to determine the peak period for tonnage and the corresponding number of customers. As noted in Section 2.2, peak daily waste quantities were selected for use in sizing the proposed replacement and new transfer stations. Utilizing the peak daily tonnage, calculations were prepared for establishing the waste storage requirements on the tipping floor, and determining the number and type of unloading stalls required for each transfer station. Design calculations for the sizing of each of the transfer stations are provided in Appendix A.

In addition to the space allocations required for waste storage and unloading stalls, area requirements for equipment maneuvering, loadout hopper(s), tamping cranes, general equipment access, administration, and storage of equipment or other materials are estimated and added to determine the overall station footprint dimensions. The spatial allocations for these areas vary based on client's needs and the transfer technology selected. Conceptual building footprints were developed for each of the transfer stations and used in the development of conceptual facility site plans.

To estimate the acreage requirements for each facility, conceptual layouts are developed based on the required transfer station footprint, station roadway network, maneuvering areas, citizen recycling and material drop-off area requirements, administration, scalehouses, scales, maintenance and parking areas. For the purpose of this study, the current transfer technology, services provided and basic operations were incorporated into the conceptual layouts for the replacement and new transfer stations. Conceptual facility

site layouts were developed, and setbacks and buffer areas were added to present an estimate of required site acreage for each of the facilities. The conceptual site layouts are provided in Appendix B.

Using the dimensions and details provided in the conceptual site layouts, material quantity take-offs were performed for major cost items in an effort to develop opinions of probable construction cost for each of the proposed facilities. These opinions of cost included estimates for bonds, mobilization and insurance; land purchase; engineering, design and construction administration activities; and contingency. Cost information from recent bid tabulations and cost data references, such as *Means Construction Cost Data* were utilized in the development of the opinions of cost. These opinions of cost were used as input values to the financial analyses performed in Section 4.0 of this report. The complete opinion of probable construction cost spreadsheets for each of the proposed facilities can be found in Appendix C.

3.3 Operation and Maintenance Requirements

The general operations of the Colbert and Valley Transfer Stations are very similar. Both facilities are open for business seven days per week from the hours of 7:30 am to 5:00 pm. In addition to the waste materials deposited at the transfer station proper, customers can drop their recyclable materials into a series of roll-off bins designated for specific materials. In addition, household hazardous waste (HHW) products can also be dropped off at the hazardous waste storage building. System personnel are responsible for checking the materials to confirm that they can be accepted, and placing the material into the appropriate compartment of the HHW building.

In addition to the above, a range of support type operations are conducted at the transfer stations to comply with the requirements of the permit conditions. These activities include: litter control, dust and odor control, and general site housekeeping. General site maintenance tasks include equipment servicing and cleaning, and keeping the drains free of litter and debris to maintain the integrity of the storm water drainage system.

The City of Spokane's Solid Waste Management Department provides the staffing at the existing transfer stations. For the purpose of this study, HDR evaluated the activities and functional requirements of each of the facilities, and developed estimates of operational personnel required to maintain the current services provided at each of the existing and proposed transfer station facilities. The staffing levels were based on HDR's experience and comparison to similar publicly and privately operated facilities. Consideration for shared resources between the facilities was also reflected in the staffing estimates. Table 3.2 provides the estimated personnel and job function description for each facility.

Existing Colbert Transfer Station with New Operator				Replacement Colber	t Transfe	er Station		
	FTE		D.T.		FTE			
	M-Th	F-Su	- PT		M-Th	F-Su	FTE	
Scale Clerk	1	1	1	Scale Clerk	1	1	1	
HHW	1	1		HHW	1	1		
Recycling	0	0	1	Recycling	0	0	1	
Spotter	0	1	1	Spotter	0	1	1	
Loader/Supervisor	1	1		Loader/Supervisor	1	1		
Crane operator/spotter	1	1		Crane operator/spotter	1	1		
Total	4	5	3	Total	4	5	3	
Existing Valley Trans Oper	sfer Statio rator	on with N	lew	Replacement Valley	Transfe	r Station		
	FI	Ъ	DT		FTE		DT	
	M-Th	F-Su			M-Th	F-Su	- 11	
Scale Clerk	1	1	1	Scale Clerk	1	1	1	
HHW	1	1		HHW	1	1		
Recycling		1	1	Recycling		1	1	
Spotter	1	1	1	Spotter	1	1	1	
Loader/Supervisor	1	1	1	Loader/Supervisor/Hostler	1	1	1	
Crane operator	1	1		Crane operator/Hostler	1	1		
Compactor	1	1						
Total	6	7	4	Total	5	6	4	
				Proposed West Plains Transfer Station				
Abbreviations					F	ГЕ	РТ	
					M-Th	F-Su	11	
FTE – Full Time Equivalen	ıt			Scale Clerk	1	1	1	
PT – Part Time				HHW	1	1		
M - Monday				Recycling	0	0	1	
Th – Thursday				Spotter	0	1	1	
F – Friday				Loader/Supervisor/Hostler	1	1		
Su - Sunday				Crane operator/spotter	1	1		
				Total	4	5	3	

Table 3.2 Staffing Estimate Summary

In addition to the manpower requirements for the facilities, estimates for major pieces of equipment that would be assigned to each of the sites were also prepared. For the cases which included the County/City of Spokane Valley acquisition of the existing Colbert and Valley Transfer Stations, only the equipment deemed necessary for operations was included in the HDR estimates. Table 3.3 provides a listing of all required equipment for the operations of all transfer station facilities.

Operator		Replacement Colbert Transfer Station		
Stationary Tamping Crane	1	Stationary Tamping Crane	1	
40 CY Roll Off Containers	6	40 CY Roll Off Containers	6	
40 CY Open Top Containers	2	40 CY Open Top Containers	1	
2007 Volvo L 1103 Wheel Loader	1	2007 Volvo L 1103 Wheel Loader	1	
Bobcat A-300 Skid Steer	1	Bobcat A-300 Skid Steer	1	
2012 Ford F250 3/4 Ton	1	2012 Ford F250 3/4 Ton	1	
Yard Bull	1	Yard Bull	1	
Existing Valley Transfer Station with	n New			
Operator		Replacement Valley Transfer Sta	tion	
Stationary Tamping Crane	1	Stationary Tamping Crane	2	
Preload Compactor (2003)	1	40 CY Roll Off Containers	8	
40 CY Roll Off Containers	8	40 CY Roll Off Containers with Lid	1	
40 CY Roll Off Containers with Lid	1	20 CY Open Top Containers	6	
20 CY Open Top Containers	6	2007 Volvo L 1103 Wheel Loader	2	
2007 Volvo L 1103 Wheel Loader	2	Bobcat A-300 Skid Steer	1	
Bobcat A-300 Skid Steer	1	2012 Ford F250 3/4 Ton	1	
2012 Ford F250 3/4 Ton	1	Yard Bull	1	
Yard Bull	1			
		Proposed West Plains Transfer St	ation	
CY- Cubic Yard		Stationary Tamping Crane	1	
		20 CY Roll Off Containers	6	
		40 CY Roll Off Containers with Lid	1	
		2007 Volvo L 1103 Wheel Loader	1	
		Bobcat A-300 Skid Steer	1	
		Yard Bull	1	

Table 3.3 Equipment Estimate Summary

Enjeting Call out Turnefor Station with New

Section 4 Financial Analysis

The financial analyses performed as part of this study are based on the matrix options described in Section 3.1. The matrix options contain multiple elements included in the transfer and disposal operations regardless of the option selected. For example, after the material is deposited and transferred into trailers, there may be a cost element or an intermediate operation required ahead of the ultimate disposal location. This is particularly the case for the disposal option with rail haul. The rail haul options must include the transfer operations of the loaded containers from the trailers to the rail cars at an intermodal facility, the reverse at the receiving intermodal facility, and any required truck hauling operation to the ultimate disposal site if a transload operation was not located at the regional landfill receiving the waste. The disposal cost centers were developed to include the haul and intermediate operations required for each disposal option.

The transfer and disposal options were paired to make combinations that included a variety of transfer and disposal scenarios. The option combinations were further broken down into cost centers so that each of the elements can be estimated for incorporation into the proformas developed for each matrix option analyzed.

4.1 Cost Center Development

To simplify the development of the overall per ton cost of each matrix option, HDR developed cost centers for each element or operation included in each of the matrix options. The calculations associated with each transfer cost center are provided in Appendix D and for disposal cost centers in Appendix E. The resulting cost center per ton values include costs for operation and maintenance, infrastructure development, labor supplies, utilities, etc. The cost centers for each option were then summarized and utilized as inputs to the financial proforma models.

The following is a summary of the capital, operating and maintenance cost assumptions for each cost center identified. Cost information from the City of Spokane, Spokane County, previous reports such as the transfer stations appraisal reports, the Geiger Spur Transload Facility Study, *USRail.desktop* software, and HDR's knowledge and experience with transfer stations, truck haul and rail haul were utilized in the development of the opinions of cost. The estimated transfer station operations and maintenance costs include the following components.

- Labor
- □ Insurance
- □ Building and site maintenance
- □ Utilities buildings and site
- **Equipment operating and maintenance costs**
- □ Mobile equipment fuel costs
- Equipment replacement reserves
- \Box Overhead and profit (10%)
- □ General and administration charges (10%)

The primary operating assumptions for the transfer cost centers are shown in Table 4.1.

TDANSEED COST CENTEDS	KEY ASSUMPTIONS
TRANSFER COST CENTERS 1 - County/City of Spokane Valley purchases Colbert and Valley Transfer Stations and equipment for fair market value. - County/City of Spokane Valley issue RFP for operations of both facilities.	 KEY ASSUMPTIONS Fair market value with select mobile equipment from October 2012 report Colbert TS, \$2,411,194 Spokane Valley TS, \$6,682,153 Revenue bonds for escalated purchase cost O&M based on 7 days per week operation Labor based on staffing estimates in Table 3.2, local prevailing wage rates w/ 40% benefits, and assumed 5% overtime Utilities based on current usage and costs and include electricity, natural gas heat, water , sanitary sewer, stormwater, and telephone Equipment maintenance and fuel based on Table 3.3 and estimated operating hours and unit rates, fuel consumption, and \$4 per gallon diesel fuel Equipment replacement reserves based on estimated purchase price and typical number of years before replacement Insurance assumed at 0.5% of capital cost Building and site maintenance assumed at 1.5% of capital cost (excluding equipment) Solid Waste Services and interfund charges at annual budget costs divided by System tonnages of 300,000 trive
 County/City of Spokane Valley sites and builds new transfer stations to replace Colbert and Valley Transfer Stations. County/City of Spokane Valley issues RFP for operations of both facilities. 	 Indirect administrative charges at 2.8% of annual capital and operating costs Construction cost from Section 3.2 Revenue bonds for escalated construction cost Labor based on staffing estimates in Table 3.2 for new facilities Utilities based on estimated usage by new facilities and current utility rates Same O. M. assumptions as above
 3 - County/City of Spokane Valley sites and builds new West Plains Transfer Station. - County/City of Spokane Valley issues RFP for operations of facility. 	 Same Occir assumptions as above Construction cost from Section 3.2 Revenue bonds for escalated construction cost Labor based on staffing estimates in Table 3.2 for proposed West Plains Transfer Station Utilities based on estimated usage by new facility and current utility rates Same O&M assumptions as above

 Table 4.1 Transfer Cost Centers Key Assumptions

In addition to the transfer station capital and operating costs, the transfer cost centers also include annual budgeted costs for solid waste services of recycling and public education, moderate risk waste program, and litter control (\$2.1M per year); solid waste services interfund charges (\$0.9M per year – litter control included with the solid waste services charge); and indirect administrative costs applied at 2.8% of the total annual expenditures including capital debt service. The solid waste services and interfund charges are divided by the total regional system tonnage of approximately 300,000 tpy to obtain a per ton charge.

The primary financing assumptions for the revenue bonds in the cost centers for capital projects (transfer stations and proposed Geiger Spur Intermodal Yard) include the following.

- □ Bond period
 - 10-year amortization period for purchase of existing transfer stations and development costs of proposed Geiger Spur intermodal yard and rail improvements (10 years selected for comparison purposes with the proposed 10-year WTE disposal agreement; actual bonding period may be increased to lower annual payments)
 - 20-year amortization period for replacement and new transfer stations (construction of new facilities would not bond for less than 20 years)
- Based on a recent sample bond quote provided by Spokane County
 - Tax-exempt revenue bond, average interest rate of 4.37 percent
 - Bond issuance fees of 1.5 percent
 - Long-term and short-term reinvestment rates of 1 percent
- Escalation of capital costs to estimated start of construction (or purchase date) by 3 percent annually
- □ Fund one-year debt service reserve with annual interest earnings reducing the annual debt service (i.e., net annual debt service)

The disposal cost centers include the short truck haul (to WTE facility or rail intermodal yard), truck long haul to regional landfills, rail long haul including the rail intermodal yard container handling operations, and the disposal facility gate fee. Transfer truck haul costs will depend upon the location and distance to destination, whether that be the WTE facility, rail intermodal yard, or regional landfill. The County and City of Spokane Valley are anticipated to contract with third party provider for transfer haul and disposal. The estimated haul costs are based on annual freight hours and miles driven to determine required tractor-trailers, driver labor, fuel and maintenance. Estimated truck haul costs include the following components.

- Driver labor
- □ Maintenance and repairs
- □ Fuel, oil and grease
- □ Tires
- □ Truck and trailer amortization
- □ Insurance
- □ Licenses and taxes
- \Box Overhead & profit at 10% (for 3rd party contract haul)

The primary operating assumptions for the disposal cost centers are shown in Table 4.2.

DISPOSAL COST CENTERS	KEY ASSUMPTIONS
 1 – Transfer to and disposal at Waste-to- Energy Facility. – County/City of Spokane Valley issue RFP for haul and disposal. 	 Short truck haul from Colbert and Valley Transfer Stations to WTE Facility Average trailer payload of 20 tons as reported by existing transfer operations Driver labor at local prevailing wage rate, assumed similar to heavy equipment operator category Fuel price at \$4 per gallon and average truck fuel consumption of 5 miles per gallon Tires, maintenance and repairs based on miles driven annually; oil and grease based on freight hours New semi-truck tractor at \$150,000 based on historic fleet cost by City of Spokane New walking floor trailer at \$76,000 based on historic fleet cost Insurance assumed at 3% per year of truck tractor capital purchase cost Overhead & profit assumed at 1.5% per year of truck tractor capital purchase cost WTE Facility disposal fee assumes 10-year agreement at \$65 per ton
 2 - Truck long haul to Regional Landfill - County/City of Spokane Valley issues RFP for haul and disposal. 	 west County customers direct hauf to w TE facility Truck long haul from Colbert and Valley Transfer Stations and proposed West Plains Transfer Station to each of the Regional Landfills One-way distance and average speed from internet mapping Same truck haul assumptions as above Regional Landfills gate rate (see Table 4.3)
 ³ - Rail long haul to Regional Landfill using BNSF Intermodal Yard. - County/City of Spokane Valley issues RFP for short truck haul, rail haul and disposal. 	 Short truck haul from Colbert and Valley Transfer Stations and proposed West Plains Transfer Station to BNSF Intermodal Yard Added Transfer Station retrofit costs for capital and operation costs of compactor to load fully enclosed containers for rail haul (Note: existing Valley Transfer Station has compactor so no additional costs when paired with TS purchase scenario) Rail intermodal yard container loading/unloading at assumed \$25 per container lift (at BNSF and Regional Landfill) Rail haul based on USRail.desktop runs from Spokane to Regional Landfill destinations assumes merchant train, rail-owned rail cars, containers double-stacked assumed revenue to cost ratio multiplier of 1.8 Container purchase/lease based on required number of containers, \$15000 per container, 4% simple interest and 10- year term Fuel surcharge not included Regional Landfills gate rate (see Table 4.3)

Table 4.2 Disposal Cost Centers Key Assumptions

(continued)

Table 4.2 continued

DISPOSAL COST CENTERS	KEY ASSUMPTIONS
 4 - Rail long haul to Regional Landfill using proposed Geiger Spur Intermodal Yard. - County/City of Spokane Valley issues RFP for short truck haul, Geiger Spur operations, rail haul and disposal. 	 Construction cost of proposed Geiger Spur from Transload Facility Supplemental Study (June 2008) of \$3,853,000 Additional rail improvements MP1.2 to Geiger Jct. of approximately \$6,000,000 (2013\$) Revenue bonds for escalated construction costs Short truck haul from Colbert and Valley Transfer Stations and proposed West Plains Transfer Station to proposed Geiger Spur Intermodal Yard, proposed West Plains Transfer Station assumed adjacent to Geiger Spur location Added Transfer Station retrofit costs for capital and operation costs of compactor to load fully enclosed containers for rail haul (Note: existing Valley Transfer Station has compactor so no additional costs when paired with TS purchase scenario) Geiger Spur intermodal yard operations estimated at approximately \$540,000 per year applied to annual tonnage of 157,000 (additional rail yard customers would lower the cost for solid waste) Rail intermodal yard container loading/unloading at assumed \$25 per container lift at Regional Landfills Same rail haul and container purchase/lease assumptions as above Regional Landfills gate rate (see Table 4.3)

Landfill gate fees were obtained from contacting regional landfills and are shown in Table 4.3. The fees utilized were the market gate rates; bidding and long-term contract for haul and disposal may result in lower fees. The regional landfill gate fees do not include the state of Washington's refuse tax of 3.6 percent. The refuse tax is either applied by the collection haulers or at the transfer station on total fees for solid waste destined for disposal in a landfill.

Table 4.3 Regional Landfills' Gate Fees

REGIONAL LANDFILL	REPORTED GATE FEE
Roosevelt Regional Landfill, Roosevelt, WA (rail access, BNSF)	\$24 per ton
Wenatchee Regional Landfill, East Wenatchee, WA (no rail access)	\$65 per ton
Finley Buttes Landfill, Boardman, OR (rail access, UP)	\$33 per ton
Columbia Ridge Landfill, Arlington, OR (rail access, UP)	\$35 per ton
Proposed Adams County Landfill, Waschtucna, WA	NA, permitted but not developed

The combined cost of truck/rail haul and disposal for each of the regional landfills was evaluated within the cost centers. Based on this evaluation, disposal at the Roosevelt Landfill was the most cost effective combined with truck or rail haul, and was used for the proforma.

4.2 Proforma Analysis

The cost centers were paired to make combinations that included a variety of transfer and disposal scenarios. The proforma analyses are based on the capital and operating costs identified herein. The expenses are subject to annual escalation adjustment which for the purpose of this analysis was assumed to be 2.5 percent per annum. Detailed proforma assumptions, inputs and projections for each matrix option are contained in Appendix F.

For economic evaluation purposes, an implementation schedule was assumed for each scenario from a notice to proceed date (assumed January 1, 2014 in the analyses) and the expiration of the current interlocal agreements on November 16, 2014. For the cost centers with new construction, a reasonable number of months were assigned to periods for siting/local approval, planning/permitting/design, and construction/start-up. These implementation periods were utilized in both the bond sizing runs and in the timing for the matrix options.

The proformas are projected for ten years from the end of year 2014 corresponding with the expiration of interlocal agreements and continued through year 2024. Where new construction (i.e., replacement/new transfer stations and proposed Geiger Spur) could not be operational by November 2014, interim operations assumed disposal at the WTE facility at a gate fee of \$98 per ton escalated annually, plus transfer station operations. The interim transfer station operations assumed operations of the existing transfer stations at cost similar to the estimated O&M in the transfer station purchase scenarios.

The first full year of new system operating expenses projections common to all the options was the year 2018. Based on the operating assumptions, implementation schedules, and financing described above, the common first year operating projections are presented in Table 4.3. Annual costs are rounded to the nearest thousand dollars and calculated system gate fees are rounded to the nearest dollar per ton. Figure 4.1 graphically shows the calculated system gate fee for each matrix option over the 10-year proforma.

MSW Mast Quantities WT.@ \$sort WT.@ \$sort <t< th=""><th></th><th>1</th><th>A</th><th>1B</th><th>1C</th><th>1D</th><th>2</th><th>3A</th><th>3B</th><th>4A</th><th>4B</th></t<>		1	A	1B	1C	1D	2	3A	3B	4 A	4B
Colbert North Comtry 1S 46,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 20,000 157,000 1	MSW Waste Quantities	WTE @ \$65/T	WTE @ \$98/T								
Speckne Valley TS 91,000	Colbert (North County) TS	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000
WTE TSProposed West Plains TS 20,000 157,000	Spokane Valley TS	91,000	91,000	91,000	91,000	91,000	91,000	91,000	91,000	91,000	91,000
Total County/Spokane Valley MSW (tpy) 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 157,000 0	WTE TS/Proposed West Plains TS	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
(pp) 157,000 1	Total County/Spokane Valley MSW										
MSW to WTE 157,000 157,000 0 20,000 20,000 157,000 153,000 155,100 155	(tpy)	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000
MSW to WTE 157,000 157,000 107,000 152,400,00 151,400,00 151,400,00 151,400,00 151,400,00 151,400,00 151,40,00 151,40,00 151,400,00 151,41,40 151,400 151,400 151,41,40 151,41,451,000 151,41,451,000 11,451,000 11,451,000											
MSW to Regional Landfill 0 0 157,000 137,000 137,000 137,000 157,000 55,140,00 55,140,00 55,140,00 55,140,00 55,140,00 555,1,000 555,1,000 555,1,000 555,1,000 555,1,000 555,1,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 555,000 550,000 551,000 551,000 551,000 551,000 51,243,000 51,243,000 51,243,000 51,243,000 51,243,000 51,245,000 51,350,000 51,350,000 51,350,000 51,350,00 51,350,000 51,350,000 51,350,000 51,350,0	MSW to WTE	157,000	157,000	0	20,000	20,000	157,000	0	0	0	0
System Expenses Image: Cost Center Image: Cos	MSW to Regional Landfill	0	0	157,000	137,000	137,000	0	157,000	157,000	157,000	157,000
Transfer Cost Center M M M M M M Transfer Stations O&M \$1,243,000	System Expenses										
Transfer Stations O&M \$4,130,000 \$4,130,000 \$4,130,000 \$4,130,000 \$4,130,000 \$5,608,000 \$5,608,000 \$5,649,000 \$5,449,000 \$5,449,000 \$5,449,000 \$5,449,000 \$5,449,000 \$5,449,000 \$5,449,000 \$5,449,000 \$1,243,000 \$1	Transfer Cost Center										
Solid Waste Services \$1,243,000 \$2,218,000 \$1,243,000 \$2,218,000 \$1,243,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,258,000 \$2,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000	Transfer Stations O&M	\$4 130 000	\$4 130 000	\$5,608,000	\$4 130 000	\$4 130 000	\$4 130 000	\$5,608,000	\$5,608,000	\$5 449 000	\$5 449 000
Interfund Charges \$551,000 \$50,000 \$51,01,000 \$51,01,000<	Solid Waste Services	\$1,243,000	\$1,243,000	\$1,243,000	\$1,085,000	\$1,085,000	\$1,243,000	\$1,243,000	\$1,243,000	\$1,243,000	\$1 243 000
Indirect Admin Charges \$194,000 \$194,000 \$258,000 \$188,000 \$166,000 \$258,000 \$2255,000 \$205,000 \$205,000 \$205,000 \$502,000 \$502,000 \$502,000 \$51,300,000 \$51,30,000 \$51,300,000 \$51,31,000 \$51,31,000 \$51,31,000 \$51,31,000 \$51,31,000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,456,000 \$502,1000 \$51,426,000 \$502,1000 \$51,426,3000 \$51,426,3000 \$51,21,200 \$51,21,200,000 \$51,261,000 \$	Interfund Charges	\$551.000	\$551.000	\$551.000	\$481,000	\$481,000	\$551.000	\$551.000	\$551.000	\$551,000	\$551,000
Haul & Disposal Cost Center Outcome Out	Indirect Admin Charges	\$194,000	\$194,000	\$258,000	\$188,000	\$188,000	\$166,000	\$258,000	\$258,000	\$295,000	\$295,000
Add! Transfer Station Capital and O&M (w/ rail haul only) \$0 \$0 \$0 \$0 \$255,00 \$0 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$502,000 \$50 \$512,000 \$51,360,000 \$51,360,000 \$51,360,000 \$51,360,000 \$50 \$51,172,000 \$51,172,000 \$51,172,000 \$50,172,000 \$51,1546,000 \$50	Haul & Disposal Cost Center	\$17.,000	\$191,000	¢200,000	\$100,000	\$100,000	\$100,000	¢200,000	\$200,000	\$270,000	\$270,000
(w/rail haul only) S0 S0 S0 S0 \$255,000 \$502,000 \$511,450,000 \$502,000 \$511,450,000 \$502,000 \$511,450,000 \$502,000 \$511,450,000 \$502,000 \$511,450,000 \$502,000 \$502,000 \$511,450,000 \$502,000 \$502,000 \$511,450,000 \$502,00	Add'l Transfer Station Capital and O&M										
Short Truck Haul to WTE/Rail Yard \$1,360,000 \$1,360,000 \$0 \$0 \$1,499,000 \$1,360,000 \$1,585,000 \$0 \$1,122,000 Truck Long Haul \$0 \$0 \$11,457,000 \$10,004,000 \$0 \$0 \$0 \$0 \$11,457,000 \$0 \$0 \$0 \$0 \$0 \$11,457,000 \$0 \$0 \$4,707,000 \$5,631,000 \$0 \$4,707,000 \$5,631,000 \$0 \$4,707,000 \$5,631,000 \$0 \$4,707,000 \$5,631,000 \$0 \$4,263,000 \$11,456,000 \$11,456,000 \$11,456,000 \$2,218,000 \$2,218,000 \$11,546,000 \$10,408,000 \$0 \$4,263,000 \$4,263,000 \$4,263,000 \$4,263,000 \$4,263,000 \$4,263,000 \$4,263,000 \$10,408,000 \$1,24,263,000 \$11,456,000 \$1,24,263,000 \$11,456,000 \$1,24,263,000 \$1,24,263,000 \$10,21,200 \$1,24,263,000 \$10,21,200 \$1,263,000 \$1,263,000 \$1,263,000 \$1,263,000 \$1,263,000 \$1,263,000 \$1,263,000 \$10,21,200 \$1,263,000 \$1,263,000	(w/ rail haul only)	\$0	\$0	\$0	\$0	\$255.000	\$0	\$502.000	\$502.000	\$0	\$913.000
Truck Long Haul Store	Short Truck Haul to WTE/Rail Yard	\$1.360.000	\$1,360,000	\$0	\$0	\$1,499,000	\$1.360.000	\$1,172,000	\$1.585.000	\$0	\$1,172,000
Rail Long Haul (incl. rail yard 0&M) \$0 \$0 \$0 \$0 \$4,991,000 \$0 \$4,707,000 \$5,631,000 \$0 \$4,707,000 WTE Facility Disposal \$11,546,000 \$17,408,000 \$0 \$2,218,000 \$2,218,000 \$11,546,000 \$10,01,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,0	Truck Long Haul	\$0	\$0	\$11.457.000	\$10.004.000	\$0	\$0	\$0	\$0	\$11,456,000	\$0
WTE Facility Disposal \$11,546,000 \$17,408,000 \$0 \$2,218,000 \$2,218,000 \$11,546,000 \$11,546,000 \$11,546,000 \$14,263,000 \$14,263,000 \$14,263,000 \$14,263,000 \$14,263,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000 \$12,614,000	Rail Long Haul (incl. rail vard O&M)	\$0	\$0	\$0	\$0	\$4,991,000	\$0	\$4,707,000	\$5,631,000	\$0	\$4,707,000
Regional Landfill Gate Fees \$0 \$4,263,000 \$3,720,000 \$0 \$4,263,000 \$4,263	WTE Facility Disposal	\$11,546,000	\$17,408,000	\$0	\$2,218,000	\$2,218,000	\$11.546.000	\$0	\$0	\$0	\$0
Subtotal Expenses \$19,024,000 \$24,886,000 \$21,826,000 \$18,567,000 \$18,304,000 \$19,641,000 \$23,257,000 \$18,593,000 Net Debt Service Image: Stations-Colbert and Spokane Image: Stations-Colbert and Spokane Image: Stations-Colbert and Spokane Image: Stations-Colbert and Spokane \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$2,514,	Regional Landfill Gate Fees	\$0	\$0	\$4,263,000	\$3,720,000	\$3,720,000	\$0	\$4,263,000	\$4,263,000	\$4,263,000	\$4,263,000
Net (Expenses)(\$20,025,000)(\$25,887,000)\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,060,000\$1,001	Subtotal Expenses	\$19,024,000	\$24,886,000	\$23,380,000	\$21,826,000	\$18,567,000	\$18,996,000	\$18,304,000	\$19,641,000	\$23,257,000	\$18,593,000
Net Debt Service Image: Stations-Colbert and Spokane Valley \$\$1,001,000 <th></th>											
Transfer Stations-Colbert and Spokane \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$2,514,000 \$2,514,000 \$2,514,000 Transfer Station-Proposed West Plains \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$1,001,000 \$1,001,000 \$1,001,000 \$2,514,000 \$2,514,000 \$2,514,000 \$2,514,000 \$2,514,000 \$2,514,000 \$2,514,000 \$788,000 \$90	Net Debt Service										
Valley \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$1,001,000 \$2,514,000 Transfer Station-Proposed West Plains \$0	Transfer Stations-Colbert and Spokane										
Transfer Station-Proposed West Plains \$0 \$0 \$788,000 \$780,000 \$780,0	Valley	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$0	\$1,001,000	\$1,001,000	\$2,514,000	\$2,514,000
Geiger Spur-Intermodal Yard & Rail Improvements Subtoral Net Debt Service \$1,001,000 \$1001,000 \$1,001,000 \$2,634,000 \$0 \$1,789,000 \$3,302,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,000 \$3,002,	Transfer Station-Proposed West Plains	\$0	\$0	\$788,000	\$0	\$0	\$0	\$788,000	\$788,000	\$788,000	\$788,000
Improvements \$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c	Geiger Spur-Intermodal Yard & Rail										
Subtotal Net Debt Service \$1,001,000 \$1,001,000 \$1,789,000 \$1,001,000 \$2,634,000 \$0 \$1,789,000 \$3,302,000 \$3,30,	Improvements	\$0	\$0	\$0	\$0	\$1,633,000	\$0	\$0	\$1,633,000	\$0	\$0
Net (Expenses) (\$20,025,000) (\$25,887,000) (\$25,169,000) (\$21,201,000) (\$18,996,000) (\$20,093,000) (\$23,063,000) (\$26,559,000) (\$21,895,000) Calculated System Gate Fee, \$/ton \$128 \$165 \$160 \$145 \$135 \$121 \$128 \$147 \$169 \$139 Calculated System Gate Fee, \$/ton \$128 \$160 \$145 \$135 \$121 \$128 \$147 \$169 \$139 Calculated System Gate Fee w/ Washington's 3.6% Refuse Tax, \$/ton \$166 \$151 \$140 \$133 \$152 \$175 \$144	Subtotal Net Debt Service	\$1,001,000	\$1,001,000	\$1,789,000	\$1,001,000	\$2,634,000	\$0	\$1,789,000	\$3,422,000	\$3,302,000	\$3,302,000
Calculated System Gate Fee, \$/ton \$128 \$165 \$160 \$145 \$135 \$121 \$128 \$147 \$169 \$139 Calculated System Gate Fee w/ Washington's 3.6% Refuse Tax, \$/ton \$166 \$151 \$140 \$133 \$152 \$175 \$144	Net (Expenses)	(\$20,025,000)	(\$25,887,000)	(\$25,169,000)	(\$22,827,000)	(\$21,201,000)	(\$18,996,000)	(\$20,093,000)	(\$23,063,000)	(\$26,559,000)	(\$21,895,000)
Calculated System Gate Fee, \$/ton \$128 \$165 \$160 \$145 \$135 \$121 \$128 \$147 \$169 \$139 Calculated System Gate Fee w/											
Calculated System Gate Fee w/ \$166 \$151 \$140 \$133 \$152 \$175 \$144	Calculated System Gate Fee, \$/ton	\$128	\$165	\$160	\$145	\$135	\$121	\$128	\$147	\$169	\$139
Washington's 3.6% Refuse Tax, \$/ton \$166 \$151 \$140 \$133 \$152 \$175 \$144	Calculated System Cate Fee w/										
	Washington's 3.6% Refuse Tax. \$/ton			\$166	\$151	\$140		\$133	\$152	\$175	\$144

Table 4.4 Transfer and Disposal Operating Projections (2018\$)



Figure 4.1 System Gate Fees Projections

4.3 Results and Summary

For comparison purposes, the capital costs (total investment for construction or purchase), operating and maintenance costs, total haul costs, and disposal fees for each matrix option considered are summarized in Table 4.5 below. The operation and maintenance, haul and disposal fees are the present value of the common first year operating expenses, assuming discount of 2.5% annually. The annual net debt service is based on the financing assumptions described in Section 4.1 and escalation of capital costs to projected start of construction or estimated purchase date.

	Capital Costs ²		0.8-M	Solid Waste Services/	Houl	Disposal	Total Annual
Options	Total	Annual Net Debt Service	Costs ³	Interfund/Indirect Charges ³	Costs ³	Fees ³	Cost ⁴ (2013\$)
1A (\$98/ton)	\$9,520,000	\$1,000,000	\$3,650,000	\$1,760,000	\$1,200,000	\$15,390,000	\$23,000,000
1A (\$65/ton)	\$9,520,000	\$1,000,000	\$3,650,000	\$1,760,000	\$1,200,000	\$10,200,000	\$17,810,000
1B	\$17,650,000	\$1,790,000	\$4,960,000	\$1,810,000	\$10,130,000	\$3,770,000	\$22,460,000
1C	\$9,520,000	\$1,000,000	\$3,650,000	\$1,550,000	\$8,840,000	\$5,250,000	\$20,290,000
1D	\$19,990,000	\$2,630,000	\$3,880,000	\$1,550,000	\$5,740,000	\$5,250,000	\$19,050,000
2	\$0	\$0	\$3,650,000	\$1,730,000	\$1,200,000	\$10,200,000	\$16,780,000
3A	\$17,650,000	\$1,790,000	\$5,400,000	\$1,810,000	\$5,200,000	\$3,770,000	\$17,970,000
3B	\$28,120,000	\$3,420,000	\$5,400,000	\$1,810,000	\$6,380,000	\$3,770,000	\$20,780,000
4A	\$34,090,000	\$3,300,000	\$4,820,000	\$1,850,000	\$10,130,000	\$3,770,000	\$23,870,000
4B	\$34,090,000	\$3,300,000	\$5,620,000	\$1,850,000	\$5,200,000	\$3,770,000	\$19,740,000

Fable 4.5 Summary	of Capital,	, O&M, Haul	and Disposal	Costs (2013\$
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Notes:

1. Costs rounded to nearest \$10,000.

 Capital costs can be purchase cost or new construction estimate escalated to 2013\$ by 3% annually. New construction costs include siting, permitting, design/engineering, construction and contingency. Annual net debt service based on financing assumptions described in Section 4.1 and contained in Appendices D and E.

