Pottawattamie County Integrated Solid Waste Management Services Evaluation

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Executive Summary

Background

The Pottawattamie County Transfer Station (Transfer Station) was constructed in 1983 with the primary purpose of providing integrated solid waste management (ISWM) services to municipalities within the County. The Transfer Station accepted municipal solid waste (MSW) and construction and demolition (C&D) materials from municipal and private haulers servicing the communities of Carson, Hancock, Neola, Minden, Underwood, and Walnut. The Transfer Station also accepted waste materials from residents of these communities and rural residents that self-hauled their materials to the Transfer Station.

The original funding mechanism for the Pottawattamie County Transfer Station (Transfer Station) operations was to charge the communities that used the facility a per capita fee. As communities opted to haul directly to a landfill, the per capita funding structure was changed to a per ton charge to non-rural customers. The rural residents support Transfer Station operations through their taxes. In 1994 the MSW and C&D disposal fees assessed to non-rural customers was $32.00 per ton. In 1996 this fee increased to $50.00 per ton and $100 per ton in 2012. When disposal fees reached $50.00 per ton only the cities of Hancock and Walnut continued to use the Transfer Station. These communities ceased using the Transfer Station when disposal fees reached $100.00 per ton. With declining tonnage and utilization of the Transfer Station it was determined that a comprehensive review of the facilities and county-wide solid waste needs of the citizens needed to be conducted.

The Pottawattamie County Board of Supervisors (Board) retained BARKER LEMAR ENGINEERING CONSULTANTS (BARKER LEMAR) to perform an ISWM Report (Report) focusing on the services and operations of the Transfer Station. The purpose of the Report is to evaluate existing Transfer Station services and identify potential alternative strategies to improve operational efficiencies and service costs.

Introduction

Over the past several years, the total tons managed by the Transfer Station have continued to decrease. Table ES1 shows the total tons of MSW and C&D received at the Transfer Station, the total number of container pulls, and the associated hauling and disposal costs over the past 10 years.

Table ES1 – Transfer Station MSW and C&D Tonnage Management for Past 10 Years

Category	Fiscal Year									
	2006	2007	2008	2009	2010	2011	2012	2013 [1]	2014	2015[3]
Total Tons	1,768	1,811	1,817	1,735	1,903	1,688	1,645	955	622	837
# Trips to Landfill	NA	NA	200	127	238	218	200	140	102	121
Estimated Expenses										
Hauling[2]	NA	NA	$68,000	$43,180	$80,920	$74,120	$68,000	$47,600	$34,680	$41,140
Disposal[2]	$41,553	$42,557	$42,705	$40,764	$44,715	$39,657	$38,657	$22,443	$14,617	$19,670
Total	**NA**	**NA**	**$110,705**	**$83,944**	**$125,635**	**$113,777**	**$106,657**	**$70,043**	**$49,297**	**$60,810**
Cost Per Ton	**NA**	**NA**	**$61**	**$48**	**$66**	**$67**	**$65**	**$73**	**$79**	**$73**

[1] *City of Hancock and Walnut ceased using transfer station for MSW and C&D December 2012.*

[2] *Estimated expenses may differ from direct tonnage to expense calculations due to rounding of tonnages.*

[3] *FY 2015 tonnages include wastes generated from receipt of storm debris.*

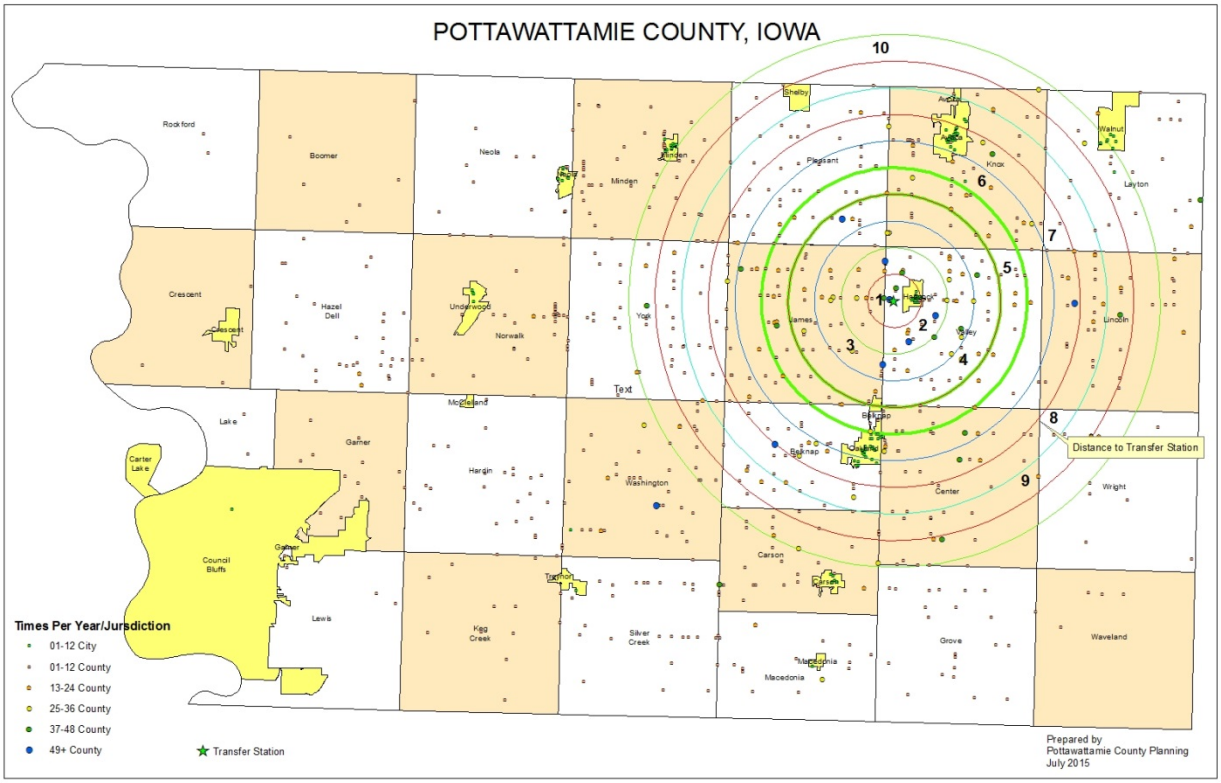
Table ES1 shows a total hauling and disposal expense of $60,810 for fiscal year (FY) 2015. Table ES1 does not include the operational expenses (i.e., maintenance, salaries, utilities, etc.) of the Transfer Station.

The total operational expense (including hauling and disposal) was:

- $168,740 (or $175 per ton) in FY 2013;
- $129,949 (or $209 per ton) in FY 2014; and
- $118,735 (or $142 per ton) in FY 2015.

Staff provided data on the number and type of customers that utilized the Transfer Station in FY 2015. Figure ES1 shows the location of the Transfer Station, a 10 mile radius centered on the Transfer Station, and the locations of addresses that used the Transfer Station at least once in FY 2015.

