



**Department of Public Works, Solid Waste Division
City of North Port, Florida**

Feasibility Study – Solid Waste Transfer Station

FINAL REPORT

February 9, 2012

MSWCONSULTANTS

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EXECUTIVE SUMMARY

At the current time, the City of North Port has an effective solid waste management system. The City is interested, however, in maximizing recycling and waste diversion, while keeping costs at a sustainable level. MSW Consultants performed a study to determine the feasibility of locating a transfer station in North Port for all parts of the waste stream, in relation to this goal.

A locally situated transfer station has the potential to reduce the size (and cost) of the City's collection system. Further, a transfer station would open up access to more distant disposal facilities and material recovery facilities (MRFs), which could either reduce the City's disposal cost or increase the material revenues it realizes from recycled materials. However, there will be incremental capital and operating costs for a new facility, as well as transportation costs to get wastes and recyclables to the more distant facilities. This study compiled the operating and cost factors necessary to compare the current direct-haul system with a system centered on a local transfer station.

In brief, available data suggest that the existence of a local transfer station:

- 1) Will enable the City to reduce its collection system by two routes per day (one refuse route and one recycling route);
- 2) Will not lead to lower overall disposal costs (including transfer and transportation); and
- 3) Will open up access for the City to generate revenues for recyclables instead of the current small fee that is paid for delivery of recyclables to the current facility.

The analysis found that under the most favorable disposal cost and recycling revenue assumptions, the likely savings to the City would be approximately \$200,000 to \$300,000, which is roughly two to three percent of the City's total solid waste budget. This savings is predicated on a string of assumptions about the likely capital and operating costs, as well as the likely market prices for disposal and recycling revenues. It is particularly important to note that recycling revenues can and do fluctuate significantly with commodity markets. While "average" revenues were used for the purpose of projections in this report, actual revenues may be higher or lower than those projected in this report. Further, market conditions and pricing is subject to change over time.

1. INTRODUCTION

The City of North Port, Florida (City) was founded in 1959. North Port is Florida's fourth fastest growing city and fourth largest in land area. By both population and land mass, it is the largest city in Sarasota County.

The City Public Works Department includes the Solid Waste Division (Division). The Division is responsible for providing residential and commercial solid waste collection throughout the City of North Port Solid Waste District, which is comprised of the entire corporate limits of the City. There are currently two sources of District funding. Residential

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services are funded by a non-ad valorem assessment. Commercial services are funded through monthly fees based on the type and level of service.

North Port utilizes a number of Sarasota County services. The City currently delivers refuse to the Sarasota County landfill and recycling to the County-owned South County Transfer Station for transfer to ReCommunity Recycling Company's Recycled Materials Processing Facility (RMPF). The Sarasota landfill is approximately 24 miles from the North Port city centroid, which requires significant non-productive travel time for the City's residential and commercial collection vehicles. The South County Transfer Station is 17.7 miles from the centroid, while the distance to the RMPF is 41.9 miles.

At the current time, the City is interested in evaluating the feasibility of developing a transfer station within City limits. A locally sited transfer station could improve collection productivity for all City routes by reducing non-productive time, and may obtain access to lower cost disposal and/or recyclables processing compared to the City's current disposal and transfer facilities.

MSW Consultants was retained by the City to evaluate the feasibility of developing a transfer station locally. MSW Consultants' approach to this project included the following tasks:

- ◆ Baseline North Port's collection system operating parameters and costs, so that it would be possible to estimate the impacts on the collection system of a local transfer station.
- ◆ Researching transfer station capital and operating costs via literature search and supported by data contained in the MSW Consultants project files.
- ◆ Researching the local and regional market for alternative waste disposal and recyclables processing facilities that might be capable of accepting the City's waste and recyclables.
- ◆ Modeling the incremental costs and savings associated with the development of a new transfer station.
- ◆ Providing a qualitative discussion of the benefits, obstacles, and policy considerations that should be discussed if the City moves forward with any transfer station.

The results of this analysis are contained in this report.

2. CURRENT SOLID WASTE MANAGEMENT SYSTEM

2.1. POPULATION

The City of North Port Comprehensive Plan includes population figures and projections for planning purposes. Table 2-1 summarizes and projects population through 2030. It is important to note that North Port expects to experience significant population increases during its build-out, which would be expected to drive higher waste and recyclable material quantities. This transfer station feasibility study takes into account not only the current population levels, but also the projected increases in population and associated demand for collection and disposal through a 10-year planning period (through 2021).

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Table 2-1 Population Projections

Year	Population [1]	Annual Growth	Cumulative Growth From 2010
2000 [2]	22,797	N/A	N/A
2008	56,316	N/A	N/A
2009	57,280	1.7%	N/A
2010	59,061	3.1%	0.0%
2011	61,611	4.3%	4.3%
2012	65,075	5.6%	10.2%
2013	68,618	5.4%	16.2%
2014	72,237	5.3%	22.3%
2015	76,506	5.9%	29.5%
2016	78,833	3.0%	33.5%
2017	82,673	4.9%	40.0%
2018	86,592	4.7%	46.6%
2019	91,450	5.6%	54.8%
2020 [3]	96,307	5.3%	63.1%
2025 [3]	114,785	N/A	94.3%
2030 [3]	126,851	N/A	114.8%

[1] Source: City of North Port Comprehensive Plan, Chapter 2, Future Land Use, Table 2-6b

[2] Source: US Census Bureau

[3] Theoretical population figures. Source: City of North Port Comprehensive Plan, Chapter 2, Future Land Use, Table 2-6c

2.2. KEY SOLID WASTE MANAGEMENT SYSTEM PARAMETERS

The City of North Port provides a full slate of waste, recycling, and yard waste collection services to both residential and commercial customers. Currently, two apartment complexes and 20 businesses still have private waste collection contracts. The City will add those twenty-two commercial customers at the beginning of the 2014 fiscal year, at which point it will be providing service to all of the residential and commercial customers in North Port.

Each and every North Port collection route would be impacted by the siting and development of a local transfer station. Table 2-2 summarizes the critical operating parameters for the City's collection system at the current time. MSW Consultants maintains a proprietary collection system model, and the parameters below were utilized for purposes of evaluating impacts to the collection system.

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Table 2-2 Current Collection System Parameters [1]

Service	Truck Type	Avg Truck Capacity	Tons Collected	Routes/Day	Work Days/Week	Length of Work Day
Residential Refuse	Automated	12.5 tons	18,242	7	5	8
Residential Yard Waste	Manual	6.0 tons	1,534	2	5	8
Residential Recyclables	Manual	4.5 tons	4,223	7	5	8
Residential Bulky	Grapple	2.5 tons	1,254	2	5	8
Commercial Refuse	Front Loader	12 tons	3,393	1	5	8
Roll-off	Roll-off	varies	207	1 on Wed	1	8
Total			28,852 [2]			

[1] This table excludes commercial cardboard collection.

[2] Fractional values are not shown. Subtotal therefore may not sum due to rounding error.

The City of North Port’s waste management system relies on separate disposal and processing facilities for disposition of collected materials. Table 2-3 summarizes the current disposal and processing facilities used by the City, as well as relevant cost and location parameters. These parameters would be expected to change were the City to develop a transfer station.

Table 2-3 Current Disposal/Recycling Facility Parameters

Material	Tons Collected (2010-11)	Delivered To	Miles from City Vehicle Yard	Drive Time from City Vehicle Yard (minutes)	Tip Fee (\$/ton)
Refuse [1]	23,096	Sarasota Co. Landfill	24.3	33	48.34
Recyclables	4,223	South County Transfer Station	17.5	27	7.53
Yard waste	1,534	Thomas Ranch	12.5	23	7.00/cu.yd.
Total	28,852 [2]				

[1] Includes residential refuse, bulky waste, and commercial refuse

[2] Fractional values are not shown. Subtotal therefore may not sum due to rounding error.

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2.3. ESTIMATED FUTURE WASTE GENERATION

North Port currently provides collection services to 25,660 single family homes, 1,268 multi-family homes, and 256 commercial businesses. In fiscal year 2014, 20 businesses and two apartment complexes with private collection contracts will change to City service.

Table 2-4 projects the future quantities of wastes and recyclables to be generated in North Port. For purposes of this study, 2020 to 2030 generation projections have been calculated strictly based on increases in population. It should be noted that such projections assume no major recycling or composting program changes that might shift generated materials from the disposed waste stream to the recycled or composted (or source reduced) waste stream. MSW Consultants believes that such simplified projections are suitable for the purposes of this transfer station feasibility analysis.

Table 2-4 Waste Generation Projections

Material	2010 (actual)	2015 [1]	2020 [2]	2025 [2]	2030 [2]
Residential Refuse	19,496	23,453	29,777	35,490	39,220
Commercial Refuse	3,600	4,936	6,307	7,518	8,308
Recyclables	4,223	7,363	9,695	11,555	12,770
Yard Waste	1,534	4,091	5,193	6,190	6,840
Total	28,852	39,843	50,972	60,753	67,138

[1] Source: North Port Solid Waste Rate Study, August 2011, p. 13

[2] Extrapolated using the population growth rates shown in Table 2-1

As shown in the table above, North Port should expect its wastes under management to increase from 28,852 tons yearly to 50,972 tons by 2020 and 67,138 tons by 2030. This represents an increase of 128% percent from 2010 to 2030 levels.

2.4. SYSTEM COSTS

The City of North Port recently completed a cost-of-service and rate study to establish system costs, revenue needs, and service rates. MSW Consultants re-organized the 2012 data from this report to separate collection costs from disposal costs and other costs not associated with the collection system operations. This is shown in Table 2-5.

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Table 2-5 Budgeted Annual Costs [1]

Expense	Residential	Commercial	Total
Collection			
Personnel	\$1,821,445	\$208,246	\$2,029,691
Professional Services	\$19,112	\$2,185	\$21,297
Repair & Maintenance	\$945,131	\$61,505	\$1,006,636
Operating Supplies	\$788,521	\$106,508	\$895,029
Debt Service	\$454,923	\$50,715	\$505,638
Other Allocated Current Charges [2]	\$509,103	\$58,206	\$567,309
Capital Equipment	\$392,815	\$43,792	\$436,607
Subtotal Collection	\$ 4,931,050	\$ 531,157	\$ 5,462,207
Disposal	\$1,169,203	\$234,234	\$1,403,437
Interfund Transfer	\$3,568,521	\$187,817	\$3,756,338
Total Budget	\$ 9,668,774	\$ 953,208	\$10,621,982

[1] Source: Rate Study Table 8-1

[2] These were reported by the City to be allocated based on Solid Waste Division labor and expense levels. These costs will therefore grow or shrink in direct proportion to any increases or decreases in the size of the collection system.