 Annual O&M, service charges, haul and disposal fees are present value (2013\$) of common first year operating expenses. For rail haul options 1D, 3A, 3B and 4B the O&M includes the additional transfer station costs. Haul costs include short truck haul, truck long haul and/or rail haul including container handling fees.

4. Costs do not include the Washington Refuse Tax of 3.6% required on all waste disposed in landfills. All options except 1A and 2 will have the tax assessed either by collection haulers or at the transfer stations.

The net present value of the calculated system gate fee for each matrix option is summarized in Table 4.6 below. This gate fee is based on the year 2018 costs (see Table 4.4), discounted at 2.5% annually (set equal to the escalation rate) to arrive at net present value in 2013 dollars. For those options with landfill disposal, the state of Washington Refuse Tax (WRT) of 3.6 percent has been added in the second column.

Option	Transfer	Disp	osal	Gate Fee ¹ (\$/ton)	Gate Fee w/ WRT ² (\$/ton)
	Purchase CTS & VTS at fair market value	Α	All waste to WTE	\$113 - \$146 ³	N/A
Option 1		В	Build West Plains TS & truck long haul to regional landfill	\$142	\$147
		С	CTS & VTS truck long haul to regional landfill, City operates WTE TS	\$129	\$133
		D	CTS & VTS rail haul via proposed Geiger Spur, City operates WTE TS	\$119	\$124
Option 2	Purchase CTS & VTS for minimal fee		All waste to WTE	\$107	N/A
Option Purchase CTS & VTS at		Α	BNSF Intermodal, rail to regional landfill	\$113	\$117
3	Build West Plains TS	В	Geiger Spur Intermodal, rail to regional landfill	\$130	\$135
Option	Build replacement & new	Α	Truck long haul to regional landfill	\$150	\$155
4	transfer stations (3)	B	BNSF Intermodal, rail to regional landfill	\$123	\$128

Table 4.6 Calculated System Gate Fees (2013\$)

Notes:

1. Gate Fee is taken from year 2018 costs and is in net present value (2013). 2018 is the first year that all options would be operational.

2. Gate Fee including 3.6% Washington Refuse Tax (WRT) applied to all collection and disposal costs if waste is landfilled. (WTE is exempt.)

3. Actual Gate Fee at WTE will be negotiated.

As shown in the tables above, the lowest cost option for the long-term is Option 2 – Purchase of the Colbert and Valley Transfer Stations for a minimal fee from the City of Spokane with a 10-year agreement for disposal at the City of Spokane's WTE Facility for initial \$65 per ton with escalation provisions. The next lowest cost option can either be Option1A, where the County/City of Spokane Valley purchase the existing transfer stations at fair market value, and all waste is transferred and disposed at the WTE plant at a gate fee of \$65 per ton; or Option 3A with purchase of the existing transfer stations at fair market value, development of the proposed West Plains Transfer Station, and rail haul through the existing BNSF Intermodal Yard for disposal at a regional landfill. It should be noted that the resultant all-inclusive transfer and disposal fee for Option 3A must include an additional 3.6% associated with the Washington Refuse Tax, which increases the base gate fee to \$117 per ton.

Competitive bidding and negotiations may lower the fees for these options. In addition, review of transfer station operations and reductions in hours of operation based on tonnage and use could further reduce costs.

Appendix A

Design Calculations

HR

Computation Form

HDR Project No. 211864 No. 001

Project	Spokane County	Computed	R. J. Rella	Date	6/20/2013
Subject	Replacement for Colbert Transfer Station	Checked	D Frye	Date	6/25/2013
Task	Size New Transfer Station	Sheet	1	of	3

TYPES OF ANALYSIS

> Building Dimensions and Sizing for Receiving, Storage and Processing

CRITERIA - PRIMARY

- Peak Waste Tonnage 4,800 tons/month @ 30 days = 160 tpd (Peak Year 2008), May 2013 showed peak day of 237 Tons of MSW so use that for sizing
- Peak YW Tonnage 1,325 tons/month @ 30 days = 45 tpd (Peak Year 2008), May 2013 showed peak day of 117 Tons of yard waste so use that for sizing
- Peak 2008 130,000 customers/year; average = 7,140/month MSW, 1,845/month YW
- Based on historical data, 8% of total monthly customers bring in 51.2% of the total monthly MSW tonnage, and average 6.0 tons/vehicle (large commercial accounts):

8,984 customers x 0.08 = 720 comm. vehicles/mo. / 30 = **24 comm. vehicles/day** 4,800 tons/mo. / 720 comm. vehicles/mo. = 6.67 tons/vehicle

Peak May 2013 day had 61 yard waste customers (average 1.9 tons/customer for yard waste)

Since the tonnage varies, use 6.0 tons/vehicles

- > One Day Storage Floor Sizing
- Transfer Operation 10 Hours/Day
- Zero Queue
- > Exterior Maneuvering of Waste Hauling Vehicles

ASSUMPTIONS

- > Open Top Trailer Loading
 > Monday through Sunday receive waste from 7:30AM to 5:00PM
 > Average Payloads = 20 tons/trailer
- > Assume Comm. Vehicles received over 6 hour operating period

Estimated Peak Hour of Deliveries

Commercial Avg. Hour during peak day = 24 vehicles/ 6 hrs. = 4 vehicles/hr Commercial Peak Hour (assume peak hour is 20% higher) = $4 \times 1.2 = 5$ vehicles/hr

Self-Haul Vehicles = 8,984/mo. - 720 comm. vehicles = 8,264 / 30 = 276/daySelf-Haul Avg. Hour during peak day = 276 vehicles/10hrs. = 28 vehicles/hr Self-Haul Peak Hour = $28 \times 1.2 = 34$ vehicles/hr



Computation Form

HDR Project No. 211864 No. 001

Self-Haul Yard Waste peak was 61 vehicles in May, assume peak 20% higher Self-Haul Peak Hour = 61 vehicles/10 hours x 1.2 = 8 vehicles/hr

SIZE UNLOADING AREA

Estimated:

Unloading Time Comm. Vehicles = 10 minutes, self haul 12 minutes, yard waste 14 minutes

Unloading Bay - Comm. Vehicles (two times vehicle width) = 16 feet

Required Area for Unloading Bay Based on Zero Queue:

Comm. Bays = 4 vehicles/hr x 10 min/vehicle x 1 hr/60 min = 0.7 Bays Provide 1 bays for Commercial Vehicles to Unload

Self-haul Waste Bays = 34 vehicles/hr x 12 min/vehicle x 1 hr/60 min = 6.8

Bays

Provide 7 bays for Self-haul Vehicles to Unload Waste

Self-haul Yard Waste Bays = 8 vehicles/hr x 14 min/vehicle x 1 hr/60 min = 2 Bays Provide 2 bays for Self-haul Vehicles to Unload Yard Waste

Therefore, space for Commercial Vehicles to Unload = 1 bays @ 16' each = 16 FT

Self-haul Bays = 7 bays @ 14' each = 98 FT for waste Self-haul Bays = 2 bays @ 14' each = 28 FT for yard Waste

So unloading bay space = $(16 \text{ FT} + 98 \text{ FT} + 28 \text{ FT}) \ge 24 \text{ FT} \log = 3,410 \text{ SF}$ Outdoor Maneuvering = 65 FT $\ge (16 \text{ FT} + 98 \text{ FT} + 28 \text{ FT}) = 9,300 \text{ SF}$

SIZE WASTE STORAGE AREA

Assume: Store Waste Disposal = 400 lbs/CY = 15 lbs/CF Peak Stacking Height = 12 FT Side Slopes are = 1:1 (horizontal to vertical) Access Corridor Around Waste Pile = 12 feet wide

> Avg Area_{® center of stack} x Height Area of Base = 12 feet longer, and 24 feet wider than A_{top} Area Base = 6 feet longer, 12 feet wider than A_{avg}

Volume Required:

For one day of storage of Waste at Peak Throughput: 237 tons for one day storage

Volume = 237 tons x 2000 lbs/ton x 1 CY/400 lbs x 27 FT3/CY Volume = 32,000 FT3
Computation Form



HDR Project No. 211864 No. 001

Avg Area = Volume/12 FT high = 32,000 / 12 = 2,700 FT2

Area = $40 \times 70 = 2,800 FT2$

Add corridors to define storage area (add 12 feet on three sides) $A = 64 \times 82 = 5,250 FT2$

For one day of storage of Yard Waste at Peak Throughput: 117 tons for one day storage

Volume = 117 tons x 2000 lbs/ton x 1 CY/350 lbs x 27 FT3/CY Volume = 18,100 FT3 Avg Area = Volume/12 FT high = 18,100 / 12 = 1,500 FT2 Area = 40 x 40 = 2,800 FT2 Add corridors to define storage area (add 12 feet on three sides) A = 64 x 52 = 3,400 FT2

Total Material Storage Area = 5,250 SF + 3,400 SF = 8,650 SF

Check Loadout Area Requirements

Assume 1 loader working the tipping floor loading trailers Assume 25 mins/trailer load time

237 TPD x trailer/20.0 tons = 11.9 trailers/day - USE 12 trailers

12 trailers x 25 min = 300 mins x hr/60 mins = 5 hours

For yard waste, assume 16 tons/trailer 117 TPD x trailer/16 tons = 7.3 trailers/day, use 8 trailers/day

8 trailers x 25 min = 200 min x hr/60 mins = 3.5 hours

So loading out material for 8.5 hours with one hopper.

HR

Computation Form

HDR Project No. 211864 No. 001

Project	Spokane County	Computed	R. J. Rella	Date	6/19/2013
Subject	Replacement for Valley Transfer Station	Checked	D Frye	Date	6/25/2013
Task	Size New Transfer Station	Sheet	1	Of	3

TYPES OF ANALYSIS

> Building Dimensions and Sizing for Receiving, Storage and Processing

CRITERIA - PRIMARY

- Peak Waste Tonnage 10,000 tons/month @ 30 days = 335 tpd (Peak Year 2008)444 Tons in May 2013 so use that
- Peak YW Tonnage 2,785 tons/month @ 30 days = 93 tpd (Peak Year 2008) 233 Tons in May 2013 so use that
- Peak 2008 200,978 customers/year; average = 11,033/month MSW, 5400/month YW
- Based on historical data, 8% of total monthly customers bring in 51.1% of the total monthly MSW tonnage, and average 7.0 tons/vehicle (large commercial accounts):

16,433 customers x 0.08 = 1,315 comm. vehicles/mo. / 30 = 44 comm. vehicles/day

10,000 tons/mo. / 1,315 comm. vehicles/mo. = 7.6 tons/vehicle

Since the tonnage varies, use 7.0 tons/vehicles

- > One Day Storage Floor Sizing
- Transfer Operation 10 Hours/Day
- > Zero Queue
- > Exterior Maneuvering of Waste Hauling Vehicles

ASSUMPTIONS

- > Open Top Trailer Loading
 > Monday through Sunday receive waste from 7:30AM to 5:00PM
 > Average Payloads = 20 tons/trailer
- > Assume Comm. Vehicles received over 6 hour operating period

Estimated Peak Hour of Deliveries Commercial Avg. Hour during peak day = 44 vehicles/ 6 hrs. = 8 vehicles/hr Commercial Peak Hour (assume peak hour is 20% higher) = 8 x 1.2 = 10 vehicles/hr Self-Haul Vehicles for Waste = 16,433/mo. - 1,315 comm. vehicles = 15,118 / 30 = 504/day Self-Haul Avg. Hour during peak day = 504 vehicles/10hrs. = 51 vehicles/hr Self-Haul Peak Hour = 51 x 1.2 = 62 vehicles/hr Self Haul vehicles for Waste Avg. Hour during peak day = 272 vehicles/10hrs. =

Self-Haul vehicles for Yard Waste Avg. Hour during peak day = 273 vehicles/10hrs. = 28 vehicles/hr

HR

Computation Form

HDR Project No. 211864 No. 001

Self-Haul Yard Waste Peak Hour = 28 x 1.2 = 34 vehicles/hr

SIZE UNLOADING AREA

Estimated:

Unloading Time Comm. Vehicles = 10 minutes

Unloading Bay - Comm. Vehicles (two times vehicle width) = 16 feet

Required Area for Unloading Bay Based on Zero Queue:

Comm. Bays = 10 vehicles/hr x 10 min/vehicle x 1 hr/60 min = 1.7 Bays Provide 2 bays for Commercial Vehicles to Unload

Self-haul Bays = 62 vehicles/hr x 12 min/vehicle x 1 hr/60 min = 12.4 Bays Provide 13 bays for Self-haul Vehicles to Unload Waste

Self-haul Bays for Yard Waste = 34 vehicles/hr x 14 min/vehicle x 1 hr/60 min = 7.9 Bays

Provide 8 bays for Self-haul Vehicles to Unload Yard Waste

Therefore, space for Commercial Vehicles to Unload = 2 bays @ 16' each = 32 FT

Self-haul Bays = 13 bays @ 14' each = 182 FT Self-haul Yard Waste Bays = 8 x 14' each = 112 FT

Unloading area = (32 FT + 182 FT + 112 FT) x 24 FT long Stalls = 7,850 SF

**The current facility is limited to 4 bays for yard waste, 8 bays for self haul customers, 4 bays for commercial customers so there will be back -ups on busy days.

Outside Maneuvering Area = (32 FT + 182 Ft + 112 FT) x 65 FT long spaces = 21,200 FT2

SIZE WASTE STORAGE AREA

Assume: Store Waste Disposal = 400 lbs/CY = 15 lbs/CF Peak Stacking Height = 12 FT Side Slopes are = 1:1 (horizontal to vertical) Access Corridor Around Waste Pile = 12 feet wide

> Avg Area_{® center of stack} x Height Area of Base = 12 feet longer, and 24 feet wider than A_{top} Area Base = 6 feet longer, 12 feet wider than A_{avg}

Volume Required:

For one day of storage at Peak Throughput: 444 tons for one day storage

Volume = 444 tons x 2000 lbs/ton x 1 CY/400 lbs x 27 FT3/CY Volume = 59,940 FT3

Computation Form

HR

ID				l	
		HDR Project No.	211864	NO.	001
	Avg Area = Volume/12 FT high = 59,940/	12 = 5,000 FT2			
	Area = $80 \times 63 = 5,040 \text{ FT2}$				
	Add corridors to define storage area (A = $104 \times 75 = 7,800 FT2$	add 12 feet on th	ree sides)		
Storage	Space for Yard Waste				
Volume =	233 tons x 2000 lbs/ton x 1 CY/350 lbs Volume = 35,950 FT3	s x 27 FT3/CY			
	Avg Area = Volume/12 FT high = 35,950/	12 = 3,000 FT2			
	Area = $60 \times 50 = 3,000 FT2$				
	Add corridors to define storage area (A = 84 x 62 = 5,200 FT2	add 12 feet on th	ree sides)		
Total St	orage Area = 7,800 FT2 + 5,200 FT2 = 13	3,000 FT2			
Check Lo	adout Area Requirements				
Assume 1 Assume 2	loader working the tipping floor loadi 5 mins/trailer load time	ing trailers			
For Soli 444 TPD	d Waste x trailer/20.0 tons = 22.2 trailers/day	7 - USE 22 trailer	s		
22 trail	ers x 25 min = 550 mins x hr/60 mins =	9.2 hours			
For Yard 233 TPD	l Waste x trailer/16.0 tons = 14.6 trailers/day	7 - USE 15 trailer	s		
15 trail	ers x 25 min = 375 mins x hr/60 mins =	6.3 hours			
Will nee	d two load out ports.				

HR

Computation Form

HDR Project No. 211864 No. 001

Project	Spokane County	Computed	R. J. Rella	Date	6/20/2013
Subject	Proposed West Plains Transfer Station	Checked	D Frye	Date	6/26/2013
Task	Size New Transfer Station	Sheet	1	of	3

TYPES OF ANALYSIS

> Building Dimensions and Sizing for Receiving, Storage and Processing

CRITERIA - PRIMARY

- Peak Waste Tonnage 20,000 TPY, 60 TPD average, assume peak is 40% higher, 84 TPD
- > Peak YW Tonnage 18 tpd (prorated)at 30% of 84 Tons = 26 TPD Peak
- Peak 2008 130,000 customers/year; average = 7,140/month MSW, 1,845/month YW
- Based on historical data, 8% of total monthly customers bring in 51.2% of the total monthly MSW tonnage, and average 6.0 tons/vehicle (large commercial accounts):

10 comm. vehicles/day (based on 6.0 tons/vehicle)

- > One Day Storage Floor Sizing
- Transfer Operation 10 Hours/Day
- Zero Queue
- > Exterior Maneuvering of Waste Hauling Vehicles

ASSUMPTIONS

- > Open Top Trailer Loading
- > Monday through Sunday receive waste from 7:30AM to 5:00PM
- > Average Payloads = 20 tons/trailer
- > Assume Comm. Vehicles received over 6 hour operating period

Estimated Peak Hour of Deliveries

Commercial Avg. Hour during peak day = 10 vehicles/ 6 hrs. = 2 vehicles/hr Commercial Peak Hour (assume peak hour is 20% higher) = 2 x 1.2 = 3 vehicles/hr Self-Haul Waste Vehicles = 110 vehicles/day (prorated)

Self-Haul Avg. Hour during peak day = 110 vehicles/10hrs. = 11 vehicles/hr Self-Haul Peak Hour = 11 x 1.2 = 14 vehicles/hr

Self-Haul Avg. Hour during peak day = 26 Tons/.7 Ton/Vehicle = 37 vehicles/10hrs. =
4 vehicles/hr
Self-Haul yard Waste Peak Hour = 4 x 1.2 = 5 vehicles/hr

SIZE UNLOADING AREA

Estimated:

Unloading Time Comm. Vehicles = 10 minutes



Computation Form

HDR Project No. 211864 No. 001

Unloading Bay - Comm. Vehicles (two times vehicle width) = 16 feet

Required Area for Unloading Bay Based on Zero Queue:

Comm. Bays = 3 vehicles/hr x 10 min/vehicle x 1 hr/60 min = 0.5 Bays Provide 1 bays for Commercial Vehicles to Unload

Self-haul Waste Bays = 14 vehicles/hr x 12 min/vehicle x 1 hr/60 min = 2.8

Bays

Provide 3 bays for Self Haul Waste Vehicles to Unload

Self-haul yard Waste Bays = 5 vehicles/hr x 14 min/vehicle x 1 hr/60 min = 1.7 Bays Provide 2 bays for Self Haul Yard Waste Vehicles to Unload

Therefore, space for Commercial Vehicles to Unload = 1 bays @ 16' each = 16 FT

Self-haul Waste Bays = 3 bays @ 14' each = 42 FT Self-haul Yard Waste Bays = 2 bays @ 14' each = 28 FT

Unloading Bay Area = (16 FT + 42 FT + 28 FT) x 24 FT long = 2,100 FT2

SIZE WASTE STORAGE AREA

Assume: Store Waste Disposal = 400 lbs/CY = 15 lbs/CF Peak Stacking Height = 12 FT Side Slopes are = 1:1 (horizontal to vertical) Access Corridor Around Waste Pile = 12 feet wide

> Avg Area_{® center of stack} x Height Area of Base = 12 feet longer, and 24 feet wider than A_{top} Area Base = 6 feet longer, 12 feet wider than A_{avg}

Volume Required for Solid Waste: For one day of storage of Waste at Peak Throughput: 84 tons for one day storage

Volume = 84 tons x 2000 lbs/ton x 1 CY/400 lbs x 27 FT3/CY
Volume = 11,400 FT3
Avg Area = Volume/12 FT high = 11,400 / 12 = 950 FT2
Area = 32 x 30 = 960 FT2
Add corridors to define storage area (add 12 feet on three sides)
A = 56 x 42 = 2,400 FT2 for Waste

Volume Required for Yard Waste: For one day of storage of Waste at Peak Throughput: 26 tons for one day storage

Volume = 26 tons x 2000 lbs/ton x 1 CY/350 lbs x 27 FT3/CY

Computation Form



HDR Project No. 211864 No. 001

Volume = 4,000 FT3
Avg Area = Volume/12 FT high = 4,000 / 12 = 340 FT2
Area = 20 x 18 = 360 FT2
Add corridors to define storage area (add 12 feet on three sides)
A = 44 x 30 = 1,300 FT2 for Waste

Check Loadout Area Requirements

Assume 1 loader working the tipping floor loading trailers Assume 25 mins/trailer load time 84 TPD x trailer/20.0 tons = 4.2 trailers/day - **USE 4 trailers**

4 trailers x 25 min = 100 mins x hr/60 mins = 1.7 hours

Yard Waste 26 TPD x trailer/16.0 tons = 1.6 trailers/day - USE 2 trailers

2 trailers x 25 min = 50 mins x hr/60 mins = .8 hours

Appendix B

Site Layout



NOTES:

- 1. THIS GRAPHIC DEPICTS A THREE SIDED TRANSFER STATION WITH VEHICLE TURNAROUND OUT SIDE OF THE BUILDING. VEHICLES BACK IN OPEN SIDE TO DUMP.
- 2. DASHED RECTANGLE DEPICTS APPROXIMATELY 12.6 ACRES.



1" = 100'

Spokane County, WA Replacement Colbert Transfer Station

General Facilities Layout

Date 07/26/13 Sheet 1



NOTES:

- 1. THIS GRAPHIC DEPICTS A THREE SIDED TRANSFER STATION WITH VEHICLE TURNAROUND OUT SIDE OF THE BUILDING. VEHICLES BACK IN OPEN SIDE TO DUMP.
- 2. DASHED RECTANGLE DEPICTS APPROXIMATELY 15.1 ACRES.





NOTES:

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- THIS GRAPHIC DEPICTS AN ENCLOSED TRANSFER STATION, VEHICLES ENTER, BACK AND UNLOAD INSIDE THE BUILDING. FACILITY IS ASSUMED TO BE ENCLOSED DUE TO FAA REQUIREMENTS.
- 2. DASHED RECTANGLE DEPICTS APPROXIMATELY 10.3 ACRES.



Spokane County, WA Proposed West Plains Transfer Station 1" = 100'

General Facilities Layout

Date 07/26/13 Sheet 3

Appendix C

Construction Cost Estimates

Engineering Opinion of Probable Construction Cost Colbert Transfer Station

ESTIMATEL						
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	
	Trongfor Duilding					
1	Ponde Mobilization and Insurance	4.0/	of WORK	\$5,106,170	\$216 500	
1	L and Durchase	4%		\$3,190,170	\$210,300	
2	Clearing and Crubbing	15	AC	\$87,120	\$1,097,700	
3	Clearing and Grubbing	12.0	AC	\$4,000	\$30,400	
4		40,030	CI	\$15.00	\$009,800	
3		220	CV	\$250	\$20.200	
	Apron Determine Well (1.5 av/LE) Typesel Interior Well	512	CY	\$550	\$80,200	
	Foundations	315 95	CY	\$600	\$507,800	
	Tinning Floor	6J 500	CY	\$250	\$30,700	
	Tupping Floor Tupped Exterior Well	212	CY	\$530	\$174,900	
6	Deving	215	CI SV	\$000	\$127,800	
7	Proving Dra anginggrad Duilding	17,303	SE	\$33	\$005,700	
/	Machanical & Eira Protection	14,200	SE	\$100	\$1,420,000	
0	Electrical	14,200	SE	\$15 \$15	\$213,000	
9	Electrical Steel Hermony/Chuteo/Linens	14,200		\$13 \$100.000	\$215,000	
10		1		\$100,000	\$100,000	
11	Sumoving	1		\$100,000	\$100,000	
12	Surveying	1		\$35,000	\$35,000	
13	Erosion Control/Storms	0	EA	\$25,000	\$23,000	
14	Site Equating	8 2 100	LE	\$1,500	\$12,000	
15	Site Landscoping & Signage	5,100		\$40,000	\$139,500	
10	L andout Tunnal Scale	1	EA	\$40,000	\$40,000	
17		1	EA	\$00,000	\$00,000	
	Scalabousa					
18	Pre-engineered Building	400	SE	\$200	\$80,000	
10	Concrete Slabwork	35	CY	\$350	\$12,300	
20	Concrete Footings and slab	15	CY	\$350	\$5,200	
20	Interior Treatments	400	SF	\$150	\$60,000	
22	Scales	2	LS	\$75,000	\$150,000	
23	Mechanical	400	SF	\$20	\$8,000	
24	Electrical	400	SF	\$25	\$10,000	
				<i><i><i><i><i><i></i></i></i></i></i></i>	<i>Q</i> 10,000	
	ннพ					
25	Prefabricated unit	1	EA	\$25,000	\$25,000	
26	Slab and Foundations	32	CY	\$350	\$11.343	
27	Pre-engineered structure	875	SF	\$50	\$43,750	
28	Equipment	1	LS	\$20,000	\$20,000	
	White Goods					
29	Slab and Foundations	22	CY	\$350	\$7,778	
30	Pre-engineered structure	600	SF	\$50	\$30,000	
31	Equipment	1	LS	\$20,000	\$20,000	
	Citizen Drop-off Area					
32	Concrete Slab	80	CY	\$350	\$28,000	
33	Retaining Walls	500	CY	\$600	\$300,000	
34	Mech./Electr.	1	LS	\$20,000	\$20,000	
				SUBTOTAL	\$6,510,370	
			С	ontingency (15%)	\$976,556	
			Engineering	g & Design (10%)	\$748,693	

Construction Administration (8%) \$598,954

TOTAL \$8,834,573

Engineering Opinion of Probable Construction Cost Valley Transfer Station

Transfer Building OUANTITY UNIT UNIT PRICE TOTAL PRICE Transfer Building of WORK \$9,401,044 \$531,700 \$13,15,500 2 Land Parchase 15 AC \$87,120 \$13,15,500 3 Clearing and Grubbing 15.1 AC \$87,120 \$13,15,500 5 Concrete: - - \$13,800 \$73,800 6 Concrete: - - \$13,00 \$13,000 7 promotions 181 CY \$1500 \$13,800 8 prom 1,602 CY \$350 \$18,800 9 promotions 1,602 CY \$350 \$330,800 10 mmcl Exterior Wall 495 CY \$600 \$27,000 10 mmcl Exterior Wall 495 CY \$600 \$207,000 10 mmcl Exterior Wall 37,620 SF \$15 \$564,300 9 listerrical 37,620 SF \$15 \$564,300 10 bitset loppers/Chater/Liners 1 LS \$100,000 \$200,0001					ESTIMAT	ED COST
Transfer Building of of of 1 Books, Mobilization and Insurance 4% of WORK \$9,401,044 \$5391,700 2 Land Purchase 15 AC \$87,120 \$51,315,500 3 Clearing and Grubbing 15.1 AC \$4,000 \$504,400 4 Entiwork/structural Full 48,723 CY \$350 \$516,000 4 Entiwork/structural Full 48,723 CY \$350 \$516,000 4 prion 522 CY \$350 \$5186,300 Foundations 181 CY \$600 \$477,000 Foundations 181 CY \$500 \$297,000 6 Paving 19,685 \$Y \$353 \$689,000 Tupping Floor 1,002 CY \$500 \$297,000 9 Exercical 37,620 \$F \$15 \$564,300 10 Steel Hoppers/Chutes/Liners 2 15 \$100,000 \$200,000 11 Utilities 1 LS \$100,000 \$200,000 12 Stu		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
Inside building 4% of WORK S9.401.044 S391,700 2 Land Purchase 15 AC S87.120 \$1,315.500 3 Clearing and Grubbing 15.1 AC S87.100 \$1,315.500 4 Earthwork/Structural Fill 48,723 CY \$15.00 \$730.800 5 Concrete		T				
1 Broks, Montzation and insurance 4% 01 WORk 39-01/044 357,004 2 Land Parchase 15 AC 587,120 \$13,15,500 3 Clearing and Grubbing 15.1 AC 54,000 560,400 4 Earthwork/Structural Fill 48,723 CY 515,000 5730,800 Apron 532 CY 5350 5186,200 Retaining Wall (1.5cy/LF) + Tunnel Interior Wall 795 CY 5600 5497,700 Foundations 181 CY 5600 5297,000 6497,700 6 Paving 190,685 SY 535 669,000 5297,000 6 Paving 190,685 SY 515 5564,300 150,000 5297,000 6 Paving 37,620 SF \$15 \$564,300 150,0000 \$209,000 10 Stoci Hoppers/Chutes/Liners 2 1S \$100,000 \$209,000 \$10,0000 \$209,000 12 Surveying 1 1S \$25,000 \$15,000 \$10,0000 \$209,000 \$12,0000	1	Transfer Building	40/	-f WODK	¢0.401.044	¢201 700
1 1.3 AC \$37,120 \$35,15,00 2 Clearing and Grubbing 1.5.1 AC \$4,000 \$50,400 4 Earthwork/Structural Fill 48,723 CY \$15,00 \$570,800 5 Corcrete:	1	L and Durahasa	4%		\$9,401,044	\$391,700
1.1.1 AC 36,000 360,000 BarhworkStructural Fill 48,723 CV \$15,00 \$730,800 S Concrete:	2	Clearing and Cryphing	15 1	AC	\$4,000	\$1,313,300
Introduction 45.723 C1 35.300 37.00,000 Apron Scorecte:	3	Earthwork/Structural Eill	13.1	AC CV	\$4,000	\$00,400
Obset Description S32 CY \$330 \$118, 300 Retaining Wall (1.Scy/LF) + Tunnel Interior Wall 795 CY \$500 \$137,000 Foundations 181 CY \$600 \$103,700 Tripping Floor 1.002 CY \$500 \$237,000 6 Paving 19,885 SY \$335 \$689,000 7 Pre-engineered Building 37,620 SF \$115 \$564,300 9 Electrical 37,620 SF \$15 \$564,300 10 Steel Hoppers/Chures/Liners 2 1.5 \$100,000 \$20,000 11 Utilities 1 LS \$100,000 \$20,000 12 Surveying 1 LS \$100,000 \$20,000 13 Brosin Control/Storms 1 LS \$20,000 \$31,000 15 Site Fencing 3.250 LF \$40 \$13,000 15 Site Fencing \$32,00 \$16,000 \$12,000	4		46,725	CI	\$15.00	\$750,800
PipOn 232 C1 5230 5102.000 Retaining Wall (1.5cy/LF) + Tunnel Interior Wall 795 CY \$600 \$477,000 Foundations 181 CY \$500 \$108,700 Tipping Floor 1,002 CY \$530 \$53,800 Tunnel Exterior Wall 495 CY \$560 \$227,000 6 Paving 19,885 SY \$33 \$689,000 \$277,000 7 Pre-engineered Building 37,620 SF \$15 \$564,300 10 Steel Hoppers/Chutes/Liners 2 LS \$100,000 \$220,000 11 Utilities 1 LS \$35,000 \$35,000 \$35,000 12 Surveying 1 LS \$35,000 \$35,000 \$35,000 13 Birosion Control/Storms 1 LS \$35,000 \$32,000 \$32,000 15 Site Fencing 8 EA \$1,500 \$12,000 \$100,000 15 Oscienchage & Signage 1 LS \$40,000 \$100,000 \$12,000	5	A prop	532	CV	\$350	\$186.300
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Tunnel Exterior Wall Hose CY Solo Solo Tunnel Exterior Wall 495 CY Solo S27,000 6 Paving 37,620 SF \$110 S3,762,000 8 Mechanical & Fire Protection 37,620 SF \$15 \$564,300 9 Electrical 37,620 SF \$15 \$564,300 10 Steel Hoppers/Chutes/Liners 2 L.S \$100,000 \$200,000 11 Uitifies 1 L.S \$35,000 \$35,000 12 Surveying 1 L.S \$25,000 \$35,000 13 Erosion Control/Storms 1 L.S \$25,000 \$327,000 14 Yard Lighting 8 EA \$1,500 \$120,000 15 Site Fencing 3,250 LF \$40 \$100,000 16 Site Landscaping & Signage 1 LS \$40,000 \$40,000 17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 18 Building Structures 800 SF \$200 \$16,000		Tipping Floor	1 002	CY	\$350	\$350,800
Data 10 10 10 10 10 100 1000000000000000000000000000000000000		Tunnel Exterior Wall	495	CY	\$600	\$297,000
Image 1000000000000000000000000000000000000	6	Paving	19 685	SY	\$35	\$689,000
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12 Surveying 1 LS \$35,000 \$35,000 13 Erosion Control/Storms 1 LS \$25,000 \$25,000 14 Yard Lighting 8 EA \$11,000 \$12,000 15 Site Fencing 3,250 LF \$40 \$130,000 15 Site Fencing 3,250 LF \$40,000 \$40,000 16 Site Landscaping & Signage 1 LS \$40,000 \$40,000 17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 18 Building Structures 800 SF \$200 \$160,000 10 Concrete Footings and slab 30 CY \$350 \$24,500 20 Concrete Footings and slab 30 SF \$120,000 \$22,500 21 Interior Treatments 800 SF \$220 \$16,000 22 Scales 3 LS \$7,500 \$22,500 23 Mechanical 800<	11	Utilities	1	LS	\$100.000	\$100.000
13 Erosion Control/Storms 1 LS \$25,000 \$25,000 14 Yard Lighting 8 EA \$1,500 \$12,000 15 Site Fencing 3,250 LF \$40 \$13,000 16 Site Landscaping & Signage 1 LS \$40,000 \$40,000 17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 18 Building Structures 800 SF \$200 \$160,000 19 Concrete Slabwork 70 CY \$350 \$14,000 21 Interior Treatments 800 SF \$120,000 22 Scales 3 LS \$7,500 \$24,500 20 Concrete Footings and slab 30 CY \$350 \$110,000 23 Scales 3 LS \$7,500 \$22,500 \$24,500 23 Mechanical 800 SF \$250 \$16,000 \$25 24 Electrical 800 SF \$250 \$20,000 \$20,000 25 Prefab	12	Surveying	1	LS	\$35.000	\$35.000
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15 Site Fencing 3,250 LF \$40 \$130,000 16 Site Landscaping & Signage 1 LS \$40,000 \$40,000 17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 18 Building Structures 800 SF \$200 \$160,000 19 Concrete Slabwork 70 CY \$350 \$24,500 20 Concrete Footings and slab 30 CY \$350 \$24,500 20 Concrete Footings and slab 30 CY \$350 \$10,500 21 Interior Treatments 800 SF \$120 \$120,000 22 Scales 3 LS \$7,500 \$22,500 23 Mechanical 800 SF \$20 \$16,000 24 Electrical 800 SF \$20 \$16,000 25 Prefabricated unit 2 EA \$25,000 \$50,000 26 Slab and Foundations 58 CY \$350 \$20,417 27 Pre-engineered structure	14	Yard Lighting	8	EA	\$1,500	\$12,000
16 Site Landscaping & Signage 1 LS \$40,000 \$40,000 17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 Scalehouses (2) 2 EA \$60,000 \$120,000 18 Building Structures 800 SF \$200 \$160,000 19 Concrete Slabwork 70 CY \$3350 \$24,500 20 Concrete Footings and slab 30 CY \$3350 \$10,500 21 Interior Treatments 800 SF \$150 \$120,000 22 Scales 3 LS \$7,500 \$22,500 23 Mechanical 800 SF \$20 \$16,000 24 Electrical 800 SF \$20 \$16,000 25 Prefabricated unit 2 EA \$25,000	15	Site Fencing	3,250	LF	\$40	\$130,000
17 Loadout Tunnel Scales (2) 2 EA \$60,000 \$120,000 Scalehouses (2)	16	Site Landscaping & Signage	1	LS	\$40,000	\$40,000
Scalehouses (2) Image: Constraint of the state of the st	17	Loadout Tunnel Scales (2)	2	EA	\$60,000	\$120,000
Scalehouses (2) Image: scalehouses (2)						
18 Building Structures 800 SF \$200 \$160,000 19 Concrete Slabwork 70 CY \$350 \$24,500 20 Concrete Footings and slab 30 CY \$350 \$10,000 21 Interior Treatments 800 SF \$150 \$120,000 22 Scales 3 LS \$7,500 \$22,500 23 Mechanical 800 SF \$20 \$16,000 24 Electrical 800 SF \$20 \$20,000 4 HW - - - - 25 Prefabricated unit 2 EA \$25,000 \$20,000 26 Slab and Foundations 58 CY \$350 \$7,750 28 Equipment 1 LS \$20,000 \$20,000		Scalehouses (2)				
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24 Electrical 800 SF \$25 \$20,000 HHW Image: Constraint of the state of the sta	23	Mechanical	800	SF	\$20	\$16,000
Image: mark mark mark mark mark mark mark mark	24	Electrical	800	SF	\$25	\$20,000
HHW C C C C 25 Prefabricated unit 2 EA \$25,000 \$50,000 26 Slab and Foundations 58 CY \$350 \$20,417 27 Pre-engineered structure 1,575 SF \$50 \$78,750 28 Equipment 1 LS \$20,000 \$20,000 29 Slab and Foundations 22 CY \$350 \$7,778 29 Slab and Foundations 22 CY \$350 \$7,778 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 31 Equipment 1 LS \$20,000 \$20,000 32 Concrete Slab 80 CY \$350 \$28,000 32 Concrete Slab 500 CY \$300,000 \$300,000 33 Retaining Walls 500 CY \$300,000 \$20,000 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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26 Slab and Foundations 58 CY \$350 \$20,417 27 Pre-engineered structure 1,575 SF \$50 \$78,750 28 Equipment 1 LS \$20,000 \$20,000 29 Slab and Foundations 22 CY \$350 \$7,778 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 32 Concrete Slab 1 LS \$20,000 \$20,000 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$300,000 \$20,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 34 Mech./Electr. 1 LS \$20,000 \$20,000	25	Prefabricated unit	2	EA	\$25,000	\$50,000
27 Pre-engineered structure 1,575 SF \$50 \$78,750 28 Equipment 1 LS \$20,000 \$20,000 20 White Goods - - - - 29 Slab and Foundations 22 CY \$350 \$7,778 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 31 Equipment 1 LS \$20,000 \$20,000 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$3600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 34 Mech./Electr. 1 LS \$20,000 \$20,000	26	Slab and Foundations	58	CY	\$350	\$20,417
28 Equipment 1 LS \$20,000 \$20,000 29 Mite Goods Image: Cry state State Structure Cry state State Structure \$50 \$7,778 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 31 Equipment 1 LS \$20,000 \$20,000 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 Cry \$3600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL SUBTOTAL	27	Pre-engineered structure	1,575	SF	\$50	\$78,750
Mite Goods C C C C 29 Slab and Foundations 22 CY \$350 \$7,778 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 31 Equipment 1 LS \$20,000 \$20,000 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$3600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000	28	Equipment	1	LS	\$20,000	\$20,000
White Goods Image: Constraint of the constra						
29 Stab and Foundations 22 CY \$350 \$7,7/8 30 Pre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 Citizen Drop-off Area 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL SUBTOTAL SUBTOTAL	20	White Goods		<u>av</u>	\$250	\$7.77 0
Stre-engineered structure 600 SF \$50 \$30,000 31 Equipment 1 LS \$20,000 \$20,000 Citizen Drop-off Area Citizen Drop-off Area 80 CY \$350 \$28,000 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL SUBTOTAL SUBTOTAL	29	Stad and Foundations	22		\$350	\$7,778
31 Equipment 1 LS \$20,000 \$20,000 31 Equipment Image: Constraint of the state of the s	30	Pre-engineered structure	600	SF	\$50	\$30,000
Citizen Drop-off Area Image: Citizen Drop-off Area Image: Citizen Drop-off Area 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL SUBTOTAL Contingency (15%)	51	Equipment	1	LS	\$20,000	\$20,000
CHizen Drop-on Area CHizen Drop-on Area 32 Concrete Slab 80 CY \$350 \$28,000 33 Retaining Walls 500 CY \$600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL SUBTOTAL Contingency (15%) \$1.666.237		Citizan Duan off Ana				
32 Concrete Stab 60 C1 \$550 \$28,000 33 Retaining Walls 500 CY \$600 \$300,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL \$11,108,244 Contingency (15%) \$1.666.237	27	Concrete Slab	80	CV	\$350	\$28,000
34 Mech./Electr. 500 C1 \$000 \$500,000 34 Mech./Electr. 1 LS \$20,000 \$20,000 SUBTOTAL Contingency (15%)	32	Retaining Walls	500	CV	\$600	\$20,000
Subtraction Licentian Subtraction Subtract	33	Mech /Flectr	1		\$20,000	\$20,000
Contingency (15%) \$1.666.237	54	meen, Loeu.	1	ப	SUBTOTAL	\$11.108.244
				C	ontingency (15%)	\$1.666.237