Figure ES1 – FY 2015 Location of Transfer Station Users and 10 Mile Radius



The data from Figure ES1 indicates that a total of 967 individual customers (i.e., unique non-rural and rural addresses) used the Transfer Station in FY 2015. Of these customers, 121 had non-rural addresses and 846 customers had rural addresses. The Report indicates there are a total of approximately 7,600 rural addresses for the County. Therefore, approximately 12% of the rural addresses utilized the services of the Transfer Station in FY 2015. The Report indicates that the Rural Services Fund contributed $97,800 in FY 2015 towards the operational expenses of the Transfer Station. Therefore, the Rural Services Fund contributed approximately $116 per rural customer in FY 2015.

Report Summary

In July 2015, BARKER LEMAR presented the County with a summary report indicating preliminary findings of the ISWM service evaluation. This summary report identified eight items for the Board to consider for further evaluation. The Board selected the following three items for further evaluation.

1. Increase MSW and C&D Tonnage Accepted at the Transfer Station
2. Assess Facility User Fees for All MSW and C&D Customers
3. Cease Accepting MSW and C&D Waste at the Transfer Station

BARKER LEMAR worked with the Transfer Station and Administrative staff to continue the evaluation focusing on the items the Board selected. The following is a summary of each of the three options.

NOTE: Administrative staff identified approximately $149,000 in repair and maintenance (i.e., repair roof, install retaining wall and barrier, address erosion issues, etc.-See Pages 13-18 of Report for details) items that would need to be considered if the Transfer Station were to continue to provide ISWM services in a safe and efficient manner. Not all identified potential maintenance items have received repair cost estimates; therefore, the cost could be substantially higher.

Option 1 - Increasing MSW and C&D Tonnage Accepted at the Transfer Station (Pages 19-24 of Report)

Over the past several years, the Transfer Station customer base has changed from primarily servicing waste collection vehicles (residential waste collected from cities) to mainly servicing rural customers that self-haul their waste materials to the Transfer Station. The decreased amount of tonnage received at the Transfer Station decreases the potential for tipping fees (i.e., fees charged to customers) to support or cover operational expenses. As Transfer Station revenues decrease, this places greater financial burden on the Rural Services Fund which currently covers operational finance gaps.

Increasing the waste received at the Transfer Station would require that communities elect to have their waste hauled to the Transfer Station instead of directly the Loess Hills Regional Sanitary Landfill (Landfill). The Transfer Station would consolidate the waste materials and transport the waste to the Landfill for final disposal.

The Report assumed the communities of Hancock, Oakland, and Walnut would most likely elect to use the Transfer Station (due to proximity) if the hauling and tipping expenses could be comparable to their existing costs. The Report estimated that if all of these communities used the Transfer Station, approximately 2,142 tons would be received at the Transfer Station.

In order to determine the tipping point for a community to elect to have their waste hauled directly to the Transfer Station, the Report attempted to determine potential hauling and disposal costs for the City of Walnut, Iowa. The City of Walnut, Iowa was selected as the community for evaluation as it is the furthest from the Landfill and therefore, the most likely to benefit from utilizing a waste disposal facility that decreases their hauling costs.

It was estimated that the City of Walnut spent approximately $20,005 in FY 2015 to haul an estimated 416 tons of waste to the Landfill and pay disposal fees. Therefore, it is assumed that the hauling and disposal costs are approximately $49 per ton (This cost estimate does not include costs associated with providing waste collection services).

The Report indicated that the Transfer Station received a total of 837 tons (MSW and C&D) and had an operational expense of $118,735 for FY 2015. Therefore, for FY 2015, the per ton operational cost of the Transfer Station was approximately $142 per ton.

The Report identified strategies (i.e., expanding the Transfer Station to accommodate transfer trailers) in order to maximize hauling efficiencies in order to potentially decrease the per ton operational costs in order to establish an attractive tipping fee for the communities. The Report estimates that by increasing the annual tonnage from 837 tons to a total of 2,142 tons per year, and implementing potential efficiency improvements, that the operational expenses for the Transfer Station (after the initial year of capital improvement and maintenance expenses) could be between $102 and $170 per ton.

It is unlikely that the communities would elect to have their waste hauled to the Transfer Station instead of directly to the Landfill as these costs are not competitive to current practices. Therefore, without the ability to entice additional customers (i.e., communities) to use the Transfer Station, the annual tonnage managed by the facility will likely remain steady or continue to decline.

Option 2 – Assess Facility User Fees for All MSW and C&D Customers (Pages 25-38 of Report)

The Transfer Station had a total operational expense of $118,735 in FY 2015. The facility received approximately $19,876 in revenue (i.e., non-rural customer tipping fees, tire and appliance disposal fees, and scrap metal sales). This left an operational financial gap of approximately $98,859 in FY 2015. This operational financial service gap was covered by the Rural Services Fund.

Currently the Transfer Station assess MSW and C&D tipping fees ($5 per car, $50 per truck or $0.05 per pound) to non-rural customers and does not assess a direct user fee to rural customers. The Board directed BARKER LEMAR to evaluate potential strategies to assess user fees to Transfer Station customers.

The Report evaluated the following fee strategies:

- Charge all customers a user fee;
- Charge rural customers cost of transportation and disposal;
- Charge all customers by weight;
- Charge by vehicle type; and
- Different fees for MSW or C&D materials.

The Report assumes that assessing any fee to customers that have not historically directly paid a direct user fee will create a decrease in the number of times the Transfer Station may be used. Determining the potential decrease in the number of customers based on assessed fees is beyond the scope of this project. However, the Report assumed a decrease in number of vehicle trips (i.e., number of times customers use the facility) per year, but did not assume a decrease in the total number of customers (i.e., unique addresses).

Table ES2 shows the evaluated fee strategies and their estimated revenue.

Table ES2 – User Fee and Estimated Total Revenue Summary

Fee Strategy	Estimated Total Revenue
Charge all customers a user fee: - $5 per car - $50 per truck - $0.05 per pound	$87,580
Charge rural customers a fees that cover just hauling and disposal costs: - $2 per rural car - $40 per rural truck - $0.04 per pound	$99,154[(1)]
Charge all customer by weight: - $7 per car - $70 per truck - $0.07 per pound	$122,612
Charge by vehicle type: - $5 car - $26 per truck	$139,595

(1) Estimated revenue does not include current non-rural tipping fee revenue which was approximately $5,000 in FY 2015

Ultimately, the Board would need to decide the purpose of the user fees. Assessed user fees could be designed to cover all operational expenses or partially cover costs while using the Rural Service Funds to cover the operational financial gap.

Option 3 – Cease Accepting MSW and C&D Waste at the Transfer Station (Pages 39-44 of Report)

Eliminating the service of accepting MSW and C&D materials at the Transfer Station may allow the Board to reallocate Rural Service Funds currently allocated to the operations of the Transfer Station to support other ISWM services and programs. The Report identified the following ISWM services that may potentially continue to provide ISWM services to County residents.

- Countywide Drop-Off Recycling Programs
- Establish Citizen Convenience Centers
- Subsidize Community Clean-Up Events
- Modify Transfer Station to Offer Additional Recycling Opportunities

Countywide Drop-Off Recycling Programs

Currently, the communities of Carson, Council Bluffs, and the Transfer Station are the only locations that accept drop-off recyclables within Pottawattamie County. The Board could use Rural Service Funds to either establish County owned and operated drop-off recycling locations or work with communities to partially subsidize existing and/or future drop-off recycling programs (that would allow County residents to participate) to help increase the opportunities for rural residents to participate in recycling. The Board could provide communities that wish to establish drop-off recycling sites for rural residents an agreed upon annual fee or work with the communities to purchase needed containers.