As shown in the above table, the residential collection system incurs roughly \$4.9 million annual operating costs (\$4.4 million excluding allocated charges) with the commercial collection system adding over \$ 530,000 (\$470,000 excluding allocated charges).

Based on the total system costs in Table 2-5, and on the number of daily routes, MSW Consultants calculated the average cost per collection route. This is shown in Table 2-6. As shown, the sum of these costs closely approximates the absolute collection costs contained in Table 2-5.

It is important to note that these estimated costs per route are for planning purposes only. It was beyond the scope of this study to developed service-level costs for refuse, recycling, yard waste, etc. However, these planning-level route costs are useful for estimating the cost impact of changes to the number of routes that are needed to service the City customer base.

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Table 2-6 Estimated Collection Cost per Daily Route

Program	Daily Routes	Estimated Collection Cost per Route [1]	Total Estimated Collection Cost [1]
Residential Refuse	7	\$289,000	\$2,023,000
Residential Yard Waste	2	\$368,500	\$737,000
Residential Recycling	7	\$242,200	\$1,695,600
Residential Bulky Items	2	\$256,200	\$512,400
Commercial FEL	1	\$298,000	\$298,000
Commercial FEL Cardboard Recycling	0.4	\$298,000	\$119,200
Roll-off	0.2	\$194,800	\$39,000
Total	19.6	N/A	\$5,424,200

[1] Fractional values not shown. Subtotals therefore may not sum due to rounding error.

2.5. TRANSFER STATION DESIGN AND COST

A transfer station is a facility that receives waste from multiple collection vehicles and consolidates the waste into larger transportation vehicles for more economical transport to the disposal site. Waste is not stored long-term at a transfer station. The waste is dumped on the transfer station floor and then loaded into larger vehicles, such as transfer trailers. The waste is often compacted, either before or after loading.

The primary reason for using a transfer station is to reduce hauling costs – time, fuel, and maintenance – as well as reducing traffic, road wear and emissions. In addition: transfer stations can provide the opportunity to screen out wastes that should not go to the disposal facility (both recyclables and special wastes); can serve as convenience centers for the public; and allow for flexibility in the selection of waste disposal facilities.

To decide if a transfer station makes sense for a community, it is necessary to determine whether or not the benefits of the savings the transfer station can generate from reduced hauling costs outweigh the costs of building (planning, siting and designing) and operating the facility. According to the US Environmental Protection Agency (EPA), "...transfer stations generally become economically viable when the hauling distance to the disposal facility is greater than 15 to 20 miles."¹

¹ US Environmental Protection Agency, Waste Transfer Stations: A Manual for Decision-Making, Introduction, p. 4

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Calculating Transfer Station Break-Even Points²

To calculate the break-even point for a specific facility, first determine the following values:

Transfer Station Cost (cost to build, own, and operate transfer station, in dollars per ton)

Direct Haul Payload (average payload of collection truck hauling directly to landfill, in tons)

Transfer Haul Payload (average payload of transfer truck hauling from transfer station to landfill, in tons)

Trucking Cost (average cost of direct or transfer hauling, in dollars per mile)

Once these values are known, use the following formulas to calculate cost at different distances:

Cost of Direct Haul (without the use of a waste transfer station)
Distance (miles) multiplied by Trucking Cost (dollars per mile) divided by Direct Haul Payload (tons)

Cost of Transfer Haul

Transfer Station Cost (dollars per ton) plus Distance (miles) multiplied by Trucking Cost (dollars per mile) divided by Transfer Haul Payload (tons)

MSW Consultants generally follows the methodology above. However, because we have compiled North Port's collection system operating parameters, our analysis of transfer station costs do not attempt to compare direct haul costs to transfer haul costs. Rather, we estimate the collection cost savings achievable because of the more conveniently located transfer station, and then sum the transfer, transportation, and alternate disposal costs to arrive at a cost comparison with the existing system.

2.6. CONCEPTUAL TRANSFER STATION LOCATION

The current North Port Solid Waste Yard, Fleet Maintenance Yard and Public Works office are located at 1930 West Price Boulevard, North Port, FL 34286. At the direction of the City, and supported by MSW Consultants, this location is used as the City centroid for this study.

However, the City's Solid Waste Yard is not expected or intended to serve as the site for a new facility. In practice, the City should expect to undergo a siting study that solicits input from City residential and commercial stakeholders. Given the geographic size of North Port, it is possible that a transfer station sited in an area other than the centroid of the City, specifically on the periphery, may drive slightly different results from those shown in this analysis. It was beyond the scope of this analysis to test multiple site locations.

² Ibid

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2.7. CONCEPTUAL TRANSFER STATION DESIGN

As described in SWANA's July 2005 report, "Transfer Station Planning and Design," a number of issues need to be considered in planning a transfer station:

- ◆ Transfer stations are considered essential public facilities, and must be built to survive and function during a natural disaster as well as afterwards. There must also be an alternate plan in the event that, due to a disaster, the facility cannot be operated for a period of time. In North Port's case, this might entail direct hauling of wastes to disposal/processing facilities.
- ◆ During the siting process, it is important to have a thorough and transparent evaluation of the impacts and alternatives in order to counter the NIMBY (Not In My Back Yard) syndrome. Noise, traffic, litter, dust and odor, as well as aesthetic concerns, must be taken into consideration. Stakeholder input is important during this process.
- ◆ As many things can affect future operations, the design must be flexible.
- ◆ The financing period should be at least 20 years.
- ◆ It is important to identify the technology to be used. The following are some of the basic technologies:³
 - ◆ **Open top transfer trailers**, usually 100 cubic yards or more, are used. Waste may or may not be compacted with the loader, grapple, or excavator while still on the floor or after loading, but no specialized compaction equipment is employed. This is often used for low-volume facilities which do not support the investment in compactors or balers. The trailers can be loaded in the following ways:
 - Lift load over side of the trailer.
 - Direct dump – Non-compacted waste is dumped directly into the trailer in a pit or tunnel.
 - Push load into trailer – Refuse has been dumped onto the tipping floor and is then pushed into the trailer which is located in a pit or tunnel.
 - ◆ **Surge pit**. This is an intermediate step, where waste is dumped onto the tipping floor and pushed into the surge pit, or is dumped directly into the pit. Mobile equipment (tracked loader or bulldozer) is then used to compact the waste and load it into the trailers. If the waste is dumped directly into the surge pit, this might discourage waste screening and materials recovery prior to loading.
 - ◆ **Compactor system**. In this system, stationary compactors compact waste into the trailers with a hydraulic ram. Trailers are usually made of reinforced steel, which increases the weight of the trailer, thus decreasing the allowable weight of the waste per trailer.

³ US Environmental Protection Agency, Waste Transfer Stations: A Manual for Decision-Making, Introduction, p. 26

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- ◆ **Pre-compact system.** A dense “log” of waste is created by a hydraulic ram inside a cylinder. This “log” is pushed into a trailer that uses either “walking floor” technology to unload at the disposal facility or relies on a tipper to unload by gravity.
- ◆ **Bailers** compress waste into dense, self-contained bales, which may be held together with wire straps. The bales are usually put on flatbed trailers by forklifts. Due to the high capital costs, this system is generally used only in high-volume facilities.
- ◆ **Intermodal.** When rail transport is an option, waste is tipped onto the transfer station floor and then loaded into intermodal containers. Where available, the containers are loaded directly onto railcars. They can also be loaded onto flatbed trailers to be transferred by truck to a train terminal. As these containers usually have moisture- and odor-control features, the sealed containers can be stored on site until enough containers are filled for economic transport to the disposal site. Intermodal transfer was not considered as part of this project.

2.8. GREEN BUILT TRANSFER STATIONS

Currently, there are at least seven transfer stations in the U.S. with Leadership in Energy and Environmental Design (LEED) certification. Shoreline Recycling & Transfer Station, in Shoreline, Washington, is said to be the first transfer station to achieve Platinum LEED certification. (See Appendix A for a description of Shoreline.)

Whether or not a community chooses to apply for LEED certification, building to LEED standards will save energy and water, and will provide long-term operations savings. Some of the opposition to siting of solid waste facilities may be mitigated by following these standards.

There are several goals to strive for in building an environmentally-friendly transfer station:⁴

- ◆ Minimize the impact of traffic on the neighboring community by well planned location.
- ◆ Use visual buffers and green space to provide a more pleasing appearance.
- ◆ Reduce consumption of energy:
 - ◆ Use natural ventilation systems and natural light (ex. skylights, translucent roofing and walls);
 - ◆ Use solar panels to provide 10% or more of needed electricity.
- ◆ Reduce consumption of water:
 - ◆ If allowed by code, harvest rainwater (for washing down equipment and the tipping floor, and flushing toilets);
 - ◆ Green roofs and rainwater cisterns can also be used.
- ◆ Use recycled, reused and sustainable building materials and purchase locally when possible.
- ◆ The amount of paved surfaces can be reduced by parking industrial vehicles underneath the building. Where leachate is not an issue, pervious pavement can be used.

⁴ *Waste Age*, February 2010

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It was beyond the scope of this project to select a specific transfer station design, but the above are factors the City should consider if it decides to pursue a transfer station.

2.9. PROJECTED THROUGHPUT

In considering the development of a transfer station in North Port, there are three potential sources of waste that might be attracted to such a facility:

- ◆ City-collected wastes,
- ◆ Commercially collected wastes from within the City (20 businesses and two apartment complexes that currently have private service), and
- ◆ Sarasota County’s southern refuse district (Friday’s routes).

The following tables summarize the approximate contribution of wastes from each of these three sources. Table 2-7 shows the estimated throughput at the current time, and Table 2-8 shows the projected throughput in 2021.