Engineering & Design (10%)\$1,277,448Construction Administration (8%)\$1,021,958

TOTAL \$15,073,888

Engineering Opinion of Probable Construction Cost Proposed West PlainsTransfer Station

				ESTIMAT	ED COST
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Tronofor Duilding				
1	Ponds Mohilization and Insurance	40/	of WORK	\$4,270,270	\$182 500
1	L and Durahasa	4%		\$4,379,270	\$182,300
2	Clearing and Crubbing	10.5	AC	\$4,000	\$914,800
3	Earthwork/Structural Eill	22.990	AC CV	\$4,000	\$42,000
4		55,880	CI	\$13.00	\$308,200
3		161	CV	\$250	\$56 500
	Apron Dataining Wall (1 Say/LE) + Tunnal Interior Wall	275		\$550	\$30,300
	Equip detions	575	CY	\$000	\$223,000
	Foundations	161		\$000	\$56,200
	Tipping Floor	101	CY	\$550	\$36,400
6	Tunnel Exterior wall	11 295	CI SV	\$000	\$90,000
0	Paving Dra anginggrad Duilding	11,283	51	\$33 \$100	\$393,000
/	Mechanical & Fire Destantion	13,000	SF	\$100	\$1,500,000
0	Flasteigel	13,000	SF	\$15	\$195,000
9	Electrical Staal Hannara/Chutas/Linors	13,000	SF	\$15	\$195,000
10		1		\$100,000	\$100,000
11		1		\$100,000	\$100,000
12	Surveying	1	LS	\$30,000	\$30,000
13	Erosion Control/Storms	I		\$20,000	\$20,000
14	Y and Lighting	0	EA	\$1,500	\$9,000
15		2,740	LF	\$40	\$109,600
16	Site Landscaping & Signage	1	LS	\$30,000	\$30,000
1/	Loadout Tunnel Scale	1	EA	\$60,000	\$60,000
18	Roll Up Doors	2	EA	\$10,000	\$20,000
10	Scalehouse	400	015	¢200	¢00.000
19	Building Structure	400	SF	\$200	\$80,000
20		35	CY	\$350	\$12,300
21	Concrete Footings and slab	15		\$350	\$5,200
22	Interior Treatments	400	SF	\$150	\$60,000
23	Scales Machanical	2	LS	\$60,000	\$120,000
24	Flootrical	400	SF	\$20	\$8,000
23	Electrical	400	SF	\$25	\$10,000
	111137				
26	nnvv Desfabricated unit	1	EA	\$25,000	\$25,000
20	Sleb and Foundations	22	EA	\$25,000	\$23,000
21	Dra angineerad structure	32 875		\$33U \$50	\$11,343 \$13,750
20	Fre-engineered structure	1		\$30	\$20,000
29	Equipment	1	Lo	\$20,000	\$20,000
	White Goods				
30	Slah and Foundations	22	CY	\$350	\$7 778
31	Dra angineered structure	600	SE	\$50	\$30,000
32	Equipment	1		\$20,000	\$20,000
52	Equipment	1	LO	ψ20,000	ψ20,000
	Citizen Dron-off Area				
33	Concrete Slab	80	CY	\$350	\$28,000
34	Retaining Walls	500	CY	\$600	\$300.000
35	Mech./Electr.	1	LS	\$20,000	\$20,000
SURTOTAL					
Contingency (15%)					\$821.486
			Engineering	x & Design (10%)	\$620 806

Engineering & Design (10%) Construction Administration (8%) TOTAL \$503,844

\$7,431,706

Appendix D

Transfer Cost Centers

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Purchase Existing Transfer Stations, Contract Operations
Costs:	2013 \$
Location:	Spokane County, Washington

Cost Center Summary - Purchase Existing Transfer Stations

	Purchase Colbert (North County) Transfer Station	Purchase Spokane Valley Transfer Station
Tonnage, tpy	46,000	91,000
Transfer Station Capital Debt,		
\$/ton	\$7.80	\$10.90
Transfer Station O&M Costs,		
\$/ton	\$29.90	\$25.00
Solid Waste Services, \$/ton	\$7.00	\$7.00
Interfund Charges, \$/ton	\$3.10	\$3.10
Indirect Admin Costs, \$/ton	\$1.30	\$1.30
Total Transfer Station Cost,		
\$/ton	\$49.10	\$47.30

Notes:

1. Solid Waste Services equals annual budget costs for recycling & public education, moderate risk waste program and litter control divided by total regional system tonnage of 300,000 tpy. Solid Waste Services fees do not include County Landfills closure and post-closure costs of approximately \$750,000 annually or \$4.80/ton over 157,000 tpy (non-City of Spokane tonnage).

2. Solid waste interfund charges (based on 2013 budget) divided by total regional system tonnage of 300,000 tpy. Litter control included with the Solid Waste Services charges.

Indirect Administrative Costs applied at 2.8% of total annual expenditures as provided by Spokane County.
 Does not include the annual county landfills closure and post-closure costs.

5. Total transfer station cost estimate does not include haul and disposal fee. See Disposal Cost Centers.

State of Washington Ecology fee of 3.6% will apply to total fee included in Proformas.

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Purchase Existing Transfer Stations, Contract Operations
Costs:	2013 \$
Location:	Spokane County, Washington

Cost Center Summary - Acquire Existing Transfer Stations

	Acquire Colbert (North County) Transfer Station	Acquire Spokane Valley Transfer Station
Tonnage, tpy	46,000	91,000
Transfer Station Capital Debt,		
\$/ton	\$0.00	\$0.00
Transfer Station O&M Costs,		
\$/ton	\$29.90	\$25.00
Solid Waste Services, \$/ton	\$7.00	\$7.00
Interfund Charges, \$/ton	\$3.10	\$3.10
Indirect Admin Costs, \$/ton	\$1.10	\$1.00
Total Transfer Station Cost,		
\$/ton	\$41.10	\$36.10

Notes:

1. to 5. Same as above.

6. Assumes existing transfer stations acquired for \$1 and 10-year agreement with City of Spokane for waste disposal at the Waste-to-Energy Facility.

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

GREEN TABS: CAPITAL COST DEBT SERVICE for FAIR MARKET VALUE PURCHASE · BOND SIZING

Bond Sizing Calculation Methodology

ASSUMPTIONS		Colbert Transfer Station		ation
		Values	Capital Requireme	ents
Construction Assumptions:			Colbert TS Appraisel(2012\$)	\$2,198,438
Construction Cost Annual Escalation Rate		3.0%	Fixed Equip (2012\$)	\$95,668
Escalation Years from 2012 to Purchase		2	Select Equip(2012\$)	\$117,088
Siting and Local Approval (months)	NA	0	Esc. (To const.)	\$140,000
Planning, Permitting & Design (months)	NA	0	Projected Costs	\$2,551,194
Months for Construction (Months):	0.00	0	Other Funding	\$0
Debt Assumptions			Financed Capital	\$2,551,194
Amortization period (Years):		10	*For comparison purposes, pure	chase
Availability of Reserves (%):		100%	amortization period set equal to	proposed 10-
Taxable Debt Portion (%)			year agreement by City of Spok	ane for WIE
Equity Portion (%) excl. tax benefits		¢2 551 104	disposal	
Draw Down Availability of Funds (%):		φ2,331,194 30%		
Bond Issuance Fees (%):		1 5%		
Interest Rate Assumptions		1.070		
Blended Bond Interest Rate (%)		4.37%		
Tax Exempt Rate (%)				
Taxable Rate (%)				
Equity Rate (%)				
Reinvestment Rates				
Long Term Reinvestment Rate (%):		1.0%		
Short Term Reinvestment Rate (%):		1.0%		
CALCULATIONS:				
Number of Const. Payment Periods		0		
Interest During Construction Availability:		0.00		
Blend Capital Recovery Factor		10.00/		
Bond Capital Recovery Factor		12.6%		
Debt Service Reserve Cap		10.0%		
Bond Issue Size (Round up to nearest \$5000)		\$2,885,000		
Capital Cost		\$2,551,194		
Bond Discount		\$43,275		
Debt Service Reserve		\$288,500		
Interest During Construction		\$0	_	
Subtotal		\$2,882,969		
Interest on:				
Capital		\$0		
Debt Service Reserve		\$0 \$0		
Interest During Construction		\$0		
Subtotal		\$0	•	
Bond Issue Size		\$2,883,000		
Annual Interest Earned on Debt Service Res	erves	\$3,000	_	
Net Annual Debt Service MSW (tons) to North County Transfer Statior	_	\$359,000 46.000		
Debt Service Cost p	er Ton	\$7.80 /ton	-	

Bond Sizing Calculation Methodology

ASSUMPTIONS	5	Spokane Valley Transfer Station		er Station
		Values	Capital Requireme	ents
Construction Assumptions:			Valley TS Appraisel(2012\$)	\$6,140,397
Construction Cost Annual Escalation Rate		3.0%	Fixed Equip (2012\$)	\$294,114
Escalation Years from 2012 to Purchase		2	Select Equip (2012\$)	\$247,642
Siting and Local Approval (months)	NA	0	Esc. (To purchase)	\$392,000
Planning, Permitting & Design (months)	NA	0	Projected Costs	\$7,074,153
Months for Construction (Months):	0.00	0		\$0
Debt Assumptions		10	*For comparison purposos, pu	\$7,074,153
Amonization period (Years): Availability of Resonves (%):		100%	amortization period set equal to	nronosed 10-
Taxable Debt Portion (%)		10078	vear agreement by City of Soo	kane for WTE
Faulty Portion (%) excl. tax benefits			disposal	
Construction Price Financed (\$):		\$7,074,153		
Draw Down Availablity of Funds (%):		30%		
Bond Issuance Fees (%):		1.5%		
Interest Rate Assumptions				
Blended Bond Interest Rate (%)		4.37%		
Tax Exempt Rate (%)				
Taxable Rate (%)				
Equity Rate (%)				
Reinvestment Rates				
Long Term Reinvestment Rate (%):		1.0%		
Short Term Reinvestment Rate (%):		1.0%		
CALCULATIONS:				
Number of Const. Payment Periods		0		
Interest During Construction Availability:		0.00		
Blend Capital Recovery Factor				
Bond Capital Recovery Factor		12.6%		
Debt Service Reserve Cap		10.0%		
Bond Issue Size (Round up to nearest \$5000)		\$7,995,000		
Capital Cost		\$7,074,153		
Bond Discount		\$119,925		
Debt Service Reserve		\$799,500		
Interest During Construction		\$0		
Subtotal		\$7,993,578		
Interest on:				
Capital		\$0		
Debt Service Reserve		\$0		
Interest During Construction		\$0		
Subtotal		\$0		
Bond Issue Size		\$7,994,000		
Annual Interest Earned on Debt Service Rese	erves	\$8,000		
Net Annual Debt Service MSW (tons) to Spokane Valley Transfer Stati	on	\$996,000 91,000		
Debt Service Cost p	er Ton	\$10.90 /ton		

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

ORANGE TABS: TRANSFER STATION O&M COST ESTIMATES

Engineering Opinion of Probable O&M Cost Colbert Transfer Station

				ESTIMA	\TED	COST
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	T	OTAL PRICE
LABOR						
Job Classification	Qty	Labor Rate	Hrs/Yr			Total
Transfer Station Foreman (loader operator)	2	\$45	2080 hrs		\$	186,400
Heavy Equipment Operator (crane/spotter)	2	\$39	2080 hrs		\$	160,500
Cash Accounting Clerk I (scale clerk)	2.5	\$31	2080 hrs		\$	159,300
Hazardous Waste Technician (HHW)	2	\$36	2080 hrs		\$	151,700
Laborer II (recycling)	0.5	\$34	2080 hrs		\$	35,100
Laborer II (spotter)	1.5	\$34	2080 hrs		\$	105,200
Overtime	5%	\$ 798,200	1.5		\$	59,900
				Subtotal	\$	858,100
Notes/Assumptions:						
Personnel numbers based on 7 days per week op	eration. See rec	commended staffing.				
Prevailing labor wages based on City of Spokane	2013 salaries.	Labor rates include ber	nefits of	40%		
Overtime assumes percentage of all salaries and	1.5x average rat	e.				
	-					
INSURANCE						
Item		Quantity		Unit Price		Total
General, Liability, Fire, Etc.	0.5%	\$2,551,194	bldgs/equip	ment value	\$	13,000
BUILDING AND SITE MAINTENANCE						
Item		Quantity		Unit Price		Total
General Maintenance	1.5%	\$2,551,194	bldgs/equip	ment value	\$	38,000
UTILITIES - BUILDING AND SITE						
Item		Quantity		Unit Price		Total
Electricity Usage		400,000 kwh	ı	\$0.07	\$	28,000
Electricity Demand - Monthly		100 kw/month	ı	\$7	\$	8,400
Heating - Natural gas		600 DTH	I	\$5 /DTH	\$	3,000
Water		362,000 gal	I	\$8 /1000 gal	\$	2,900
Sanitary Service		12 months	5	\$140 /month	\$	1,700
Site Stormwater		225,848 sf	f	\$21 /yr/3500 sf	\$	1,400
Telephone/Mobile Phones	3	phone service		\$100 /month	\$	3,600
				Subtotal	\$	49,000
Notes/Assumptions:						
Electricity usage and price based on actual billing	0.5	watts/sf				
	19168	square feet, transfer st	tation			
	2830	square feet, all other b	uildings			
Stationary Tamping Crane	75	hp	1092	hours/year	(est.	3 hrs/day)
Assume natural gas use	2	therm/sf/season (DTH	= decatherm)			
Water use - domestic & washdown	10	gpd/FTE	5	gpd/100 SF	(trans	sfer station)

Engineering Opinion of Probable O&M Cost Colbert Transfer Station

					ESTIMA) COST	
	ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	Т	OTAL PRICE
E	QUIPMENT O&M						
	Item	Qty	Units/Yr		Unit Price		Total
	Stationary Tamping Crane - electric	1	1092 hrs		\$3	\$	3,300
	Wheel Loader (Volvo L 1103)	1	1820 hrs		\$10	\$	18,200
	Skid Steer (Bobcat A-300)	1	718 hrs		\$5	\$	3,600
	Pick-Up Truck	1	10000 miles		\$0.20	\$	2,000
	Yard Bull	1	718 hrs		\$5	\$	3,600
	Roll-Off Truck*	0			\$5	\$	-
	Roll-Off & Open Top Containers	8	each		\$250	\$	2,000
	General Maint & Operating Supplies	1	LS		\$10,000	\$	10,000
	Minor Equipment & Operating Rentals	1	LS		\$10,000	\$	10,000
					Subtotal	\$	52,700
N	otes/Assumptions:						

*Pick-up of roll-off containers assumed to be contracted out with material revenues off-setting cost.

MOBILE EQUIPMENT FUEL

Item	Qty	Rate	Hrs/Yr	Unit Price	Total
Wheel Loader	1	3 gal/hr	1820 hrs	\$4.00	\$ 21,800
Skid Steer	1	2 gal/hr	718 hrs	\$4.00	\$ 5,700
Pick-Up Truck	10000 miles	0.1 gal/mile		\$4.00	\$ 4,000
Yard Bull	1	3 gal/hr	718 hrs	\$4.00	\$ 8,600
Roll-Off Truck	0	1 gal/hr	0 hrs	\$4.00	\$ -
				Subtotal	\$ 40,100

EQUIPMENT REPLACEMENT RESERVES

Item	Qty	Equip Life	Price (2013\$)	Total - Annual
Stationary Tamping Crane O&M	1	10 yrs	\$170,000	\$17,000
Wheel Loader (Volvo L 1103)	1	7 yrs	\$350,000	\$50,000
Skid Steer (Bobcat A-300)	1	10 yrs	\$50,000	\$5,000
Pick-Up Truck	1	7 yrs	\$35,000	\$5,000
Yard Bull	1	7 yrs	\$105,000	\$15,000
Roll-Off Truck	0	7 yrs	\$120,000	\$0
Roll-Off & Open Top Containers	8	10 yrs	\$5,000	\$4,000
			Subtotal	\$ 96,000
			ANNUAL SUBTOTAL	\$ 1,146,900
		Ov	erhead and Profit (10%)	\$ 114,700
		General &	& Admin Services (10%)	\$ 114,700
			ANNUAL TOTAL	\$ 1,376,300

Notes:

Excludes construction and equipment capital debt service.
 General & Admin Services assumed to include home office charges and taxes under contract operations.

* Revise items in red for program and site specific information.

Engineering Opinion of Probable O&M Cost Spokane Valley Transfer Station

				ESTIM	\TED	COST
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	т	OTAL PRICE
LABOR						
Job Classification	Qty	Labor Rate	Hrs/Yr			Total
Transfer Station Foreman (loader operator)	2.5	\$45	2080 hrs		\$	233,000
Heavy Equipment Operator (compactor)	2	\$39	2080 hrs		\$	160,500
Heavy Equipment Operator (crane)	2	\$39	2080 hrs		\$	160,500
Cash Accounting Clerk I (scale clerk)	2.5	\$31	2080 hrs		\$	159,300
Hazardous Waste Technician (HHW)	2	\$36	2080 hrs		\$	151,700
Laborer II (recycling)	1.5	\$34	2080 hrs		\$	105,200
Laborer II (spotter)	2.5	\$34	2080 hrs		\$	175,300
Overtime	5%	\$ 1,145,500	1.5		\$	85,900
				Subtotal	\$	1.231.400
Notes/Assumptions:					r	, - ,
Personnel numbers based on 7 days per week. 1	0 hours per day	operation.				
Prevailing labor wages based on City of Spokane	2013 salaries.	Labor rates include be	nefits of	40%		
Overtime assumes percentage of all salaries and	1 5x average rat	1e		,.		
	non aronago ra					
INSURANCE						
Item		Quantity		Unit Price		Total
General, Liability, Fire, Etc.	0.5%	\$7.074.153	bldas/equip	ment value	\$	35.000
	0.070	<i></i>	blage, equip		Ψ	00,000
BUILDING AND SITE MAINTENANCE						
Item		Quantity		Unit Price		Total
General Maintenance	1 5%	\$7 074 153	hldas/equip	ment value	\$	106 000
	1.070	<i></i>	blage, equip		Ψ	100,000
UTILITIES - BUILDING AND SITE						
Item		Quantity		Unit Price		Total
Electricity Usage		555.000 kwh	1	\$0.07	\$	38,900
Electricity Demand - Monthly		170 kw/month		\$7	ŝ	14,300
Heating - Natural gas		600 DTH		\$5 /DTH	ŝ	3 000
Water		Pri d 000		In <u>1</u> , 000	¢ ¢	5,000
Sanitary Service		12 months		\$140 /month	Ψ ¢	1 700
Site Stormwater		100 / 86 of		\$21 /vr/3500 ef	Ψ ¢	1,700
Telephone/Mobile Phones	1	nhone service		\$100 /month	Ψ Φ	4 800
relephone/mobile r nones	-	priorie service		Subtotal	÷	4,000
Notes/Assumptions:				Subiolai	φ	00,000
Electricity usage and price based on actual billing	0.5	watte/ef				
Electricity usage and price based on actual billing	22456	walls/si	otion			
	33430	square feet, italister si	uildingo			
Stationan / Tomping Crane	3160	square reet, all other b	uliulings	hourstan	(aat	25 bro/wook)
Stationary Tamping Crane	75	np	1820	hours/year	(est.	35 hrs/week)
Compactor System	100	therm/of/seesen (DTU)	1820	nours/year	(est.	ວວ nrs/week)
Assume natural gas use	2	unerm/st/season (DTH	= uecatherm)		(1	-f
vvater use - domestic & washdown	10	gpa/FIE	5	gpa/100 SF	(trans	ster station)
1						

Engineering Opinion of Probable O&M Cost Spokane Valley Transfer Station

				ESTIMATED COST		
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	Т	OTAL PRICE
EQUIPMENT O&M						
Item	Qty	Units/Yr		Unit Price		Total
Stationary Tamping Crane - electric	1	1820 hrs		\$3	\$	5,500
Compactor System	1	1820 hrs		\$10	\$	18,200
Wheel Loader (Volvo L 1103)	2	1939 hrs		\$10	\$	38,800
Skid Steer (Bobcat A-300)	1	718 hrs		\$5	\$	3,600
Pick-Up Truck	1	10000 miles		\$0.20	\$	2,000
Yard Bull	1	718 hrs		\$5	\$	3,600
Roll-Off Truck*	0			\$5	\$	-
Roll-Off & Open Top Containers	15	each		\$250	\$	3,750
General Maint & Operating Supplies	1	LS		\$30,000	\$	30,000
Minor Equipment & Operating Rentals	1	LS		\$40,000	\$	40,000
				Subtotal	\$	145,450

Notes/Assumptions:

*Pick-up of roll-off containers assumed to be contracted out with material revenues off-setting cost.

MOBILE EQUIPMENT FUEL

ltem	Qty	Rate	Hrs/Yr	Unit Price	Total
Wheel Loader	2	3 gal/hr	1939 hrs	\$4.00	\$ 46,500
Skid Steer	1	2 gal/hr	718 hrs	\$4.00	\$ 5,700
Pick-Up Truck	10000 miles	0.1 gal/mile		\$4.00	\$ 4,000
Yard Bull	1	3 gal/hr	718 hrs	\$4.00	\$ 8,600
Roll-Off Truck	0	1 gal/hr	0 hrs	\$4.00	\$ -
				Subtotal	\$ 64,800

EQUIPMENT REPLACEMENT RESERVES

Item	Qty	Equip Life	Price (2013\$)	То	tal - Annual
Stationary Tamping Crane O&M	1	10 yrs	\$170,000		\$17,000
Compactor System	1	10 yrs	\$950,000		\$95,000
Wheel Loader (Volvo L 1103)	2	7 yrs	\$350,000		\$100,000
Skid Steer (Bobcat A-300)	1	10 yrs	\$50,000		\$5,000
Pick-Up Truck	1	7 yrs	\$35,000		\$5,000
Yard Bull	1	7 yrs	\$105,000		\$15,000
Roll-Off Truck	0	7 yrs	\$120,000		\$0
Roll-Off & Open Top Containers	15	10 yrs	\$5,000		\$7,500
			Subtotal	\$	244,500
			ANNUAL SUBTOTAL	\$	1,895,950
		0'	verhead and Profit (10%)	\$	189,600
		General	& Admin Services (10%)	\$	189,600
				¢	2 275 150
				-D	///3.130

Notes:

1. Excludes construction and equipment capital debt service.

2. General & Admin Services assumed to include home office charges and taxes under contract operations.

* Revise items in red for program and site specific information.
| Project: | Spokane County Solid Waste Transfer and Disposal Options Study |
|-----------------|--|
| Estimator: | Lori Calub - HDR Engineering Inc. |
| Reviewer: | Deb Frye on July 29, 2013 |
| Date: | Jul-13 |
| Estimate Basis: | Replacement Transfer Stations Development and Operations |
| Costs: | 2013 \$ |
| Location: | Spokane County, Washington |
| | |

Cost Center Summary - Replacement Transfer Stations

	Replacement Colbert Transfer Station	Replacement Spokane Valley Transfer Station
Tonnage, tpy	46,000	91,000
Transfer Station Capital Debt,		
\$/ton	\$20.20	\$17.40
Transfer Station O&M Costs,		
\$/ton	\$31.60	\$22.60
Solid Waste Services, \$/ton	\$7.00	\$7.00
Interfund Charges, \$/ton	\$3.10	\$3.10
Indirect Admin Costs, \$/ton	\$1.70	\$1.40
Total Transfer Station Cost,		
\$/ton	\$63.60	\$51.50

Notes:

1. Solid Waste Services equals annual budget costs for recycling & public education, moderate risk waste program and litter control divided by total regional system tonnage of 300,000 tpy. Solid Waste Services fees do not include County Landfills closure and post-closure costs of approximately \$750,000 annually or \$4.80/ton over 157,000 tpy (non-City of Spokane tonnage).

2. Solid waste services interfund charges (based on 2013 budget) divided by total regional system tonnage of 300,000 tpy. Litter control included with the Solid Waste Services charges.

3. Indirect Administrative Costs applied at 2.8% of total annual expenditures as provided by Spokane County.

4. Does not include the annual county landfills closure and post-closure costs.

5. Total transfer station cost estimate does not include haul and disposal fee. See Disposal Cost Centers. State of Washington Ecology fee of 3.6% will apply to total fee included in Proformas.