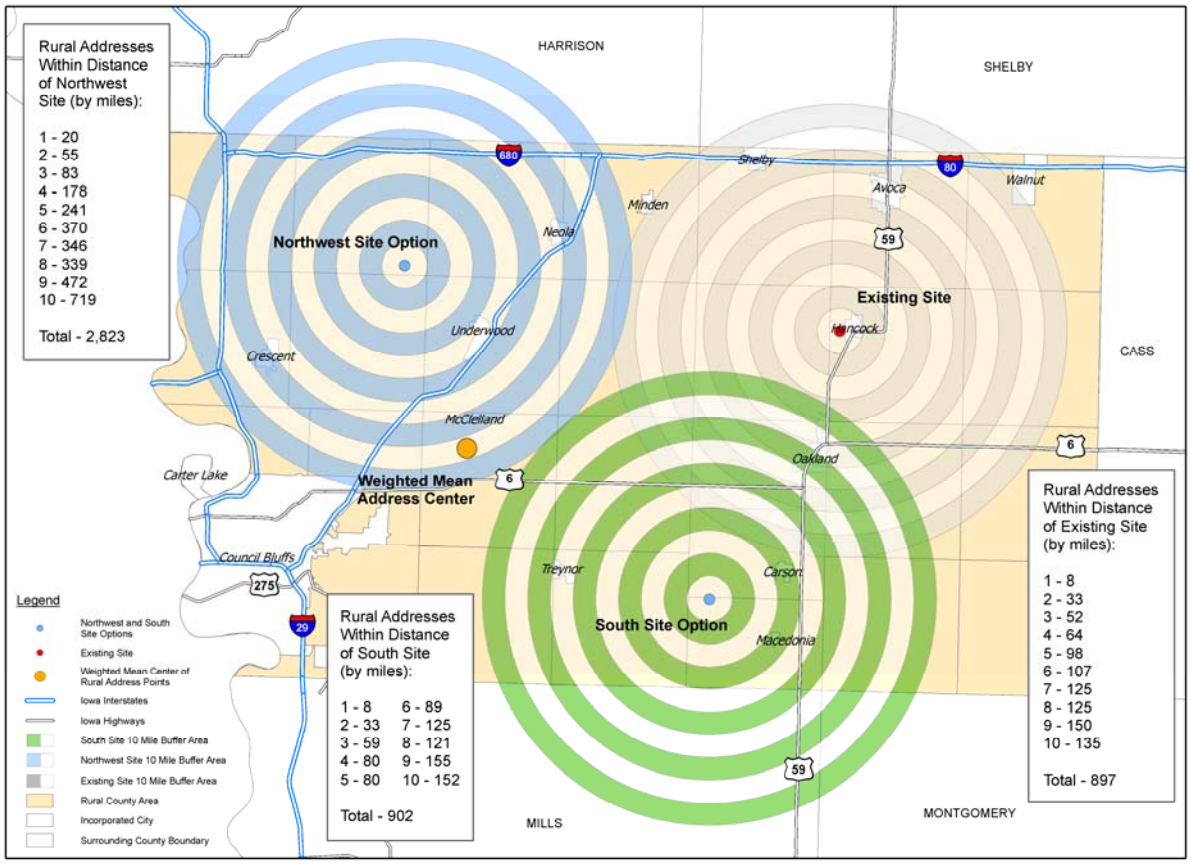
This program could provide recycling services to rural and non-rural residents by expanding access to recycling services throughout the County.

Establish Citizen Convenience Centers

A citizen convenience center (CCC) provides similar services as a transfer station but is limited to accepting MSW and C&D materials from citizens and small businesses that do not utilize waste collection vehicles. The CCC does not need to be a fixed facility, and could be a set location where a container or vehicle is available for residents and small businesses to dispose of their waste. Converting the Transfer Station to a CCC and establishing two other locations could potentially provide access to MSW and C&D disposal services to over 4,600 rural addresses within 10 miles of each location. The Report estimates that about half of these rural households may use one of the CCC facilities at least once a year. This is approximately an increase of nearly 2,000 rural households compared to the number of rural households that used the Transfer Station in FY 2015 (496 rural households).

Figure ES2 shows the current location of the Transfer Station and two potential locations. The site selection for the Northwest and South Site Options were not based on any optimal physical locations (i.e., County owned land, access to concrete roads, proximity to manned facility, etc.). Rather, the sites were selected to maximize service coverage for rural customers.

Figure ES2 – 10 Mile Radius Map of Transfer Station and Selection Locations



1 inch = 5 miles

Address data provided by the Pottawattamie County Planning Department

Subsidize Community Clean-Up Events

The Board could elect to subsidize existing community clean-up event programs that would allow rural residents the opportunity to participate in the program. Clean-up events typically allow residents the opportunity to set out bulky materials for disposal at no additional charge. The Board could work with communities that have established community clean-up events to allow rural customers to also participate in the service. The clean-up contractor could either allow the rural customers to deliver their material to a designated location or collect the material at the rural household location. Contributing funds to an existing community clean-up service contract to include rural households is assumed to be less costly than establishing a new contract.

Modify Transfer Station to Offer Additional Recycling Opportunities

The Transfer Station could be modified to accept and store recyclable materials in the current tipping area. Recyclable materials could include home furnishings (i.e., cabinets, light fixtures, electrical wiring, plumbing fixtures, wallboard, trim, windows, dimensional lumber, etc.) generated from deconstruction activities performed by contractors and/or volunteer organizations, and good condition furniture and household items. This type of program would require the facility to be staffed when accepting items to supervise unloading and to ensure prohibited materials are not accepted. It would be recommended that the facility would be open at least a Friday and Saturday and according to a regular schedule (i.e., first Friday and Saturday of the month). It is undetermined how successful the County would be in securing part-time employees to cover this type of a schedule.

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1.0 Transfer Station Facility

Inasmuch as the condition of the existing Transfer Station impacts the review of all three options, it is necessary to systemically review the existing Facility. The following sections provide a summary of the Transfer Station's background, recent services, and operational expenses and revenues.

1.1 Introduction:

In January 1982 the Schueman Landfill, which provided disposal services for Pottawattamie County residents, closed. The County evaluated several potential locations to site a transfer station that would continue to provide integrated solid waste management (ISWM) services. The County selected property at the time owned by the City of Hancock, Iowa. The City of Hancock then leased the land to the County to construct and operate a transfer station.

The Pottawattamie County Transfer Station (Transfer Station) was constructed in 1983 with the original purpose of providing ISWM services to municipalities within the County. The Transfer Station accepted municipal solid waste (MSW) and construction and demolition (C&D) materials from municipal and private haulers servicing the communities of Carson, Hancock, Neola, Minden, Underwood, and Walnut. The Transfer Station also accepted waste materials from residents of these communities and rural residents that self-hauled their materials to the Transfer Station.