Table 2-7 North Port Transfer Station Throughput Projections - Current

Type	Tons Collected			Totals	
	City Collected	Commercial Contracted	Sarasota	City + Commercial	City + Commercial + Sarasota
Refuse	23,096	419	19,807	23,515	43,322
Recyclables	4,223	0	7,539	4,730	12,269
Yard Waste	1,534	0	7,785	1,534	9,319
Total	28,852	419	35,131	29,779	64,910
<i>TPD</i>	<i>113</i>	<i>2</i>	<i>135</i>	<i>115</i>	<i>250</i>

Table 2-8 North Port Transfer Station Throughput Projections - 2021

Type	Tons Collected			Totals	
	City Collected	Commercial Contracted [1]	Sarasota County Friday Rtes.	City + Commercial	City + Commercial + Sarasota
Refuse	30,919	0	22,338	30,919	53,257
Recyclables	10,067	0	8,503	10,067	18,570
Yard Waste	5,393	0	8,780	5,393	14,173
Total	46,379	0	39,621	46,379	86,000
<i>TPD</i>	<i>178</i>	<i>0</i>	<i>152</i>	<i>178</i>	<i>331</i>

[1] In 2021, all commercial garbage in North Port will be collected by the City.

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As shown in these tables, the range of throughput for any transfer station over the 10 year planning period is:

- ◆ **Lower Bound:** 113 tons per day, if the transfer station is built to handle only the quantity of waste currently collected by the City, this does not allow for growth (which is unlikely).
- ◆ **Upper Bound:** 331 tons per day if the facility is sized to accept all of the residential and commercial waste generated in the City, as well as the residential waste collected in the southern district of Sarasota County’s unincorporated area by the end of the planning period.

Sarasota County has reported that it is not interested in participating in a City transfer station project, so MSW Consultants has discounted this option. A reasonable sizing target, then, would be for the quantity of City-collected wastes in 2021, the end of the planning period, or roughly 178 tons per day. All of the estimates above assume that all refuse, recyclables and yard wastes are transferred at the facility.

2.10. ESTIMATED COSTS

MSW Consultants does not provide conceptual design nor work up engineering cost estimates of solid waste facilities. Instead, we have performed both a literature search on transfer station costs, and reviewed available capital and operating cost data available to us from our project files.

Table 2-9 summarizes the reported cost ranges for the capital and operating costs of small transfer stations from an article in Waste Age magazine. As shown in this table, annualized capital costs are relatively low regardless of the facility size, while operating costs decline more steeply as the throughput of the facility increases.

**Table 2-9 Transfer Station Owning and Operating Costs
(Dollar per ton) [1]**

Cost Component	Facility Size			
	100 tpd	250 tpd	500 tpd	750 tpd
Amortized Capital	\$3.50-\$5.50	\$2.00-\$4.50	\$2.00-\$3.50	\$2.00-\$3.50
Operations and Maintenance	\$13.00-\$16.50	\$7.50-\$11.00	\$4.50-\$7.50	\$4.50-\$6.50
Total Owning and Operating	\$16.50-\$22.00	\$9.50-\$15.50	\$6.50-\$11.00	\$6.50-\$10.00

[1] Source: “To Build or Not to Build”, John Dempsey, Waste Age, Sep. 1, 2004. The values shown above have been inflated to reflect 2010 costs. Actual Values may be higher or lower based upon actual construction costs and operating practices.

It is noted that Table 2-9 contains a range of costs, rather than a single number, for each facility throughput. This is because individual transfer station designs may or may not incorporate more costly components and/or more costly operating procedures, either out of necessity or by choice of the facility developer. Tables 2-10 and 2-11 attempt to summarize the various capital and operating cost factors that influence transfer station costs.

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Table 2-10 Capital Cost Factors

Facility Feature	Lower Cost	Medium Cost	Higher Cost
Site Topography	Flat site with no drainage issues		Sites requiring grading, drainage issues
Site Finishing Costs	Limited paving, landscaping, lighting, security needs	Moderate paving, landscaping, lighting, security needs	Extensive paving, landscaping, lighting, security needs
Size	Smaller tipping floor with minimal storage; one bay; no public drop-off access	Medium sized tipping floor with some storage; limited public drop-off access	Larger tipping floor; extra storage areas; multiple push pits; full public drop-off access
Enclosure	Roof only	Three sided structure with roof	Fully enclosed
Building Superstructure	Structural steel frame	Enclosed with metal siding	Precast concrete/ masonry exterior
Personnel Support	Portable restrooms	Permanent restrooms	Restrooms with locker; offices; meeting rooms
Compaction Equipment	Loader, grapple or excavator loading from floor	Push-pit	Stationary preload compactors (\$650k to \$900k) Balers (\$350k to \$600k) Refuse Cranes (\$125k to \$175k)
Floor Configuration	Single level for tipping and floor loading		Double level with tip floor and pits
Pre-processing/Recycling Objectives	Wastes only	Processing of some of the waste stream	Pre-processing of multiple waste streams (refuse, organics, recyclables, other)
Support Facilities	None	Equipment maintenance shop	Standby generators; Fueling systems; Leachate pretreatment.
Scales/Scalehouse	Low tech scalehouse; Smaller scales; Limited scalehouse periphery needs; Basic software system	Higher tech scalehouse; more sophisticated software system	Larger vehicle scales; Complex periphery needs; Axle scales to optimize for trailer loading, highly sophisticated software system

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Facility Feature	Lower Cost	Medium Cost	Higher Cost
Mobile Equipment	Lighter duty, loading equipment; fewer mobile units	Medium duty, loading equipment; few spare mobile units	Heavier duty equipment; full complement of mobile units including spares
Green Building Features	Standard utilities and building construction	Air ventilation and natural lighting (windows, skylights)	Solar; rainwater collection and reuse; green roofs; use of recycled, reused and sustainable building materials purchased locally.

Table 2-11 Operating Cost Factors

Operating Feature	Lower Cost	Medium Cost	Higher Cost
Hours of Operation	Limited weekday schedule, e.g. 4 days/wk, 8 hrs/day	Full weekday schedule, e.g. 5 days/wk, 8 hrs/day	Full weekday schedule and weekend hours for citizen drop-off
Scalehouse	Automated scale and computer system		Manual scale
Truck Traffic	Low volume; No public drop-off	Additional volume; public drop-off	High volume; public drop-off
On-site Preprocessing or Sorting	Limited or no pre-processing	Processing of some of the waste stream	Processing of multiple material streams
Equipment Maintenance	Fewer pieces of equipment to maintain; High quality equipment requiring less maintenance; Excellent maintenance program		More pieces of equipment to maintain; More complicated equipment requiring higher maintenance;

As Tables 2-10 and 2-11 show, there are many factors that influence the cost of a facility. Should the City of North Port take the next step in a transfer station evaluation, it is recommended that the City perform a siting study and retain a qualified engineer to develop specific design and operating cost projections that incorporate appropriate decisions relative to the factors above.

Another option would be for North Port to build an Eco-Industrial Park or Resource Recovery Park, and invite companies to lease property and build businesses that would use recovered materials. This would lower the need to transport recyclables, saving money as well as providing revenue for the City. This option is discussed further in Section 6, Public/Private Partnership Opportunities.

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MSW Consultants further reviewed the actual capital and operating costs for two small transfer stations from our project files:

- ◆ Mifflin County, Pennsylvania built and operates an open top loading 100 ton-per-day transfer station for its municipal waste stream. This facility cost \$1.1 million to build in 2005, which equates to annualized capital costs of roughly \$3.40/ton for a 20-year financing at five percent. Its current operating cost is roughly \$11/ton. These actual costs are within the ranges shown in Table 2-9.
- ◆ Liberty County, Georgia owns and operates a 160 ton-per-day transfer station that utilizes a push pit for loading trailers. This facility was built in 1994, and capital costs are not available. However, based on a cost-of-service study conducted by MSW Consultants for the County, operating costs were just less than \$10/ton in 2009. These actual figures are also within the ranges shown in Table 2-9.

As a final data point, MSW Consultants requested capital and operating costs from the Shoreline Transfer Station. This facility was reported to cost \$26 million, with a design capacity of 500 tons per day. The facility currently processes only 300 tons per day, at an annual operating cost of \$1.6 million, which equates to a \$21/ton operating cost. At full capacity, the operating cost drops to \$12.30 per ton. This facility is more expensive to operate because of the multiple recovery operations that are being performed – organics, clean wood, and scrap metal recovery, as well as a self-haul tipping area for wastes – beyond simple consolidation of wastes for transport and disposal. It also uses compaction technology before loading.

For purposes of this report, it is assumed that a transfer station in North Port would cost roughly \$1.5 to \$2.0 million to build, and could be operated at roughly \$10/ton, for a total cost per ton of \$15.00. This equates to the lower bound in the table above for a 100 tpd transfer station. Should North Port opt to build a facility that is geared for more aggressive processing/recovery of wastes, it would be expected to increase both the capital and operating costs shown in this analysis.

3. DISPOSAL/RECYCLING FACILITY MARKET ANALYSIS

MSW Consultants researched the location, available capacity, and tip fee or processing fees that might be achieved were North Port to deliver wastes in transfer trailers. Appendix B includes all of the facilities contacted by MSW Consultants, whether or not the facilities are possible alternatives. Individual facility types are summarized below.

3.1. DISPOSAL FACILITIES

Table 3-1 lists possible alternate disposal facilities, as well as the current disposal destination.

TRANSFER STATION FEASIBILITY STUDY

Table 3-1 Alternate Disposal Facility Parameters

Facility Name	Type	Location	Mileage from North Port	Gate Rate (\$ per ton)	Likely Long Term Tip Fee (\$ per ton)
Sarasota County Landfill (current destination)	Landfill	Sarasota County	23.8	Municipalities: \$48.34	Municipal rate
Zemel Road Landfill	Landfill	Charlotte County	31.1	\$36.00 in-county \$72.00 out-of county	between 36.00 and 72.00
Desoto County Landfill	Landfill	Desoto County	27.7	42.00 in-county 84.00 out-of county	Might be lower than out-of-county fee
Okeechobee Landfill	Landfill	Okeechobee County	110	Posted: 39.90 out-of-county	Possibly \$5 to \$8/ton less than posted fee
ACMS Class I Landfill (planned opening early 2012)	Landfill	Sumter County	145	Not established	Estimated to be comparable to Okeechobee LF

In addition, MSW Consultants contacted the Lena Road Landfill, in Manatee County, and were told that Manatee County would not be interested in taking any waste from North Port. Lee County’s current agreements would prohibit accepting North Port’s waste in the Lee County Solid Waste Resource Recovery (Waste-To-Energy) facility. They indicated that there might be a possibility of allowing North Port’s waste, but the ash would have to go back to North Port. Although ash constitutes only 10% by volume, it is 25 to 30% by weight. MSW Consultants therefore did not further explore the possibility of taking waste to Lee County.