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

GREEN TABS: CAPITAL COST DEBT SERVICE - BOND SIZING

Bond Sizing Calculation Methodology

ASSUMPTIONS	Values	Replacement Colbert Transfe Values Capital Requirement					
Construction Assumptions:		Generic Site (2013\$)	\$8,834,573				
Construction Cost Annual Escalation Rate	3.0%	Mobile Equin (2013\$)	\$745,000				
Escalation Vears from 2013 to NTP	1	Esc (To const.)	\$888,000				
Citian and Local Annauch (months)	1	Esc. (10 collst.)	\$000,000 \$10,407,570				
Siting and Local Approval (months)	12	Projected Costs	\$10,467,573				
Planning, Permitting & Design (months)	12	Other Funding	\$0				
Months for Construction (Months): 1	.50 18	Financed Capital	\$10,467,573				
Debt Assumptions							
Amortization period (Years):	20	*For new facility would	not bond for less				
Availability of Reserves (%)	100%	than 20 years					
Taxable Debt Portion (%)	100/0						
Equity Portion (%)							
Construction Drive Financed (^(h))	¢40,407,672						
Construction Price Financed (\$):	\$10,467,573						
Draw Down Availability of Funds (%):	30%						
Bond Issuance Fees (%):	1.5%						
Interest Rate Assumptions							
Blended Bond Interest Rate (%)	4.37%						
Tax Exempt Rate (%)							
Taxable Rate (%)							
Equity Pate (%)							
Equity Rate (%)							
Reinvestment Rates							
Long Term Reinvestment Rate (%):	1.0%						
Short Term Reinvestment Rate (%):	1.0%						
CALCULATIONS:							
Number of Const. Payment Periods	3						
Interest During Construction Availability	0.67						
Blend Capital Recovery Eactor	0.07						
Bond Capital Receivery Factor	7 60/						
Dolid Capital Recovery Factor	7.0%						
Debt Service Reserve Cap	7.6%						
Bond Issue Size (Round up to nearest \$5000)	\$12,330,000						
Capital Cost	\$10,467,573						
Bond Discount	\$184 950						
Debt Service Reserve	\$937,200						
Interest During Construction	\$000,200 \$000,222						
Interest During Construction	\$808,232	-					
Subtotal	\$12,397,954						
Interest on:							
Canital	\$47 100						
Debt Service Recerve	\$14,060						
Interest During Construction	\$14,000						
Interest During Construction	\$8,080	-					
Subtotal	\$69,240						
Bond Issue Size	\$12,329,000						
Annual Interest Earned on Debt Service Reserv	es \$9,000						
Net Annual Debt Service MSW (tons) to North County Transfer Station	\$928,000 46,000						
Debt Service Cost per	Ton \$20.20 /ton						

Bond Sizing Calculation Methodology

ASSUMPTIONS		Values	Replacement Spokane Valley TS Capital Requirements			
Construction Assumptions:			Generic Site (2013\$)	\$15,073,888		
Construction Cost Annual Escalation Rate		3.0%	Mobile Equip (2013\$)	\$1,305,000		
Escalation Years from 2013 to NTP		1	Esc. (To const.)	\$1,519,000		
Siting and Local Approval (months)		12	Projected Costs	\$17,897,888		
Planning, Permitting & Design (months)		12	Other Funding	\$0		
Months for Construction (Months):	1.50	18	Financed Capital	\$17,897,888		
Debt Assumptions				+ ,		
Amortization period (Years):		20	*For new facility would not	bond for less		
Availability of Reserves (%):		100%	than 20 years.			
Equity Portion (%) excl tax benefits						
Construction Price Financed (\$):	c	17 807 888				
Draw Down Availability of Funds (%):	,	30%, 160, 110 30%				
Bond Issuance Foos (%):		1 5%				
Interest Rate Assumptions		1.370				
Plandad Pand Interact Pate (%)		1 270/				
Tax Example Data (%)		4.37 %				
Tax Exempt Rate (%)						
Taxable Rale (%)						
Equity Rate (%)						
Reinvestment Rates		4.000				
Long Term Reinvestment Rate (%):		1.0%				
Short Term Reinvestment Rate (%):		1.0%				
CALCULATIONS:						
Number of Const. Payment Periods		3				
Interest During Construction Availability:		0.67				
Blend Capital Recovery Factor						
Bond Capital Recovery Factor		7.6%				
Debt Service Reserve Cap		7.6%				
Bond Issue Size (Round up to nearest \$5000)	\$	\$21,080,000				
Capital Cost	S	\$17,897,888				
Bond Discount		\$316,200				
Debt Service Reserve		\$1,602,300				
Interest During Construction		\$1,381,794				
Subtotal	ç	\$21,198,182	-			
Interest on:						
Capital		\$80.540				
Debt Service Reserve		\$24.030				
Interest During Construction		\$13,820				
Subtotal		\$118,390	-			
Bond Issue Size	S	\$21,080,000				
Annual Interest Earned on Debt Service Reserv	/es	\$16.000				
Net Annual Debt Service		\$1.586.000	•			
MSW (tons) to Spokane Valley Transfer Station	n	91,000	-			
Debt Service Cost per	Ton	\$17.40 /ton				

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

ORANGE TABS: TRANSFER STATION O&M COST ESTIMATES

Engineering Opinion of Probable O&M Cost Replacement Colbert Transfer Station

				ESTIM	ATED O	COST
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	то	TAL PRICE
LABOR						
Job Classification	Qty	Labor Rate	Hrs/Yr			Total
Transfer Station Foreman (loader operator)	2	\$45	2080 hrs		\$	186,400
Heavy Equipment Operator (crane/hostler)	2	\$39	2080 hrs		\$	160,500
Cash Accounting Clerk I (scale clerk)	2.5	\$31	2080 hrs		\$	159,300
Hazardous Waste Technician (HHW)	2	\$36	2080 hrs		\$	151,700
Laborer II (recycling)	0.5	\$34	2080 hrs		\$	35,100
Laborer II (spotter)	1.5	\$34	2080 hrs		\$	105,200
Overtime	5%	\$ 798,200	1.5		\$	59,900
		. ,		Subtotal	\$	858,100
Notes/Assumptions:				e a de contra de	+	,
Personnel numbers based on 7 days per week 1	0 hours per day	operation				
Prevailing labor wages based on City of Spokane	2013 salaries	Labor rates include be	enefits of	40%		
Overtime assumes percentage of all salaries and	1 5x average ra	te		1070		
e vertime accumes percentage er an calance and	nox avoiago ia					
INSURANCE						
Item		Quantity		Unit Price		Total
General, Liability, Fire, Etc.	0.5%	\$6.389.226	bldas/equip	ment capital	\$	32.000
	0.070	¢0,000, <u>=</u> =0	anage, equip	inon oupnui	+	,
BUILDING AND SITE MAINTENANCE						
Item		Quantity		Unit Price		Total
General Maintenance	1.5%	\$6.389.226	bldas/equip	ment capital	\$	96.000
		+-,,	3		ŗ	,
UTILITIES - BUILDING AND SITE						
Item		Quantity		Unit Price		Total
Electricity - Lighting		64.000 kwl	h	\$0.07	\$	4.500
Electricity - Equipment (crane)		60.000 kwl	h	\$0.07	\$	4,200
Electricity - Equipment (HVAC, computers,	etc.)	182.000 kwl	h	\$0.07	\$	12,700
Electricity Demand - Monthly	0101)	80 kw/montl	h	\$7.30	\$	7 000
Heating - Natural gas		400 DTH	-	\$5 /DTH	\$	2 000
Water		273 000 da	al	lon 0001/ 88	ŝ	2,000
Sanitary Service		12 month	\$	\$140 /month	ŝ	1 700
Site Stormwater		176 075 s	ef	\$21 /vr/3500 ef	¢ ¢	1,700
Telephone/Mobile Phones	3	nhone service	,	\$100 /month	Ψ S	3 600
relephone/mobile r nones	0	phone service		Subtotal	¢	30,000
Notes/Assumptions				Subiolai	φ	39,000
Buildings lighting based on	0.5	watts/sf	3640	hours/vear	(est 7	0 hrs/week)
Durangs ignang based on	14 200	square feet transfer s	station	nours/year	(051.7)	5 mo, weeky
	1 875	square feet all other b	ouildinge			
Site Lighting estimate	1,075	1000W Lights	1380	bours/voor	(night-	time)
Stetionary Tomping Cropp	75	ho	4300	hours/year	(night-	hre/dev/
Equipment (H)(AC computers cooles at a)	75	hh M	2640	hours/year	(est. 5	to
Assume patural das use	50	thorm/ef/concor (DTU	Journal - docathorm	nours/year	esuma	10
Mater use - demostic & weekdown	2	and/ETE	i = uecainefm)	and/100 SE	(trancf	or station)
Water use - utilesite & Washuuwin	10	gpu/i i L	5	9pu/100 OF	(uansi	SI SIGUOII)

Engineering Opinion of Probable O&M Cost Replacement Colbert Transfer Station

					ESTIMA	TED	O COST
	ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	Т	OTAL PRICE
E	QUIPMENT O&M						
	Item	Qty	Units/Yr		Unit Price		Total
	Stationary Tamping Crane - electric	1	1077 hrs		\$3	\$	3,200
	Wheel Loader (Volvo L 1103)	1	1795 hrs		\$10	\$	18,000
	Skid Steer (Bobcat A-300)	1	718 hrs		\$5	\$	3,600
	Pick-Up Truck	1	10000 miles		\$0.20	\$	2,000
	Yard Bull	1	718 hrs		\$5	\$	3,600
	Roll-Off Truck*	0			\$5	\$	-
	Roll-Off Containers	7	each		\$250	\$	1,800
	General Maint & Operating Supplies	1	LS		\$10,000	\$	10,000
	Minor Equipment & Operating Rentals	1	LS		\$10,000	\$	10,000
					Subtotal	\$	52,200

Notes/Assumptions:

*Pick-up of roll-off containers assumed to be contracted out with material revenues off-setting cost.

MOBILE EQUIPMENT FUEL

Item	Qty	Rate	Hrs/Yr	Unit Price	Total
Wheel Loader	1	3 gal/hr	1795 hrs	\$4.00	\$ 21,500
Skid Steer	1	2 gal/hr	718 hrs	\$4.00	\$ 5,700
Pick-Up Truck	10000 miles	0.1 gal/mile		\$4.00	\$ 4,000
Yard Bull	1	3 gal/hr	718 hrs	\$4.00	\$ 8,600
Roll-Off Truck	0	1 gal/hr	0 hrs	\$4.00	\$ -
				Subtotal	\$ 39,800

EQUIPMENT REPLACEMENT RESERVES

Item	Qty	Equip Life	Price (2013\$)	Total - Annual
Stationary Tamping Crane O&M	1	10 yrs	\$170,000	\$17,000
Wheel Loader (Volvo L 1103)	1	7 yrs	\$350,000	\$50,000
Skid Steer (Bobcat A-300)	1	10 yrs	\$50,000	\$5,000
Pick-Up Truck	1	7 yrs	\$35,000	\$5,000
Yard Bull	1	7 yrs	\$105,000	\$15,000
Roll-Off Truck	0	7 yrs	\$120,000	\$0
Roll-Off & Open Top Containers	7	10 yrs	\$5,000	\$3,500
			Subtotal	\$ 95,500
				• • • • • • • • •
			ANNUAL SUBICIAL	\$ 1,212,600
		O	verhead and Profit (10%)	\$ 121,300
		General	& Admin Services (10%)	\$ 121,300
			ANNUAL TOTAL	\$ 1,455,200

Notes:

1. Excludes construction and equipment capital debt service.

2. General & Admin Services assumed to include home office charges and taxes under contract operations.

* Revise items in red for program and site specific information.

Engineering Opinion of Probable O&M Cost Replacement Spokane Valley Transfer Station

				ESTIMA	TEC	COST
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	Т	OTAL PRICE
LABOR						
Job Classification	Qty	Labor Rate	Hrs/Yr			Total
Transfer Station Foreman (loader operator)	2.5	\$45	2080 hrs		\$	233,000
Heavy Equipment Operator (crane/hostler)	2	\$39	2080 hrs		\$	160,500
Cash Accounting Clerk I (scale clerk)	2.5	\$31	2080 hrs		\$	159,300
Hazardous Waste Technician (HHW)	2	\$36	2080 hrs		\$	151,700
Laborer II (recycling)	1.5	\$34	2080 hrs		\$	105.200
Laborer II (spotter)	2.5	\$34	2080 hrs		\$	175.300
Overtime	5%	\$ 985,000) 1.5		\$	73,900
	0,0	φ οσο,σοο		Subtotal	ŝ	1.058.900
Notes/Assumptions:				••••••	-	.,,
Personnel numbers based on 7 days per week. 1	0 hours per dav	operation.				
Prevailing labor wages based on City of Spokane	2013 salaries	Labor rates include be	enefits of	40%		
Overtime assumes percentage of all salaries and	1 5x average ra	te		1070		
evenine assumes percentage of all salaries and	1.0x average ra					
INSURANCE						
Item		Quantity		Unit Price		Total
General, Liability, Fire, Etc.	0.5%	\$11,458,981	bldgs/equip	ment value	\$	57,000
		. , ,	0 1 1			,
BUILDING AND SITE MAINTENANCE						
Item		Quantity		Unit Price		Total
General Maintenance	1.5%	\$11,458,981	bldgs/equip	ment value	\$	172,000
			0 1 1			
UTILITIES - BUILDING AND SITE						
Item		Quantity		Unit Price		Total
Electricity - Lighting		118,000 kwl	h	\$0.072	\$	8,500
Electricity - Equipment (crane)		204,000 kwl	h	\$0.072	\$	14,700
Electricity - Equipment (HVAC, computers, e	etc.)	182.000 kwl	h	\$0.072	\$	13,100
Electricity Demand - Monthly		140 kw/month	h	\$7	\$	11.800
Heating - Natural gas		600 DTH		\$5 /DTH	\$	3 000
Water		697 000 ge	al	len 001\ 88	\$	5,600
Sanitary Service		12 months	e	\$140 /month	¢ ¢	1 700
Site Stormwater		220 505 6	5 sf	\$21 /ur/3500 ef	¢	1,700
Telephone/Mobile Phones	1	nhone service	51	\$100 /month	Ψ Φ	4 800
relephone/mobile r nones	-	priorie service		φ100/monal	¢	4,000 64,500
Notes/Assumptions:				Subiolai	φ	04,500
Buildings lighting based on	0.5	watte/ef	3640	hours/year	(oct	70 brs/wook)
Dulidings lighting based on	37 620	square feet transfer e	station	nours/year	(631.	TO THS/WEEK)
	2.075	square feet, ilalisier s	huildingo			
Cite Liebting actimate	2,975	square reet, an other t	buildings 4000	h	(- + +:
Site Lighting, estimate	10	1000vv Lights	4380	nours/year	(nigr	nt-time)
Stationary Tamping Grane (2 cranes)	75	np	1820	nours/year	(35 h	ITS/WK each)
Equipment (HVAC, computers, scales, etc.)	50	kW	3640	hours/year	estin	nate
Assume natural gas use	2	therm/sf/season (DTH	I = decatherm)			•
Water use - domestic & washdown	10	gpd/FTE	5	gpd/100 SF	(tran	ister station)

Engineering Opinion of Probable O&M Cost Replacement Spokane Valley Transfer Station

				ESTIMA	TE	D COST
ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE		TOTAL PRICE
EQUIPMENT O&M						
Item	Qty	Units/Yr		Unit Price		Total
Stationary Tamping Crane - electric	2	1820 hrs		\$3	\$	10,900
Wheel Loader (Volvo L 1103)	2	1939 hrs		\$10	\$	38,800
Skid Steer (Bobcat A-300)	1	718 hrs		\$5	\$	3,600
Pick-Up Truck	1	10000 miles		\$0.20	\$	2,000
Yard Bull	1	718 hrs		\$5	\$	3,600
Roll-Off Truck*	0			\$5	\$	-
Roll-Off & Open Top Containers	15	each		\$250	\$	3,800
General Maint & Operating Supplies	1	LS		\$30,000	\$	30,000
Minor Equipment & Operating Rentals	1	LS		\$40,000	\$	40,000
				Subtotal	\$	132,700
Notes/Assumptions:						
*Pick-up of roll-off containers assumed to be cont	racted out with ma	terial revenues off-sett	ing cost.			
MOBILE EQUIPMENT FUEL						
Item	Qty	Rate	Hrs/Yr	Unit Price		Total
Wheel Loader	2	3 gal/hr	1939 hrs	\$4.00	\$	46,500
Skid Steer	1	2 gal/hr	/18 hrs	\$4.00	\$	5,700
Pick-Up Truck	10000 miles	0.1 gal/mile	7401	\$4.00	\$	4,000
Yard Bull	1	3 gal/hr	/18 hrs	\$4.00	\$	8,600
Roll-Off Truck	0	i gai/nr	Unrs	\$4.00	\$	-
				Subtotal	\$	64,800
Item	Otv	Equip Life		Price (2013\$)	-	Total - Annual
Stationary Tamping Crane O&M	2	10 yrs		\$170.000		\$34,000
Wheel Loader (Volvo L 1103)	2	7 vrs		\$350,000		\$100,000
Skid Steer (Bobcat A-300)	1	10 vrs		\$50,000		\$5,000
Pick-Up Truck	1	7 yrs		\$35,000		\$5,000
Yard Bull	1	7 yrs		\$105,000		\$15,000
Roll-Off Truck	0	7 yrs		\$120,000		\$0
Roll-Off & Open Top Containers	15	10 vrs		\$5.000		\$7.500
	-	- , -		Subtotal	\$	166.500
					٠	,
			ANNU	JAL SUBTOTAL	\$	1,716,400
			Overhead	and Profit (10%)	\$	171,600
		Gene	ral & Admir	Services (10%)	\$	171,600
			F	NNUAL TOTAL	\$	2,059,600

Notes:

1. Excludes construction and equipment capital debt service.

2. General & Admin Services assumed to include home office charges and taxes under contract operations.

* Revise items in red for program and site specific information.

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY LIGHT GREEN TABS: TRANSFER STATION CAPITAL COST ESTIMATES

Engineering Opinion of Probable Construction Cost Replacement Colbert Transfer Station

					ED COST
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Transfer Building				
1	Bonds Mobilization and Insurance	4%	of WORK	\$5 196 170	\$216 500
2	I and Purchase	13	AC	\$87 120	\$1,097,700
- 3	Clearing and Grubbing	12.6	AC	\$4,000	\$50,400
4	Earthwork/Structural Fill	40.656	CY	\$15.00	\$609.800
5	Concrete:	,			+,
	Apron	229	CY	\$350	\$80,200
	Retaining Wall (1.5cy/LF) + Tunnel Interior Wall	513	CY	\$600	\$307,800
	Foundations	85	CY	\$600	\$50,700
	Tipping Floor	500	CY	\$350	\$174,900
	Tunnel Exterior Wall	213	CY	\$600	\$127,800
6	Paving	17,305	SY	\$35	\$605,700
7	Pre-engineered Building	14,200	SF	\$100	\$1,420,000
8	Mechanical & Fire Protection	14,200	SF	\$15	\$213,000
9	Electrical	14,200	SF	\$15	\$213,000
10	Steel Hoppers/Chutes/Liners	1	LS	\$100,000	\$100,000
11	Utilities	1	LS	\$100,000	\$100,000
12	Surveying	1	LS	\$35,000	\$35,000
13	Erosion Control/Storms	1	LS	\$25,000	\$25,000
14	Yard Lighting	8	EA	\$1,500	\$12,000
15	Site Fencing	3,100	LF	\$45	\$139,500
16	Site Landscaping & Signage	1	LS	\$40,000	\$40,000
17	Loadout Tunnel Scale	1	EA	\$60,000	\$60,000
	Scalehouse				
18	Pre-engineered Building	400	SF	\$200	\$80,000
19	Concrete Slabwork	35	CY	\$350	\$12,300
20	Concrete Footings and slab	15	CY	\$350	\$5.200
21	Interior Treatments	400	SF	\$150	\$60.000
22	Scales	2	LS	\$75.000	\$150.000
23	Mechanical	400	SF	\$20	\$8.000
24	Electrical	400	SF	\$25	\$10.000
					+ - ,
	ннพ				
25	Prefabricated unit	1	EA	\$25.000	\$25.000
26	Slab and Foundations	32	CY	\$350	\$11.343
27	Pre-engineered structure	875	SF	\$50	\$43,750
28	Equipment	1	IS	\$20,000	\$20,000
_		•		<i><i><i><i></i></i></i></i>	<i><i><i>q</i>=0,000</i></i>
	White Goods				
29	Slab and Foundations	22	CY	\$350	\$7.778
30	Pre-engineered structure	600	SF	\$50	\$30.000
31	Equipment	1	LS	\$20.000	\$20.000
				, ,,	
	Recycling Area				
32	Concrete Slab	80	CY	\$350	\$28,000
33	Retaining Walls	500	CY	\$600	\$300,000
34	Mech./Electr.	1	LS	\$20,000	\$20,000
				SUBTOTAL	\$6,510,370

Contingency (15%) Engineering & Design (10%) Construction Administration (8%) TOTAL \$976,556 \$748,693

\$598,954 \$8,834,573

Engineering Opinion of Probable Construction Cost Replacement Spokane Valley Transfer Station

					ED COST
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Transfer Building				
1	Bonds Mobilization and Insurance	4%	of WORK	\$9 401 044	\$391 700
2	Land Purchase	15	AC	\$87,120	\$1.315.500
3	Clearing and Grubbing	15.1	AC	\$4.000	\$60.400
4	Earthwork/Structural Fill	48.723	CY	\$15.00	\$730.800
5	Concrete:				<i></i>
	Apron	532	CY	\$350	\$186,300
	Retaining Wall (1.5cv/LF) + Tunnel Interior Wall	795	CY	\$600	\$477,000
	Foundations	181	CY	\$600	\$108,700
	Tipping Floor	1,002	CY	\$350	\$350,800
	Tunnel Exterior Wall	495	CY	\$600	\$297,000
6	Paving	19,685	SY	\$35	\$689,000
7	Pre-engineered Building	37,620	SF	\$100	\$3,762,000
8	Mechanical & Fire Protection	37,620	SF	\$15	\$564,300
9	Electrical	37,620	SF	\$15	\$564,300
10	Steel Hoppers/Chutes/Liners	2	LS	\$100,000	\$200,000
11	Utilities	1	LS	\$100,000	\$100,000
12	Surveying	1	LS	\$35,000	\$35,000
13	Erosion Control/Storms	1	LS	\$25,000	\$25,000
14	Yard Lighting	8	EA	\$1,500	\$12,000
15	Site Fencing	3,250	LF	\$40	\$130,000
16	Site Landscaping & Signage	1	LS	\$40,000	\$40,000
17	Loadout Tunnel Scales (2)	2	EA	\$60,000	\$120,000
	Scalehouses (2)				
18	Building Structures	800	SF	\$200	\$160,000
19	Concrete Slabwork	70	CY	\$350	\$24,500
20	Concrete Footings and slab	30	CY	\$350	\$10,500
21	Interior Treatments	800	SF	\$150	\$120,000
22	Scales	3	LS	\$7,500	\$22,500
23	Mechanical	800	SF	\$20	\$16,000
24	Electrical	800	SF	\$25	\$20,000
	ннм				
25	Prefabricated unit	2	EA	\$25,000	\$50,000
26	Slab and Foundations	58	CY	\$350	\$20,417
27	Pre-engineered structure	1,575	SF	\$50	\$78,750
28	Equipment	1	LS	\$20,000	\$20,000
	White Goods				
29	Slab and Foundations	22	CY	\$350	\$7,778
30	Pre-engineered structure	600	SF	\$50	\$30,000
31	Equipment	1	LS	\$20,000	\$20,000
	Citizen Drop-off Area				-
32	Concrete Slab	80	CY	\$350	\$28,000
33	Retaining Walls	500	CY	\$600	\$300,000
34	Mech./Electr.	1	LS	\$20,000	\$20,000
				SUBTOTAL	\$11,108,244

Contingency (15%) \$1,666,237 Engineering & Design (10%) \$1,277,448 Construction Administration (8%) \$1,021,958 TOTAL \$15,073,888

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	New West Plains Transfer Station Development and Operations
Costs:	2013 \$
Location:	Spokane County, Washington

Cost Center Summary - New West Plains Transfer Station

	New West Plains Transfer Station
Tonnage, tpy	20,000
Transfer Station Capital Debt,	
\$/ton	\$39.40
Transfer Station O&M Costs,	
\$/ton	\$65.30
Solid Waste Services, \$/ton	\$7.00
Interfund Charges, \$/ton	\$3.10
Indirect Admin Costs, \$/ton	\$3.20
Total Transfer Station Cost,	
\$/ton	\$118.00

Notes:

1. Solid Waste Services equals annual budget costs for recycling & public education, moderate risk waste program and litter control divided by total regional system tonnage of 300,000 tpy. Solid Waste Services fees do not include County Landfills closure and post-closure costs of approximately \$750,000 annually or \$4.80/ton over 157,000 tpy (non-City of Spokane tonnage).

2. Solid waste services interfund charges (based on 2013 budget) divided by total regional system tonnage of 300,000 tpy. Litter control included with the Solid Waste Services charges.

3. Indirect Administrative Costs applied at 2.8% of total annual expenditures as provided by Spokane County.

4. Does not include the annual county landfills closure and post-closure costs.

5. Total transfer station cost estimate does not include haul and disposal fee. See Disposal Cost Centers. State of Washington Ecology fee of 3.6% will apply to total fee included in Proformas.

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

GREEN TABS: CAPITAL COST DEBT SERVICE - BOND SIZING

Bond Sizing Calculation Methodology

ASSUMPTIONS			New West Plains 1	Transfer Station
	Val	ues	Capital Requ	uirements
Construction Assumptions:			Total Costs (2013\$)	\$7,431,706
Construction Cost Annual Escalation Rate	3	.0%	Mobile Equip (2013\$)	\$703,000
Escalation Years from 2013 to NTP		1	Esc. (To const.)	\$754,000
Siting and Local Approval (months)		12	Projected Costs	\$8,888,706
Planning, Permitting & Design (months)		12	Other Funding	\$0
Months for Construction (Months):	50	18	Financed Capital	\$8 888 706
Debt Assumptions	1.00	10		\$0,000,700
Amerization period (Veero):		20	*Ear now facility would	not hand for loss
Amonization period (fears).	4.0	20	then 20 years	
Availability of Reserves (%).		JU 70	a than 20 years.	
Equity Portion (%) excl. tax benefits	.			
Construction Price Financed (\$):	\$8,888,7	06		
Draw Down Availablity of Funds (%):	3	30%)	
Bond Issuance Fees (%):	1.	.5%	•	
Interest Rate Assumptions				
Blended Bond Interest Rate (%)	4.3	37%		
Tax Exempt Rate (%)				
Taxable Rate (%)				
Equity Rate (%)				
Poinvostmont Patos				
Long Torm Doinyootmont Data (9())	4	00/		
Long Term Reinvestment Rate (%).	1	.0%)	
Short Term Reinvestment Rate (%):	1	.0%)	
CALCULATIONS:				
Number of Const. Payment Periods		3	•	
Interest During Construction Availability:	().67	•	
Blend Capital Recovery Factor				
Bond Capital Recovery Factor	7	.6%)	
Debt Service Reserve Cap	7	.6%		
·				
Bond Issue Size (Round up to nearest \$5000)	\$10.470.0	000		
· · · · ·				
Capital Cost	\$8,888.7	706		
Bond Discount	\$157 (150		
Debt Service Reserve	¢705,0			
Interest During Construction	φ190,5 ¢696.2	200		
Interest During Construction	φ000,3	009	-	
Subtotal	\$10,527,9	964		
Interest on:				
Capital	\$40.0	000		
Debt Service Reserve	\$11.9	940		
Interest During Construction	\$6,8	360		
	φ0,0	.00	-	
Subtotal	\$58,8	300		
Pand Jacua Ciza	¢10.460.0	000		
Dona 19906 Dize	ΦΙ 0,469,0	00		
Annual Interest Earned on Debt Service Reserv	es \$8,0	000	-	
Net Annual Debt Service	\$788.0	000		
MSW (tons) to North County Transfer Station	20,0	000		
Debt Service Cost per	Ton \$39.40	ton	_	

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY

ORANGE TABS: TRANSFER STATION O&M COST ESTIMATES

Engineering Opinion of Probable O&M Cost Proposed West Plains Transfer Station

					ESTIM	\TE	D COST
ITEM DESCRIPTION		QUANTI	TY	UNIT	UNIT PRICE	Т	OTAL PRICE
LABOR							
Job Classification	Qty	Labor Ra	ate	Hrs/Yr			Total
Transfer Station Foreman (loader operator)	2	\$45		2080 hrs		\$	186,400
Heavy Equipment Operator (crane/hostler)	2	\$39		2080 hrs		\$	160,500
Cash Accounting Clerk I (scale clerk)	2.5	\$31		2080 hrs		\$	159,300
Hazardous Waste Technician (HHW)	2	\$36		2080 hrs		\$	151,700
Laborer II (recycling)	0.5	\$34		2080 hrs		\$	35,100
Laborer II (spotter)	0.5	\$34		2080 hrs		\$	35,100
Overtime	5%	\$ 72	28.100	1.5		\$	54,600
		•	-,		Subtotal	\$	782,700
Notes/Assumptions					Cubiciai	Ψ	.02,.00
Personnel numbers based on 7 days per week 1	0 hours per day	operation					
Prevailing labor wages based on City of Spokane	2013 salaries	Labor rates incl	lude henefi	its of	40%		
Overtime assumes percentage of all salaries and	1 5x average ra			113 01	-070		
Overtime assumes percentage of all salaries and	1.5x average ra						
Item		Quantit	v		Unit Price		Total
General Liability Fire Etc	0.5%	\$5.38	32256 bl	Idas/equin	ment canital	¢	27 000
General, Liability, The, Ltc.	0.576	ψ0,00	55,250 01	iugs/equip	ment capital	φ	27,000
BUILDING AND SITE MAINTENANCE							
Itom		Quantit	N/		Unit Prico		Total
General Maintenance	1 5%	¢6 29	. y 22.256 hi	ldas/oquin	mont capital	¢	10tai 91.000
General Maintenance	1.5%	 4 5 , 5 с	55,250 DI	lugs/equip	ment capital	φ	81,000
UTILITIES - BUILDING AND SITE		Overstit			Unit Drice		Total
Item Electricity Lighting			. y 00 laub		Unit Price	¢	10tal
Electricity - Lighting		53,00			\$0.07	ф ф	3,700
Electricity - Equipment (crane)	- (-)	40,00			\$0.07	Э Ф	2,800
Electricity - Equipment (HVAC, computers,	etc.)	182,00	00 kwh		\$0.07	\$	12,700
Electricity Demand - Monthly		80 kw	/month		\$7.30	\$	7,000
Heating - Natural gas		40	DIH		\$5 /DTH	\$	2,000
Water		248,0	JOO gal		\$8 /1000 gal	\$	2,000
Sanitary Service		12 r	nonths		\$140 /month	\$	1,700
Site Stormwater		116	,875 sf		\$21 /yr/3500 sf	\$	700
Telephone/Mobile Phones	3	phone service	9		\$100 /month	\$	3,600
					Subtotal	\$	36,200
Notes/Assumptions:							
Buildings lighting based on	0.5	watts/sf		3640	hours/year	(est.	. 70 hrs/week)
	13,000	square feet, tra	nsfer statio	on			
	1,875	square feet, all	other build	dings			
Site Lighting, estimate	6	1000W Lights		4380	hours/year	(nigł	nt-time)
Stationary Tamping Crane	75	hp		718	hours/year	(est.	2 hrs/day)
Equipment (HVAC, Computers, etc.)	50	kW		3640	hours/year	estir	nate
Assume natural gas use	2	therm/sf/seasor	n (DTH = d	decatherm)			
Water use - domestic & washdown	10	gpd/FTE		5	gpd/100 SF	(tran	nsfer station)

Engineering Opinion of Probable O&M Cost Proposed West Plains Transfer Station

					ESTIMA	TED	COST
	ITEM DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	T	OTAL PRICE
EC	QUIPMENT O&M						
	Item	Qty	Units/Yr		Unit Price		Total
	Stationary Tamping Crane - electric	1	718 hrs		\$3	\$	2,200
	Wheel Loader (Volvo L 1103)	1	1436 hrs		\$10	\$	14,400
l l	Skid Steer (Bobcat A-300)	1	718 hrs		\$5	\$	3,600
l l	Pick-Up Truck	0	10000 miles		\$0.20	\$	-
	Yard Bull	1	718 hrs		\$5	\$	3,600
l l	Roll-Off Truck*	0			\$5	\$	-
l l	Roll-Off Containers (20 CY & 1-40 CY)	7	each		\$250	\$	1,800
l l	General Maint & Operating Supplies	1	LS		\$5,000	\$	5,000
	Minor Equipment & Operating Rentals	1	LS		\$10,000	\$	10,000
Í.					Subtotal	\$	40,600

Notes/Assumptions:

*Pick-up of roll-off containers assumed to be contracted out with material revenues off-setting cost.

MOBILE EQUIPMENT FUEL

Item	Qty	Rate	Hrs/Yr	Unit Price	Total
Wheel Loader	1	3 gal/hr	1436 hrs	\$4.00	\$ 17,200
Skid Steer	1	2 gal/hr	718 hrs	\$4.00	\$ 5,700
Pick-Up Truck	0 miles	0.1 gal/mile		\$4.00	\$ -
Yard Bull	1	3 gal/hr	718 hrs	\$4.00	\$ 8,600
Roll-Off Truck	0	1 gal/hr	0 hrs	\$4.00	\$ -
				Subtotal	\$ 31,500

EQUIPMENT REPLACEMENT RESERVES

Item	Qty	Equip Life	Price (2013\$)	Total - Annual
Stationary Tamping Crane O&M	1	10 yrs	\$170,000	\$17,000
Wheel Loader (Volvo L 1103)	1	7 yrs	\$350,000	\$50,000
Skid Steer (Bobcat A-300)	1	10 yrs	\$50,000	\$5,000
Pick-Up Truck	0	7 yrs	\$35,000	\$0
Yard Bull	1	7 yrs	\$105,000	\$15,000
Roll-Off Truck	0	7 yrs	\$120,000	\$0
Roll-Off Containers	7	10 yrs	\$4,000	\$2,800
			Subtotal	\$ 89,800
			ANNUAL SUBTOTAL	\$ 1,088,800
		Ov	verhead and Profit (10%)	\$ 108,900
		General 8	& Admin Services (10%)	\$ 108,900
			ANNUAL TOTAL	\$ 1,306,600

Notes:

Excludes construction and equipment capital debt service.
General & Admin Services assumed to include home office charges and taxes under contract operations.

* Revise items in red for program and site specific information.

PROJECT: SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDY LIGHT GREEN TABS: TRANSFER STATION CAPITAL COST ESTIMATES

Engineering Opinion of Probable Construction Cost Proposed West PlainsTransfer Station

ESTIMATE					ED COST
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
	Transfer Building				
1	Bonds Mobilization and Insurance	4%	of WORK	\$4 379 270	\$182 500
2	Land Durchaso	470		φ 4 ,373,270 \$87,120	\$014 800
2	Clearing and Grubbing	10.5	AC	\$4,000	\$914,000
3	Earthwork/Structural Fill	22 000		\$4,000 \$15.00	\$42,000
4		33,000	C1	\$15.00	\$508,200
5	Aprop	161	CV	¢250	¢56 500
	Apron Retaining Wall (1 Sov/LE) + Tunnal Interior Wall	275		\$300 \$600	\$30,300
		575	CY	\$000 \$600	\$220,000
		161		\$000 \$250	\$30,200
	Tuppel Exterior Well	101		\$350 \$600	\$30,400
6		100		\$000 ¢25	\$90,000 \$205,000
6	Paving Dra angineered Duilding	11,285	SI	\$35 \$100	\$395,000
1	Pre-engineerea Builaing	13,000	SF	\$100	\$1,300,000
8	Mechanical & Fire Protection	13,000	5F	\$15	\$195,000
9		13,000	5F	\$15	\$195,000
10	Steel Hoppers/Chutes/Liners	1	LS	\$100,000	\$100,000
11	Utilities	1	LS	\$100,000	\$100,000
12	Surveying	1	LS	\$30,000	\$30,000
13	Erosion Control/Storms	1	LS	\$20,000	\$20,000
14	Yard Lighting	6	EA	\$1,500	\$9,000
15	Site Fencing	2,740	LF	\$40	\$109,600
16	Site Landscaping & Signage	1	LS	\$30,000	\$30,000
17	Loadout Tunnel Scale	1	EA	\$60,000	\$60,000
18	Roll Up Doors	2	EA	\$10,000	\$20,000
	Scalehouse				
19	Building Structure	400	SF	\$200	\$80,000
20	Concrete Slabwork	35	CY	\$350	\$12,300
21	Concrete Footings and slab	15	CY	\$350	\$5,200
22	Interior Treatments	400	SF	\$150	\$60,000
23	Scales	2	LS	\$60,000	\$120,000
24	Mechanical	400	SF	\$20	\$8,000
25	Electrical	400	SF	\$25	\$10,000
	ННЖ				
26	Prefabricated unit	1	EA	\$25,000	\$25,000
27	Slab and Foundations	32	CY	\$350	\$11,343
28	Pre-engineered structure	875	SF	\$50	\$43,750
29	Equipment	1	LS	\$20,000	\$20,000
	White Goods				
30	Slab and Foundations	22	CY	\$350	\$7,778
31	Pre-engineered structure	600	SF	\$50	\$30,000
32	Equipment	1	LS	\$20,000	\$20,000
	Citizen Drop-off Area				
33	Concrete Slab	80	CY	\$350	\$28,000
34	Retaining Walls	500	CY	\$600	\$300,000
35	Mech./Electr.	1	LS	\$20,000	\$20,000
				SUBTOTAL	\$5,476,570
			С	ontingency (15%)	\$821,486
			Engineerin	g & Design (10%)	\$629,806

Construction Administration (8%) TOTAL \$503,844

\$7,431,706

Appendix E

Disposal Cost Centers

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jun-13
Estimate Basis:	Existing Transfer Stations - Haul to WTE Facility/WTE Disposal
Costs:	2013 \$
Location:	Spokane County, Washington

Cost Center Summary - Haul to WTE Facility

	Colbert (North County) Transfer Station	Spokane Valley Transfer Station
Tonnage, tpy	46,000	91,000
Transfer Station Costs,		
\$/ton	See Transfer Cost Centers	See Transfer Cost Centers
Haul Cost to WTE Facility,		
\$/ton	\$9.90	\$8.20
WTE Disposal Fee, \$/ton	\$65.00	\$65.00
Total Haul & Disposal,		
\$/ton	\$74.90	\$73.20

Notes:

1. City of Spokane offered disposal at WTE Facility at \$65/ton with 10-year agreement and contractual escalations.

2. Non-City of Spokane waste (self-haul and commercial) is received at WTE Facility at current gate rate of \$98/ton.

3. Rounded to nearest \$0.10 per ton.

4. State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas for Landfilled material, it does not apply to disposal at the WTE facility.