The operational expenses of the Transfer Station were primarily covered by assessed per capita fees to the communities that used the Transfer Station. As communities elected to have their waste directly hauled to the Loess Hills Regional Sanitary Landfill (Landfill) for disposal, instead of to the Transfer Station, the available funds for operations decreased. With communities directly hauling waste to the Landfill, not only did the total waste volumes received at the Transfer Station decrease, but the type of customers serviced changed from primarily commercial packer trucks (by volume of waste delivered) to solely self-haul (i.e., car, truck, trailers, etc.) customers. Over the past several years, the Transfer Station has been repurposed to serve a different customer base and volume throughput than it was originally constructed to serve.

Over the past 15 years, the volume of waste received at the Transfer Station has decreased from 6,142 total tons in fiscal year (FY) 1990 to 837 total tons in FY 2015. While the volume of waste has steadily decreased over the past 25 years, the costs associated with facility operations (i.e., waste and recycling container hauling fees, waste disposal fees, recycling processing fees, staff, etc.) continue to increase. In order to continue to provide ISWM services at the Transfer Station, the Pottawattamie County Board of Supervisors (Board elected to use Rural Service Funds to finance Transfer Station operations. Over the past three years, the Rural Services Fund has contributed $417,424 and managed approximately 2,409 total tons (includes tons from Hancock and Walnut as these communities used the Transfer Station for a portion of FY 2013) at the Transfer Station.

1.2 Transfer Station Infrastructure:

Currently, the Transfer Station consists of the following infrastructure:

- Access roads
- 30’ x 30’ Metal building
    - Enclosed tipping pad for MSW
    - Office and restroom
- Household hazardous material (HHM) storage building
- Storage shed
- C&D Tipping area
- Compactor system
    - MSW chute
    - Compactor box
    - Compactor cylinder and floor
- Water well

Picture 1 – Access Roads

Picture 2 – Metal Building

Picture 3 – MSW Tipping Pad

Picture 4 – Office and Restroom

Picture 5 – HHM Storage Building & Storage Shed

Picture 6 – C&D Tipping Area

Picture 7 – MSW Chute

Picture 8 – Compactor Box

Picture 9 – Water Well

The Transfer Station has an area to accept and store scrap metal and appliances. A container for recyclables is also on-site and accepts plastic, paper and glass. The Transfer Station owns two compactor containers used for MSW management and two open top roll-off containers used for C&D management. The Transfer Station contracts with JP Boring to transport MSW and C&D containers to the Landfill for disposal and to transport the recyclable container to and from the Council Bluffs Recycling Center.

Picture 10 – Appliance & Scrap Metal Storage

Picture 11 – Tire Storage

Picture 12 - Recyclable Drop-Off

1.3 Transfer Station MSW and C&D Management Operations:

The Transfer Station accepts MSW and C&D from rural customers at no direct users fee charge. Customers sign-in, providing their name and address to verify if they are rural or non-rural customers. Non-rural customers are assessed a $5 per car, $50 per truck, or $0.05 per pound fee. If customers desire to pay by weight, they are required to provide a weigh in and out ticket from a certified scale. The Crop Production Service in Hancock, Iowa currently allows customers to use their scale for a $5 service fee. Transfer Station customers utilizing this service pay the $5 fee to the Transfer Station and then the County pays the Crop Production Services. The scale hours of the Cooperative may not always be consistent or match the Transfer Station operation schedule; therefore, customers are either required to utilize a different certified scale or pay the per truck rate.

Currently, customers with dump trailers are required to haul their waste directly to the Landfill. This policy was necessary due to the large tonnages that can be hauled on dump trailers and the impact on available container volumes (either open top C&D or MSW compactor containers) being nearly exhausted with one customer. Allowing dump trailers potentially necessitates that the container be replaced with an empty container to allow the Transfer Station to continue to provide ISWM services to other customers.

MSW is unloaded inside the Transfer Station building directly into the compactor chute. The Transfer Station operator cycles the compactor cylinder as needed to maximize waste compaction. C&D is

unloaded into open-top containers that are positioned against the retaining wall. When the containers are full (or need to be replaced to prepare for anticipated volumes) the Transfer Station staff contact JP Boring to request service. JP Boring typically replaces the container with an empty container before the start of the next business day. JP Boring currently charges $340 per container pull and the Landfill charges $23.50 per ton.

Table 1 shows the total tons of MSW and C&D received at the Transfer Station, the total number of container pulls, and the associated hauling and disposal costs.

Table 1 – Transfer Station MSW and C&D Tonnage Management for Past 10 Years

Category	Fiscal Year									
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013** [1]	**2014**	**2015** [3]
Total Tons	1,768	1,811	1,817	1,735	1,903	1,688	1,645	955	622	837
# Trips to Landfill	NA	NA	200	127	238	218	200	140	102	121
Estimated Expenses										
Hauling[2]	NA	NA	$68,000	$43,180	$80,920	$74,120	$68,000	$47,600	$34,680	$41,140
Disposal[2]	$41,553	$42,557	$42,705	$40,764	$44,715	$39,657	$38,657	$22,443	$14,617	$19,670
Total	**NA**	**NA**	**$110,705**	**$83,944**	**$125,635**	**$113,777**	**$106,657**	**$70,043**	**$49,297**	**$60,810**
Cost Per Ton	**NA**	**NA**	**$61**	**$48**	**$66**	**$67**	**$65**	**$73**	**$79**	**$73**

[1] *City of Hancock and Walnut ceased using transfer station for MSW and C&D December 2012.*

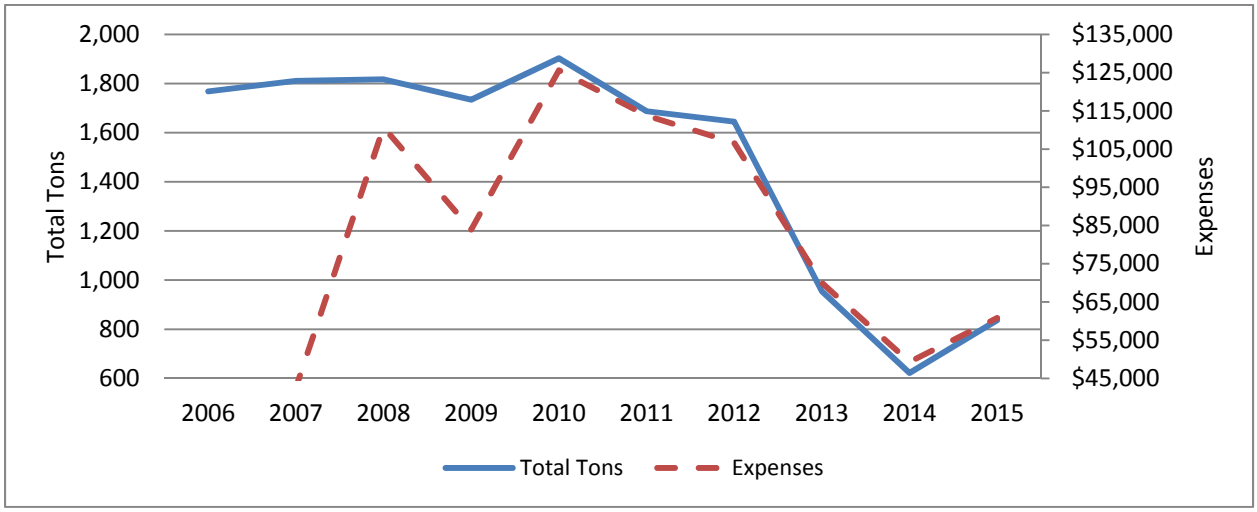
[2] *Estimated expenses may differ from direct tonnage to expense calculations due to rounding of tonnages.*

[3] *FY 2015 tonnages include wastes generated from receipt of storm debris.*

Table 1 shows a total hauling and disposal expense of $60,810 for FY 2015. The total operational expense for the Transfer Station was $118,735 in FY 2015. For the purposes of this Report, the operational expenses (excluding the hauling and disposal costs) were $57,925 in FY 2015.