MSW Consultants also spoke with Waste Services (WSI). They would be interested in discussing a public/private partnership for a C&D transfer station in North Port. However, no plans are in the works at this time.

3.2. RECYCLABLES PROCESSING FACILITIES

North Port currently does not receive revenue for the residential fiber and co-mingled containers, and pays a processing fee of \$7.53 per ton. The City reported having had conversations with the single stream recycling facilities listed in Table 3-2, as staff is interested in the option of transitioning to single stream recycling collection. This table lists the current destination for recyclables and possible alternate processing facilities that receive single stream material. This table also shows the range of revenues that might be received given the market value of delivered recyclables (based on prevailing market conditions).

TRANSFER STATION FEASIBILITY STUDY

Table 3-2 Alternate Recyclables Processing Facility Parameters

Facility Name	Type	Location	Mileage from North Port	Expected Revenue (Cost) if Recyclables Average Value = \$100/ton	Expected Revenue (Cost) if Recyclables Average Value = \$150/ton
South County Transfer Station (Current destination)	Transfer Station	Sarasota County	17.7	(\$7.53/ton)	(\$7.53/ton)
ReCommunity Recycling (formerly FCR and RRS) [1]	Recycled Materials Processing Facility (RMPF), dual stream	City of Sarasota	41.9	\$42/ton paper \$24.50/ton containers	\$77/ton paper \$59.50/ton containers
Republic Services, Lakeland Materials Recovery Facility	Materials Recovery Facility (MRF), single stream	Lakeland, FL	115	\$20/ton	\$70/ton
Waste Management, Tampa, Materials Recovery Facility (planned opening Feb. 2012)	Materials Recovery Facility (MRF), single stream	Tampa	87.2	\$36.50/ton	\$73.00/ton
Lee County Materials Recovery Facility (MRF)	Materials Recovery Facility (MRF), single stream	Ft. Myers	39.5	\$25/ton	\$50/ton

[1] North Port takes material to South County Transfer Station. It is then transferred to the ReCommunity RMPF.

All of the facilities listed in the table would be interested in receiving recycling from North Port. All of the single stream facilities indicated that there would be revenue sharing, although some facilities were more forthcoming than others. If the recycling processing were bid out, the true revenue-sharing picture would be available. Sarasota County’s contract with ReCommunity Recycling does not obligate the company to share revenue with municipalities, including North Port, but neither does it prohibit them from doing so.

Information for the ReCommunity RMPF shows the recycling material as dual stream, as the Sarasota Contract for dual stream material is the reference. It can be assumed that the net revenue would be somewhat lower if single stream material was delivered to ReCommunity.

It should be kept in mind that recycling markets are volatile, and while revenues are reasonably high at this time, there is no way to forecast revenues over the long term with a great degree of certainty. That said, as some companies are building new single stream facilities or retrofitting current recycling facilities, it can be assumed that they believe there will be some revenue available over the long term. Additionally, moving to single stream recycling can result in long term collection savings. Appendix C shows additional information on the assumptions used to derive these revenue estimates.

Based on current revenue sharing arrangements in Central Florida for recent recyclables processing procurements, expected revenues realized by North Port for the delivery of single stream recyclables could range from a net annual cost to net annual revenues. See Section 4 for additional recycling cost/revenue information.

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3.3. YARD WASTE PROCESSING FACILITIES

North Port is interested in collecting and composting food waste, beginning with pre-consumer produce. The current yard waste destination, Thomas Ranch Chipping and Mulching Facility, has been investigating whether or not their composting permit allows food waste. MSW Consultants researched other composting facilities and found two who would consider taking yard waste from North Port. Unfortunately, neither facility is permitted to take food waste. They are, however, included in Table 3-3 for information purposes.

Table 3-3 Alternate Yard Waste Processing Facility Parameters

Facility Name	Type	Location	Mileage from North Port	Gate Rate (\$ per ton)	Likely Long Term Tip Fee (\$ per ton)
Thomas Ranch Chipping and Mulching Facility (Current destination)	Yard Waste - Chipping, mulching and composting (material is put on pasture)	Venice, FL	13.1	7.00/cubic yard	Currently doing annual contracts. New contract will be either 7.00/cy or 25.00/ton
OrganicLee™ composting facility	Yard Waste and Biosolids	Felda, FL	69.3	N/A	N/A
Green Planet Recycling	Yard Waste - mulching and composting	Punta Gorda, FL	21.6	N/A	N/A

The OrganicLee™ composting facility, which is owned and operated by Lee County, composts yard waste and biosolids under a residuals treatment permit, which does not allow food waste to be included. Green Planet Recycling mulches and composts yard waste and land clearing debris, and cannot take food waste under their permit.

Thomas Ranch reported that they believe they are able to add pre-consumer vegetative food waste to their composting operation. Post-consumer food waste could be included as long as there were no meat or dairy products. Items permitted include fruit and vegetable scraps, coffee grounds and tea leaves. Thomas Ranch has about 8,000 acres that are permitted to take vegetative waste up to 12 inches deep. The material is disked into the soil as a soil amendment. This allows enough capacity to take all of North Port’s organics, other than meat and dairy food waste, for the foreseeable future.

3.4. TRANSPORTATION COSTS

To get materials from a transfer station to the facilities in this section, North Port would be required to provide hauling services. This could be performed with City resources, or could be contracted. For purposes of estimating transportation costs, MSW Consultants has modeled the transportation costs for transfer trailers. Specific assumptions are shown in Table 3-4.

TRANSFER STATION FEASIBILITY STUDY

Table 3-4 Transportation Cost Assumptions

Cost Category	Tractor Trailer
Capital Cost	\$195,000
Useful Life	8 years
Fuel Price/Gal	\$3.50
Gallon/Hour	6
Maintenance	\$20,400
Driver Hourly Rate	\$23
Benefit %	30%
Insurance	\$3,500
Overhead %	4%
System Cost/Mile	\$1.91

Based on these assumptions, Table 3-5 summarizes the transportation costs for hauling various materials from North Port.

Table 3-5 Transportation Costs [1]

Material	Trailer Weights (tons)	Cost per RT Mile (\$/mile)	Cost per Ton-mile (\$/ton-mile)
Refuse (including bulky waste)	22.5	\$1.91	\$0.085
Single Stream Recyclables	15.75	\$1.91	\$0.121
Yard Waste/Organics	22.5	\$1.91	\$0.085

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded.

4. COST COMPARISONS

At the current time, North Port operates a \$5.4 million collection system, including both direct and allocated costs. Disposal costs are roughly \$1.4 million. Table 4-1 summarizes the disposal and processing costs of the current system.

TRANSFER STATION FEASIBILITY STUDY

Table 4-1 Current Disposal/Processing Costs

Material	Tons Collected	Delivered to	Tip Fee (\$/ton)	Est. Annual Disposal Cost
Refuse (including bulky waste)	23,095	Sarasota Co. Landfill	\$48.34	\$1,116,444
Dual Stream Recyclables [1]	4,223	County South TS	\$7.53	\$31,799
Yard Waste/Organics [2]	1,534	Thomas Ranch	\$25.00	\$38,345
Total	28,852			\$1,186,588

[1] The City also collects recyclable cardboard from commercial businesses, as well as a small amount of appliances, metals, and other recyclables. These materials have been excluded from the transfer analysis.

[2] North Port paid for yard waste by the cubic yard in 2010, for a total of \$62,580. Thomas Ranch charges \$7.00 per cubic yard or \$25.00 per ton. For comparison purposes, this table shows the disposal fee if North Port had paid by the ton.

For a transfer station to make economic sense, the savings associated with lower collection costs and (presumably) lower disposal costs (and higher recyclables revenue) must outweigh the incremental cost of transferring and transporting materials through a transfer station.

4.0. COLLECTION SYSTEM IMPACTS

MSW Consultants used its proprietary collection model to determine the impact on the collection system of reducing disposal drive times for collection vehicles. This analysis suggests that the City would be able to reduce its seven daily refuse routes and its seven daily recycling routes by one each. Table 4-2 summarizes the collection cost savings, based on estimated costs per route. As shown, having a local transfer station would be expected to eliminate two collection routes, for a full cost savings of roughly \$531,000.

Table 4-2 Collection Cost Savings with Local Transfer Station

Collection Service	Reduction in Routes	Annual Savings per Route [1]	Total Collection Cost Savings [1]
Refuse Collection	-1	(\$289,000)	(\$289,000)
Recyclables Collection	-1	(\$242,200)	(\$242,200)
Total			(\$531,200)

[1] All figures have been rounded to the nearest 100.

4.1. TRANSFER, TRANSPORTATION, AND ALTERNATE DISPOSAL COSTS

While disposal costs would be expected to decrease, North Port will absorb transfer and transportation costs. Applying the operating cost assumptions, mileage, and tip fee data compiled, Table 4-3 summarizes the costs of transfer, transportation, and alternate disposal.

TRANSFER STATION FEASIBILITY STUDY

Table 4-3 Transfer, Transportation and Alternate Disposal Costs [1]

Disposal Facility	Transfer Costs	Transportation Costs	Tip Fee	Disposal Costs	Total Costs
Sarasota Co LF	\$346,400	\$95,300	\$48.34	\$1,116,400	\$1,558,200
Zemel Road Landfill	\$346,400	\$121,500	\$41.00	\$946,900	\$1,415,300
Desoto Co. Landfill	\$346,400	\$108,600	\$84.00	\$1,940,000	\$2,395,200
Okeechobee Landfill	\$346,400	\$431,300	\$32.00	\$739,100	\$1,516,900
ACMS Class I Landfill	\$346,400	\$568,600	\$35.00	\$808,300	\$1,723,400

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

It is important to note that all of the tip fees reported are reasonably firm, with the exception of the Charlotte County/Zemel Road landfill. It was reported to MSW Consultants that the in-county tip fee is \$36/ton, and the out-of-county tip fee is double (\$72/ton), but that it might be possible to negotiate a lower rate with the Board of County Commissioners. We have used a \$41/ton tip fee because this is the tip fee that would be required to break even with the current direct haul system (see next section).