PROJECT:SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDYYELLOW TABS:TRUCK HAUL COST ESTIMATES - SHORT HAUL FROM TS TO WTE FACILITY

Project:	Spokane County Solid Wa	ste Transfer and Disposal Options Study				
Estimator:	Lori Calub - HDR Engineering Inc					
Beviewer:	Deb Erve an July 29, 2013					
Date:	lun 12					
Estimate Basis:	Colbert Transfer Station - Haul to WTE Facility					
Coete:						
Location:	Spokane County Washing	top				
	Spokalle County, Washing					
	City of Spokane WTE					
	Facility	Comments				
Number of Trailer Loads	2,300	Based on 20 tons/load as reported by transfer stations				
Tonnage (tpy):	46,000					
Load & Unload Time (minutes):	25	Estimate				
One-Way Distance (miles)	23	Added couple miles for on-site travel				
Average Speed (mph):	35	Estimated from internet route mapping				
Average Trips/Year:	2,300					
Average Trips/Month:	192					
Average Trips/Week:	45					
Hours Per Trip	1.7					
Weekly Freight Hours:	78					
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day				
Annual Freight Hours:	4,050	Freight hours only for vehicle fuel, oil & grease cost				
Total Miles/Yr	105,800					
Annual Costs Assumptions:						
Fuel, Oil & Grease						
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013				
Miles per Gallon	5					
Oil & Grease (\$/freight hour)	\$0.50	Estimate				
Tires						
New Tires Price	\$700					
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers				
Retread Tires	\$300	2008 retread tire prices escalated				
# Retread Tires Per 25,000 Miles	12					
Maintenance & Repairs						
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator				
Mechanic Labor % per Truck	5%					
Parts, Repairs, Overhaul (\$/mile)	\$0.25					
Equipment Operator/Driver Labor						
Driver % (based on total time)	220%					
Number of Drivers, FTE	2.2					
Driver annual salary	\$80,270	Prevailing wage rate based on City heavy equip operators				
Fringe benefits (% of salary)	40%	Provided, Included in annual				
Truck Amortization						
Number of Tractors	2	Update based on loads/day				
Capital Cost - per semi-truck	\$150,000	New truck price based on historic fleet cost, escalated				
Resale Value (% of truck \$)	20%					
Replacement Schedule (years)	7	years replacement based on mileage				
Interest Rate	4%					
Capital Recovery Factor (A/P,i,n)	0.1666					
Trailer Amortization						
Number of Trailers	4	Update based on loads/day & trip time				
Capital Cost per trailer	\$76,000	Walking floor trailer - new, based on historic fleet cost				
Replacement Schedule (years)	10					
Interest Rate	4%					
Capital Recovery Factor (A/P,i,n)	0.1233					
Insurance (per yr/truck) @ 3% \$	\$4,500	Estimate % of capital cost				
License&Taxes (per yr/truck)@1.5%	\$2,300	Estimate % of capital cost				
Overhead & Profit @ % of O&M	10%	% of all O&M				

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye an July 29, 2013
Date:	Jun-13
Estimate Basis:	Colbert Transfer Station - Haul to WTE Facility
Costs:	2013 \$
Location:	Spokane County, Washington

	City of Spokane WTE	
Annual Haul Cost to Disposal:	Facility	Comments
Fuel, Oil & Grease	\$86,670	Mileage & Time Based
Tires	\$24,120	Mileage Based
Maintenance & Repairs	\$34,480	Mileage & Time Based
Driver Labor	\$176,590	FTE, Time Based
Truck Amortization	\$39,990	100% Utilized
Trailer Amortization	\$37,480	100% Utilized
Insurance	\$9,000	No. trucks
Licensing & Taxes	\$4,600	No. trucks
Overhead & Profit	\$41,290	
MSW Haul Cost to WTE Facility	\$454,220	
Total Haul Cost/Ton	\$9.90	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jun-13
Estimate Basis:	Spokane Valley Transfer Station - Haul to WTE Facility
Costs:	2013 \$
Location:	Spokane County, Washington

City of Spokane WTE				
	Facility	Comments		
Number of Trailer Loads	4,550	Based on 20 tons/load as reported by transfer stations		
Tonnage (tpy):	91,000			
Load & Unload Time (minutes):	25	Estimate		
One-Way Distance (miles)	20	Added couple miles for on-site travel		
Average Speed (mph):	40	Estimated from internet route mapping		
Average Trips/Year:	4,550			
Average Trips/Month:	380			
Average Trips/Week:	88			
Hours Per Trip	1.4			
Weekly Freight Hours:	125			
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day		
Annual Freight Hours:	6,483	Freight hours only for vehicle fuel, oil & grease cost		
Total Miles/Yr	182,000			
Annual Costs Assumptions:				
Fuel, Oll & Grease	¢4.00	Discoluzione 2012		
Fuel Cost per Gallon	\$4.00	Diesei prices, 2013		
Miles per Gallon	5			
Oil & Grease (\$/freight hour)	\$0.50	Estimate		
Ilres	¢700			
How Tires Price	\$700	(time on tractor (12 time on trailors		
# New Tires Per 50,000 Miles	0	6 lifes on tractor & 12 lifes on trailers		
# Detreed Tires Der 25 000 Miles	\$300	2008 Terread life prices escalated		
# Retread Thes Per 25,000 Miles	12			
Mannenance & Repairs	\$80.270	Accumac rate cimilar to begun equip, energtor		
Mechanic Labor annual Salary	\$00,270	Assumes rate similar to neavy equip. Operator		
Resta Banaira Overhaul (*/mile)	570 \$0.25			
Fails, Repairs, Overhaul (\$/fille)	\$0.25			
Driver % (based on total time)	220%			
Number of Drivers FTE	33078			
Driver annual salary	\$80.270	Prevailing wage rate based on City beavy equin operators		
Fringe benefits (% of salary)	40%	Provided Included in annual		
Truck Amortization	4070			
Number of Tractors	4	Indate based on loads/day		
Capital Cost - per semi-truck	\$150,000	New truck price based on historic fleet cost_escalated		
Resale Value (% of truck \$)	20%			
Replacement Schedule (vears)	7	vears replacement based on mileage		
Interest Rate	4%	Jeans replacement based on mileage		
Capital Recovery Factor (A/P i n)	0 1666			
Trailer Amortization	0.1000			
Number of Trailers	6	Lindate based on loads/day & trin time		
Capital Cost per trailer	\$76,000	Walking floor trailer - new, based on historic fleet cost		
Replacement Schedule (vears)	10			
Interest Rate	1%			
Capital Recovery Factor (Δ/P i n)	0 1033 1 1033			
Insurance (per vr/truck) @ 3% \$	\$4 500	Estimate % of capital cost		
License&Taxes (per vr/truck)@1 5%	\$2 300	Estimate % of capital cost		
Overhead & Profit @ % of O&M	φ <u>∠</u> ,000 10%	% of all O&M		

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jun-13
Estimate Basis:	Spokane Valley Transfer Station - Haul to WTE Facility
Costs:	2013 \$
Location:	Spokane County, Washington

	City of Spokane WTE	
Annual Haul Cost to Disposal:	Facility	Comments
Fuel, Oil & Grease	\$148,840	Mileage & Time Based
Tires	\$41,500	Mileage Based
Maintenance & Repairs	\$61,550	Mileage & Time Based
Driver Labor	\$264,890	FTE, Time Based
Truck Amortization	\$79,970	100% Utilized
Trailer Amortization	\$56,220	100% Utilized
Insurance	\$18,000	No. trucks
Licensing & Taxes	\$9,200	No. trucks
Overhead & Profit	\$68,020	
MSW Haul Cost to WTE Facility	\$748,190	
Total Haul Cost/Ton	\$8.20	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Truck Long Haul to Regional Landfills
Costs:	2013 \$
Location:	Spokane County, Washington

Cost Center Summary - Truck Long Haul to Regional Landfills

Regional Landfill:	Roosevelt Regional Landfill			
	Colbert (North County) Transfer	Spokane Valley	New West Plains	
	Station	Transfer Station	Transfer Station	
Tonnage, tpy	46,000	91,000	20,000	
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	See Transfer Cost	
\$/ton	Centers	Centers	Centers	
Haul Cost to Regional Landfill, \$/ton	\$65.90	\$63.40	\$60.20	
Roosevelt Landfill Gate				
Fee, \$/ton*	\$24.00	\$24.00	\$24.00	
Total Haul & Disposal,				
\$/ton	\$89.90	\$87.40	\$84.20	

Regional Landfill: Wenatchee Regional Landfill

	Colbert (North		
	County) Transfer	Spokane Valley	New West Plains
	Station	Transfer Station	Transfer Station
Tonnage, tpy	46,000	91,000	20,000
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	See Transfer Cost
\$/ton	Centers	Centers	Centers
Haul Cost to Regional			
Landfill, \$/ton	\$50.70	\$48.90	\$49.30
Wenatchee Landfill			
Gate Fee, \$/ton*	\$65.00	\$65.00	\$65.00
Total Haul & Disposal,			
\$/ton	\$115.70	\$113.90	\$114.30

Regional Landfill: Finley Buttes Landfill

	Colbert (North		
	County) Transfer	Spokane Valley	New West Plains
	Station	Transfer Station	Transfer Station
Tonnage, tpy	46,000	91,000	20,000
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	See Transfer Cost
\$/ton	Centers	Centers	Centers
Haul Cost to Regional			
Landfill, \$/ton	\$57.90	\$55.70	\$55.30
Finley Buttes Landfill			
Gate Fee, \$/ton*	\$33.00	\$33.00	\$33.00
Total Haul & Disposal,			
\$/ton	\$90.90	\$88.70	\$88.30

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Truck Long Haul to Regional Landfills
Costs:	2013 \$
Location:	Spokane County, Washington

	Colbert (North		
	County) Transfer	Spokane Valley	New West Plains
	Station	Transfer Station	Transfer Station
Tonnage, tpy	46,000	91,000	20,000
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	See Transfer Cost
\$/ton	Centers	Centers	Centers
Haul Cost to Regional			
Landfill, \$/ton	\$69.50	\$67.70	\$67.60
Columbia Ridge Landfill			
Gate Fee, \$/ton*	\$35.00	\$35.00	\$35.00
Total Haul & Disposal,			
\$/ton	\$104.50	\$102.70	\$102.60

Notes:

Rounded to nearest \$0.10 per ton.
Competitive bidding could result in lower haul and landfill disposal fees.
State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas.

PROJECT:SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDYYELLOW TABS:TRUCK HAUL COST ESTIMATES - LONG HAUL FROM TS TO LANDFILLS

Project:
Estimator:
Reviewer:
Date:
Estimate Basis:
Costs:
Location:

Spokane County Solid Waste Transfer and Disposal Options Study Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 Colbert Transfer Station - Long Haul by Truck 2013 \$ Spokane County, Washington

	Roosevelt	Wenatchee	Finley Buttes	Columbia	Adams	
	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
		East			Washtucna,	
Location	Roosevelt, WA	Wenatchee,	Boardman, OR	Arlington, OR	WA	
Number of Trailer Loads	2,300	2,300	2,300	2,300	2,300	Based on 20 tons/load reported by transfer station
Tonnage (tpy):	46,000	46,000	46,000	46,000	46,000	
Load & Unload Time (minutes):	25	25	25	25	25	Estimate
One-Way Distance (miles)	228	180	207	245	104	Added couple miles for on-site travel
Average Speed (mph):	57	57	57	57	50	Estimated from internet route mapping
Average Trips/Year:	2,300	2,300	2,300	2,300	2,300	
Average Trips/Month:	192	192	192	192	192	
Average Trips/Week:	45	45	45	45	45	
Hours Per Trip	8.4	6.7	7.7	9.0	4.6	
Add'l Trip Time-Driver Break	0.5	-	-	0.5	-	for >8 hrs on-duty, add 30 minute sleeper break
Weekly Freight Hours:	401	303	346	428	206	
Wkly Prorated Veh Inspect/Breaks:	7	7	7	7	7	1 hour per day
Annual Freight Hours:	20,865	15,754	17,971	22,261	10,709	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	1,048,800	828,000	952,200	1,127,000	478,400	
Annual Costs Assumptions:						
Fuel, Oil & Grease						
Fuel Cost per Gallon	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00	Diesel prices, 2013
Miles per Gallon	5	5	5	5	5	
Oil & Grease (\$/freight hour)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	Estimate
Tires						
New Tires Price	\$700	\$700	\$700	\$700	\$700	
# New Tires Per 50,000 Miles	6	6	6	6	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	\$300	\$300	\$300	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	12	12	12	12	
Maintenance & Repairs						
Mechanic Labor annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	5%	5%	5%	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25	
Equipment Operator/Driver Labor						
Driver % (based on total time)	1030%	780%	890%	1090%	540%	
Number of Drivers, FTE	10.3	7.8	8.9	10.9	5.4	
Driver annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	40%	40%	40%	40%	Provided, Included in annual
Truck Amortization		_	_			
Number of Tractors	11	8	9	11	6	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	20%	20%	20%	20%	
Replacement Schedule (years)	5	5	5	5	5	years replacement based on mileage
Interest Rate	4%	4%	4%	4%	4%	
Capital Recovery Factor (A/P,i,n)	0.2246	0.2246	0.2246	0.2246	0.2246	
Trailer Amortization						
Number of Trailers	13	10	11	13	8	Update based on loads/day & trip time
Capital Cost per trailer	\$76,000	\$76,000	\$76,000	\$76,000	\$76,000	Walking floor trailer - new, based on historic fleet cost
Replacement Schedule (years)	7	7	7	7	7	
Interest Rate	4%	4%	4%	4%	4%	
Capital Recovery Factor (A/P,i,n)	0.1666	0.1666	0.1666	0.1666	0.1666	
Insurance (per yr/truck) @ 3% \$	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5%	\$2,300	\$2,300	\$2,300	\$2,300	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	10%	10%	10%	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Colbert Transfer Station - Long Haul by Truck
Costs:	2013 \$
Location:	Spokane County, Washington

	Roosevelt	Wenatchee	Finloy Buttos	Columbia	Adams	
Annual Haul Cost to Disposal:	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
Fuel, Oil & Grease	\$849,470	\$670,280	\$770,750	\$912,730	\$388,070	Mileage & Time Based
Tires	\$239,130	\$188,780	\$217,100	\$256,960	\$109,080	Mileage Based
Maintenance & Repairs	\$306,350	\$239,110	\$274,170	\$325,900	\$143,680	Mileage & Time Based
Driver Labor	\$826,790	\$626,110	\$714,410	\$874,950	\$433,460	FTE, Time Based
Truck Amortization	\$296,510	\$215,640	\$242,600	\$296,510	\$161,730	100% Utilized
Trailer Amortization	\$164,610	\$126,620	\$139,290	\$164,610	\$101,300	100% Utilized
Insurance	\$49,500	\$36,000	\$40,500	\$49,500	\$27,000	No. trucks
Licensing & Taxes	\$25,300	\$18,400	\$20,700	\$25,300	\$13,800	No. trucks
Overhead & Profit	\$275,770	\$212,090	\$241,950	\$290,650	\$137,810	
MSW Haul Cost to Landfill	\$3,033,430	\$2,333,030	\$2,661,470	\$3,197,110	\$1,515,930	
Total Haul Cost/Ton	\$65.90	\$50.70	\$57.90	\$69.50	\$33.00	
Landfill Gate Rate/Ton	\$24.00	\$65.00	\$33.00	\$35.00	NA	
TOTAL HAUL & DISPOSAL, \$/TON	\$89.90	\$115.70	\$90.90	\$104.50	NA	

* Adams County Landfill fully permitted, but not developed yet.

Project:	
Estimator:	
Reviewer:	
Date:	
Estimate Basis:	
Costs:	
Location:	

Spokane County Solid Waste Transfer and Disposal Options Study Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 Spokane Valley Transfer Station - Long Haul by Truck 2013 \$ Spokane County, Washington

	Roosevelt	Wenatchee	Finley Buttes	Columbia	Adams	
	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
	Ŭ	East			Washtucna,	
Location	Roosevelt, WA	Wenatchee,	Boardman, OR	Arlington, OR	WA	
Number of Trailer Loads	4,550	4,550	4,550	4,550	4,550	Based on 20 tons/load reported by transfer station
Tonnage (tpy):	91,000	91,000	91,000	91,000	91,000	
Load & Unload Time (minutes):	25	25	25	25	25	Estimate
One-Way Distance (miles)	225	177	203	242	100	Added couple miles for on-site travel
Average Speed (mph):	57	57	57	57	50	Estimated from internet route mapping
Average Trips/Year:	4,550	4,550	4,550	4,550	4,550	
Average Trips/Month:	380	380	380	380	380	
Average Trips/Week:	88	88	88	88	88	
Hours Per Trip	8.3	6.6	7.5	8.9	4.4	
Add'l Trip Time-Driver Break	0.5	-	-	0.5	-	for >8 hrs on-duty, add 30 minute sleeper break
Weekly Freight Hours:	775	583	663	828	389	
Wkly Prorated Veh Inspect/Breaks:	7	7	7	7	7	1 hour per day
Annual Freight Hours:	40,321	30,326	34,501	43,051	20,211	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	2,047,500	1,610,700	1,847,300	2,202,200	910,000	
Annual Costs Assumptions:						
Fuel, Oil & Grease						
Fuel Cost per Gallon	\$4.00	\$4.00	\$4.00	\$4 00	\$4.00	Diesel prices 2013
Miles per Gallon	5	5	5	5	5	_ · · · · · · · · · · · · · · · · · · ·
Oil & Grease (\$/freight hour)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	Estimate
Tires	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	Loundro
New Tires Price	\$700	\$700	\$700	\$700	\$700	
# New Tires Per 50.000 Miles	6	6	6	6	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	\$300	\$300	\$300	\$300	2008 retread tire prices escalated
# Retread Tires Per 25.000 Miles	12	12	12	12	12	
Maintenance & Repairs						
Mechanic Labor annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	5%	5%	5%	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25	
Equipment Operator/Driver Labor						
Driver % (based on total time)	1960%	1480%	1680%	2090%	990%	
Number of Drivers, FTE	19.6	14.8	16.8	20.9	9.9	
Driver annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	40%	40%	40%	40%	Provided, Included in annual
Truck Amortization						
Number of Tractors	20	15	17	21	10	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	20%	20%	20%	20%	
Replacement Schedule (years)	5	5	5	5	5	years replacement based on mileage
Interest Rate	4%	4%	4%	4%	4%	
Capital Recovery Factor (A/P,i,n)	0.2246	0.2246	0.2246	0.2246	0.2246	
Trailer Amortization						
Number of Trailers	22	17	19	23	12	Update based on loads/day & trip time
Capital Cost per trailer	\$76,000	\$76,000	\$76,000	\$76,000	\$76,000	Walking floor trailer - new, based on historic fleet cost
Replacement Schedule (years)	7	7	7	7	7	
Interest Rate	4%	4%	4%	4%	4%	
Capital Recovery Factor (A/P,i,n)	0.1666	0.1666	0.1666	0.1666	0.1666	
Insurance (per yr/truck) @ 3% \$	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5%	\$2,300	\$2,300	\$2,300	\$2,300	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	10%	10%	10%	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Spokane Valley Transfer Station - Long Haul by Truck
Costs:	2013 \$
Location:	Spokane County, Washington

	Roosevelt	Wenatchee	Finley Buttes	Columbia	Adams	
Annual Haul Cost to Disposal:	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
Fuel, Oil & Grease	\$1,658,160	\$1,303,720	\$1,495,090	\$1,783,290	\$738,110	Mileage & Time Based
Tires	\$466,830	\$367,240	\$421,180	\$502,100	\$207,480	Mileage Based
Maintenance & Repairs	\$592,150	\$462,880	\$530,050	\$634,830	\$267,640	Mileage & Time Based
Driver Labor	\$1,573,300	\$1,188,000	\$1,348,540	\$1,677,650	\$794,680	FTE, Time Based
Truck Amortization	\$539,110	\$404,330	\$458,240	\$566,060	\$269,550	100% Utilized
Trailer Amortization	\$278,570	\$215,260	\$240,580	\$291,230	\$151,950	100% Utilized
Insurance	\$90,000	\$67,500	\$76,500	\$94,500	\$45,000	No. trucks
Licensing & Taxes	\$46,000	\$34,500	\$39,100	\$48,300	\$23,000	No. trucks
Overhead & Profit	\$524,410	\$404,340	\$460,930	\$559,800	\$249,740	
MSW Haul Cost to Landfill	\$5,768,530	\$4,447,770	\$5,070,210	\$6,157,760	\$2,747,150	
Total Haul Cost/Ton	\$63.40	\$48.90	\$55.70	\$67.70	\$30.20	
Landfill Gate Rate/Ton	\$24.00	\$65.00	\$33.00	\$35.00	NA	
TOTAL HAUL & DISPOSAL, \$/TON	\$87.40	\$113.90	\$88.70	\$102.70	NA	

* Adams County Landfill fully permitted, but not developed yet.

 Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jun-13
Estimate Basis:	West Plains Transfer Station - Long Haul by Truck
Costs:	2013 \$
 Location:	Spokane County, Washington

	Roosevelt	Wenatchee	Finley Buttes	Columbia	Adams	
	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
		East			Washtucna,	
Location	Roosevelt, WA	Wenatchee,	Boardman, OR	Arlington, OR	WA	
Number of Trailer Loads	1,000	1,000	1,000	1,000	1,000	Based on 20 tons/load
Tonnage (tpy):	20,000	20,000	20,000	20,000	20,000	
Load & Unload Time (minutes):	25	25	25	25	25	Estimate
One-Way Distance (miles)	209	160	187	226	84	Added couple miles for on-site travel
Average Speed (mph):	57	57	57	57	50	Estimated from internet route mapping
Average Trips/Year:	1,000	1,000	1,000	1,000	1,000	
Average Trips/Month:	84	84	84	84	84	
Average Trips/Week:	20	20	20	20	20	
Hours Per Trip	7.8	6.0	7.0	8.3	3.8	for , 0 hrs on duty, add 20 minute closener brook
Maakhi Ereight Heurei	455	-	-	0.5	-	IOF >6 HIS OFFULLY, AND SO MITTURE STEEPER DREAK
Weekly Freight Hours:	100	121	140	7	70	1 hour por day
Appual Ereight Hours	، ۵.060	6 272	7 257	0.200	2 0 2 0	Fraight hours only for yohida fual, all & groose pact
Total Milos/Vr	418,000	220,000	274 000	9,200 452,000	168,000	Freight hours only for vehicle fuel, on & grease cost
Total Wiles/11	418,000	320,000	374,000	432,000	108,000	
Annual Costs Assumptions:						
Fuel. Oil & Grease						
Fuel Cost per Gallon	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00	Diesel prices, 2013
Miles per Gallon	5	5	5	5	5	
Oil & Grease (\$/freight hour)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	Estimate
Tires						
New Tires Price	\$700	\$700	\$700	\$700	\$700	
# New Tires Per 50,000 Miles	6	6	6	6	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	\$300	\$300	\$300	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	12	12	12	12	
Maintenance & Repairs						
Mechanic Labor annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	5%	5%	5%	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25	
Equipment Operator/Driver Labor						
Driver % (based on total time)	410%	320%	370%	460%	210%	
Number of Drivers, FTE	4.1	3.2	3.7	4.6	2.1	
Driver annual salary	\$80,270	\$80,270	\$80,270	\$80,270	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	40%	40%	40%	40%	Provided, Included in annual
Truck Amortization				_		
Number of Tractors	4	4	4	5	2	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	20%	20%	20%	20%	
Replacement Schedule (years)	C AD/	5	5	5	5	years replacement based on mileage
Interest Rate	4%	4%	4%	4%	4%	
Capital Recovery Factor (A/P,I,n)	0.2246	0.2246	0.2246	0.2246	0.2246	
Number of Troilers	6	6	6	7	4	Undata based on loads/day & trip time
Conital Cost por trailer	¢76.000	¢76.000	¢76.000	¢76.000	4 ¢76.000	Walking flags trailer, pay, based on bistoria flast cast
Poplacomont Schedule (vacra)	φ/0,000 	φ/0,000 	φ/0,000 	φ/0,000 	φ/0,000 	ייימוגוווץ ווטטו נומוופו - וופיי, טמצפע טוו וווגוטוול וופפן לטצו
Interest Pate	1	1	/	407	1	
Copital Recovery Easter (A/D in)	4%	4%	4%	4%	4%	
Insurance (ner vr/truck) @ 2% ¢	0.1000 \$4 500	0.1000 \$4 500	0.1000 \$4 500	\$4 500	0.1000 \$4 500	Estimate % of capital cost
Liconsol Tayos (nor ur/truck)@1 E0/	φ 4 ,000 ¢2 200	φ 4 ,000 ¢2 200	φ 4 ,000 ¢2 200	φ 4 ,000 ¢0 200	φ 4 ,000 ¢2 200	Estimate % of capital cost
Overhead & Profit @ % of OPM	φ2,300 109/	φ 2,300 100/	φ 2,300	φ2,300 109/	φ <u>2</u> ,300 100/	2 of all OPM
	1070	10%	10%	1070	1070	
Project:	Spokane County Solid Waste Transfer and Disposal Options Study					
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Estimator:	Lori Calub - HDR Engineering Inc.					
Reviewer:	Deb Frye on July 29, 2013					
Date:	Jun-13					
Estimate Basis:	West Plains Transfer Station - Long Haul by Truck					
Costs:	2013 \$					
Location:	Spokane County, Washington					

	Poosevelt	Wenatchee	Finloy Buttos	Columbia	Adams	
Annual Haul Cost to Disposal	Regional LF	Regional LF	LF	Ridge LF	County LF*	Comments
						Comments
Fuel, Oil & Grease	\$338,430	\$259,140	\$302,830	\$366,200	\$136,360	Mileage & Time Based
Tires	\$95,300	\$72,960	\$85,270	\$103,060	\$38,300	Mileage Based
Maintenance & Repairs	\$120,550	\$96,050	\$109,550	\$133,070	\$50,030	Mileage & Time Based
Driver Labor	\$329,110	\$256,870	\$297,000	\$369,240	\$168,570	FTE, Time Based
Truck Amortization	\$107,820	\$107,820	\$107,820	\$134,780	\$53,910	100% Utilized
Trailer Amortization	\$75,970	\$75,970	\$75,970	\$88,640	\$50,650	100% Utilized
Insurance	\$18,000	\$18,000	\$18,000	\$22,500	\$9,000	No. trucks
Licensing & Taxes	\$9,200	\$9,200	\$9,200	\$11,500	\$4,600	No. trucks
Overhead & Profit	\$109,440	\$89,600	\$100,560	\$122,900	\$51,140	
MSW Haul Cost to Landfill	\$1,203,820	\$985,610	\$1,106,200	\$1,351,890	\$562,560	
Total Haul Cost/Ton	\$60.20	\$49.30	\$55.30	\$67.60	\$28.10	
Landfill Gate Rate/Ton	\$24.00	\$65.00	\$33.00	\$35.00	NA	
TOTAL HAUL & DISPOSAL, \$/TON	\$84.20	\$114.30	\$88.30	\$102.60	NA	

* Adams County Landfill fully permitted, but not developed yet.

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Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Haul to Intermodal Yard, Rail Haul to Regional Landfills
Costs:	2013 \$
Location:	Spokane County, Washington

Regional Landfill:	Roosevelt Regional Landfill							
	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer					
	Transfer Station	Station	Station					
Tonnage, tpy	46,000	91,000	20,000					
Transfer Station Costs,	See Transfer Cost	See Transfer Cost						
\$/ton	Centers	Centers	See Transfer Cost Centers					
Add'I TS Costs for								
Compactor, \$/ton ¹	\$4.90	\$4.40	\$10.90					
Haul Cost to BNSF								
Intermodal Yard, \$/ton ²	\$7.80	\$4.70	\$7.50					
Rail Haul Cost, \$/ton ³	\$26.50	\$26.50	\$26.50					
Roosevelt Landfill Gate								
Fee, \$/ton	\$24.00	\$24.00	\$24.00					
Total Haul & Disposal,								
\$/ton	\$63.20	\$59.60	\$68.90					

Notes:

1. Includes addition of compactor at transfer station for loading rail intermodal containers. See Compactor analysis.

2. See Truck Haul analysis for each transfer station.

3. Based on City of Spokane agreement for bypass waste rail haul and disposal at Roosevelt Regional Landfill. The fees are inclusive of the containers and intermodal yard handling fees at BNSF yard and landfill.

4. Competitive bidding could result in lower haul and landfill disposal fees.

5. State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas.

6. Rounded to nearest \$0.10 per ton.

Regional Landfill:	Wenatchee Regional Landfill
	NO RAIL TO LF

Regional Landfill:	Finley Buttes Landfill		
	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer
	Transfer Station	Station	Station
Tonnage, tpy	46,000	91,000	20,000
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	
\$/ton	Centers	Centers	See Transfer Cost Centers
Add'I TS Costs for			
Compactor, \$/ton ¹	\$4.90	\$4.40	\$10.90
Haul Cost to Spokane			
Intermodal Yard, \$/ton ²	\$7.80	\$4.70	\$7.50
Container Purchase/Lease,			
\$/ton ³	\$1.20	\$1.20	\$1.20
Intermodal Yards Lift Fees,			
\$/ton ³	\$5.00	\$5.00	\$5.00
Rail Haul Cost, \$/ton ³	\$23.80	\$23.80	\$23.80
Finley Buttes Landfill Gate			
Fee, \$/ton	\$33.00	\$33.00	\$33.00
Total Haul & Disposal,			
\$/ton	\$75.70	\$72.10	\$81.40

Notes:

1. Includes addition of compactor at transfer station for loading rail intermodal containers. See Compactor analysis.

2. See Truck Haul analysis for each transfer station.

3. See Rail Haul analysis for details.

4. Competitive bidding could result in lower haul and landfill disposal fees.

5. State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas.

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Haul to Intermodal Yard, Rail Haul to Regional Landfills
Costs:	2013 \$
Location:	Spokane County, Washington

6. Rounded to nearest \$0.10 per ton.

Regional Landfill:	Columbia Ridge Landfill		
	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer
	Transfer Station	Station	Station
Tonnage, tpy	46,000	91,000	20,000
Transfer Station Costs,	See Transfer Cost	See Transfer Cost	
\$/ton	Centers	Centers	See Transfer Cost Centers
Add'I TS Costs for			
Compactor, \$/ton ¹	\$4.90	\$4.40	\$10.90
Haul Cost to Spokane			
Intermodal Yard, \$/ton ²	\$7.80	\$4.70	\$7.50
Container Purchase/Lease,			
\$/ton ³	\$1.20	\$1.20	\$1.20
Intermodal Yards Lift Fees,			
\$/ton ³	\$5.00	\$5.00	\$5.00
Rail Haul Cost, \$/ton ³	\$25.30	\$25.30	\$25.30
Columbia Ridge Landfill			
Gate Fee, \$/ton	\$35.00	\$35.00	\$35.00
Total Haul & Disposal,			
\$/ton	\$79.20	\$75.60	\$84.90

Notes:

1. Includes addition of compactor at transfer station for loading rail intermodal containers. See Compactor analysis.

2. See Truck Haul analysis for each transfer station.

3. See Rail Haul analysis for details.

4. Competitive bidding could result in lower haul and landfill disposal fees.

5. State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas.

6. Rounded to nearest \$0.10 per ton.

RED TABS: INTERMODAL, RAIL HAUL & OFF-LOADING FACILITY COST ESTIMATES Notes: ORIGIN at BNSF SPOKANE INTERMODAL FACILITY

Spokano Co	inty Sc	ateW hile	Transfer and Dis	nneal	Ontions Stu	dv	
Lori Calub - F	Lori Calub - HDR Engineering Inc.						
Deb Frye on	July 29	9, 2013					
Jul-13							
BNSF Interm	odal F	acility to R	egional Landfills	- Rail	Haul		
2013 \$							
Spokane Cou	unty, W	/ashingtor	1				
tors.							
		430	tons/day				
		20	tons				
		4	days				
15%		4.6	times daily requi	ireme	nt		
		7	1 .				
		100	containers				
		2	containers/ car (stack	car)		
		50	Assume rail cars	s prov	ided/owned	by rail	
		3,913	Loads/year			-	
			·		Price	Int. Rate	Term
		\$1,850	/container-yr	\$	15,000	4.0%	10
	\$	25	/container/handl	ing			
	\$	-		Ŭ			
	Spokane Cou Lori Calub - H Deb Frye on Jul-13 BNSF Interm 2013 \$ Spokane Cou tors.	Spokane County So Lori Calub - HDR E Deb Frye on July 29 Jul-13 BNSF Intermodal F 2013 \$ Spokane County, W tors.	Spokane County Solid Waste Lori Calub - HDR Engineering Deb Frye on July 29, 2013 Jul-13 BNSF Intermodal Facility to R 2013 \$ Spokane County, Washingtor tors. 430 20 44 15% 4.6 7 100 2 50 3,913 \$1,850 \$ 25 \$ -	Spokane County Solid Waste Transfer and Dis Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 BNSF Intermodal Facility to Regional Landfills 2013 \$ Spokane County, Washington tors. 430 tons/day 200 tons days 15% 4.6 times daily requi 7 100 containers 2 containers/ car (50 Assume rail cars 3,913 Loads/year \$ 1,850 /container-yr \$ 25 /container/handl \$ -	Spokane County Solid Waste Transfer and Disposal Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 BNSF Intermodal Facility to Regional Landfills - Rail 2013 \$ Spokane County, Washington tors. 430 tons/day 200 tons 440 days 15% 4.6 times daily requireme 7 100 containers 2 containers 2 containers/ car (stack 50 Assume rail cars prov 3,913 Loads/year \$ 25 /container/handling \$ -	Spokane County Solid Waste Transfer and Disposal Options Stu Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 BNSF Intermodal Facility to Regional Landfills - Rail Haul 2013 \$ Spokane County, Washington tors.	Spokane County Solid Waste Transfer and Disposal Options Study Lori Calub - HDR Engineering Inc. Deb Frye on July 29, 2013 Jul-13 BNSF Intermodal Facility to Regional Landfills - Rail Haul 2013 \$ Spokane County, Washington tors. tors. 430 tons/day 20 43 tons 44 days 15% 4.6 times daily requirement 7 100 containers 2 containers/ car (stack car) 50 Assume rail cars provided/owned by rail 3,913 Loads/year Price Int. Rate \$1,850 /container-yr \$ 25 /container/handling \$ 25 /container/handling

Starting Point:

Spokane Intermodal Facility

Destination:		Finley Buttes LF (UP) ⁴	Columbia Ridge LF (UP) ⁴	Roosevelt Regional LF (BNSF)	
Rail Haul Distance (One-Way) Transit Days	miles	205	233	230	
Rail Car Loading	days	1	1	1	
Rail Car Unloading	days	0.5	0.5	0.5	
Rail Haul (merchant train)	days	2.7	2.8	2.9	
Total Transit Days		4.2	4.3	4.4	
Net Tons (MSW) Per Rail Car RailRoad Provided Cars		40	40	40	
¹ Raw Haul Cost Per Container	\$/box	\$264	\$282	\$273	
Revenue to Cost Ratio		1.8	1.8	1.8	
Rail Haul Per Container	\$/box	\$475	\$507	\$492	
Cost Per Net Ton (of MSW)	\$/ton	\$23.77	\$25.34	\$24.59	

Starting Point:

Spokane Intermodal Facility

Destination:	Est.	. Annual\$	Finley Buttes LF (UP) ⁴ \$/ton	Columbia Ridge LF (UP)⁴ \$/ton	Roosevelt Regional LF (BNSF) \$/ton	=
Container Purchase/Lease	\$	185,000	\$ 1.20	\$ 1.20	\$ 1.2	20
² Spokane Intermodal Lift Fees	\$	400,400	\$ 2.50	\$ 2.50	\$ 2.5	50
² Landfill Intermodal Lift Fees	\$	400,400	\$ 2.50	\$ 2.50	\$ 2.5	50
³ Rail Hauling	NA		\$23.80	\$25.30	\$24.6	60
Fuel Surcharge			\$ -	\$ -	\$	-
Total Rail Hau			\$ 30.00	\$ 31.50	\$ 30.8	30

¹ Includes RR cost, fuel cost, yard & industry switching cost, and equipment cost. See USRail.destop lane runs.