Figure 1 shows the total tons and the combined estimated hauling and disposal costs for the Transfer Station over the past 10 years.

Figure 1 – Total Tons and Combined Estimated Hauling and Disposal Costs for Past 10 Years



NOTE: Hauling costs were not available for FY 2006 or FY 2007.

As Table 1 and Figure 1 indicate, the tonnage received has continued to decline over the past several years. However, the combined hauling and disposal cost remain the same and thus, the cost per ton increases (due to lower tonnage volumes).

The MSW compactor system has not received major maintenance or repair service since the Transfer Station was constructed in 1983. The compactor system compacts MSW into the compactor container from the top portion (length wise) of the container rather than traditional systems which compact from the bottom (length wise). Compacting in this manner does not allow the system to perform compaction on the waste at optimal efficiencies or achieve maximum compaction results. A representative of Solid Waste Equipment Co., which services compactor systems, estimated that the Transfer Station should be able to achieve an average of 7-10 tons per pull when operating at maximum efficiency.

Data provided by Administrative staff included the total tons by material type and the number of pulls performed by month for the past three years. Table 2 shows the total weight for C&D and MSW, the total number of times the container was pulled, and the average weight per pull.

Table 2 – Weight and Pull Data by Type of Container for FY 2013 – FY 2015

Container Type	Category	FY 13	FY 14	FY 15
Open Top (C&D)	Total Weight (tons)	355	277	475
	Total Number of Pulls	56	48	66
	Average Weight Per Pull (tons)	6.3	5.8	7.0
Compactor (MSW)	Total Weight (tons)	600	345	362
	Total Number of Pulls	84	55	55
	Average Weight Per Pull (tons)	7.0	6.3	6.6

Table 2 indicates that the average tons per pull performed between FY 2013 and FY 2015 was approximately 6.4 tons for the open top containers (primarily C&D) and 6.7 tons for the compactor containers (primarily MSW).

Figure 3 and 4 illustrate the average container weight per pull and the total number of pulls for each container type from FY 2013 through FY 2015.

Figure 2 – FY 13 – FY 15 Open Top Container Average Number of Tons Per Pull

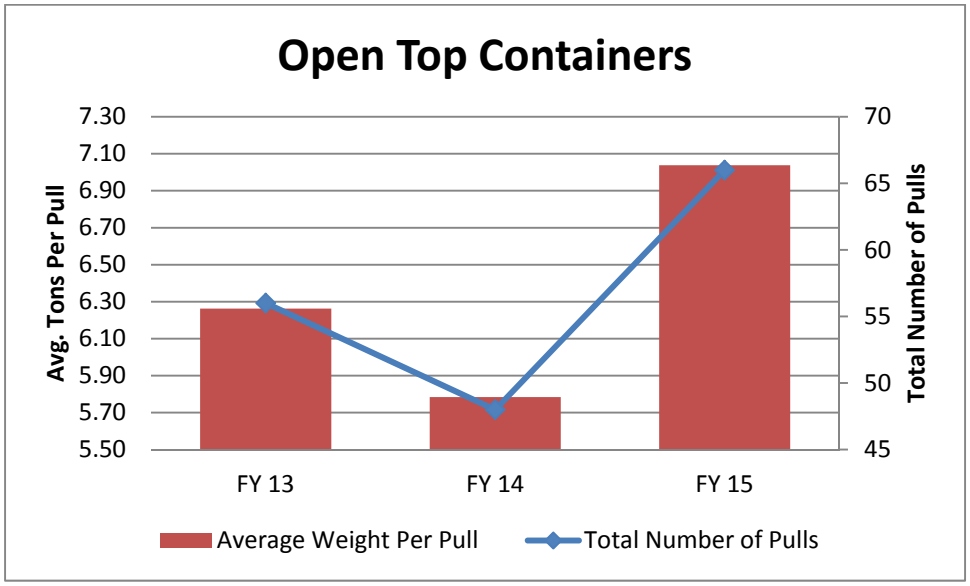
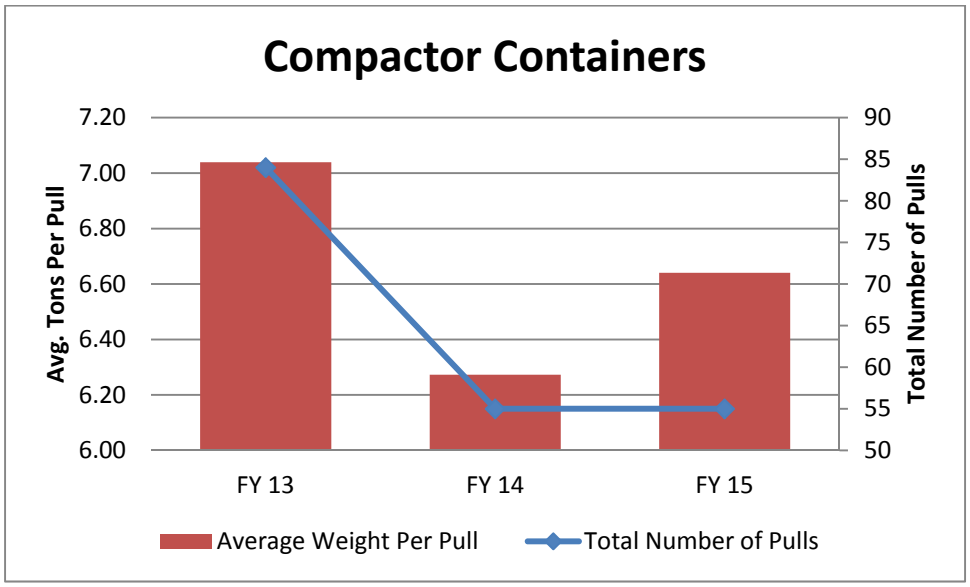


Figure 3 – FY 13 – FY 15 Compactor Container Average Number of Tons Per Pull



Due to the age and the orientation of the compactor system (i.e., compacting MSW into the compactor container from the top portion) the system is not performing at maximum efficiencies. However, an

average of 6.7 tons of MSW per pull is not far from the estimated efficiency standards of 7-10 tons per pull provided by the representative of Solid Waste Equipment Co.

1.4 Transfer Station Finances:

Transfer Station operations are partially funded from fees assessed to non-rural customers (i.e., self-haulers that have addresses within city limits), appliance and tire fees, revenue generated from sale of scrap metal, and the Rural Services Fund. Table 3 shows the estimated revenue generated from the various sources over the past three years.