Table 4-4 provides the transfer, transportation, and processing revenues that might be expected if the City had a local transfer station and could deliver recyclables to a single stream processor.

Table 4-4 Annual Transfer and Transportation Costs and Alternate Processing Costs (Revenues) [1]

Processing Facility	Transfer Costs	Transportation Costs	Revenue/Ton	Processing Cost (Revenue)	Total Net Cost (Net Revenue)
ReCommunity, Sarasota (paper) [2]	\$31,900	\$21,600	\$42.00	(\$89,200)	(\$35,800)
ReCommunity, Sarasota (containers) [2]	\$31,500	\$21,300	\$24.50	(\$51,400)	\$1,400
Republic, Lakeland [3]	\$63,300	\$117,800	\$20.00	(\$84,500)	\$96,700
Waste Management, Tampa	\$63,300	\$89,300	\$36.50	(\$154,100)	(\$1,500)
Lee Co. MRF	\$63,300	\$40,500	\$25.00	(\$105,600)	(\$1,800)

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

[2] Sarasota County's contract is for dual stream material, which is the reference for ReCommunity. If North Port's dual stream material was transported to the ReCommunity RMPF, it is assumed that ReCommunity would give a slightly less revenue than Sarasota County receives if plastics 1-7 continue to be collected and cardboard does not go to ReCommunity. This was calculated with no processing fee and a 70% revenue share, instead of Sarasota's 75% revenue share, after the Protected Base Price.

[3] Republic Services reported that they would charge North Port \$80/ton processing and \$20/ton hauling. If \$20/ton is used for the transportation cost, net recycling cost would decrease to \$21,374 in this scenario.

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It is important to note that all recycling revenues are calculated using an average market value of \$100/ton for single stream recyclables. Should the value of recyclables remain at a higher rate (as they are currently), actual revenues would be higher assuming the City’s revenues are indexed to market value. However, in this case, revenues would also decrease in the event the value of recyclables decreased. It was beyond the scope of this study to project the market value of recyclables or to run multiple sensitivity analyses on the potential value of recyclables.

4.2. NET COST (SAVINGS) OF LOCAL TRANSFER STATION

Table 4-5 combines the collection and disposal cost savings with the incremental transfer and transportation costs for disposal of refuse. As shown in the table, only the Zemel Road Landfill, if it is possible for North Port to negotiate a tip fee of \$41/ton or less, is close enough to provide breakeven disposal costs.

Table 4-5 Net Impact on Waste Disposal Costs [1]

Disposal Facility	Current Disposal Cost	Waste Collection Cost Savings	Transfer, Transport, Disposal Cost	Net Cost of Transfer System	Disposal (Savings) Cost
Sarasota Co LF	\$1,116,600	(\$289,000)	\$1,558,200	\$1,269,200	\$152,600
Zemel Road Landfill	\$1,116,600	(\$289,000)	\$1,415,300	\$1,093,400	\$9,700
Desoto Co. Landfill	\$1,116,600	(\$289,000)	\$2,395,100	\$2,106,100	\$989,500
Okeechobee Landfill	\$1,116,600	(\$289,000)	\$1,516,800	\$1,227,800	\$111,200
ACMS Class I Landfill	\$1,116,600	(\$289,000)	\$1,723,300	\$1,434,300	\$317,700

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

Table 4-6 performs the same exercise for recyclables processing. As shown in this table, with a value of \$100/ton for recyclables, a combination of collection cost savings combined with the higher recycling revenues realized at the MRFs contacted results in net savings at all of the MRFs included in this study.

Table 4-6 Net Impact on Recyclables Processing Costs [1]

Processing Facility	Current Processing Cost	Recyclables Collection Savings	Transfer, Transport, Processing Savings (Cost)	Net Cost of Transfer System	Recyclables Processing (Savings) Cost
ReCommunity, Sarasota (combines paper and containers)	\$31,800	(\$242,200)	\$34,400	(\$276,600)	(\$308,400)
Republic, Lakeland	\$31,800	(\$242,200)	(\$96,700)	(\$145,600)	(\$177,300)
Waste Management, Tampa	\$31,800	(\$242,200)	\$1,500	(\$243,700)	(\$275,500)

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Lee Co. MRF	\$31,800	(\$242,200)	\$1,800	(\$244,000)	(\$275,800)
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[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

Table 4-7 combines the disposal cost impacts and the recycling revenue impacts of the transfer station. This table assumes the City would be able to maximize recycling revenues by delivering recyclables to the highest revenue location, which was found to be the ReCommunity dual stream MRF in Sarasota. Because disposal costs are the primary driver of the total system cost, recycling revenues are offset by the projected disposal costs at each of the landfills evaluated. As shown, a transfer station is projected to generate a small net savings on the strength of a reduction in collection costs and significantly higher revenues for recovered recyclables.

Table 4-7 Combined Net Impact on Waste Disposal and Recyclables Processing Costs [1]

If Waste is Delivered to...	Incremental Waste Transfer and Disposal Cost	Recyclables Savings for Delivery to ReCommunity	Net Cost (Savings)
Sarasota Co LF	\$152,600	(\$308,400)	(\$155,800)
Zemel Road Landfill	\$9,700	(\$308,400)	(\$298,700)
Desoto Co. Landfill	\$989,500	(\$308,400)	\$681,100
Okeechobee Landfill	\$111,200	(\$308,400)	(\$197,200)
ACMS Class I Landfill	\$317,700	(\$308,400)	\$9,300

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

5. COST COMPARISONS 2021

5.0. INTRODUCTION AND ASSUMPTIONS

Section 4 estimates the impact of a transfer station on the current system. Yet, given the growth projected for North Port, it is important to investigate the impact of having a transfer station on a larger system. This section duplicates Section 4, but escalates the size of the collection system and the waste generation rates to be reflective of the population in 2021.

In projecting the size of the system in 2021, it is important to note that all other system variables have been held constant. Specifically, MSW Consultants has not attempted to escalate or modify any of the following system attributes:

- ◆ Capital, labor or operating costs;
- ◆ Tip fees and processing revenues at all facilities;

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- ◆ Per capita waste generation rates; and
- ◆ The allocation of wastes between refuse, bulky waste, recyclables, and organics.

In practice, these variables will change over time, and it would be possible to build a more robust model to capture the impact of changes. Such detailed analysis was beyond the scope of this project.

5.1. 2021 COLLECTION SYSTEM IMPACTS

As a first step, MSW Consultants used its proprietary collection system model to scale up the City’s collection system to 2021, both with and without a transfer station. As shown in Table 5-1, the collection system size will increase to service the larger customer base; however, the collection cost savings does not extend beyond one refuse route per day and one recycling route per day, consistent with the current system.

Table 5-1 Total Routes and Collection Cost per Daily Route in 2021

Program	Daily Routes without Transfer Station	Daily Routes with Transfer Station	Net Reduction in Routes	Collection Cost Savings with Transfer Station [1]
Residential Refuse	11	10	-1	\$289,000
Residential Yard Waste	3	3	0	\$0
Residential Recycling	11	10	-1	\$242,200
Residential Bulky Items	3	3	0	\$0

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

5.2. TRANSFER, TRANSPORTATION, AND ALTERNATE DISPOSAL COSTS

Table 5-2 projects the quantities of waste projected to be collected in North Port in 2021, and the total cost of disposing of these materials (at current tip fees.)

Table 5-2 Waste Quantities in 2021

Material	Tons Collected [1]	Delivered to	Tip Fee (\$/ton)	Est. Annual Disposal Cost [1]
Refuse (including bulky waste)	30,919	Sarasota Co. Landfill	\$48.34	\$1,494,600
Single Stream Recyclables	10,067	County South TS	\$7.53	\$75,800
Yard Waste/Organics	5,393	Thomas Ranch	\$25.00	\$134,800
Total	46,379			\$1,705,300

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[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. Disposal costs have been rounded to the nearest 100.

Table 5-3 summarizes the costs of transfer, transportation, and alternate disposal in 2021.

Table 5-3 Transfer, Transportation and Alternate Disposal Costs in 2021 [1]

Disposal Facility	Transfer Costs	Transportation Costs	Tip Fee	Disposal Costs	Total Costs
Sarasota Co LF	\$401,900	\$127,600	\$48.34	\$1,494,600	\$2,024,200
Zemel Road Landfill	\$401,900	\$163,300	\$41.00	\$1,267,700	\$1,832,900
Desoto Co. Landfill	\$401,900	\$145,400	\$84.00	\$2,597,200	\$3,144,600
Okeechobee Landfill	\$401,900	\$577,400	\$32.00	\$989,400	\$1,968,800
ACMS Class I Landfill	\$401,900	\$761,200	\$35.00	\$1,082,200	\$2,245,300

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

Table 5-4 provides the transfer, transportation, and processing revenues that might be expected if the City had a local transfer station and could deliver recyclables to a single stream processor.

Table 5-4 Annual Transfer and Transportation Costs and Alternate Processing Costs in 2021 [1]

Disposal Facility	Transfer Costs	Transportation Costs	Revenue/Ton	Processing Cost (Revenue)	Total Net Cost (Net Revenue)
ReCommunity, Sarasota (paper)	\$65,400	\$51,200	\$42.00	(\$211,400)	(\$94,800)
ReCommunity, Sarasota (containers)	\$65,400	\$51,200	\$24.50	(\$123,300)	(\$6,733)
Republic, Lakeland	\$130,900	\$280,800	\$20.00	(\$201,300)	\$210,320
Waste Management, Tampa	\$130,900	\$212,900	\$36.50	(\$367,400)	(\$23,663)
Lee Co. MRF	\$130,900	\$96,400	\$25.00	(\$251,700)	(\$24,359)

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

As with the current system, all recycling revenues are calculated using an average market value of \$100/ton for single stream recyclables.

TRANSFER STATION FEASIBILITY STUDY

5.3. NET COST (SAVINGS) OF LOCAL TRANSFER STATION

Table 5-5 combines the collection and disposal cost savings with the incremental transfer and transportation costs for disposal of refuse.