² Assumes railyard container handling fee per lift for each loaded container (20 net tons) and empty container,

for both the BNSF intermodal yard and at the regional landfill intermodal yard.

Contract negotiations for haul & disposal may incorporate this into overall service fee.

³ Includes rail ownership of rail cars and merchant train. See USRail.desktop lane runs.

⁴ The estimates for UP do not include local infrastructure development (UP intermodal yard) or train switching charges between BNSF and UP.

⁵ Rounded to nearest \$0.10 per ton.

USRail.desktop

Rail Manager

Report Title Origin Shipper Destination Consignee Route	HDR Urban Ore S SPOKANE Open BOARDMAN Closed SPOKANE WA - U	Study P - BOARDMAN OR
STCC5		40291
STCC Desc		urban' ore, including waste or scrap nec
Tons Per Box		20
Car Type		Container 40' - dry
Owner		Private
Pvt Car Mile Rat	е	\$0.00
Boxes Per Shipn	nent	21
Cost Type		Trainload

				MOVEMEN [®]	T COST SU	MMARY							
Basis:	Per Box Basis						Cost level:	1st Q 2013					
				Yard &			Round Trip	Fuel	Fuel				
	Operating			Industry	Equip	Other	Transit	Surcharge	Surcharge		Total	Op.	Rev/Cost
Segment	Miles	RR Cost	Fuel Cost	Switching	Costs	Services	Days	Miles	(\$)	RR Rate	Revenue	Margin	Ratio
UP	204.5	\$217.02	\$34.87	\$3.24	\$8.96	\$116.15	2.1	204.5					
Total	204.5	\$217.02	\$34.87	\$3.24	\$8.96	\$116.15	2.1	204.5	\$.00	\$.00	\$.00	-\$217.02	.00

		OTHER COSTING INPUTS FOR THIS MOVE	MENT	
Rate Informat	ion	Category	Value	
Author:	Lori	Circuity (miles X circuity = costed miles)	1.00	
Eff. Date:	7/17/2013	Load/Empty Ratio (2=100% empty return)	2.00	100% emprty return to Spokane
Exp. Date:	7/17/2013	Tare Wt - Car	99.20	
Comments:	Assumptions; 2 5-well stack cars	Train Speed, OTR (mph) UP	32.00	
	tacked on rear end of an intermodal	RR Car Mileage Cost	0.07	Assumes railroad owns stack car
	train. 10 containers per 5-well stack	RR Car Per Diem Cost	27.20	
	car. Perhaps once a week or so there	Pvt Car Mileage Cost	0.00	Containers are pvt ownership
	would be an extra car to pickup the 6 or	Fuel (\$/gal) UP	3.23	
	7 extra containers to meet the daily	GTM/gal UP	878.00	
	average of 21. The Other Costs	Switch Minutes UP	14.50	These minutes are automatically adjusted within the model
	category is an estimated UP cost to	Car Days to Load	0.50	This time should be confirmed. Represents railcar time in terminal.
	load container onto railcar and unload	Car Days to Unload	0.50	This time should be confirmed. Represents railcar time in terminal.
	(ground) container from railcar. The	Tare Wt - Box (trailer/container)	4.40	
	actual cost may vary and should be	Boxes per car	10.00	
	confirmed at both origin and destination.	Other Services (Per Platform) UP	116.15	\$58.00 per box
		Number of Locomotives - Unit Trains Only UP	3.04	
		I&I Switches UP		

USRail.desktop

Rail Manager

Report Title Origin Shipper Destination Consignee Route	HDR Urban Ore S SPOKANE Open ARLINGTON Closed SPOKANE WA - U	itudy P - ARLINGTON OR
STCC5		40291
STCC Desc		urban' ore, including waste or scrap nec
Tons Per Box		20
Car Type		Container 40' - dry
Owner		Private
Pvt Car Mile Rat	е	\$0.00
Boxes Per Shipn	nent	21
Cost Type		Trainload

				MOVEMEN	T COST SU	MMARY							
Basis:	Per Box Basis						Cost level:	1st Q 2013					
				Yard &			Round Trip	Fuel	Fuel				
	Operating			Industry	Equip	Other	Transit	Surcharge	Surcharge		Total	Op.	Rev/Cost
Segment	Miles	RR Cost	Fuel Cost	Switching	<u>Costs</u>	Services	<u>Days</u>	Miles	<u>(\$)</u>	RR Rate	Revenue	<u>Margin</u>	Ratio
UP	232.7	\$229.11	\$39.68	\$3.24	\$9.58	\$116.15	2.2	232.7					
Total	232.7	\$229.11	\$39.68	\$3.24	\$9.58	\$116.15	2.2	232.7	\$.00	\$.00	\$.00	-\$229.11	.00

		OTHER COSTING INPUTS FOR THIS MOVE	MENT	
Rate Informat	ion	Category	Value	
Author:	Lori	Circuity (miles X circuity = costed miles)	1.00	
Eff. Date:	7/17/2013	Load/Empty Ratio (2=100% empty return)	2.00	100% emprty return to Spokane
Exp. Date:	7/17/2013	Tare Wt - Car	99.20	
Comments:	Assumptions; 2 5-well stack cars	Train Speed, OTR (mph) UP	32.00	
	tacked on rear end of an intermodal	RR Car Mileage Cost	0.07	Assumes railroad owns stack car
	train. 10 containers per 5-well stack	RR Car Per Diem Cost	27.20	
	car. Perhaps once a week or so there	Pvt Car Mileage Cost	0.00	Containers are pvt ownership
	would be an extra car to pickup the 6 or	Fuel (\$/gal) UP	3.23	
	7 extra containers to meet the daily	GTM/gal UP	878.00	
	average of 21. The Other Costs	Switch Minutes UP	14.50	These minutes are automatically adjusted within the model
	category is an estimated UP cost to	Car Days to Load	0.50	This time should be confirmed. Represents railcar time in terminal.
	load container onto railcar and unload	Car Days to Unload	0.50	This time should be confirmed. Represents railcar time in terminal.
	(ground) container from railcar. The	Tare Wt - Box (trailer/container)	4.40	
	actual cost may vary and should be	Boxes per car	10.00	
	confirmed at both origin and	Other Services (Per Platform) UP	116.15	\$58.00 per box
	destination.	Number of Locomotives - Unit Trains Only UP	3.04	
		I&I Switches UP	0.00	



Cost Type

Rail Manager

Report Title Origin	HDR Urban Ore St SPOKANE	udy
Shipper	Open	
Destination	ROOSEVELT	
Consignee	Closed	
Route	SPOKANE WA - BN	ISF - ROOSEVELT WA
STCC5		40291
STCC Desc		urban' ore, including waste or scrap nec
Tons Per Box		20
Car Type		Container 40' - dry
Owner		Private
Pvt Car Mile Rate	9	\$0.00
Boxes Per Shipm	ent	21

Trainload (see Comments below)

				MOVEMENT CO	OST SUMM	IARY							
Basis:	Per Box Basis						Cost level:	1st Q 2013					
				Yard &			Round Trip	Fuel	Fuel				
	Operating			Industry	Equip	Other	Transit	Surcharge	Surcharge		Total	Op.	Rev/Cost
Segment	Miles	RR Cost	Fuel Cost	Switching	Costs	Services	Days	Miles	<u>(\$)</u>	RR Rate	Revenue	Margin	Ratio
BNSF	230.3	\$218.55	\$41.69	\$3.09	\$9.91	\$110.82	2.1	230.3					
Total	230.3	\$218.55	\$41.69	\$3.09	\$9.91	\$110.82	2.1	230.3	\$.00	\$.00	\$.00	-\$218.55	.00

Rate Informati	on_
Author:	Lori
Eff. Date:	7/17/2013
Exp. Date:	7/17/2013
Comments:	Assumptions; 2 5-well stack cars tacked
	on rear end of an intermodal train. 10
	containers per 5-well stack car. Perhaps
	once a week or so there would be an
	extra car to pickup the 6 or 7 extra
	containers to meet the daily average of
	21. The Other Costs category is an
	estimated BNSF cost to load container
	onto railcar and unload (ground)
	container from railcar. The actual cost
	may vary and should be confirmed at
	both origin and destination.

OTHER COSTING INPUTS FOR THIS MOVEMENT

Category	Value	
Circuity (miles X circuity = costed miles)	1.00	
Load/Empty Ratio (2=100% empty return)	2.00	100% emprty return to Spokane
Tare Wt - Car	99.20	
Train Speed, OTR (mph) BNSF	35.00	
RR Car Mileage Cost	0.07	Assumes railroad owns stack car
RR Car Per Diem Cost	27.20	
Pvt Car Mileage Cost	0.00	Containers are pvt ownership
Fuel (\$/gal) BNSF	3.21	
GTM/gal BNSF	822.00	
Switch Minutes BNSF	14.00	These minutes are automatically adjusted within the model
Car Days to Load	0.50	This time should be confirmed. Represents railcar time in terminal.
Car Days to Unload	0.50	This time should be confirmed. Represents railcar time in terminal.
Tare Wt - Box (trailer/container)	4.40	
Boxes per car	10.00	
Other Services (Per platform) BNSF	110.82	\$55.41 per box
Number of Locomotives - Unit Trains Only BNSF	3.25	
I&I Switches BNSF	0.00	

PROJECT:SPOKANE COUNTY TRANSFER STATION AND DISPOSAL OPTIONS STUDYYELLOW TABS:TRUCK HAUL COST ESTIMATES - SHORT HAUL FROM TS TO INTERMODAL FACILITY

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Colbert Transfer Station - Haul to BNSF Parkwater Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

	Truck to BNSF	
	Intermodal Yard	Comments
Number of Trailer Loads	2,300	Based on 20 tons/container as reported by transfer stations
Tonnage (tpy):	46,000	· · ·
Load & Unload Time (minutes):	25	Estimate
One-Way Distance (miles)	18	Added couple miles for on-site travel
Average Speed (mph):	30	Estimated from internet route mapping
Average Trips/Year:	2,300	11 5
Average Trips/Month:	192	
Average Trips/Week:	45	
Hours Per Trip	1.6	
Weekly Freight Hours:	73	
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day
Annual Freight Hours:	3,783	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	82,800	0 9 0
Annual Casta Assumptions		
Annual Costs Assumptions:		
Fuel Cost per Collon	¢4 00	Diasal pricas 2012
Miles per Cellen	φ4.00 F	Dieser prices, 2013
Miles per Gallon	5 ¢0 50	Falizata
Oil & Grease (\$/freight hour)	\$0.50	Estimate
New Tiree Drice	¢700	
Hew Tires Price	\$700	(time on tractor (12 time on trailors
# New Tites Per 50,000 Milles	0	6 lifes on tractor & 12 lifes on trailers
Retread Tires	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	
Maintenance & Repairs	¢00.070	Assessments and a first state to a second state of the second stat
Mechanic Labor annual salary	\$80,270	Assumes rate similar to neavy equip. operator
Mechanic Labor % per Truck	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	
Equipment Operator/Driver Labor	0000/	
Driver % (based on total time)	200%	
Number of Drivers, FTE	2.0	
Driver annual salary	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	Provided, Included in annual
Iruck Amortization	-	
Number of Tractors	2	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	
Replacement Schedule (years)	10	years replacement based on mileage
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Trailer Amortization		
Number of Trailers	4	Update based on loads/day & trip time
Capital Cost per trailer	\$12,000	flat bed trailers
Replacement Schedule (years)	10	
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Insurance (per yr/truck) @ 3% \$	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5% \$	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Colbert Transfer Station - Haul to BNSF Parkwater Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

	Truck to BNSF	
Annual Haul Cost to Disposal:	Intermodal Yard	Comments
Fuel, Oil & Grease	\$68,130	Mileage & Time Based
Tires	\$18,880	Mileage Based
Maintenance & Repairs	\$28,730	Mileage & Time Based
Driver Labor	\$160,540	Time Based
Truck Amortization	\$29,590	100% Utilized
Trailer Amortization	\$5,920	100% Utilized
Insurance	\$9,000	No. trucks
Licensing & Taxes	\$4,600	No. trucks
Overhead & Profit	\$32,540	
MSW Haul Cost to BNSF Intermodal	\$357,930	
Truck Haul Cost/Ton	\$7.80	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Debra Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Spokane Valley Transfer Station - Haul to BNSF Parkwater Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

Т	ruck to BNSF Intermodal	
	Yard	Comments
Number of Trailer Loads	4,550	Based on 20 tons/container as reported by transfer stations
Tonnage (tpy):	91,000	
Load & Unload Time (minutes):	25	Estimate
One-Way Distance (miles)	9	Added couple miles for on-site travel
Average Speed (mph):	30	Estimated from internet route mapping
Average Trips/Year:	4,550	
Average Trips/Month:	380	
Average Trips/Week:	88	
Hours Per Trip	1.0	
Weekly Freight Hours:	89	
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day
Annual Freight Hours:	4,652	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	81,900	
Annual Costs Assumptions:		
Fuel, Oil & Grease		
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013
Miles per Gallon	5	
Oil & Grease (\$/freight hour)	\$0.50	Estimate
Tires		
New Tires Price	\$700	
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	
Maintenance & Repairs		
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	
Equipment Operator/Driver Labor		
Driver % (based on total time)	250%	
Number of Drivers, FTE	2.5	
Driver annual salary	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	Provided, Included in annual
Truck Amortization		
Number of Tractors	3	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	
Replacement Schedule (years)	10	years replacement based on mileage
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Trailer Amortization		
Number of Trailers	5	Update based on loads/day & trip time
Capital Cost per trailer	\$12,000	Flatbed Trailers
Replacement Schedule (years)	10	
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Insurance (per yr/truck) @ 3% \$	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5% :	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Debra Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	Spokane Valley Transfer Station - Haul to BNSF Parkwater Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

	Truck to BNSF Intermodal	
Annual Haul Cost to Disposal:	Yard	Comments
Fuel, Oil & Grease	\$67,850	Mileage & Time Based
Tires	\$18,670	Mileage Based
Maintenance & Repairs	\$32,520	Mileage & Time Based
Driver Labor	\$200,680	Time Based
Truck Amortization	\$44,380	100% Utilized
Trailer Amortization	\$7,400	100% Utilized
Insurance	\$13,500	No. trucks
Licensing & Taxes	\$6,900	No. trucks
Overhead & Profit	\$39,190	
MSW Haul Cost to BNSF Intermodal	\$431,090	
Truck Haul Cost/Ton	\$4.70	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	new West Plains Transfer Station - Haul to BNSF Parkwater Intermodal Y
Costs:	2013 \$
Location:	Spokane County, Washington

	Truck to BNSF	
	Intermodal Yard	Comments
Number of Trailer Loads	1,000	Based on 20 tons/container as reported by transfer stations
Tonnage (tpy):	20,000	
Load & Unload Time (minutes):	25	Estimate
One-Way Distance (miles)	13	Added couple miles for on-site travel
Average Speed (mph):	30	Estimated from internet route mapping
Average Trips/Year:	1,000	
Average Trips/Month:	84	
Average Trips/Week:	20	
Hours Per Trip	1.3	
Weekly Freight Hours:	26	
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day
Annual Freight Hours:	1,335	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	26,000	
Annual Costs Assumptions:		
Fuel, Oil & Grease		
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013
Miles per Gallon	5	
Oil & Grease (\$/freight hour)	\$0.50	Estimate
Tires		
New Tires Price	\$700	
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	
Maintenance & Repairs		
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	
Equipment Operator/Driver Labor		
Driver % (based on total time)	90%	
Number of Drivers, FTE	0.9	
Driver annual salary	\$80,270	Prevailing wage rate based on City heavy equip. oper.
Fringe benefits (% of salary)	40%	Provided, Included in annual
Truck Amortization		
Number of Tractors	1	Update based on loads/day
Capital Cost - per semi-truck	\$150,000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	
Replacement Schedule (years)	10	years replacement based on mileage
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Trailer Amortization		
Number of Trailers	3	Update based on loads/day & trip time
Capital Cost per trailer	\$12,000	flat bed trailers
Replacement Schedule (years)	10	
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Insurance (per yr/truck) @ 3% \$	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5% \$	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye on July 29, 2013
Date:	Jul-13
Estimate Basis:	new West Plains Transfer Station - Haul to BNSF Parkwater Intermodal Y
Costs:	2013 \$
Location:	Spokane County, Washington

	Truck to BNSF	
Annual Haul Cost to Disposal:	Intermodal Yard	Comments
Fuel, Oil & Grease	\$21,470	Mileage & Time Based
Tires	\$5,930	Mileage Based
Maintenance & Repairs	\$10,510	Mileage & Time Based
Driver Labor	\$72,240	Time Based
Truck Amortization	\$14,790	100% Utilized
Trailer Amortization	\$4,440	100% Utilized
Insurance	\$4,500	No. trucks
Licensing & Taxes	\$2,300	No. trucks
Overhead & Profit	\$13,620	
MSW Haul Cost to BNSF Intermodal	\$149,800	
Truck Haul Cost/Ton	\$7.50	

GREEN TABS: ADDITIONAL CAPITAL DEBT AND O&M COSTS FOR COMPACTORS AT TRANSFER STATIONS

Project:	Spokane Cou	nty Solid Waste T	ransfer and Dis	posal Options Stud	ly	
Estimator:	Lori Calub - HDR Engineering Inc.					
Reviewer:	Deb Frye on .	July 29, 2013				
Date:	Jul-13					
Estimate Basis:	Add Compact	ors at Transfer Sta	ations for loadin	g intermodal conta	iners for rai	l haul
Costs:	2013 \$			0		
Location:	Spokane Cou	nty, Washington				
Red numbers represent input factor	S.					
COMPACTOR ASSUMPTIONS						
Shipping Container Capacity		20	tons			
Operating Days per Week		7				
				Price	Int. Rate	Term
Compactor Purchase (annual amortiz	zed)	\$117,100	/yr	\$ 950,000	4.0%	10
Destination: BNSF Spo	kane Intermo	dal Facility				
			0	David a state of block		
		Colbert (North	Spokane	Proposed New		
Starting Point:		County) TS	Valley TS	West Plains TS		
MSW Tonnage Throughput		46,000	91,000	20,000		
Average Daily Shipping Tons		126	250	55		
Average No. Containers per Day		7	13	3		
Number of Compactors		1	1	1		
O&M Assumptions:			,	I		
Heavy Equip Operator (compactor)	\$30 /br	0	2	0		
Litilities - Electricity	\$0.07 /k\//b	64 000 kwb	2 118 000 kwb	27 000 kwb		
Compactor Maintonanco	¢0.07 /KVVII ¢10 /br	952 hrs	1 592 bro	265 bro		
		10	1,002 1115	10		
Equipment Replacement Reserves	me (yrs)	10	10	10		

COMPACTOR COSTS - ANNUAL

Destination: BNSF Spokane Ir	ntermodal Facility			
Starting Point:	Colbert (North County) TS	Spokane Valley TS	Proposed New West Plains TS	
Compactor Purchase Compactor O&M:	\$117,100	\$117,100	\$117,100	
Labor - Heavy Equip. Operator	\$0	\$160,500	\$0	
Utilities - Electricity	\$4,480	\$8,260	\$1,890	
Compactor Maintenance	\$8,500	\$15,800	\$3,700	
Equipment Replacement Reserves	\$95,000	\$95,000	\$95,000	
Total Annual Additional Costs	\$225,080	\$ 396,660	\$217,690	
Compactor Costs per Ton	\$4.89	\$ 4.36	\$10.88	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Haul to Proposed Geiger Spur Intermodal Yard, Rail
	Haul to Regional Landfill
Costs:	2013 \$
Location:	Spokane County, Washington

	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer
	Transfer Station	Station	Station
Tonnage, tpy	46,000	91,000	20,000
Transfor Station Costs #/tan	See Transfer Cost Contere	See Transfer Cost Contern	See Transfer Cost Costors
Addu TS Costs for Compositor	See Transfer Cost Centers	See Transfer Cost Centers	See Transfer Cost Centers
Add 115 Costs for Compactor,			
\$/ton'	\$4.90	\$4.40	\$10.90
Haul Cost to proposed Geiger			
	0 44.00	\$ 2.22	\$ 0.00
Spur Intermodal Yard, \$/ton-	\$11.20	\$8.90	\$3.80
Geiger Spur Intermodal Capital			
Debt Service, \$/ton ³	\$4.40	\$4.40	\$4.40
Geiger Spur Rail			
Improvements Capital Debt			
Service, \$/ton ³	\$6.00	\$6.00	\$6.00
Geiger Spur Intermodal Yard			
Handling Fee, \$/ton ⁴	\$3.40	\$3.40	\$3.40
Short Truck Haul & Rail			
Intermodal Cost, \$/ton	\$29.90	\$27.10	\$28.50

Notes:

1. Includes addition of compactor at transfer station for loading rail intermodal containers. See Compactor analysis.

2. See Truck Haul analysis for each transfer station.

3. See Capital Debt-Bond Sizing analysis.

4. Based on annual intermodal operations, 7850 loaded lifts and 20 tons per container.

Regional Landfill:	Roosevelt Regional Landfill									
	Colbert (North County) Transfer Station	Spokane Valley Transfer Station	New West Plains Transfer Station							
Short Truck Haul & Rail										
Intermodal Cost, \$/ton	\$29.90	\$27.10	\$28.50							
Rail Haul Cost, \$/ton ¹	\$28.30	\$28.30	\$28.30							
Roosevelt Landfill Gate Fee,										
\$/ton	\$24.00	\$24.00	\$24.00							
Total Haul & Disposal, \$/ton	\$82.20	\$79.40	\$80.80							

1. Assume similar to current City of Spokane agreement through BNSF yard. See Rail Haul analysis for details. Includes container purchase/lease, landfill intermodal yard handling, and rail haul.

Regional Landfill:

Wenatchee Regional Landfill NO RAIL TO LF

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Existing Transfer Stations - Haul to Proposed Geiger Spur Intermodal Yard, Rail
	Haul to Regional Landfill
Costs:	2013 \$
Location:	Spokane County, Washington

Regional Landfill:	Finley Buttes Landfill	-	
	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer
	Transfer Station	Station	Station
Short Truck Haul & Rail			
Intermodal Cost, \$/ton	\$29.90	\$27.10	\$28.50
Rail Haul Cost, \$/ton ¹	\$27.50	\$27.50	\$27.50
Finley Buttes Landfill Gate			
Fee, \$/ton	\$33.00	\$33.00	\$33.00
Total Haul & Disposal, \$/ton	\$90.40	\$87.60	\$89.00

Regional Landfill:	Columbia Ridge Landfill		
	Colbert (North County)	Spokane Valley Transfer	New West Plains Transfer
	Transfer Station	Station	Station
Short Truck Haul & Rail			
Intermodal Cost, \$/ton	\$29.90	\$27.10	\$28.50
Rail Haul Cost, \$/ton ¹	\$29.00	\$29.00	\$29.00
Columbia Ridge Landfill Gate			
Fee, \$/ton	\$35.00	\$35.00	\$35.00
Total Haul & Disposal, \$/ton	\$93.90	\$91.10	\$92.50

Notes:

1. See Rail Haul analysis for details.

Includes container purchase/lease, landfill intermodal yard handling, and rail haul.

2. Competitive bidding could result in lower haul and landfill disposal fees.

3. State of Washington Ecology fee of 3.6% will apply to total transfer, haul and disposal fee included in Proformas.

4. Rounded to nearest \$0.10 per ton.

RED TABS: INTERMODAL, RAIL HAUL & OFF-LOADING FACILITY COST ESTIMATES Notes: ORIGIN at proposed GEIGER SPUR INTERMODAL FACILITY

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Spokane Intermodal Facility to Regional Landfills - Rail Haul
Costs:	2013 \$
Location:	Spokane County, Washington

Red numbers represent input factors.

RAIL HAUL ASSUMPTIONS

Average Daily Shipping Tons		430	tons/day				
Shipping Container Capacity		20	tons				
Container Cycle Time		4	days				
Container Ratio Estimate	15%	4.6	times daily requi	ireme	ent		
Shipping Days per Week		7					
# of Containers Req'd		100	containers				
Railcar capacity (double-stacked)		2	containers/ car (stacl	< car)		
Total Number of Railcar Req'd		50	Assume rail cars	s pro	vided/owned	by rail	
Total Number Railcar Loads		3,913	Loads/year				
					Price	Int. Rate	Term
Container Purchase/Lease		\$1,850	/container-yr	\$	15,000	4.0%	10
Loading/Unloading Charge		\$ 25	/container/handl	ing			
Rail Road Fuel Surcharge		\$ -					

Starting Point: Proposed Geiger Spur Intermodal Facility

				Roosevelt	
		Finley Buttes	Columbia	Regional LF	
Destination:		LF (UP)	Ridge LF (UP)	(BNSF)	
Rail Haul Distance (One-Way)	miles	205	233	230	
Rail Car Loading	days	1	1	1	
Rail Car Unloading	days	0.5	0.5	0.5	
Rail Haul (merchant train)	days	2.7	2.8	2.9	
Total Transit Days		4.2	4.3	4.4	
Net Tons (MSW) Per Rail Car		40	40	40	
RailRoad Provided Cars					
¹ Raw Haul Cost Per Container	\$/box	\$264	\$282	\$273	
Revenue to Cost Ratio		1.8	1.8	1.8	
Rail Haul Per Container	\$/box	\$475	\$507	\$492	
Cost Per Net Ton (of MSW)	\$/ton	\$23.77	\$25.34	\$24.59	

Starting Point: Proposed Geiger Spur Intermodal Facility

Destination:	Est.	Annual\$	Fir	nley Buttes LF (UP) \$/ton	Ri	Columbia idge LF (UP) \$/ton	R	Roosevelt egional LF (BNSF) \$/ton	
Container Purchase/Lease	\$	185,000	\$	1.20	\$	1.20	\$	1.20	
² Landfill Intermodal Lift Fees	\$	400,400	\$	2.50	\$	2.50	\$	2.50	
³ Rail Hauling	NA			\$23.80		\$25.30		\$24.60	
Fuel Surcharge			\$	-	\$	-	\$	-	
Total Rail Haul			\$	27.50	\$	29.00	\$	28.30	

¹ Includes RR cost, fuel cost, yard & industry switching cost, and equipment cost. See USRail.destop lane runs. Assume Geiger Spur rail haul costs similar to rail haul from BNSF Spokane Intermodal Facility.

² Assumes railyard container handling fee per lift for each loaded container (20 net tons) and empty container, at the regional landfill intermodal yard.

Contract negotiations for haul & disposal may incorporate this into overall service fee.

³ Includes rail ownership of rail cars and merchant train. See USRail.desktop lane runs.

⁴ The estimates do not include train switching charges between BNSF and UP.

⁵ Rounded to nearest \$0.10 per ton.