Table 3 – Estimated Revenue Source Totals from FY 13 to FY 15

Revenue Source	Fiscal Year		
	2013	2014	2015
Non-Rural MSW and C&D Customers	$9,378	$4,940	$4,893
Tire Fees	$3,332	$1,919	$1,612
Appliance Fees	$3,497	$2,787	$2,709
Scrap Metal Sale	$10,459	$7,169	$10,662
Total	**$34,660[1]**	**$16,815**	**$19,876**

([1]) FY 2013 includes $7,994 in revenues received from the communities of Hancock and Walnut as they were still utilizing the Transfer Station for a portion of FY 2013.

Table 4 shows the total Transfer Station operational expenses for the past three years.

Table 4 – Total Transfer Station Operational Expenses from FY 13 to FY 15

Category	Fiscal Year		
	2013	2014	2015
Total Operational Expenses	$168,740	$129,949	$118,735

NOTE: FY 2013 and FY 2014 had expenses totaling approximately $16,000 associated with vehicle maintenance. FY 2014 had a nearly $16,000 expense due to the purchase of a new compactor container.

Table 5 shows the combined MSW and C&D tonnage, the total operational expenses, and per ton cost for operating the Transfer Station for the past three years.

Table 5 – Combined Tonnages and Operational Expenses from FY 13 to FY 15

Category	Fiscal Year		
	2013	2014	2015
Total Tonnage	955	622	837
Total Operational Expense	$168,740	$129,949	$118,735
Total Cost per Ton	$177	$209	$142

NOTE: FY 2013 and FY 2014 had expenses totaling approximately $16,000 associated with vehicle maintenance. FY 2014 had a nearly $16,000 expense due to the purchase of a new compactor container.

The Board uses Rural Service Funds to pay for Transfer Station operation expenses that are not directly covered by revenues. Table 6 shows the total funds received from the Rural Service Fund over the past three years to help cover the difference between Transfer Station revenues and expenses. The amount of Rural Service Funds allocated to Transfer Station operations is determined by calculating the difference between budgeted expenses minus budgeted revenues for each FY.

Table 6 – Total Funds from the Rural Service Funds Used for Transfer Station Operations from FY 13 to FY 15

Category	Fiscal Year		
	2013	2014	2015
Total Rural Service Funds Used for Transfer Station Operations	$145,572	$88,570	$97,800

1.5 Transfer Station Usage:

Staff provided data on the number and type of customers that utilized the Transfer Station in FY 2015. This information included the number of times a customer (i.e., individual address) used the Transfer Station and the distance between their household and the Transfer Station. Figure 4 shows the location of the Transfer Station, a 10 mile radius centered on the Transfer Station, and the locations of addresses that used the Transfer Station at least once in FY 2015.

Figure 4 – FY 2015 Location of Transfer Station Users and 10 Mile Radius

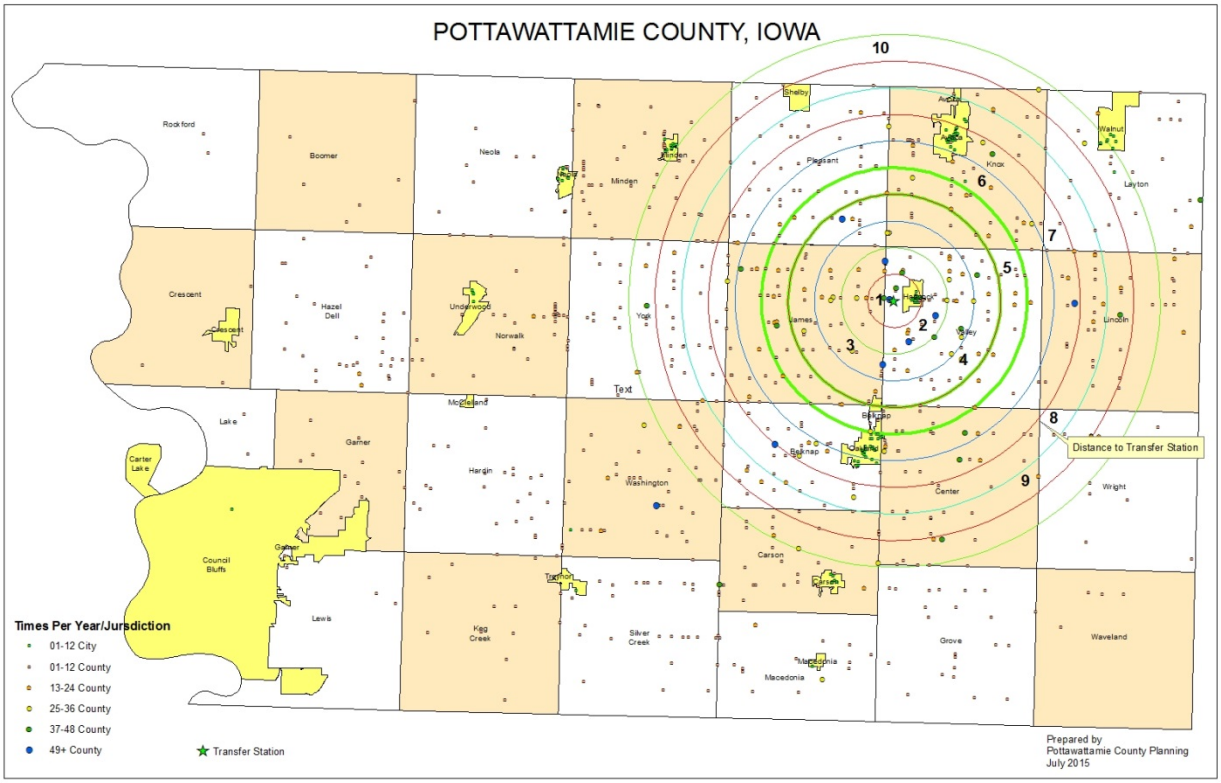


Table 7 shows the number of individual customers (i.e., unique addresses) that used the facility, their mile radius from the facility, and the number of times they used the facility in 2015.

Table 7 – 2015 Facility Customer Usage

Miles to Transfer Station	Number of Times An Individual City Address Used the Facility	Number of Times An Individual County Address Used the Facility					Total Number of Facility Uses for Participants Within the Mile Radius
	1-12	1-12	13-24	25-36	37-48	>49	
1	22	4	0	0	2	1	29
2	2	18	7	2	1	3	33
3	0	19	8	9	2	1	39
4	0	32	5	2	1	1	41
5	0	44	14	2	1	0	61
6	23	49	12	2	1	1	88
7	28	54	6	5	2	1	96
8	2	55	6	1	0	1	65
9	0	53	9	0	1	0	63
10	5	47	5	4	2	0	63
10+	39	333	12	2	2	1	389
Total Facility Users	121	708	84	29	15	10	967

Table 7 indicates that nearly 85% of the 2015 rural customers used the facility no more than once a month. Approximately 6% of the rural customers used the facility more than twice a month in 2015. Table 7 also shows that there were no non-rural customers that used the facility more than once a month.

Table 8 shows the number of total vehicles that used the Transfer Station for each frequency of usage category.