Table 5-5 Net Impact on Waste Disposal Costs in 2021 [1]

Disposal Facility	Projected Disposal Cost	Waste Collection Cost Savings	Transfer, Transport, Disposal Cost	Net Cost of Transfer System	Disposal Cost (Savings)
Sarasota Co LF	\$1,494,600	(\$289,000)	\$2,024,200	\$1,735,200	\$240,600
Zemel Road Landfill	\$1,494,600	(\$289,000)	\$1,832,900	\$1,543,900	\$49,300
Desoto Co. Landfill	\$1,494,600	(\$289,000)	\$3,144,600	\$2,855,600	\$1,361,000
Okeechobee Landfill	\$1,494,600	(\$289,000)	\$1,968,800	\$1,679,800	\$185,200
ACMS Class I Landfill	\$1,494,600	(\$289,000)	\$2,245,300	\$1,956,300	\$461,700

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

Table 6-6 performs the same exercise for recyclables processing.

Table 5-6 Net Impact on Recyclables Processing Costs in 2021 [1]

Processing Facility	Projected Processing Cost	Recyclables Collection Savings	Transfer, Transport, Processing Revenue (Cost)	Net Cost of Transfer System	Recyclables Processing (Savings) Cost
ReCommunity, Sarasota (combines paper and containers)	\$75,800	(\$242,200)	\$101,600	(\$343,800)	\$419,600
Republic, Lakeland	\$75,800	(\$242,200)	(\$210,300)	(\$31,900)	\$107,700
Waste Management, Tampa	\$75,800	(\$242,200)	\$23,700	(\$265,900)	\$341,700
Lee Co. MRF	\$75,800	(\$242,200)	\$24,400	(\$266,600)	\$342,400

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

Table 5-7 combines the disposal cost impacts and the recycling revenue impacts of the transfer station in 2021. This table assumes the City would be able to maximize recycling revenues by delivering recyclables to the highest potential revenue location, which was found to be the ReCommunity dual stream MRF in Sarasota. As shown, a transfer station is projected to generate a small net savings on the strength of a reduction in collection costs and significantly higher revenues for recovered recyclables.

TRANSFER STATION FEASIBILITY STUDY

Table 5-7 Combined Net Impact on Waste Disposal and Recyclables Processing Costs in 2021 [1]

If Waste is Delivered to...	Waste Transfer and Disposal Projected Cost	Recyclables Savings for Delivery to ReCommunity	Net Cost (Savings)
Sarasota Co LF	\$240,500	(\$419,600)	(\$179,000)
Zemel Road Landfill	\$49,300	(\$419,600)	(\$370,300)
Desoto Co. Landfill	\$1,361,000	(\$419,600)	\$941,400
Okeechobee Landfill	\$185,200	(\$419,600)	(\$234,400)
ACMS Class I Landfill	\$461,700	(\$419,600)	\$42,100

[1] The figures in this table originate from a spreadsheet model that relies on inputs with fractional values. All figures have been rounded to the nearest 100.

5.4. CONCLUSION IN 2021

We make the following observations about the projected impacts of a transfer station in 2021:

- ◆ Despite the increased number of customers and growth in the size of the collection system, a local transfer station is projected to save only one refuse route and one recycling route in 2021, which is the same as the current system.
- ◆ Because recyclables are projected to increase faster than refuse (according to the City’s rate study), a transfer station is more financially attractive in 2021 when the fraction of recyclables to the overall waste stream is higher than current levels.
- ◆ There are many variables that could change between now and 2021, and MSW Consultants cautions against relying on the 2021 projects as they contain many simplifying assumptions.

TRANSFER STATION FEASIBILITY STUDY

6. PUBLIC/PRIVATE PARTNERSHIP OPPORTUNITIES

There are several forms of public/private partnership in the waste management industry that should be considered if the City opts to proceed with a transfer station. Specifically, the City could consider any of the following:

Table 6-1 Public/Private Partnership Options

	Facility Ownership	Facility Operations	Transportation
Option 1: Fully Public	Public	Public	Public
Option 1: Public Facility Own/Operate	Public	Public	Private Contract
Option 2: Public Ownership Only	Public	Private Contract	Private Contract
Option 3: Private with Public Waste Flow Guarantee	Private	Private	Private

Decisions about the ultimate form of a public/private partnership may center around the interest from the private sector to take on the costs of siting and developing a transfer station. If a private entity perceives a competitive advantage to having a transfer station in North Port, then the City could both avoid facility development costs and structure favorable pricing for at least the initial terms of any agreement. However, case studies in other areas of the country suggest that private sector owners will over time seek to raise prices to market levels, which may be significantly above actual costs in some markets. The City will need to consider which of the public/private strategies above makes the most sense.

Other public/private partnership arrangements are summarized below.

- ◆ **Recycling:** It is recommended that North Port continue to use a public/private partnership for the processing of recyclables. The decisions to be made include whether or not to move to single stream recycling and whether to negotiate with ReCommunity, if it can be done under the Sarasota County contract, or to bid out the recycling processing
- ◆ **Composting:** North Port currently has a public/private partnership for yard waste composting that is working well. In order to continue to increase diversion, the addition of composting organics should continue to be explored. The current vendor has indicated that pre-consumer fruits and vegetables can be added to the yard waste composting system. To add more food waste, it may be necessary to look for another option. If a Resource Recovery Park were built in North Port, a food waste composting facility could be one of the components.
- ◆ **Construction and Demolition Debris:** A significant percentage of waste is construction and demolition debris (C&D). There are private companies that are accomplishing C&D recycling rates of 75% or higher. North Port could encourage a C&D recycling company that guaranteed at least a 75% recycling rate to locate in the City. This would need a

TRANSFER STATION FEASIBILITY STUDY

partnership with the City to ensure the waste stream would be available, through ordinance or financial incentives.

- ◆ **Resource Recovery Park:** A number of jurisdictions have built, or are looking into building, Resource Recovery Parks (RRP) to encourage recycling and re-use businesses to locate near the waste resources. There are challenges as well as opportunities in these endeavors. RRP's are operated by both public and private entities, including Monterey (CA) Regional Waste Management District, Urban Ore (CA), Society of St. Vincent de Paul (various locations), Waste Management (WM) in San Leandro CA and Catawba County (NC). Resource Recovery Parks are in the planning stage in Collier County (FL) and Alachua County (FL). It is beyond the scope of this study to provide detailed information on this forward-looking public/private partnership opportunity.

7. CONCLUSIONS

- ◆ At the current time, the cost to build and operate a transfer station, plus the incremental transportation cost, does not appear to generate disposal cost savings unless the City can secure a negotiated tip fee of \$41/ton or less from the Charlotte County/Zemel Road landfill. Such an arrangement would need to be negotiated with the Charlotte County's Board of County Commissioners.
- ◆ Conversely, the collection cost reduction for recyclables is sufficient to secure a more favorable disposition of single stream recyclables in North Port. It is likely that the City would secure revenues for recyclables delivered directly to one of several processors, and that the incremental transfer and transportation costs do not offset the collection cost savings and the revenue potential.
- ◆ If recycling material revenues remain high, it would appear that development of a low-cost transfer station would enable the City to reduce its collection system and secure sufficient recycling revenues to result in a cost savings.
- ◆ The value of a transfer station increases if the existence of the transfer station would enable the elimination of collection routes. It is of particular interest that the prospects for reducing the number of daily routes in 2021 are the same as the current system.
- ◆ The value of the transfer station increases if additional materials can be shifted from the waste stream to the recyclables stream. Based on the City's projections, this shift occurs between now and 2020.
- ◆ Several other developments would make a transfer station more financially attractive. These include:
 - ◆ Potential for economies of scale by attracting 3rd party wastes. Transfer station per-ton operating costs stand to come down significantly if the facility could attract wastes from either private haulers or other local government contracts. Private hauler waste could be attracted based on pure economics – i.e., the prospect of a lower all-in cost compared to direct haul. It is less likely, though not assured, that private haulers would not be concerned with the ultimate disposition of the wastes they deliver, meaning the City could continue to search out the best combination of transportation and disposal. Conversely, waste delivered by another local government with its own landfill would likely require, as a condition of using the transfer station, that all wastes

TRANSFER STATION FEASIBILITY STUDY

it delivers be transferred to that county's landfill. The economics of this arrangement would need to be integrated into the establishment of any tip fee charged to the participating county for this transfer/transport service.

- ◆ Pursuit of single stream collection to increase recycling. Single stream recycling programs have been shown to increase diversion quantities. If the City could roll out single stream recycling collection, having a local transfer station would boost the potential for collection cost savings and increased revenues from the sale of recyclables.
- ◆ Pursuit of Pay-As-You-Throw (PAYT) to decrease waste produced and increase recycling. PAYT has been shown to increase diversion as much or more than single stream recycling. If the City were to implement a PAYT rate structure, however, there would be increased administrative costs as well as capital costs for the additional sized carts, for those who wanted smaller than 96 gallons. It should be noted that, currently, North Port charges extra for those who need to have more than one 96 gallon cart.
- ◆ State requirements or other commitments to implement expanded organics collection and composting. At the current time, the City's arrangement for disposition of yard wastes is conveniently located and cost effective. A local transfer station would not be expected to improve the economics. However, the Thomas Ranch is not currently permitted to compost non-vegetative organics (meat, dairy) that is contained in residential and commercial food waste. If North Port expects to implement full organics collection, it may be necessary to have a transfer station to enable access to a distant composting facility. It is likely that such an outcome would be significantly more expensive than the current system.
- ◆ Conversely, some developments might diminish financial performance:
 - ◆ Changes to local disposal and recycling market prices. A variety of forces impact the prices of disposal and recyclables. This includes any program changes that Sarasota County may implement.
 - ◆ Overbuilding the transfer station. While many local governments nationally have opted to develop multi-purpose transfer stations that also perform a significant amount of processing and recovery, such opportunities are more achievable with a larger waste stream that enables processing economies of scale.

8. RECOMMENDATIONS

This analysis suggests that it would be possible to slightly reduce overall system costs by developing a transfer station. The current annual cost of the City's waste management system is \$10.6 million. Assuming that the value of recyclables stay at historical averages, development of a low cost transfer station could save the City several hundred thousand dollars, or roughly two or three percent.