YELLOW TABS: TRUCK HAUL COST ESTIMATES - SHORT HAUL FROM TS TO INTERMODAL FACILITY

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Colbert Transfer Station - Haul to proposed Geiger Spur Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

	Geiger Spur Intermodal Yard	Comments
Number of Trailer Loads	2,300	Based on 20 tons/container as reported by transfer stations
Tonnage (tpy):	46,000	
Load & Unload Time (minutes):	25	Estimate
One-Way Distance (miles)	28	Added couple miles for on-site travel
Average Speed (mph):	35	Estimated from internet route mapping
Average Trips/Year:	2,300	
Average Trips/Month:	192	
Average Trips/Week:	45	
Hours Per Trip	2.0	
Weekly Freight Hours:	91	
Wkly Prorated Ven Inspect/Breaks:	/	1 hour per day
Annual Freight Hours:	4,719	Freight hours only for vehicle fuel, oil & grease cost
lotal Miles/Yr	128,800	
Annual Costs Assumptions:		
Fuel, Oil & Grease		
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013
Miles per Gallon	5	
Oil & Grease (\$/freight hour)	\$0.50	Estimate
Tires		
New Tires Price	\$700	
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	
Maintenance & Repairs	¢00.070	
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator
Nechanic Labor % per Truck	5%	
Fauinment Operator/Driver Labor	\$0.25	
Driver % (based on total time)	250%	
Number of Drivers FTF	25076	
Driver annual salary	\$80,270	Prevailing wage rate based on City beavy equin oper
Eringe benefits (% of salary)	40%	Provided Included in annual
Truck Amortization	1070	
Number of Tractors	3	Lindate based on loads/day
Capital Cost - per semi-truck	\$150.000	New truck price based on historic fleet cost, escalated
Resale Value (% of truck \$)	20%	·····
Replacement Schedule (years)	7	years replacement based on mileage
Interest Rate	4%	,
Capital Recovery Factor (A/P,i,n)	0.1666	
Trailer Amortization		
Number of Trailers	5	Update based on loads/day & trip time
Capital Cost per trailer	\$12,000	flat bed trailers
Replacement Schedule (years)	10	
Interest Rate	4%	
Capital Recovery Factor (A/P,i,n)	0.1233	
Insurance (per yr/truck) @ 3% \$	\$4,500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5%	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Colbert Transfer Station - Haul to proposed Geiger Spur Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

Annual Haul Cost to Disposal:	Geiger Spur Intermodal Yard	Comments
Fuel, Oil & Grease	\$105,400	Mileage & Time Based
Tires	\$29,370	Mileage Based
Maintenance & Repairs	\$44,240	Mileage & Time Based
Driver Labor	\$200,680	FTE, Time Based
Truck Amortization	\$59,980	100% Utilized
Trailer Amortization	\$7,400	100% Utilized
Insurance	\$13,500	No. trucks
Licensing & Taxes	\$6,900	No. trucks
Overhead & Profit	\$46,750	
MSW Haul Cost to Geiger Spur		
Intermodal Yard	\$514,220	
Total Short Truck Haul Cost/Ton	\$11.20	

Proiect:	Spokane County Solid Waste Tran	nsfer and Disposal Options Study					
Estimator:	Lori Calub - HDR Engineering Inc.						
Reviewer:	Deb Frve						
Date:	Jul-13						
Estimate Basis:	Spokane Valley Transfer Station -	Haul to proposed Geiger Spur Intermodal Yard					
Costs:	2013 \$						
Location:	Spokane County, Washington						
	Geiger Spur Intermodal Yard	Comments					
Number of Trailer Loads	4,550	Based on 20 tons/container as reported by transfer stations					
Tonnage (tpy):	91,000						
Load & Unload Time (minutes):	25	Estimate					
One-Way Distance (miles)	25	Added couple miles for on-site travel					
Average Speed (mph):	40	Estimated from internet route mapping					
Average Trips/Year:	4,550						
Average Trips/Month:	380						
Average Trips/Week:	88						
Hours Per Trip	1.7						
Weekly Freight Hours:	147						
Wkly Prorated Veh Inspect/Breaks:	7	1 hour per day					
Annual Freight Hours:	7,627	Freight hours only for vehicle fuel, oil & grease cost					
Total Miles/Yr	227,500						
Annual Costs Assumptions:							
Fuel, Oil & Grease							
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013					
Miles per Gallon	5						
Oil & Grease (\$/freight hour)	\$0.50	Estimate					
Tires							
New Tires Price	\$700						
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers					
Retread Tires	\$300	2008 retread tire prices escalated					
# Retread Tires Per 25,000 Miles	12						
Maintenance & Repairs							
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator					
Mechanic Labor % per Truck	5%						
Parts, Repairs, Overhaul (\$/mile)	\$0.25						
Equipment Operator/Driver Labor							
Driver % (based on total time)	390%						
Number of Drivers, FIE	3.9	Descetting and the second are City because in second					
Eringe henefite (% of colory)	\$00,270 40%	Prevailing wage rate based on City heavy equip. Oper.					
Truck Amortization	40%	Pionueu, incluueu in annual					
Number of Tractors	1	Indata basad an laads/day					
Capital Cost - per semi-truck	م \$150,000	New truck price based on historic fleet cost, escalated					
Posalo Valuo (% of truck \$)	\$150,000 20%	New Truck price based on historic neer cost, escarated					
Replacement Schedule (vears)	7	vaars rankacamant basad an milaaga					
Interest Rate	1%	years replacement based on mileage					
Capital Pacovary Eactor $(\Lambda/P i n)$	470						
Trailer Amortization	0.1000						
Number of Trailers	6	Undate based on loads/day & trin time					
Capital Cost per trailer	\$12,000	Flatherd Trailers					
Replacement Schedule (vears)	φτ <u>2</u> ,000 10						
Interest Rate	10						
Capital Recovery Factor $(\Delta/P i n)$	470 0 1233						
Insurance (per vr/truck) @ 3% \$	\$4 500	Estimate % of capital cost					
License&Taxes (per vr/truck)@1 5%	\$2.300	Estimate % of capital cost					
Overhead & Profit @ % of O&M	10%	% of all O&M					

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	Spokane Valley Transfer Station - Haul to proposed Geiger Spur Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

Annual Haul Cost to Disposal:	Geiger Spur Intermodal Yard	Comments
Fuel, Oil & Grease	\$185,810	Mileage & Time Based
Tires	\$51,870	Mileage Based
Maintenance & Repairs	\$72,930	Mileage & Time Based
Driver Labor	\$313,050	FTE, Time Based
Truck Amortization	\$79,970	100% Utilized
Trailer Amortization	\$8,880	100% Utilized
Insurance	\$18,000	No. trucks
Licensing & Taxes	\$9,200	No. trucks
Overhead & Profit	\$73,970	
MSW Haul Cost to Geiger Spur		
Intermodal Yard	\$813,680	
Short Truck Haul Cost/Ton	\$8.90	

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	new West Plains Transfer Station - Haul to proposed Geiger Spur Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

	Geiger Spur Intermodal Yard	Comments
Number of Trailer Loads	1,000	Based on 20 tons/container as reported by transfer stations
Tonnage (tpy):	20,000	
Load & Unload Time (minutes):	25	Estimate
One-Way Distance (miles)	0.5	Assumes TS adjacent to Geiger Spur Yard
Average Speed (mph):	10	assumed on-site speed limit
Average Trips/Year:	1,000	
Average Trips/Month:	84	
Average Trips/Week:	20	
Hours Per Trip	0.5	
Weekly Freight Hours:	10	
Wkly Prorated Veh Inspect/Breaks:	/	1 hour per day
Annual Freight Hours:	537	Freight hours only for vehicle fuel, oil & grease cost
Total Miles/Yr	1,000	
Annual Costs Assumptions:		
Fuel, Oil & Grease		
Fuel Cost per Gallon	\$4.00	Diesel prices, 2013
Miles per Gallon	5	
Oil & Grease (\$/freight hour)	\$0.50	Estimate
Tires		
New Tires Price	\$700	
# New Tires Per 50,000 Miles	6	6 tires on tractor & 12 tires on trailers
Retread Tires	\$300	2008 retread tire prices escalated
# Retread Tires Per 25,000 Miles	12	
Maintenance & Repairs	• • • • • • •	
Mechanic Labor annual salary	\$80,270	Assumes rate similar to heavy equip. operator
Mechanic Labor % per Truck	5%	
Parts, Repairs, Overhaul (\$/mile)	\$0.25	
Equipment Operator/Driver Labor	500/	
Driver % (based on total time)	50%	
Driver appual salary	0.5	Provailing wage rate based on City beauty again, oner
Eringo honofits (% of salan)	φου,270 40%	Prevailing wage rate based on City neavy equip. Oper.
Truck Amortization	40%	ו וטיועכע, וווכועעכע ווו מווועמו
Number of Tractors	1	I Indate based on loads/day
Capital Cost - per semi-truck	\$150.000	New truck nrice based on historic fleet cost, escalated
Resale Value (% of truck \$)	9100,000 20%	non adox price based on nisione ficer cost, escalated
Replacement Schedule (vears)	10	vears replacement based on mileage
Interest Rate	10 4%	Joan - opiacomone based on miledyc
Capital Recovery Factor (A/P i n)	0 1233	
Trailer Amortization	0.1200	
Number of Trailers	3	Update based on loads/day & trip time
Capital Cost per trailer	\$12,000	flat bed trailers
Replacement Schedule (years)	10	
Interest Rate	4%	
Capital Recovery Factor (A/P.i.n)	0.1233	
Insurance (per yr/truck) @ 3% \$	\$4.500	Estimate % of capital cost
License&Taxes (per yr/truck)@1.5%	\$2,300	Estimate % of capital cost
Overhead & Profit @ % of O&M	10%	% of all O&M

Project:	Spokane County Solid Waste Transfer and Disposal Options Study
Estimator:	Lori Calub - HDR Engineering Inc.
Reviewer:	Deb Frye
Date:	Jul-13
Estimate Basis:	new West Plains Transfer Station - Haul to proposed Geiger Spur Intermodal Yard
Costs:	2013 \$
Location:	Spokane County, Washington

Annual Haul Cost to Disposal:	Geiger Spur Intermodal Yard	Comments
Fuel, Oil & Grease	\$1,070	Mileage & Time Based
Tires	\$230	Mileage Based
Maintenance & Repairs	\$4,260	Mileage & Time Based
Driver Labor	\$40,140	FTE, Time Based
Truck Amortization	\$14,790	100% Utilized
Trailer Amortization	\$4,440	100% Utilized
Insurance	\$4,500	No. trucks
Licensing & Taxes	\$2,300	No. trucks
Overhead & Profit	\$4,570	
MSW Haul Cost to Geiger Spur		
Intermodal Yard	\$76,300	
Short Truck Haul Cost/Ton	\$3.80	

GREEN TABS: CAPITAL COST DEBT SERVICE - BOND SIZING ADDITIONAL CAPITAL DEBT AND O&M COSTS FOR COMPACTORS AT TRANSFER STATIONS

Project:	Spokane County Solid Waste Transfer and Disposal Options Study					
Estimator:	Lori Calub - HDR Engineering Inc.					
Reviewer:	Deb Frye					
Date:	Jul-13					
Estimate Basis:	Add Compact	ors at Transfer Sta	ations for loadin	g intermodal conta	iners for rail	haul
Costs:	2013 \$			-		
Location:	Spokane Cou	nty, Washington				
Red numbers represent input factors	S.	·				
COMPACTOR ASSUMPTIONS						
Shipping Container Capacity, net wt.		20	tons			
Operating Days per Week		7				
				Price	Int. Rate	Term
Compactor Purchase (annual amortiz	(ed)	\$117,100	/vr	\$ 950,000	4.0%	10
	,					
Destination: Proposed Gei	ger Spur Inter	rmodal Facility				
		Colbert (North	Spokane	Proposed New		
Starting Point:		County) TS	Valley TS	West Plains TS		
MSW Tonnage Throughput		46,000	91,000	20,000		
Average Daily Shipping Tons		126	250	55		
Average No. Containers per Day		7	13	3		
Number of Compositors		4	4	4		
Number of Compactors		I	I	I		
O&M Assumptions:	\$ \$\$\$					
Heavy Equip. Operator (compactor)	\$39 /hr	0	2	0		
Utilities - Electricity	\$0.07 /kWh	64,000 kwh	118,000 kwh	27,000 kwh		
Compactor Maintenance	\$10 /hr	852 hrs	1,582 hrs	365 hrs		
Equipment Replacement Reserves	life (yrs)	10	10	10		

COMPACTOR COST	S - ANNUAL
----------------	------------

Destination: Proposed Geiger Spur Int	ermoda	I Facility					
Starting Point:	Colb Co	ert (North unty) TS	,	Spokane Valley TS	Pro Wes	posed New at Plains TS	
Compactor Purchase		\$117,100		\$117,100		\$117,100	
Compactor O&M:							
Labor - Heavy Equip. Operator		\$0		\$160,500		\$0	
Utilities - Electricity		\$4,480		\$8,260		\$1,890	
Compactor Maintenance		\$8,500		\$15,800		\$3,700	
Equipment Replacement Reserves		\$95,000		\$95,000		\$95,000	
Total Annual Additional Costs Compactor Costs per Ton	\$ \$	225,080 4.89	\$ \$	396,660 4.36	\$ \$	217,690 10.88	

Bond Sizing Calculation Methodology

ASSUMPTIONS	Proposed Geiger Spur Intermodal Yard					
	Values	Capital Requirements				
Construction Assumptions:		Location E (2008\$)	\$3,853,000			
Construction Cost Annual Escalation Rate	3.0%	Esc. (To const.)	\$886,000			
Escalation Years from 2008 to NTP	6	Projected Costs	\$4,739,000			
Planning, Permitting & Design (months)	12	Other Funding	\$0			
Months for Construction (Months): 1.00	12	Financed Capital	\$4,739,000			
Debt Assumptions						
Amortization period (Years):	10	*For comparison purpose	es. Could bond			
Availability of Reserves (%):	100%	for longer period to lower	annual			
Taxable Debt Portion (%)		payments.				
Equity Portion (%) excl. tax benefits						
Construction Price Financed (\$):	\$4,739,000					
Draw Down Availablity of Funds (%):	30%					
Bond Issuance Fees (%):	1.5%					
Interest Rate Assumptions						
Blended Bond Interest Rate (%)	4.37%					
Tax Exempt Rate (%)						
Taxable Rate (%)						
Equity Rate (%)						
Reinvestment Rates						
Long Term Reinvestment Rate (%):	1.0%					
Short Term Reinvestment Rate (%):	1.0%					
CALCULATIONS:						
Number of Const. Payment Periods	2					
Interest During Construction Availability:	0.75					
Blend Capital Recovery Factor						
Bond Capital Recovery Factor	12.6%					
Debt Service Reserve Cap	10.0%					
Bond Issue Size (Round up to nearest \$5000)	\$5,610,000					
Capital Cost	\$4 739 000					
Bond Discount	\$84 150					
Debt Service Reserve	\$561,000					
Interest During Construction	\$245 157					
	¢210,107	•				
Subtotal	\$5,629,307					
Interest on:	A					
Capital	\$14,220					
Debt Service Reserve	\$5,610					
Interest During Construction	\$1,840	-				
Subtotal	\$21,670					
Bond Issue Size	\$5,608,000					
Annual Interest Earned on Debt Service Reserves	\$6,000					
Net Annual Debt Service	\$698.000					
MSW (tons) Delivered to Geiger Spur Yard	157,000	_				
Debt Service Cost per Ton	\$4.40 /ton					

Bond Sizing Calculation Methodology

ASSUMPTIONS	Rail Upgrades - MP1.2 to Geiger Jct.		
Construction Assumptions:	Values	Estimate (2013\$)	\$6,000.000
Construction Cost Annual Escalation Rate	3.0%	Esc. (To const.)	\$365,000
Escalation Years from 2013 to NTP	1	Projected Costs	\$6.365.000
Planning, Permitting & Design (months)	12	Other Funding	\$0
Months for Construction (Months): 1.00	12	Einanced Capital	\$6,365,000
Debt Assumptions	12		φ0,000,000
Amortization period (Years):	10	*For comparison purpose	s Could bond
Availability of Reserves (%):	100%	for longer period to lower	annual
Taxable Debt Portion (%)	10070	navments	annaan
Faulty Portion (%) excl tax benefits		paymente	
Construction Price Financed (\$):	\$6,365,000		
Draw Down Availablity of Funds (%):	\$0,000,000 30%		
Bond Issuance Fees (%):	1.5%		
Interest Pate Assumptions	1.070		
Planded Pond Interact Pate (%)	1 270/		
Tex Exempt Data (%)	4.37%		
Tax Exempt Rate (%)			
Equity Rate (%)			
Reinvestment Rates	4.00/		
Long Term Reinvestment Rate (%):	1.0%		
Short Term Reinvestment Rate (%):	1.0%		
Number of Const. Payment Periods	2		
Interest During Construction Availability:	0.75		
Blend Capital Recovery Eactor	0.70		
Bond Capital Recovery Factor	12.6%		
Debt Service Reserve Cap	10.0%	1	
Bond Issue Size (Round up to nearest \$5000)	\$7,535,000		
Capital Cast	¢6 265 000		
Capital Cost	\$0,303,000		
Bond Discount	\$113,025 \$752,500		
Debt Service Reserve	\$753,500		
	\$329,280	-	
Subtotal	\$7,560,805		
Interest on:			
Capital	\$19,100		
Debt Service Reserve	\$7,540		
Interest During Construction	\$2,470	_	
Subtotal	\$29,110	-	
Bond Issue Size	\$7,532,000		
Annual Interest Earned on Debt Service Reserves	\$8,000	-	
Net Annual Debt Service MSW (tons) Delivered to Geiger Spur Yard	\$938,000 157,000	_	
Debt Service Cost per Ton	\$6.00 /ton	I	

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Appendix F

Proformas
Pro Forma Matrix Options

Assumptions - INPUTS

Items in red may be reviewed and changed for sensitivity runs.

Annual Escalation Rates			Ŭ	
Construction Capital Cost Escalation	3.0%			
O&M Cost Escalation	2.5%			
Solid Waste Services Escalation	2.5%			
Interfund & Indirect Charges Escalation	2.5%			
Truck Haul Cost Escalation	2.5%			
Rail Haul Cost Escalation	2.5%			
Landfill Disposal Fee Escalation	2.5%			
WTE Facility Fee Escalation	2.5%			
Current Tip Fees Escalation	2.5%			
Waste Quantities Inputs				
Colbert (North County) Transfer Station	46,000 tpy	tonnages provided by	county	
Spokane Valley Transfer Station	91,000 tpy			
Proposed West Plains Transfer Station	20,000 tpy			
MSW Annual Growth Projections =	0.0%	annually		
	0.00			
Disposal Tipping Fees (Gate Rate, 2	013\$)			
WTE Disposal Fee	\$65.00	\$/ton	w/ 10-yr agreement	Spokane, WA
WTE Gate Rate	\$98.00	\$/ton	self-haul/commercial	Spokane, WA
Roosevelt Regional Landfill	\$24.00	\$/ton	BNSF rail	Roosevelt, WA
Wenatchee Regional Landfill	\$65.00	\$/ton	no rail to LF	East Wenatchee, WA
Finley Buttes Landfill	\$33.00	\$/ton	UP rail	Boardman, OR
Columbia Ridge Landfill	\$35.00	\$/ton	UP rail	Arlington, OR
Proposed Adams County Landfill	not constructed			Waschtucna, WA
Cabaduling by cast cantows				
Scheduling - by cost centers				
Current System Agreement				
Interlocal Agreement, expiration	11/16/2014	• //		
2013 tip fee at WTE	\$98.00	\$/ton		
2013 tip fee at transfer stations	\$103.00	\$/ton		
	Start Data for	# Monthe Siting	Donning Dormitting	
Transfer Station Cost Contors	Operations	# Month's - Silling, I	rianning, renniung	J,
1 Purchase Colbert & Valley TS	11/17/2014	Construction	NTP Data-Assum	od
Construct New North County TS &	11/17/2014		NTT Date-Assum	eu
2 Spokano Vallov TS	7/1/2017	1	2 1/1/201	٨
2 Operative Valley 10 3 Construct New West Plains TS	7/1/2017		2 1/1/201	4
5 Construct New West Flains 15	1/1/2017	4.	2 1/1/201	4
	Start Date for	# Months - Sitina. I	Planning, Permitting	1.
Haul & Disposal Cost Centers	Operations	Construction		<i>,</i> ,
1 Truck Haul to WTE	11/17/2014			
2 Truck Long Haul to Regional LF	11/17/2014	or operations date of	new TS construction	
3 BNSF Intermodal Yard	11/17/2014		NTP Date-Assum	ed
4 Proposed Geiger Spur Intermodal Yard	1/1/2016	24	4 1/1/201	4
 Transfer Station Cost Centers 1 Purchase Colbert & Valley TS Construct New North County TS & 2 Spokane Valley TS 3 Construct New West Plains TS Haul & Disposal Cost Centers 1 Truck Haul to WTE 2 Truck Long Haul to Regional LF 3 BNSF Intermodal Yard 4 Proposed Geiger Spur Intermodal Yard 	Start Date for Operations 11/17/2014 7/1/2017 7/1/2017 Start Date for Operations 11/17/2014 11/17/2014 11/17/2014 11/17/2014	# Months - Siting, I Construction 4: 4: 4: 4: 4: 4: 4: 4: 4: 4: 5: 5: 5: 6: 7: 6: 7: 8: 8: 8: 7: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	Planning, Permitting NTP Date-Assum 2 1/1/201 2 1/1/201 Planning, Permitting new TS construction NTP Date-Assum 4 1/1/201	g, ed 4 4 g, ed 4

Pro Forma Matrix Options

Cost Centers OUTPUTS

Haul Costs - Truck , \$/ton

			Proposed West
	Colbert TS	Spokane Valley TS	Plains TS
WTE Facility	\$9.90	\$8.20	NA
Roosevelt Regional Landfill	\$66.00	\$63.80	\$64.20
Wenatchee Regional Landfill	\$50.90	\$49.80	\$52.80
Finley Buttes Landfill	\$58.90	\$56.30	\$56.60
Columbia Ridge Landfill	\$72.50	\$69.10	\$69.40
Proposed Adams County Landfill	\$34.50	\$31.20	\$32.10

Haul Costs - Rail, Spokane BNSF Intermodal Yard \$/ton

	Colbert TS	Spokane Valley TS	West Plains TS
Add'l Transfer Station Costs for			
Loading Rail Containers	\$4.90	\$4.00	\$10.90
If TS Purchase cost center	\$4.90	\$0.00	NA
Truck Haul to BNSF Intermodal Yard	\$9.40	\$4.90	\$7.90
Rail Haul to Regional Landfills (includes ra	il haul, yard ha	ndling, and containers	s):
Roosevelt Regional Landfill	\$26.50	based on City of Spoka	ane agreement for by
Finley Buttes Landfill	\$30.00	not included local infras	structure (UP intermo

pass waste \$30.00 not included local infrastructure (UP intermodal yard)

\$31.50 not included local infrastructure (UP intermodal yard)

Haul Costs - Rail, Proposed Geiger Spur Intermodal Yard \$/ton

Columbia Ridge Landfill

	Colbert TS	Spokane Valley TS	West Plains TS	
Add'l Transfer Station Costs for				
Loading Rail Containers	\$4.90	\$4.40	\$10.90	
If TS Purchase cost center	\$4.90	\$0.00	NA	
Truck Haul to Intermodal Yard	\$11.20	\$8.90	\$3.80	Annual Total
Geiger Spur Intermodal Yard & Rail				
Improvements Capital	\$10.40	\$10.40	\$10.40	\$1,636,000
Geiger Spur intermodal yard handling	\$3.40	\$3.40	\$3.40	\$540,000
Rail Haul to Regional Landfills (includes ra	ail haul. Iandfill i	ntermodal vard handli	ng. and containers)	:

Roosevelt Regional Landfill Finley Buttes Landfill

\$28.30 not included train switching charges between BNSF and UP

Columbia Ridge Landfill

\$27.50 not included train switching charges between BNSF and UP

\$29.00 not included train switching charges between BNSF and UP

Spokane County Transfer Stations and Disposal Options Study Pro Forma Matrix Options

Fio Forma Mainx Ophons				
Matrix Scenarios				
Scenario 1A				
Transfer Cost Center				
#1 - Transfer Station Purchase at				
Fair Market Value	Colbert TS	Spokane Valley TS	WTE TS	
Market Value, TS & Equip (2012°)	¢2 /8/ 108	¢6 761 858	WIL IO	
Appuel Debt Service	ψ2,404,190 ¢269,000	ψ0,701,000 Φ722,000		no occalation
Annual Debt Service	¢200,000	\$755,000		no escalation
\$ per ion	A- 00	* 40.00		
Annual Debt Service	\$7.80	\$10.90		no escalation
Annual O&M Cost Estimate	\$29.90	\$25.00		
Solid Waste Services	\$7.00	\$7.00	\$7.00	pro-rated by tons
Interfund Charges	\$3.10	\$3.10	\$3.10	pro-rated by tons
Indirect Admin Costs	include via %	include via %	include via %	at 2.8%
Disposal Cost Center				
#1 - WTE Facility	Colbert TS	Spokane Valley TS	WTE TS	
Haul to WTE Facility	\$9.90	\$8.20	\$0	
WTE Disposal Cost (2013\$)	\$98.00	\$98.00	\$98.00	
WTE Disposal, Minimum Fee (2013\$)	\$65.00	\$65.00	\$65.00	
Scenario 1B				
Transfer Cost Center				
#1 - Transfer Station Purchase at				
Fair Market Value	Colbert TS	Spokane Valley TS		
	See 1A above for	Inpute		
		inputs		
#3 - Construct West Plains TS		Inputs	West Plains TS	
#3 - Construct West Plains TS Construction Cost. TS & Equip (2013\$)		inputs	West Plains TS \$8,134,706	
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$)		inputs	West Plains TS \$8,134,706 \$788,000	no escalation
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service		Πραιδ	West Plains TS \$8,134,706 \$788,000	no escalation
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton		Inputs	West Plains TS \$8,134,706 \$788,000	no escalation
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service		inputs	West Plains TS \$8,134,706 \$788,000 \$39.40	no escalation no escalation
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate		Inputs	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30	no escalation no escalation
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate Solid Waste Services		inputs	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00	no escalation no escalation pro-rated by tons
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate Solid Waste Services Interfund Charges		Πραιδ	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10	no escalation no escalation pro-rated by tons pro-rated by tons
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Services Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs 		Πραιδ	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i>	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8%
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs		Πραιο	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i>	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8%
#3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs			West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i>	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8%
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$)	Colbert TS	Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8%
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$), Annual Debt Service \$ per Ton Annual Debt Services Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs Disposal Cost Center #2 - Long Haul, Regional LF Truck Long Haul to Regional Landfill 	Colbert TS \$66.00	Spokane Valley TS \$63.80	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00	Spokane Valley TS \$63.80 \$24.00	West Plains TS \$8,134,706 \$788,000 \$39,40 \$65,30 \$7,00 \$3,10 <i>include via %</i> West Plains TS \$64,20 \$24,00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service per Ton	Colbert TS \$66.00 \$24.00	Spokane Valley TS \$63.80 \$24.00	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00	Spokane Valley TS \$63.80 \$24.00	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00	Spokane Valley TS \$63.80 \$24.00	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00	Spokane Valley TS \$63.80 \$24.00	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00 Colbert TS	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$), Annual Debt Service \$ per Ton Annual Debt Services Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs Disposal Cost Center #2 - Long Haul, Regional LF Truck Long Haul to Regional Landfill Landfill Gate Fee (2013\$) Scenario 1C Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value 	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo Colbert TS	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS Inputs Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$), Annual Debt Service \$ per Ton Annual Debt Services Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs Disposal Cost Center #2 - Long Haul, Regional LF Truck Long Haul to Regional Landfill Landfill Gate Fee (2013\$) Scenario 1C Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value Disposal Cost Center #2 - Long Haul, Regional LF 	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo Colbert TS See 1B above fo	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS Inputs Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$) Annual Debt Service \$ per Ton Annual Debt Service Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs Disposal Cost Center #2 - Long Haul, Regional LF Truck Long Haul to Regional Landfill Landfill Gate Fee (2013\$) Scenario 1C Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value Disposal Cost Center #2 - Long Haul, Regional LF Transfer Station Purchase at Fair Market Value 	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo Colbert TS See 1B above fo	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS Inputs Spokane Valley TS Inputs	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill
 #3 - Construct West Plains TS Construction Cost, TS & Equip (2013\$), Annual Debt Service \$ per Ton Annual Debt Services Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs Disposal Cost Center #2 - Long Haul, Regional LF Truck Long Haul to Regional Landfill Landfill Gate Fee (2013\$) Scenario 1C Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value Disposal Cost Center #2 - Long Haul, Regional LF Transfer Cost Center #1 - WTE Facility 	Colbert TS \$66.00 \$24.00 Colbert TS See 1A above fo Colbert TS See 1B above fo City of Spokane	Spokane Valley TS \$63.80 \$24.00 Spokane Valley TS Inputs Spokane Valley TS Inputs Spokane Valley TS	West Plains TS \$8,134,706 \$788,000 \$39.40 \$65.30 \$7.00 \$3.10 <i>include via %</i> West Plains TS \$64.20 \$24.00	no escalation no escalation pro-rated by tons pro-rated by tons at 2.8% Roosevelt Landfill

Pro Forma Matrix Options				
Scenario 1D				
Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value	Colbert TS See 1A above for	Spokane Valley TS		
Disposal Cost Center #4 - Rail Haul, Geiger Spur to Regional LF Add'I Transfer Station Costs Truck Haul to Geiger Spur Geiger Spur Debt Service Geiger Spur O&M Costs Rail Haul to Regional LF Landfill Gate Fee (2013\$) #1 - WTE Facility Interim Short Haul to WTE WTE Disposal Cost (2013\$)	Colbert TS \$4.90 \$11.20 \$10.40 \$3.40 \$28.30 \$24.00 Colbert TS \$9.90 \$98.00	Spokane Valley TS \$0.00 \$8.90 \$10.40 \$3.40 \$28.30 \$24.00 Spokane Valley TS \$8.20 \$98.00 <i>City of Spol</i>	multiply by 157,000tpy multiply by 157,000tpy WTE TS \$0.00 \$98.00 kane operates WTE TS	for required annual \$ for required annual \$ Roosevelt Landfill Roosevelt Landfill
Scenario 2 Transfer Cost Center #1 - Transfer Station Purchase for Minimal Fee Annual Debt Service Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Costs #1 - WTE Facility Haul to WTE Facility WTE Disposal Cost (2013\$)	Colbert TS \$0.00 \$29.90 \$7.00 \$3.10 <i>include via %</i> Colbert TS \$9.90 \$65.00	Spokane Valley TS \$0.00 \$25.00 \$7.00 \$3.10 <i>include via %</i> Spokane Valley TS \$8.20 \$65.00	WTE TS \$7.00 \$3.10 <i>include via %</i> WTE TS \$0 \$65.00	no escalation pro-rated by tons pro-rated by tons at 2.8%
Scenario 3A Transfer Cost Center #1 - Transfer Station Purchase at Fair Market Value #3 - Construct West Plains TS Disposal Cost Center #3 - Rail Haul, BNSF Intermodal to Regional LF Add'I Transfer Station Costs Truck Haul to BNSF Yard Rail Haul to Regional LF	Colbert TS See 1A for Inputs Colbert TS \$4.90 \$9.40 \$26.50	Spokane Valley TS Spokane Valley TS \$0.00 \$4.90 \$26.00	West Plains TS See 1B for Inputs West Plains TS \$10.90 \$7.90 \$26.50	incl.yard, containers

Pro Forma Matrix Options				
Scenario 3B				
Transfer Cost Center				
#1 - Transfer Station Purchase at				
Fair Market Value	940%	490%		
	See 1A for Inputs	6		
#3 - Construct West Plains TS			West Plains TS	
			See 1B for Inputs	
Disposal Cost Center				
#4 - Rail Haul, Geiger Spur to				
Regional LF	Colbert TS	Spokane Valley TS	West Plains TS	
Add'l Transfer Station Costs	\$4.90	\$0.00	\$10.90	
Truck Haul to Geiger Spur	\$11.20	\$8.90	\$3.80	
Geiger Spur Debt Service	\$10.40	\$10.40	\$10.40	on 157,000 tpy
Geiger Spur O&M Costs	\$3.40	\$3.40	\$3.40	on 157,000 tpy
Rail Haul to Regional LF	\$28.30	\$28.30	\$28.30	Roosevelt Landfill
Landfill Gate Fee (2013\$)	\$24.00	\$24.00	\$24.00	Roosevelt Landfill
#1 - WTF Facility [Interim Disposal]	Colbert TS	Spokane Valley TS	WTE TS	
Interim Short Haul to WTF	00 02	\$8.20	\$0.00	
W/TE Disposal Cost (2013\$)	00.80¢	0.20 \$08 00	00.00 00.802	
	ψ90.00	ψ30.00	ψ90.00	
Scenario 44				
Transfer Cost Center				
#2 & #3 - Construct New Transfer	New North	New Spokane		
Stations	County TS		West Plains TS	
Construction Cost TS & Equip (2013¢)	¢0 570 573	¢16 378 888	¢8 134 706	
Appual Debt Service	\$978,075 \$978,000	\$1 586 000	\$788 000	no oscalation
\$ per Ton	ψ920,000	ψ1,500,000	ψ/ 00,000	no escalation
Appual Debt Service	\$20.20	\$17.40	\$39.40	no oscalation
Annual O&M Cost Estimate	\$20.20 \$31.60	ψ17.40 \$22.60	\$39.40 \$65.30	
Annual Oaw Cost Estimate	φ31.00 ¢7.00	φ22.00 ¢7.00	ΦC0.30 Φ7.00	pro rated by tops
Solid Waste Services	\$7.00 \$2.10	\$7.00 \$2.10	\$7.00 \$2.10	pro-rated by tons
Interrund Charges	τοludo via %	τοludo via %	φο.10 include via %	pro-rated by toris
Indirect Admin Costs	Soo 1A for interin	n operations of exist	na transfor stations	dl 2.070
Disposal Cost Center			ng transfer stations	
Disposal Cost Center	New North	New Spokane		
#2 - Long Haul, Regional F			West Plains TS	
Truck Long Haul to Landfill	\$66.00	\$63.80	\$64.20	Poosovalt Landfill
Landfill Cate Eee (2013¢)	\$00.00	\$00.00 \$24.00	\$04.20 \$24.00	Doosovalt Landfill
	φ24.00	φ24.00	φ24.00	
#1 - WTE Facility [Interim Disposal]	310%	310%	WTE TS	
Interim Short Haul to WTE	\$9.90	\$8.20	\$0.00	
WTE Disposal Cost (2013\$)	\$98.00	\$98.00	\$98.00	
Scenario 4B				
Transfer Cost Center				
#2 & #3 - Construct New Transfer	New North	New Spokane		
Stations	County TS	Valley TS	West Plains TS	
	See 4A for Inputs	6		
	See 1A for interin	n operations of exist	ng transfer stations	
Disposal Cost Center				
#3 - Rail Haul, BNSF Intermodal to	New North	New Spokane		
Regional LF	County TS	Valley TS	West Plains TS	
Add'l Transfer Station Costs	\$4.90	\$4.00	\$10.90	
Truck Haul to BNSF Yard	\$9.40	\$4.90	\$7.90	
Rail Haul to Regional LF	\$26.50	\$26.50	\$26.50	incl.yard, containers
Landfill Gate Fee (2013\$)	\$24.00	\$24.00	\$24.00	Roosevelt Landfill
#1 - WTE Facility Interim Disposal				
	See 4A for Inputs	5		
	introi inputo	•		

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Option 1A - With WTE Facility Disposal Fees at \$65/ton

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14,111,000	\$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ²	\$1,960,000	\$1,761,000	\$0	\$0								
Transfer Stations - Purchase	Colbert and S	pokane Valley										
Annual Debt Service - includ	ed below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services		\$139,000	\$1,155,000	\$1,184,000	\$1,213,000	\$1,243,000	\$1,275,000	\$1,306,000	\$1,339,000	\$1,373,000	\$1,407,000	\$1,442,000
Interfund Charges		\$62,000	\$511,000	\$524,000	\$537,000	\$551,000	\$564,000	\$579,000	\$593,000	\$608,000	\$623,000	\$639,000
Indirect Admin Charges		\$22,000	\$182,000	\$186,000	\$190,000	\$194,000	\$198,000	\$202,000	\$207,000	\$211,000	\$216,000	\$220,000
Haul & Disposal												
Haul Cost to WTE Facility	\$0	\$152,000	\$1,262,000	\$1,294,000	\$1,326,000	\$1,360,000	\$1,393,000	\$1,428,000	\$1,464,000	\$1,501,000	\$1,538,000	\$1,577,000
WTE Facility Disposal	\$0	\$1,290,000	\$10,722,000	\$10,990,000	\$11,264,000	\$11,546,000	\$11,835,000	\$12,131,000	\$12,434,000	\$12,745,000	\$13,063,000	\$13,390,000
Subtotal Expenses	\$16,071,000	\$16,568,000	\$17,667,000	\$18,109,000	\$18,559,000	\$19,024,000	\$19,498,000	\$19,985,000	\$20,485,000	\$20,997,000	\$21,520,000	\$22,058,000
CAPITAL COSTS/DEBT SER	VICE											
Annual Debt Service - TS Pu	irchase	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
NET (EXPENSES) ³	(\$16,071,000)	(\$16,691,000)	(\$18,668,000)	(\$19,110,000)	(\$19,560,000)	(\$20,025,000)	(\$20,499,000)	(\$20,986,000)	(\$21,486,000)	(\$21,998,000)	(\$22,521,000)	(\$23,059,000)
CALCULATED SYSTEM												
GATE FEE, \$/TON⁴	\$102	\$106	\$119	\$122	\$125	\$128	\$131	\$134	\$137	\$140	\$143	\$147
Notes:												

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Equals the Expenses and Capital Debt Service.

⁴ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁵ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 1A - With WTE Facility Disposal Fees at \$98/ton

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14,111,000	\$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ²	\$1,960,000	\$1,761,000	\$0	\$0								
Transfer Stations - Purchase	Colbert and S	pokane Valley										
Annual Debt Service - includ	ed below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services		\$139,000	\$1,155,000	\$1,184,000	\$1,213,000	\$1,243,000	\$1,275,000	\$1,306,000	\$1,339,000	\$1,373,000	\$1,407,000	\$1,442,000
Interfund Charges		\$62,000	\$511,000	\$524,000	\$537,000	\$551,000	\$564,000	\$579,000	\$593,000	\$608,000	\$623,000	\$639,000
Indirect Admin Charges		\$22,000	\$182,000	\$186,000	\$190,000	\$194,000	\$198,000	\$202,000	\$207,000	\$211,000	\$216,000	\$220,000
Haul & Disposal												
Haul Cost to WTE Facility	\$0	\$152,000	\$1,262,000	\$1,294,000	\$1,326,000	\$1,360,000	\$1,393,000	\$1,428,000	\$1,464,000	\$1,501,000	\$1,538,000	\$1,577,000
WTE Facility Disposal	\$0	\$1,944,000	\$16,165,000	\$16,569,000	\$16,983,000	\$17,408,000	\$17,843,000	\$18,289,000	\$18,746,000	\$19,215,000	\$19,695,000	\$20,188,000
Subtotal Expenses	\$16,071,000	\$17,222,000	\$23,110,000	\$23,688,000	\$24,278,000	\$24,886,000	\$25,506,000	\$26,143,000	\$26,797,000	\$27,467,000	\$28,152,000	\$28,856,000
CAPITAL COSTS/DEBT SER	VICE											
Annual Debt Service - TS Pu	irchase	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
NET (EXPENSES) ³	(\$16.071.000)	(\$17 345 000)	(\$24 111 000)	(\$24 689 000)	(\$25,279,000)	(\$25,887,000)	(\$26 507 000)	(\$27 144 000)	(\$27 798 000)	(\$28.468.000)	(\$29 153 000)	(\$29 857 000)
	(#10,011,000)	(#17,343,000)	(\$24,111,000)	(\$24,000,000)	(\$25,215,000)	(\$20,007,000)	(#20,007,000)	(\$21,144,000)	(\$21,130,000)	(\$20,400,000)	(\$23,133,000)	(\$23,007,000)
CALCULATED TIP FEE,												
\$/TON ⁴	\$102	\$110	\$154	\$157	\$161	\$165	\$169	\$173	\$177	\$181	\$186	\$190
Notes:												

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Equals the Expenses and Capital Debt Service.