Table 8 – Total Number of Customer Vehicles by Facility Usage Category

Category	Number of Times A City Address Used the Facility	Number of Times A County Address Used the Facility					Total
	1-12	1-12	13-24	25-36	37-48	>49	
Total Customers in FY 2015	121	708	84	29	15	10	967
Total Number of Vehicle Trips in FY 2015	207	2,413	1,468	872	661	394	6,015

Table 8 shows an estimated 6,015 total vehicles using the facility in 2015. This represents approximately 115 vehicles per week, or approximately 23 vehicles per day.

Staff provided information on the number of customers per day for the time period between January 2015 and July 2015. The largest number of vehicles on a single day occurred on Saturday, June 20th with 70 vehicles. The fewest number of vehicles on a single day occurred Wednesday, January 7th with 4 vehicles. Table 9 shows the average number of vehicles per day of the week for the time period between January 2015 and July 2015. The Transfer Station is closed Sunday and Monday.

Table 9 – Average Number of Vehicles per Day Between January 2015 and July 2015

Category	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
Average Number of Vehicles	27	17	19	29	52	144
Percentage of Total Vehicles	19%	12%	13%	20%	36%	100%

Table 9 shows that a majority (56%) of all Transfer Station customers (between January 2015 and July 2015) used the Transfer Station on Fridays and Saturday. Nearly 70% of all Transfer Station customers (between January 2015 and July 2015) used the Transfer Station between Thursday and Saturday.

1.6 Facility Repair and Maintenance:

The Transfer Station was originally constructed in 1983 and has continued providing disposal services for MSW and C&D materials. The total number of tons and customers managed by the facility has decreased over the years. Facility maintenance of aging equipment (and infrastructure) potentially could pose an operational concern.

Staff has indicated that there has not been a need until recently for significant repairs to be made at the Transfer Station. While minor maintenance (i.e., concrete repair, oil and oil filter replacement for the compactor equipment, etc.) have been performed by staff to help maintain operational efficiencies and safety, it (appears from declining tonnages with the compactor system and aging infrastructure) that maintenance may be needed to maintain optimal operation.

The total waste tonnages accepted at the Transfer Station have decreased over the years, mainly attributed to the loss of waste collected from the smaller cities. The number of vehicles using the facility seems to remain consistent, while the number of individual customers (i.e., unique addresses) has declined. In the past three years (FY 2013 – FY 2015), the facility has accepted a total of 2,409 tons of MSW and C&D from nearly 20,500 individual vehicles. The wear and tear on the facility and equipment is caused by the type of waste and the number of customers managed.

Staff identified maintenance items that the Board should consider addressing if the facility is to continue to safely and efficiently provide ISWM services. Staff has received cost estimates to perform some of the identified maintenance items; however, some of the costs to perform the potential maintenance items are unknown and further investigation would be needed to develop the scope of the work. The cost of maintenance and security system items that have been identified by the Administrative staff where cost estimates have been received totals over $149,000. Again, it is important to note that not all identified potential maintenance items have received repair cost estimates; therefore, the cost could be substantially higher. Many of these items should be addressed if the Transfer Station is going to continue to provide ISWM services.

Staff identified maintenance and improvement items include the following and are discussed in greater detail below.

- Erosion of soil under concrete apron and behind retaining wall ($20,000 or more)
- Sloughing of gravel road to the east ($100,000)
- Drains needed for retaining wall (cost unknown)
- Replacement or repair of facility roof ($20,000 or more)
- Preventative maintenance on compactor equipment ($3,500)
- Replacement of water well used for bathroom water (cost unknown)

Erosion of Soil Under Concrete Apron and Behind Retaining Wall:

Operations staff has recently indicated that over the years they have removed soil from the bottom corner of the retaining wall abutting the Transfer Station's south wall. This appears to be an indication that soil is eroding behind the retaining wall creating voids. These voids may present a safety concern as they may be occurring behind the retaining wall, underneath the concrete apron for the customer vehicle entrance to the Transfer Station, and/or potentially underneath the footings which support the walls of the Transfer Station.

Picture 1 - Erosion Behind Retaining Wall

Administrative staff retained a contractor to drill bore holes into the concrete apron in an attempt to identify potential voids. The contractor identified several locations underneath the concrete apron that indicated potential voids. The exact locations and depths could not easily be determined but indications of represent a potential safety concern exist as the concrete apron could be "floating" over voids. If left unattended, the concrete over these potential voids could fail, causing a sinkhole.

Picture 2 - Concrete Apron

The contractor also attempted to measure potential voids behind the retaining wall. The contractor stated that along the Transfer Station's south wall there were areas where they did not come into contact with backfill until at least 5 feet behind the retaining wall. This may pose a potential safety concern as the concrete retaining wall may not be properly supported, which could cause sections of the retaining wall to fail.

The contractor recommended removing the concrete apron to expose the backfill in order to fully assess the potential erosion and voids. Exposing the backfill should allow the contractor to examine the depth and width of the void areas as well as allow an engineer to assess any potential risks to the support footings of the Transfer Station. The contractor estimated the cost of initially removing and replacing the concrete apron to be approximately $20,000. This cost estimate does not include fees for potential repairs.

Sloughing of Gravel Road to the East:

The Transfer Station is constructed in a Floodplain and the land where the Transfer Station is located was built up to accommodate the design. The access road on the east side of the Transfer Station has eroded and sloughed down towards the municipal waste water treatment lagoons. This erosion and sloughing has been escalated by the increased rainfall in 2015. Due to the steep slopes and lack of a retaining wall, the slopes have and will continue to erode. As erosion continues, the slopes will continue to cut back to the west towards the Transfer Station. The eroded slopes will slowly decrease the amount of space vehicles have to maneuver into position (i.e., to back into the transfer station or towards the retaining wall) and the steep slopes present a fall risk to vehicles and people.

Picture 4 - Sloughing Gravel Road

Administrative staff received a quote from a contractor to install a new 220 foot long retaining wall and a vehicle guard rail for approximately $100,000. This retaining wall and guard rail would help prevent further erosion and sloughing of the east access road and help prevent vehicles and people from falling down the steep slope.

Picture 3 - Sloughing Gravel Road

Drains Needed for Retaining Wall:

The current retaining wall is 30 feet long by 14 feet tall and does not have embedded drains. Therefore, the backfill is likely saturated with storm water and thus increasing the pressure on the retaining wall.

Cracks in the retaining wall consistently weep storm water, indicating water is being contained behind the wall. Drains should be installed in the retaining wall allowing the water an opportunity to drain and therefore decreasing the potential pressure on the retaining wall. Administrative staff does not currently have a cost estimate for this repair.

Picture 5 - Weeping Retaining Wall

Replacement or Repair of Facility Roof:

The roof of the Transfer Station will likely need to be replaced as it was temporarily repaired in 2013 due to water leaking into the Transfer Station and into the fire alarm system. Administrative staff hired a contractor to caulk suspected leak locations. It is assumed that with the expansion and contraction of the roof due to temperature changes, that the caulking will soon fail and the leaking will continue. The cost estimate to replace the roof was approximately $20,000 in 2013. Increased construction costs will likely result in this replacement or repair cost being higher with current contractor rates.