In addition to the prospect for cost savings, there are other benefits of having a transfer station. These include greater control over the wastes collected; increasing the City's ability to divert more materials as an intermediate step between collection and disposal; and slowing the growth in the size of the City's collection system under high population growth rates.

TRANSFER STATION FEASIBILITY STUDY

The City will need to weigh these offsetting dynamics in determining its next step. In the opinion of MSW Consultants, the financial business case for a transfer station does not support its development, given the significant uncertainty surrounding the value of recyclable materials.

Further, it is worth noting that the local market for waste disposal, processing and organics recovery in the region surrounding North Port is driven significantly by the actions of Sarasota County and Charlotte County, both of which maintain significant influence in the availability of disposal, recyclables processing, and yard waste/organics processing services. Significant changes to the recycling and/or organics management programs in either of these counties – especially Sarasota County – could have material unforeseen impacts on North Port. These impacts could be either positive or negative. For this reason, it is recommended that the City include Sarasota County in its decision making process, in order to minimize the potential for unforeseen outcomes and to maximize opportunities that may exist through the County or in partnership with the County.

TRANSFER STATION FEASIBILITY STUDY

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APPENDIX A
SHORELINE LEED RECYCLING AND
TRANSFER STATION
KING COUNTY, WASHINGTON

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Shoreline Recycling and Transfer Station Sets the Bar for New Stations

The Shoreline Recycling and Transfer Station was built to meet the highest standards of environmental sustainability, and is the first transfer station built in the U.S. to be registered with the U.S. Green Building Council. Their nationally recognized rating system – Leadership in Energy and Environmental Design (LEED) – evaluates buildings in the areas of protection of human and environmental health, sustainable site development, water savings, energy efficiency, materials selection, indoor environmental quality, and innovation in design.

The Shoreline station earned a platinum certification, the highest rating possible, under the LEED rating system. A few of the many features that earned the station this rating include:

- **Natural daylighting** – windows and skylights that allow natural light to filter into the building. Sensors also detect the levels of daylight and adjust the lighting accordingly. This feature is reducing energy use at the station.
- **Solar energy** – photovoltaic panels installed on the south-facing roof that generate electricity even on cloudy days, providing about 5 percent of the building's energy needs.
- **Rainwater collection and reuse** – rainwater collected on the rooftop and stored in tanks that provide water for washing station floors and equipment and for flushing toilets. This feature significantly reduces the use of potable water.



Solar panels

Running through the Shoreline property is Thornton Creek, which hosts a diversity of wildlife. Protection of the creek was an extremely high priority for the local community. Therefore, the station design incorporates innovative systems to protect and restore the creek corridor through several means:

- Invasive plants were replaced with a buffer of drought-tolerant native vegetation to conserve water, protect creek banks from erosion, and provide habitat for birds and other wildlife
- Paved areas were removed, and the buffer around the creek was increased
- Runoff from roadways was channeled to a stormwater filtration system and detention pond; this system releases stormwater to the creek at a rate that prevents erosion or flooding

The Thornton Creek Alliance recognized the division for working with local residents and alliance members to ensure that improvements at the site would help restore and enhance Thornton Creek. An educational kiosk, which features a mosaic representation of the creek made of recycled glass, was placed overlooking the creek to display the key message that we all share the watershed and to describe the green building features of the station.

At the new station, commercial and self-haul customers use separate entrances and separate sections of the transfer building. Commercial and other large, automated-dump vehicles enter directly onto a flat receiving floor where they can unload garbage, organics, clean wood, and scrap metal. Self-haul vehicles enter onto a raised tipping floor. To dispose of garbage they back their vehicles to a safety wall and unload over the wall onto the lower receiving floor. Garbage is pushed into a compactor chute at the south end of the receiving floor, which provides a gravity feed for one waste compactor located in the lower tunnel level of the station. The lower floor has provisions for the future installation of a second compactor if needed. Containers for recyclables such as scrap metal and appliances are located at one end of the building; chutes for recycling organics and clean wood are located nearby.



Rainwater collection system

In the transfer building, the large, flat-floor design gives the facility the ability to accept surges of waste. Waste can continue to be received even if all trailers on site are full. In an emergency, if the compactor is not functioning, solid waste may be loaded into trailers through top-load chutes. The maximum facility capacity is approximately 9,000 cubic yards on the receiving floor and 25 full trailers.

The Shoreline station was designed to maximize capacity to accept recyclables. The division collaborated with the host city and three other nearby cities to determine the list of materials to collect initially at the new station. A few materials added to the recyclables collected include organics (yard waste and food scraps), clean wood, and scrap metal. The station also has the built-in flexibility to accept additional or different recyclables as markets continue to develop and customer needs change.

To minimize possible traffic impacts of the transfer station on the host community, the division collaborated with King County's Metro Transit on an agreement with the Washington State Department of Transportation to allow solid waste transfer trailers to share Metro's dedicated access ramps to and from the adjacent Interstate 5. This arrangement will keep solid waste trucks off the neighborhood streets.

In 1973, King County adopted legislation creating the 1% for Art program, whereby capital construction projects set aside 1 percent of the budget, less property cost, for above-grade portions of the project to fund public artwork. The artist selected for this project, Carol dePelecyn worked with the Shoreline/ Lake Forest Park Arts Council, the 4 Culture Artist Selection Committee, the City of Shoreline, and the division to develop artistic design elements for the new station. The artist's design concepts call for us to question how our choices affect the environment and consider other uses for items before we throw them away.

In summary, the new Shoreline facility reflects a change in 1) how we approach the planning of new facilities – incorporating early community involvement; 2) how we build them – using the greenest elements possible; and 3) how we operate them – increasing recycling now, with the flexibility to expand as new markets emerge in the future.

Source: King County Draft 2011 Comprehensive Solid Waste Management Plan

<http://your.kingcounty.gov/solidwaste/about/planning/comp-plan.asp>

APPENDIX B
ALTERNATE DISPOSAL/PROCESSING
DESTINATIONS

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ALTERNATIVE DISPOSAL AND PROCESSING FACILITIES

Name of Facility	Owner/Operator	County	Address	Contact	Type	Mileage from North Port Centroid
North Port Public Works (presumed waste centroid)		Sarasota	1930 West Price Boulevard, North Port, FL 34286	Monica Bramble, Solid Waste Manager, 941-240-8050	Potential Transfer Station	0 miles
Landfills						
<u>Current destination:</u> Sarasota County Landfill	Sarasota County	Sarasota	4000 Knights Trail Road, Nokomis, FL 34275	Larry Alexander, Manager, Solid Waste Collections - (941) 861-6731	Class I Landfill	23.8 miles
Zemel Road Landfill	Charlotte County	Charlotte	29751 Zemel Road, Punta Gorda, FL 33955	Richard Allen, Solid Waste - (941) 764-4360	Class I Landfill	22.7 miles
Desoto County Landfill - currently not taking out-of-county waste, would be a BoCC decision	Desoto County BoCC	Desoto	3268 SW Dishong Ave, Arcadia 34266	Billy Hines, Environmental Services Director - (863) 993-4826	Class I Landfill	27.7 miles
Lena Road Landfill Not an option. Would not be interested in North Port's MSW.	Manatee County	Manatee	3333 Lena Road, Bradenton, FL	Bryan White, (941) 748-5543, ext. 8008	Class I Landfill	46.2 miles
Private Landfills						
Okeechobee Landfill (Permit says Burman Road Landfill and Clay Farms)	Waste Management	Okeechobee	10800 NE 128th Ave., Okeechobee, FL 34972	Charlie Orcutt, Engineer; Tony Bishop, (863) 357-0111	Class I Landfill	110 miles
ACMS Class I Landfill - 657 acres total in master plan. 1st cell (58.8 acres) will have 4 sub-cells. 1st phase is 2 sub-cells totaling 30 acres. Planned opening early 2012.	ACMS	Sumter	835 CR 529, Lake Panasoffkee, FL 33538 (address of Sumter Co. CDA, where ACMS scales will be. No address for Landfill yet.)	Marilyn Connell, ACMS, Inc. (352) 568-0999	Class I Landfill	145 miles
W-T-E facility						
Lee Co. Solid Waste Resource Recovery - currently agreements prohibit it, but is maybe feasible; but ash would have to go back to North Port (about 25-30% by weight)	Lee County BoCC / Covanta Lee Inc.	Lee	10500 Buckingham Rd., Ft. Myers, FL 33905	Keith Howard, P.E., Deputy Director, Solid Waste Division, (239) 533-8917	Waste-to-Energy facility	47.6 miles
Recycling:						
<u>Current destination:</u> ReCommunity Recycling (Resource Recovery Systems) Recycled Materials Processing Facility (RMPF) (North Port takes material to South County TS, 250 S. Jackson Road, Venice, FL 34292. It then is transferred to RMPF)	<u>RMPE:</u> Resource Recovery Systems, LLC (RRS) <u>South County Transfer Station:</u> Sarasota Co./RRS	Sarasota	4700 Middle Ave Sarasota, FL 34234 <i>ReCommunity Recycling was FCR, then Resource Recovery Systems, LLC</i>	Jose Vitale, (941) 359-0445; Bill Leonidas	Materials Recovery Facility (MRF) - dual stream (Single stream is an option, and has been discussed but has not progressed beyond discussion.)	41.9 miles (to South County TS: 17.7 miles)
Republic Services, Lakeland Materials Recovery Facility (MRF)	Republic Services	Polk	3820 Maine Avenue, Lakeland, FL 33801	Jim Callahan, Plant Manager, Mark Talbott, GM, (863) 665-1489	Materials Recovery Facility (MRF) - single-stream	115 miles