⁴ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁵ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 1B

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to West Plains/WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14,111,000	\$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ²	\$1,960,000	\$2,009,000	\$2,059,000	\$2,111,000	\$1,076,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Stations - Purchase	Colbert and S	pokane Valley										
Annual Debt Service - include	ed below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services		\$121,000	\$1,008,000	\$1,033,000	\$1,059,000	\$1,085,000	\$1,112,000	\$1,140,000	\$1,168,000	\$1,198,000	\$1,228,000	\$1,258,000
Interfund Charges		\$54,000	\$446,000	\$457,000	\$469,000	\$481,000	\$493,000	\$505,000	\$517,000	\$530,000	\$544,000	\$557,000
Indirect Admin Charges		\$21,000	\$176,000	\$180,000	\$184,000	\$188,000	\$191,000	\$196,000	\$200,000	\$204,000	\$208,000	\$213,000
Transfer Stations - Construct	t West Plains T	S										
Annual Debt Service - include	ed below											
Annual O&M Cost Estimate		\$0	\$0	\$0	\$725,000	\$1,478,000	\$1,515,000	\$1,552,000	\$1,591,000	\$1,631,000	\$1,672,000	\$1,714,000
Solid Waste Services		\$0	\$0	\$0	\$78,000	\$158,000	\$162,000	\$166,000	\$171,000	\$175,000	\$179,000	\$184,000
Interfund Charges		\$0	\$0	\$0	\$34,000	\$70,000	\$72,000	\$74,000	\$76,000	\$77,000	\$79,000	\$81,000
Indirect Admin Charges		\$0	\$0	\$0	\$35,000	\$70,000	\$71,000	\$72,000	\$74,000	\$75,000	\$76,000	\$77,000
Haul & Disposal												
Truck Haul to Regional LF	\$0	\$1,117,000	\$9,289,000	\$9,522,000	\$9,760,000	\$10,004,000	\$10,254,000	\$10,510,000	\$10,773,000	\$11,042,000	\$11,318,000	\$11,601,000
West Plains TS Haul to Regi	onal LF	\$0	\$0	\$0	\$713,000	\$1,453,000	\$1,489,000	\$1,526,000	\$1,564,000	\$1,604,000	\$1,644,000	\$1,685,000
Regional LF Gate Fees	\$0	\$416,000	\$3,454,000	\$3,541,000	\$3,629,000	\$3,720,000	\$3,813,000	\$3,908,000	\$4,006,000	\$4,106,000	\$4,209,000	\$4,314,000
Regional LF Fees - West Pla	ins TS ³	\$0	\$0	\$0	\$266,000	\$543,000	\$557,000	\$571,000	\$585,000	\$599,000	\$614,000	\$630,000
Subtotal Expenses	\$16,071,000	\$16,880,000	\$20,267,000	\$20,775,000	\$22,057,000	\$23,380,000	\$23,962,000	\$24,559,000	\$25,173,000	\$25,800,000	\$26,444,000	\$27,104,000
CAPITAL COSTS/DEBT SER	VICE											
Annual Debt Service - TS Pu	rchase	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Annual Debt Service - West I	Plains TS	\$0	\$0	\$0	\$396,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$1,001,000	\$1,397,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000
NET (EXPENSES) ⁴	(\$16,071,000)	(\$17,003,000)	(\$21,268,000)	(\$21,776,000)	(\$23,454,000)	(\$25,169,000)	(\$25,751,000)	(\$26,348,000)	(\$26,962,000)	(\$27,589,000)	(\$28,233,000)	(\$28,893,000)
				. ,								
CALCULATED SYSTEM												
GATE FEE, \$/TON ⁵	\$102	\$108	\$135	\$139	\$149	\$160	\$164	\$168	\$172	\$176	\$180	\$184
GATE FEE WITH 3.6% WA												
REFUSE TAX, \$/TON		\$112	\$140	\$144	\$155	\$166	\$170	\$174	\$178	\$182	\$186	\$191
Notes:												

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁴ Equals the Expenses and Debt Service.

⁵ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁶ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 1C

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14,111,000	\$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ²	\$1,960,000	\$2,009,000	\$2,059,000	\$2,111,000	\$2,163,000	\$2,218,000	\$2,273,000	\$2,330,000	\$2,388,000	\$2,448,000	\$2,509,000	\$2,572,000
Transfer Stations - Purchase	Colbert and S	pokane Valley										
Annual Debt Service - include	ed below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services ³		\$121,000	\$1,008,000	\$1,033,000	\$1,059,000	\$1,085,000	\$1,112,000	\$1,140,000	\$1,168,000	\$1,198,000	\$1,228,000	\$1,258,000
Interfund Charges ³		\$54,000	\$446,000	\$457,000	\$469,000	\$481,000	\$493,000	\$505,000	\$517,000	\$530,000	\$544,000	\$557,000
Indirect Admin Charges ³		\$21,000	\$176,000	\$180,000	\$184,000	\$188,000	\$191,000	\$196,000	\$200,000	\$204,000	\$208,000	\$213,000
Haul & Disposal												
Truck Haul to Regional LF	\$0	\$1,117,000	\$9,289,000	\$9,522,000	\$9,760,000	\$10,004,000	\$10,254,000	\$10,510,000	\$10,773,000	\$11,042,000	\$11,318,000	\$11,601,000
Regional LF Gate Fees⁴	\$0	\$416,000	\$3,454,000	\$3,541,000	\$3,629,000	\$3,720,000	\$3,813,000	\$3,908,000	\$4,006,000	\$4,106,000	\$4,209,000	\$4,314,000
Subtotal Expenses	\$16,071,000	\$16,880,000	\$20,267,000	\$20,775,000	\$21,293,000	\$21,826,000	\$22,369,000	\$22,928,000	\$23,500,000	\$24,087,000	\$24,689,000	\$25,305,000
CAPITAL COSTS/DEBT SERV	/ICE											
Annual Debt Service - TS Pu	rchase	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
NET (EXPENSES)5	(\$16.071.000)	(\$17.003.000)	(\$21 268 000)	(\$21 776 000)	(\$22 294 000)	(\$22 827 000)	(\$23 370 000)	(\$23 929 000)	(\$24 501 000)	(\$25.088.000)	(\$25 690 000)	(\$26 306 000)
	(\$10,071,000)	(#17,000,000)	(#21,200,000)	(\$21,770,000)	(#22,234,000)	(\$22,021,000)	(\$25,570,000)	(#20,323,000)	(#24,001,000)	(\$25,000,000)	(#20,000,000)	(\$20,000,000)
CALCULATED SYSTEM												
GATE FEE. \$/TON ⁶	\$102	\$108	\$135	\$139	\$142	\$145	\$149	\$152	\$156	\$160	\$164	\$168
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GATE FEE WITH 3.6% WA												

Notes:

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ These fees are applied on the transfer stations tonnage (137,000 tpy). The \$98/ton for City operation of WTE transfer station is assumed to include the Solid Waste Services and Interfund charges on those tons.

⁴ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁵ Equals the Expenses and Debt Service.

⁶ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁷ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 1D

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14 111 000	\$12 681 000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTF TS tip fees ²	\$1,960,000	\$2,009,000	\$2 059 000	\$2 111 000	\$2 163 000	\$2 218 000	\$2 273 000	\$2 330 000	\$2 388 000	\$2 448 000	\$2 509 000	\$2 572 000
Transfer Stations - Purchase	Colbert and Sr	okane Vallev	\$2,000,000	<i>Q2</i> , , 0000	<i>q</i> ₂ ,,,,,,,, .	<i>42,2.0,000</i>	\$2,270,000	\$2,000,000	\$2,000,000	<i>q</i> ₂ , 110,000	\$2,000,000	\$2,012,000
Annual Debt Service - include	d below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services ³		\$121,000	\$1.008.000	\$1.033.000	\$1.059.000	\$1.085.000	\$1,112,000	\$1,140,000	\$1,168,000	\$1,198,000	\$1,228,000	\$1,258,000
Interfund Charges ³		\$54.000	\$446.000	\$457.000	\$469.000	\$481.000	\$493.000	\$505.000	\$517.000	\$530.000	\$544.000	\$557.000
Indirect Admin Charges ³		\$21,000	\$176.000	\$180.000	\$184.000	\$188.000	\$191.000	\$196.000	\$200.000	\$204.000	\$208.000	\$213,000
Haul & Disposal		• ,	,		• • ,• • •	•,	• • ,	• • • • • • • •	• ,	• • ,• • •	• • • • • • • •	• -,
Interim Short Haul to WTE	\$0	\$152,000	\$1,262,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interim WTE Disposal	\$0	\$1,697,000	\$14,106,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add'l Transfer Station Costs		\$0	\$0	\$243,000	\$249,000	\$255,000	\$261,000	\$268,000	\$275,000	\$281,000	\$289,000	\$296,000
Truck Haul to Geiger Spur	\$0	\$0	\$0	\$1,427,000	\$1,463,000	\$1,499,000	\$1,537,000	\$1,575,000	\$1,615,000	\$1,655,000	\$1,696,000	\$1,739,000
Geiger Spur O&M	\$0	\$0	\$0	\$575,000	\$589,000	\$604,000	\$619,000	\$635,000	\$650,000	\$667,000	\$683,000	\$700,000
Rail Haul to Regional LF	\$0	\$0	\$0	\$4,175,000	\$4,280,000	\$4,387,000	\$4,496,000	\$4,609,000	\$4,724,000	\$4,842,000	\$4,963,000	\$5,087,000
Regional LF Gate Fees ⁴	\$0	\$0	\$0	\$3,541,000	\$3,629,000	\$3,720,000	\$3,813,000	\$3,908,000	\$4,006,000	\$4,106,000	\$4,209,000	\$4,314,000
Subtotal Expenses	\$16,071,000	\$17,196,000	\$22,892,000	\$17,673,000	\$18,114,000	\$18,567,000	\$19,028,000	\$19,505,000	\$19,991,000	\$20,490,000	\$21,002,000	\$21,526,000
CAPITAL COSTS/DEBT SERV	/ICE											
Annual Debt Service - TS Pu	rchase	\$123.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000	\$1.001.000
Annual Debt Service - Geige	Sour & Rail Im	provements	\$0	\$1.633.000	\$1,633,000	\$1.633.000	\$1.633.000	\$1.633.000	\$1,633,000	\$1.633.000	\$1,633,000	\$1.633.000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000	\$2,634,000
NET (EXPENSES) ⁵	(\$16,071,000)	(\$17,319,000)	(\$23,893,000)	(\$20,307,000)	(\$20,748,000)	(\$21,201,000)	(\$21,662,000)	(\$22,139,000)	(\$22,625,000)	(\$23,124,000)	(\$23,636,000)	(\$24,160,000)
CALCULATED SYSTEM												
GATE FEE, \$/TON ⁶	\$102	\$110	\$152	\$129	\$132	\$135	\$138	\$141	\$144	\$147	\$151	\$154
GATE FEE WITH 3.6% WA												
REFUSE TAX, \$/TON				\$134	\$137	\$140	\$143	\$146	\$149	\$153	\$156	\$159
Notes:												

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ These fees are applied on the transfer stations tonnage (137,000 tpy). The \$98/ton for City operation of WTE transfer station is assumed to include the Solid Waste Services and Interfund charges on those tons.

⁴ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁵ Equals the Expenses and Debt Service.

⁶ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁷ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 2

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ²	\$14,111,000	\$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ²	\$1,960,000	\$1,761,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Stations - Purchase	Colbert and Sp	pokane Valley										
Annual Debt Service - include	ed below											
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services		\$139,000	\$1,155,000	\$1,184,000	\$1,213,000	\$1,243,000	\$1,275,000	\$1,306,000	\$1,339,000	\$1,373,000	\$1,407,000	\$1,442,000
Interfund Charges		\$62,000	\$511,000	\$524,000	\$537,000	\$551,000	\$564,000	\$579,000	\$593,000	\$608,000	\$623,000	\$639,000
Indirect Admin Charges		\$19,000	\$154,000	\$158,000	\$162,000	\$166,000	\$170,000	\$174,000	\$179,000	\$183,000	\$188,000	\$192,000
Haul & Disposal												
Haul Cost to WTE Facility	\$0	\$152,000	\$1,262,000	\$1,294,000	\$1,326,000	\$1,360,000	\$1,393,000	\$1,428,000	\$1,464,000	\$1,501,000	\$1,538,000	\$1,577,000
WTE Facility Disposal	\$0	\$1,290,000	\$10,722,000	\$10,990,000	\$11,264,000	\$11,546,000	\$11,835,000	\$12,131,000	\$12,434,000	\$12,745,000	\$13,063,000	\$13,390,000
Subtotal Expenses	\$16,071,000	\$16,565,000	\$17,639,000	\$18,081,000	\$18,531,000	\$18,996,000	\$19,470,000	\$19,957,000	\$20,457,000	\$20,969,000	\$21,492,000	\$22,030,000
CAPITAL COSTS/DEBT SERV	/ICE											
Annual Debt Service-TS Purc	hase, minimal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NET (EXPENSES) ⁴	(\$16,071,000)	(\$16,565,000)	(\$17,639,000)	(\$18,081,000)	(\$18,531,000)	(\$18,996,000)	(\$19,470,000)	(\$19,957,000)	(\$20,457,000)	(\$20,969,000)	(\$21,492,000)	(\$22,030,000)
CALCULATED SYSTEM												
GATE FEE, \$/TON [°]	\$102	\$106	\$112	\$115	\$118	\$121	\$124	\$127	\$130	\$134	\$137	\$140
Notes:												
1	MSW to Colbert an	d Spokane Valley t	ransfer stations.									

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁴ Equals the Expenses and Debt Service.

⁵ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁶ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 3A

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES Waste Deliveries (tons) MSW to Transfer Stations ¹ MSW to WTF/ West Plains	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
TS	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ² Current WTE TS tip fees ² Transfer Stations - Purchase	\$14,111,000 \$1,960,000 e Colbert and S	\$12,681,000 \$2,009,000 pokane Valley	\$0 \$2,059,000	\$0 \$2,111,000	\$0 \$1,076,000	\$0 \$0						
Annual Debt Service - includ	ded below	. ,										
Annual O&M Cost Estimate Solid Waste Services Interfund Charges Indirect Admin Charges		\$461,000 \$121,000 \$54,000 \$21,000	\$3,835,000 \$1,008,000 \$446,000 \$176,000	\$3,931,000 \$1,033,000 \$457,000 \$180,000	\$4,029,000 \$1,059,000 \$469,000 \$184,000	\$4,130,000 \$1,085,000 \$481,000 \$188,000	\$4,233,000 \$1,112,000 \$493,000 \$191,000	\$4,339,000 \$1,140,000 \$505,000 \$196,000	\$4,448,000 \$1,168,000 \$517,000 \$200,000	\$4,559,000 \$1,198,000 \$530,000 \$204,000	\$4,673,000 \$1,228,000 \$544,000 \$208,000	\$4,790,000 \$1,258,000 \$557,000 \$213,000
Transfer Stations - Construct	t West Plains	rs										
Annual Debt Service - inclue	ded below											
Annual O&M Cost Estimate		\$0	\$0	\$0	\$725,000	\$1,478,000	\$1,515,000	\$1,552,000	\$1,591,000	\$1,631,000	\$1,672,000	\$1,714,000
Solid Waste Services		\$0	\$0	\$0	\$78,000	\$158,000	\$162,000	\$166,000	\$171,000	\$175,000	\$179,000	\$184,000
Interfund Charges		\$0	\$0	\$0	\$34,000	\$70,000	\$72,000	\$74,000	\$76,000	\$77,000	\$79,000	\$81,000
Indirect Admin Charges		\$0	\$0	\$0	\$35,000	\$70,000	\$71,000	\$72,000	\$74,000	\$75,000	\$76,000	\$77,000
Haul & Disposal												
Add'l Transfer Station Costs		\$28,000	\$237,000	\$243,000	\$370,000	\$502,000	\$514,000	\$527,000	\$540,000	\$554,000	\$568,000	\$582,000
Truck Haul to BNSF Yard	\$0	\$111,000	\$923,000	\$946,000	\$1,057,000	\$1,172,000	\$1,202,000	\$1,232,000	\$1,263,000	\$1,294,000	\$1,327,000	\$1,360,000
Rail Haul to Regional LF	\$0	\$459,000	\$3,814,000	\$3,910,000	\$4,302,000	\$4,707,000	\$4,825,000	\$4,946,000	\$5,069,000	\$5,196,000	\$5,326,000	\$5,459,000
Regional LF Gate Fees ³	\$0	\$416,000	\$3,454,000	\$3,541,000	\$3,896,000	\$4,263,000	\$4,370,000	\$4,479,000	\$4,591,000	\$4,706,000	\$4,823,000	\$4,944,000
Subtotal Expenses	\$16,071,000	\$16,361,000	\$15,952,000	\$16,352,000	\$17,314,000	\$18,304,000	\$18,760,000	\$19,228,000	\$19,708,000	\$20,199,000	\$20,703,000	\$21,219,000
CAPITAL COSTS/DEBT SER	VICE											
Annual Debt Service - TS P	urchase	\$123,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Annual Debt Service - West	Plains TS	\$0	\$0	\$0	\$396,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000
Subtotal Debt Service	\$0	\$123,000	\$1,001,000	\$1,001,000	\$1,397,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000	\$1,789,000
NET (EXPENSES) ⁴	(\$16,071,000)	(\$16,484,000)	(\$16,953,000)	(\$17,353,000)	(\$18,711,000)	(\$20,093,000)	(\$20,549,000)	(\$21,017,000)	(\$21,497,000)	(\$21,988,000)	(\$22,492,000)	(\$23,008,000)
CALCULATED SYSTEM GATE FEE, \$/TON⁵	\$102	\$105	\$108	\$111	\$119	\$128	\$131	\$134	\$137	\$140	\$143	\$147
GATE FEE WITH 3.6% WA REFUSE TAX, \$/TON		\$109	\$112	\$115	\$123	\$133	\$136	\$139	\$142	\$145	\$148	\$152

Notes:

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁴ Equals the Expenses and Debt Service.

⁵ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁶ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 3B

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES												
Waste Deliveries (tons)												
MSW to Transfer Stations ¹	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to WTE/ West Plains	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXDENSES												
Evicting System												
Current TS tip fees ²	\$14 111 000	\$12 681 000	\$0	\$0	02	02	02	\$0	02	\$0	02	\$0
Current WTE TS tip fees $Current WTE TS$	\$14,111,000	\$12,001,000	Φ0 Φ0 050 000	ΦΩ 111 000	ΦU Φ1 076 000	40 \$0	40 \$0	40 \$0	40 \$0	40 \$0	40 ¢0	\$0 \$0
Current WTE 15 up lees	\$1,960,000	\$2,009,000	\$2,059,000	φ2,111,000	\$1,076,000	4 0	4 0	Ф О	4 0	Ф О	4 0	4 0
Transfer Stations - Purchase	Coldert and S	pokane valley										
Annual Debt Service - Include	ed below	* 404 000	#0.005.000	* 0.004.000	* 4 000 000	* 4 400 000	* 4 000 000	* 4 000 000	* 4 440 000	* 4 550 000	* 4 0 7 0 000	* 4 7 00 000
Annual O&M Cost Estimate		\$461,000	\$3,835,000	\$3,931,000	\$4,029,000	\$4,130,000	\$4,233,000	\$4,339,000	\$4,448,000	\$4,559,000	\$4,673,000	\$4,790,000
Solid Waste Services		\$121,000	\$1,008,000	\$1,033,000	\$1,059,000	\$1,085,000	\$1,112,000	\$1,140,000	\$1,168,000	\$1,198,000	\$1,228,000	\$1,258,000
Interfund Charges		\$54,000	\$446,000	\$457,000	\$469,000	\$481,000	\$493,000	\$505,000	\$517,000	\$530,000	\$544,000	\$557,000
Indirect Admin Charges		\$21,000	\$176,000	\$180,000	\$184,000	\$188,000	\$191,000	\$196,000	\$200,000	\$204,000	\$208,000	\$213,000
Transfer Stations - Construct	t West Plains 1	S										
Annual Debt Service - include	ed below											
Annual O&M Cost Estimate		\$0	\$0	\$0	\$725,000	\$1,478,000	\$1,515,000	\$1,552,000	\$1,591,000	\$1,631,000	\$1,672,000	\$1,714,000
Solid Waste Services		\$0	\$0	\$0	\$78,000	\$158,000	\$162,000	\$166,000	\$171,000	\$175,000	\$179,000	\$184,000
Interfund Charges		\$0	\$0	\$0	\$34,000	\$70,000	\$72,000	\$74,000	\$76,000	\$77,000	\$79,000	\$81,000
Indirect Admin Charges		\$0	\$0	\$0	\$35,000	\$70,000	\$71,000	\$72,000	\$74,000	\$75,000	\$76,000	\$77,000
Haul & Disposal												
Interim Short Haul to WTE		\$152,000	\$1,262,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interim WTE Disposal		\$1,697,000	\$14,106,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add'l Transfer Station Costs		\$0	\$0	\$243,000	\$370,000	\$502,000	\$514,000	\$527,000	\$540,000	\$554,000	\$568,000	\$582,000
Truck Haul to Geiger Spur	\$0	\$0	\$0	\$1,427,000	\$1,505,000	\$1,585,000	\$1,625,000	\$1,665,000	\$1,707,000	\$1,750,000	\$1,794,000	\$1,838,000
Geiger Spur O&M	\$0	\$0	\$0	\$575,000	\$589,000	\$604,000	\$619,000	\$635,000	\$650,000	\$667,000	\$683,000	\$700,000
Rail Haul to Regional LF	\$0	\$0	\$0	\$4,175,000	\$4,594,000	\$5,027,000	\$5,153,000	\$5,281,000	\$5,413,000	\$5,549,000	\$5,688,000	\$5,830,000
Regional LF Gate Fees ³	\$0	\$0	\$0	\$3,541,000	\$3,896,000	\$4,263,000	\$4,370,000	\$4,479,000	\$4,591,000	\$4,706,000	\$4,823,000	\$4,944,000
Subtotal Expenses	\$16,071,000	\$17,196,000	\$22,892,000	\$17,673,000	\$18,643,000	\$19,641,000	\$20,130,000	\$20,631,000	\$21,146,000	\$21,675,000	\$22,215,000	\$22,768,000
CADITAL COSTS/DEBT SED												
Appual Debt Service - TS Pu	rchase	\$123.000	\$1,001,000	\$1 001 000	\$1,001,000	\$1,001,000	\$1 001 000	\$1,001,000	\$1,001,000	\$1 001 000	\$1,001,000	\$1 001 000
Annual Debt Service - 13 Fu		\$123,000 ¢0	\$1,001,000 ¢0	\$1,001,000 ¢0	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000	\$1,001,000
Annual Debt Service - West P		φU	\$U \$0	Φ 1 000 000	\$396,000	\$766,000	\$766,000	\$700,000	\$766,000	\$700,000	\$766,000	\$766,000
Annual Debt Service - Geiger	r Spur & Rail In	provements	\$U	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000	\$1,633,000
Subtotal Debt Service	φU	\$123,000	\$1,001,000	\$2,034,000	\$3,030,000	\$3,422,000	\$3,422,000	\$3,422,000	\$3,422,000	\$3,422,000	\$3,422,000	\$3,422,000
NET (EXPENSES) ⁴	(\$16,071,000)	(\$17,319,000)	(\$23,893,000)	(\$20,307,000)	(\$21,673,000)	(\$23,063,000)	(\$23,552,000)	(\$24,053,000)	(\$24,568,000)	(\$25,097,000)	(\$25,637,000)	(\$26,190,000)
CALCULATED SYSTEM												
GATE FEE. \$/TON⁵	\$102	\$110	\$152	\$129	\$138	\$147	\$150	\$153	\$156	\$160	\$163	\$167
	•				• • •				• • •	• • •	•	
GATE FEE WITH 3.6% WA												
REFUSE TAX, \$/TON				\$134	\$143	\$152	\$155	\$159	\$162	\$166	\$169	\$173
Notes												
1 NOLES.	MSW to Colbert and	Spokane Valley tr	ansfer stations									
² (Current MSW tin fee	es of \$103/ton at tra	ansfer stations and !	98/ton for self-hau	at WTE facility							
3 µ	Assumes Roosevelt	Regional Landfill a	is lowest combined	truck haul and disp	osal cost. Competi	tive bidding of haul	and disposal may lo	wer these fees				
4 E	Equals the Expense	s and Debt Service).		····							

⁵ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁶ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 4A

20	13 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS											
TS Operating Days/Year 3	59 359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES											
Waste Deliveries (tons)											
MSW to Transfer Stations ¹ 137,0	00 137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000	137,000
MSW to West Plains TS 20,0	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SYSTEM EXPENSES											
Existing System											
Current TS tip fees ² \$14,111,0	00 \$12,681,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Current WTE TS tip fees ² \$1,960,0	00 \$2,009,000	\$2,059,000	\$2,111,000	\$1,076,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Stations - Construct New Trans	fer Stations										
Interim Transfer Station Operations ³	\$461,000	\$3,835,000	\$3,931,000	\$2,004,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Debt Service - included below											
Annual TS O&M Cost Estimate	\$0	\$0	\$0	\$2,673,000	\$5,449,000	\$5,585,000	\$5,725,000	\$5,868,000	\$6,015,000	\$6,165,000	\$6,319,000
Solid Waste Services	\$139,000	\$1,155,000	\$1,184,000	\$1,213,000	\$1,243,000	\$1,275,000	\$1,306,000	\$1,339,000	\$1,373,000	\$1,407,000	\$1,442,000
Interfund Charges	\$62,000	\$511,000	\$524,000	\$537,000	\$551,000	\$564,000	\$579,000	\$593,000	\$608,000	\$623,000	\$639,000
Indirect Admin Charges	\$19,000	\$154,000	\$158,000	\$226,000	\$295,000	\$300,000	\$306,000	\$311,000	\$316,000	\$322,000	\$328,000
Haul & Disposal											
Interim Short Haul to WTE	\$0 \$152,000	\$1,262,000	\$1,294,000	\$660,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interim WTE Disposal ³	\$0 \$1,697,000	\$14,106,000	\$14,458,000	\$7,369,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Truck Haul to Regional LF	\$0 \$0	\$0	\$0	\$5,619,000	\$11,456,000	\$11,743,000	\$12,036,000	\$12,337,000	\$12,646,000	\$12,962,000	\$13,286,000
Regional LF Gate Fees ⁴	\$0 \$0	\$0	\$0	\$2,091,000	\$4,263,000	\$4,370,000	\$4,479,000	\$4,591,000	\$4,706,000	\$4,823,000	\$4,944,000
Subtotal Expenses \$16,071,0	00 \$17,220,000	\$23,082,000	\$23,660,000	\$23,468,000	\$23,257,000	\$23,837,000	\$24,431,000	\$25,039,000	\$25,664,000	\$26,302,000	\$26,958,000
CAPITAL COSTS/DEBT SERVICE											
Annual Debt Service - North County TS	\$0	\$0	\$0	\$467,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000
Annual Debt Service - Spokane Valley T	\$0	\$0	\$0	\$797,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000
Annual Debt Service - West Plains TS	\$0	\$0	\$0	\$396,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000
Subtotal Debt Service	0 \$0	\$0	\$0	\$1,660,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000
	0) (\$47 000 000)	(\$22,022,000)	(\$22.660.000)	(\$25 429 000)	(\$26 550 000)	(\$27.420.000)	(\$27,722,000)	(\$20.244.000)	(\$29.000.000)	(\$20,604,000)	(\$20.260.000)
NET (EXPENSES) (\$10,071,00	(\$17,220,000)	(\$23,082,000)	(\$23,000,000)	(\$25,126,000)	(\$20,559,000)	(\$27,139,000)	(\$27,733,000)	(\$20,341,000)	(\$20,900,000)	(\$29,004,000)	(\$30,200,000)
CALCULATED SYSTEM											
GATE FEE, \$/TON ⁶ \$1	02 \$110	\$147	\$151	\$160	\$169	\$173	\$177	\$181	\$184	\$189	\$193
GATE FEE WITH 3.6% WA				\$166	\$175	\$170	\$192	\$197	\$101	\$105	\$200
				φi00	ψΠΟ	ψ175	ψΙΟΟ	ψ107	ΨIJI	4193	Ψ200

¹ MSW to Colbert and Spokane Valley transfer stations.

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Assume operations of existing transfer stations continue at cost similar to estimated O&M operations for purchase scenario; and interim disposal at WTE Facility at \$98/ton escalated.

⁴ Assumes Roosevelt Regional Landfill as lowest combined truck haul and disposal cost. Competitive bidding of haul and disposal may lower these fees.

⁵ Equals the Expenses and Debt Service.

⁶ Equals the "Net (Expenses)" divided by the MSW transfer tonnage.

⁷ The existing Interlocal Agreements expire November 16, 2014. System changes are anticipated to begin November 17, 2014.

Option 4B

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATIONS												
TS Operating Days/Year	359	359	359	359	359	359	359	359	359	359	359	359
MATERIAL QUANTITIES Waste Deliveries (tons) MSW to Transfer Stations ¹ MSW to West Plains TS	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000	137,000 20,000
SYSTEM EXPENSES												
Existing System												
Current TS tip fees ² Current WTE TS tip fees ²	\$14,111,000 \$1,960,000	\$12,681,000 \$2,009,000	\$0 \$2,059,000	\$0 \$2,111,000	\$0 \$1,076,000	\$0 \$0						
Transfer Stations - Construct	New Transfer	Stations										
Interim Transfer Station Oper Annual Debt Service - include	ations ³ ed below	\$461,000	\$3,835,000	\$3,931,000	\$2,004,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual O&M Cost Estimate		\$0	\$0	\$0	\$2,673,000	\$5,449,000	\$5,585,000	\$5,725,000	\$5,868,000	\$6,015,000	\$6,165,000	\$6,319,000
Solid Waste Services		\$139,000	\$1,155,000	\$1,184,000	\$1,213,000	\$1,243,000	\$1,275,000	\$1,306,000	\$1,339,000	\$1,373,000	\$1,407,000	\$1,442,000
Interfund Charges		\$62,000	\$511,000	\$524,000	\$537,000	\$551,000	\$564,000	\$579,000	\$593,000	\$608,000	\$623,000	\$639,000
Indirect Admin Charges		\$19,000	\$154,000	\$158,000	\$226,000	\$295,000	\$300,000	\$306,000	\$311,000	\$316,000	\$322,000	\$328,000
Haul & Disposal												
Interim Short Haul to WTE	\$0	\$152,000	\$1,262,000	\$1,294,000	\$660,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interim WTE Disposal ³	\$0	\$1,697,000	\$14,106,000	\$14,458,000	\$7,369,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add'l Transfer Station Costs	\$0	\$0	\$0	\$0	\$448,000	\$913,000	\$936,000	\$960,000	\$984,000	\$1,008,000	\$1,034,000	\$1,059,000
Truck Haul to BNSF Yard	\$0	\$0	\$0	\$0	\$575,000	\$1,172,000	\$1,202,000	\$1,232,000	\$1,263,000	\$1,294,000	\$1,327,000	\$1,360,000
Rail Haul to Regional LF	\$0	\$0	\$0	\$0	\$2,309,000	\$4,707,000	\$4,825,000	\$4,946,000	\$5,069,000	\$5,196,000	\$5,326,000	\$5,459,000
Regional LF Gate Fees ^₄	\$0	\$0	\$0	\$0	\$2,091,000	\$4,263,000	\$4,370,000	\$4,479,000	\$4,591,000	\$4,706,000	\$4,823,000	\$4,944,000
Subtotal Expenses	\$16,071,000	\$17,220,000	\$23,082,000	\$23,660,000	\$21,181,000	\$18,593,000	\$19,057,000	\$19,533,000	\$20,018,000	\$20,516,000	\$21,027,000	\$21,550,000
CAPITAL COSTS/DEBT SERV	/ICE											
Annual Debt Service - North (County TS	\$0	\$0	\$0	\$467,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000	\$928,000
Annual Debt Service - Spoka	ne Valley TS	\$0	\$0	\$0	\$797,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000	\$1,586,000
Annual Debt Service - West F	Plains TS	\$0	\$0	\$0	\$396,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000	\$788,000
Subtotal Debt Service	\$0	\$0	\$0	\$0	\$1,660,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000	\$3,302,000
NET (EXPENSES) ⁵	(\$16,071,000)	(\$17,220,000)	(\$23,082,000)	(\$23,660,000)	(\$22,841,000)	(\$21,895,000)	(\$22,359,000)	(\$22,835,000)	(\$23,320,000)	(\$23,818,000)	(\$24,329,000)	(\$24,852,000)
CALCULATED SYSTEM GATE FEE, \$/TON ⁶	\$102	\$110	\$147	\$151	\$145	\$139	\$142	\$145	\$149	\$152	\$155	\$158
GATE FEE WITH 3.6% WA REFUSE TAX, \$/TON					\$151	\$144	\$148	\$151	\$154	\$157	\$161	\$164
Notes:												
1	MSW to Colbert an	d Spokane Valley t	ransfer stations.	A AA (11)								

² Current MSW tip fees of \$103/ton at transfer stations and \$98/ton for self-haul at WTE facility.

³ Assume operations of existing transfer stations continue at cost similar to estimated O&M operations for purchase scenario; and interim disposal at WTE Facility at \$98/ton escalated.

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