ALTERNATIVE DISPOSAL AND PROCESSING FACILITIES

Name of Facility	Permitted Capacity	Available Capacity	Gate Rate/Processing Fee/Revenue	Likely Long Term Tip Fee
North Port Public Works (presumed waste centroid)	N/A	N/A	N/A	N/A
Landfills				
<u>Current destination:</u> Sarasota County Landfill	Landfill life when built in 1999: 40 years.	Currently: 36-38 years life	\$57.56/ton to unincorp. businesses Municipalities: \$48.34/ton, as they do not use all services included in gate rate	County's bond requires them to charge a single, uniform rate to municipalities and to commercial customers
Zemel Road Landfill	Landfill life is to 2030 - based on current status	Yes if BoCC agreed	\$36/ton in-county \$72/ton out-of county	Would be between \$36 and \$72 per ton with long term contract
Desoto County Landfill - currently not taking out-of-county waste, would be a BoCC decision	Doesn't know permitted tonnage capacity, but have a number of years	They would have room if BoCC agreed	\$42/ton in-county \$84/ton out-of-county	Might lower out-of county fee for a long-term contract
Lena Road Landfill Not an option. Would not be interested in North Port's MSW.	Would not be interested in taking out-of-county waste	N/A	N/A	N/A
Private Landfills				
Okeechobee Landfill (Permit says Burman Road Landfill and Clay Farms)	10,000 tons a day currently @3,500	216,092,568 tons	Posted: \$39.90/ton out-of-county	Possibly \$5 to \$8/ton less than posted fee
ACMS Class I Landfill - <i>657 acres total in master plan. 1st cell (58.8 acres) will have 4 sub-cells. 1st phase is 2 sub-cells totaling 30 acres. Planned opening early 2012.</i>	Cell 1, (58.8 acres) permitted for 5.1 million tons (8.5 million cu.yds.)	5.1 million tons	Not established	Not established. "Factors such as volume would weigh into making a decision along with commitment for the waste stream." (Marilyn Connell)
W-T-E facility				
Lee Co. Solid Waste Resource Recovery - currently agreements prohibit it, but is maybe feasible; but ash would have to go back to North Port (about 25-30% by weight)	1,836 TPD	25 - 30% capacity currently available	\$40/ton	Possible 5 year agreement - not long term
Recycling:				
<u>Current destination:</u> ReCommunity Recycling (Resource Recovery Systems) Recycled Materials Processing Facility (RMPF) <i>(North Port takes material to South County TS, 250 S. Jackson Road, Venice, FL 34292. It then is transferred to RMPF)</i>	Currently processing 55,000 tons/yr, which is 60% of capacity (Only using 1 shift right now.)	40% of capacity is available	Processing fee: \$7.53/ton <i>Any revenue possibilities for NP? Willing to discuss. (Contract does not obligate them to give revenue to cities, nor does it forbid it.)</i>	Willing to discuss.
Republic Services, Lakeland Materials Recovery Facility (MRF)	10,000 tons/mon. capacity. Currently processing 35,000 tons/yr	Currently, 200 TPD. Will have 400 TPD capacity when 2nd shift added	Gross revenue ~ \$170/ton. \$80/ton processing fee, \$20/ton hauling - net revenue ~ \$70/ton	For hauling and processing, prefer 3 to 5 year contract.

ALTERNATIVE DISPOSAL AND PROCESSING FACILITIES

Name of Facility	Owner/Operator	County	Address	Contact	Type	Mileage from North Port Centroid
Waste Management, Tampa Materials Recovery Facility (MRF) Single stream planned opening Feb. 2012	Waste Management	Hillsborough	3518 East 4th Ave. Tampa, FL 33605	Larry Dalla Betta, (813) 394-1325	Materials Recovery Facility (MRF) - single-stream	87.2 miles
Waste Services (WSI) is considering building a transfer station in general area of Sarasota County	Waste Services	Sarasota		Ian Boyle (727) 572-6800, x4385; cell: (813) 352-9156; David Smith, (941) 737-2201	Considering building a single stream Materials Recovery Facility (MRF)	Site is unknown. Someplace in Florida. Are looking in Greater Tampa Bay
Lee County Materials Recovery Facility (MRF)	Lee County BoCC/FCR contracted to operate and maintain	Lee	10500 Buckingham Rd., Ft. Myers, FL 33905	Keith Howard, P.E., Deputy Director, Solid Waste Division, (239) 533-8917	Materials Recovery Facility (MRF) - single stream	39.5 miles
Yard Waste & food waste						
<u>Current destination (for yard waste):</u> Thomas Ranch Chipping and Mulching Facility	Thomas Ranch	Sarasota	7000 S. Tamiami Trail, Venice 34293 (Is opposite E. River Road)	Eric Anderson (941) 493-6608, ext. 227	Yard Waste - chipping, mulching and composting (on pasture)	13.1 miles
OrganicLee™ composting facility - cannot take food waste as permit is for biosolids (residuals treatment)	Lee County BoCC	Lee	5500 Church, Felda, FL	Keith Howard, P.E., Deputy Director, Solid Waste Division, (239) 533-8917	Yard waste and biosolids - produce Class AA compost	69.3 miles
Green Planet Recycling - not permitted for food waste	Green Planet Recycling	Charlotte	4694 Duncan Road #17, Punta Gorda, FL 33982	John R. Desrosiers (941) 637-6053	Yard Waste - mulching and composting	21.6 miles

ALTERNATIVE DISPOSAL AND PROCESSING FACILITIES

Name of Facility	Permitted Capacity	Available Capacity	Gate Rate/Processing Fee/Revenue	Likely Long Term Tip Fee
Waste Management, Tampa Materials Recovery Facility (MRF) Single stream planned opening Feb. 2012	max. capacity - 3 shifts @ 27 tons/hour	Over 10,000 tons/month	Bid to Polk County: regional Average Market Value (AMV)/ton minus \$50/ton fee times 73%. If AMV drops below \$50/ton, there is no processing fee.	Most contracts are 5 years with renewal terms.
Waste Services (WSI) is considering building a transfer station in general area of Sarasota County	Depends on amount of recyclables available. Could be about 2,000 tons/days	Not yet known	Would like to explore options, & revenue sharing would be an option.	Prefer 5 year contracts.
Lee County Materials Recovery Facility (MRF)	30 tons an hour - 10 hrs 6 days 65,000 tons per yr	By adding a 2nd shift would double throughout	General agreements with cities - 50% split of net revenue (gross revenue minus %-residue and \$50/ton processing fee)	Currently has 10-yr interlocals with cities
Yard Waste & food waste				
<u>Current destination (for yard waste):</u> Thomas Ranch Chipping and Mulching Facility	Putting it on pasture - about 8,000 acres - 12 inches deep per acre	Would have room. Permit would allow vegetative food waste (fruits & vegetables)	\$7/cu yd or \$25/ton - North Port currently pays by cu yd, but the material is being weighed for last month or so.	Currently, annual contract.
OrganicLee™ composting facility - cannot take food waste as permit is for biosolids (residuals treatment)	Not permitted for food waste	N/A	N/A	N/A
Green Planet Recycling - not permitted for food waste	Not permitted for food waste	N/A	N/A	N/A

APPENDIX C

RECYCLING REVENUE PROJECTIONS

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Recycling Revenue Potential

Sarasota Contract with ReCommunity

1. Contract with RRS, dba ReCommunity:
 - a. Processing fee = \$7.53/ton, adjusted annually by a CPI formula
 - 1) When ACR (Average Commodity Revenue) is > \$80/ton and < or = \$90/ton, fee reduced by 1/3
 - 2) ACR > \$90/ton, < or = \$100/ton, fee reduced by 2/3
 - 3) ACR > \$100/ton, no processing fee
 - b. Revenue
 - 1) County receives 75% of all revenue on Program Tons in excess of Protected Base Price
 - 2) Protected Base Price for Recyclable Paper is \$40.00/ton
 - 3) Protected Base Price for Recyclable Containers is \$65.00/ton

Note: North Port collects plastics 1 - 7, which could decrease the container revenue due to additional processing, as Sarasota County collects only 1 & 2 plastics. Also, North Port sends cardboard to another processor, which could decrease paper revenue from ReCommunity unless cardboard was included.

Polk County Bid from Waste Management

1. Polk County and WM are in contract negotiations, as per telephone conversation with Edward Sparks, Polk County Waste Resource Management Division
2. WM will convert Polk County's MRF to a recyclables transfer station and take material to Tampa facility
3. Financial Proposal Form stated:
 - a. County will pay \$50/ton fee
 - b. Revenue formula per ton:
AMV (Average Market Value) - \$50 (Fee to Contractor) x 73% (Share to be Paid to County)
4. Contractor will pay a \$3.50/ton host fee to County for Non-Program recyclables processed.

Polk County Bid from Republic

1. Republic was 2nd ranked vendor - material would be direct hauled to Lakeland facility
2. Republic did not offer a formula, but offered a number of "perks"
3. Financial Proposal Form stated that:
 - a. Republic estimated revenue to County to be \$95,000/month or \$1,142,000/year (@ \$33/ton)

Note: Polk County currently collects approximately 34,500 tons of Program recyclables per year.

Lee County MRF

General agreements with cities - 50% split of net revenue (gross revenue minus %-residue and \$50/ton processing fee)

Waste Services MRF

Location and revenue sharing potential is unknown at this time

Potential Recycling Revenue Per Ton for North Port

Average Commodity of \$100/Ton

Contractor	ACR/AMV [1] @ \$100/ton	Processing Fee	Base/Floor Price	% Above Base/Floor Price	Total/Ton
ReCommunity [2]					
Paper	100.00	0.00	40.00	70%	42.00
Containers	100.00	0.00	65.00	70%	24.50
Waste Management	100.00	50.00	N/A	73%	36.50
Republic [3]	100.00	80.00	N/A	N/A	20.00
Lee County MRF	100.00	50.00	N/A	50%	25.00

[1] ACR = Average Commodity Revenue; AMV = Average Market Value

[2] Assume that ReCommunity would drop the percent share to 70%

[3] Republic told MSW it would be \$80/ton processing and \$20/ton hauling.

Average Commodity of \$150/Ton

Contractor	ACR/AMV [1] @ \$150/ton	Processing Fee	Base/Floor Price	% Above Base/Floor Price	Total/Ton
ReCommunity [2]					
Paper	150.00	0.00	40.00	70%	77.00
Containers	150.00	0.00	65.00	70%	59.50
Waste Management	150.00	50.00	N/A	73%	73.00
Republic [3]	150.00	80.00	N/A	N/A	70.00
Lee County MRF	150.00	50.00	N/A	50%	50.00

[1] ACR = Average Commodity Revenue; AMV = Average Market Value

[2] Assume that ReCommunity would drop the percent share to 70%

[3] Republic told MSW it would be \$80/ton processing and \$20/ton hauling.