Preventative Maintenance on Compactor Equipment:

The Transfer Station uses a compactor and vertical bailer system to compact MSW into a compactor container. This compactor system was installed in 1983 and has not received major service (i.e., repair or replace components) since that time. General maintenance (i.e., change oil and filters, spot welding, painting, house replacement, etc.) has been performed by service contractors and previous operational staff. However, for approximately the past two years, no maintenance or preventative maintenance has been performed on the compactor system.

Picture 6 - Compactor System

Administrative staff has received a bid for performing preventative maintenance on the compactor system from a service contractor. The annual cost to perform preventative maintenance activities is approximately $3,500 annually. This estimated cost does not include labor or part fees associated with any minor repairs (i.e., repair leaking hoses, etc.) that need to be performed. Minor repair services would be performed on a time and materials basis.

At the time of this Report, a compactor system evaluation was not performed to identify potential maintenance or repair/replacement items and associated costs. However, a service contractor indicated that the most expensive items to replace would be the compactor floor and cylinder costs. Without an evaluation, it is difficult to determine the compactor system's existing condition and estimated remaining lifespan; however, due to decreased tonnage compaction rates, it is anticipated that equipment replacement or rebuilding may be needed.

It is recommended that a service contractor be contacted to perform a system evaluation to determine maintenance or repair/replacement activities that may need to be performed in order to either increase facility usage or maintain existing usage levels.

Replacement of Water Well Used for Bathroom Water:

The water well which was installed when the facility was constructed provides water to the facility's bathroom. Administrative staff has indicated that the water is assumed to be non-potable due to its odor and lack of clarity. Staff suspects that the well may be contaminated due to its close proximity to the municipal wastewater treatment lagoons. Bottled water is utilized for human consumption.

Picture 7 - Water Well

During the winter, the water lines freeze and no water is available in the bathroom for flushing or hand washing. Water is brought in by staff to be used for these activities during these times. Due to the location of the water lines and inaccessibility, insulation of the water line is not an option.

Testing should be performed to determine the water quality and to determine if replacing the well would be appropriate. At the time of this Report, Staff does not have a cost estimate to perform water testing or for potential well replacement.

Security:

In addition to Transfer Station repair and maintenance activities, Administrative staff has indicated a need to establish a security and surveillance system at the Transfer Station. Operational staff at the Transfer Station manages cash and interacts with customers. There are also valuable metals (i.e., scrap metal and appliances) and expensive equipment on-site. While having a video security system does not prevent an incident such as theft, vandalism, or personal safety concerns from occurring, security systems can provide a deterrent. If Facility staff felt threatened by an individual(s) they could state that the Facility was being video monitored and recorded which may help disarm a potential aggressive situation. Operational staff could also monitor activities in the recycling area from the office to see if people need assistance and to monitor their activities. The security and surveillance system could also potentially be used to help identify individuals that are suspected of improper activities (i.e., dropping off prohibited materials, etc.).

Staff received a quote from a security and surveillance company to install a system and perform security monitoring of all devices 24 hours a day. The security and surveillance system equipment (and placement location) recommended by the company is listed below.

- Door contact sensor (east service entry door);
- Two outdoor cameras (driveway approach and appliance recycling area views);
- One indoor camera (waste receiving area);
- One motion sensor (waste receiving area); and
- Security video monitor, recording device, and control pad.

The estimated equipment and installation cost is approximately $6,000. The monitoring fee (this excludes any maintenance service agreements and fees) is approximately $25 per month or $300 per year.

2.0 Option 1 - Increase MSW and C&D Tonnage Accepted at Transfer Station:

As previously stated in the Report, the Transfer Station was primarily constructed to provide ISWM services to the rural communities of Pottawattamie County. As Minden and Neola are no longer part of the Iowa Waste Systems Association Planning Area, the Transfer Station is not able to accept waste generated from these communities. Over the past several years, the Transfer Station has continued to see a decrease in the total tonnage of MSW and C&D received at the Facility.

The primary reason for the decreased tonnage volumes is due to the small communities electing to have their waste directly hauled to the Landfill as the communities contracted with commercial haulers rather than the city providing services and delivering waste to the Transfer Station. Haulers servicing Pottawattamie County communities that have disposal contracts Iowa Waste Systems Inc. are contractually obligated that their collected waste is ultimately disposed of at the Landfill.

The Transfer Station is approximately 40 miles (or 44 minutes) from the Landfill. Allowing the waste to be consolidated before transport to the Landfill may potentially decrease collection service costs by reducing the total hauling miles for waste collection service providers. Decreasing the total hauling miles may:

- Decrease city contractor labor hours spent hauling;
- Decrease fuel consumption and maintenance costs for hauling activities; and
- Decrease wear and tear on city contractor hauling equipment due to the more favorable permanent roads and limiting contact with Landfill haul roads and working the face.

Consolidating waste at the Transfer Station may also provide the collection service provider the opportunity to expand existing services or provide additional services utilizing current labor and equipment resources.

Within 10 miles of the Transfer Station there are the communities of Avoca, Hancock, Minden, Oakland, Shelby, and Walnut. Of these communities, only Hancock, Oakland, and Walnut are part of the Iowa Waste Systems Association Planning Area. Therefore, the Transfer Station could only accept waste from these communities unless the other communities became part of the Iowa Waste Systems Association Planning Area.

The cities of Hancock, Oakland, and Walnut have a combined population of approximately 2,474 (Source: US Census Bureau). Using the EPA's estimated 2.89 pounds of MSW generated per person per day (Source: Advancing Sustainable Materials Management: Facts and Figures 2013), these communities are assumed to generate approximately 1,305 tons of MSW annually. This figure does not include an estimate for any waste generated by industrial, manufacturing, or C&D generators.

If the Transfer Station accepted 1,305 additional tons of MSW in FY 2015, the total tonnage managed would have been approximately 2,142 tons annually or 41 tons per week. This is approximately the amount of material the Transfer Station was managing in the mid to late 1990's.

Using the average per pull tonnage for the previous three years for both C&D (open top containers) and MSW (compactor containers) of 6.51 tons, the Transfer Station would have to haul approximately 329 containers annually to the Landfill or an average of approximately 6 times per week. Over the past three years, the Transfer Station has averaged a total of approximately 10 pulls per month (this includes MSW and C&D containers). The cost to haul the material using the existing hauling service contract ($340 per pull) is estimated to be approximately $104,040. The total disposal cost ($23.50 per ton) is estimated to be $50,337. The combined hauling and disposal cost is estimated to be **$154,377** or approximately **$72 per ton**.

Currently, the containers are replaced after business hours to accommodate the service provider's schedule. It is likely that if the Transfer Station was managing wastes from the surrounding communities that the containers would need to be replaced daily and likely during business hours. The schedule may not be an option for the current service provider and may necessitate purchase and operation of transportation equipment or establishing hauling services with another provider. The cost for compactor containers is approximately $15,000 and 40-yard roll-off open top containers are approximately $8,000. Assuming the Transfer Station would need to purchase two additional containers of each type, the total purchase cost is estimated to be approximately $46,000.

It is anticipated that managing additional waste at the Transfer Station would require increased maintenance for facility equipment (i.e., compactor system), facility infrastructure (i.e., gravel driving surface), purchase of containers, as well as an increase in utility (i.e., electricity for the compactor system) and office expenses. Without developing a comprehensive operational plan and capital improvement plan, it is difficult to develop an estimated cost for increased maintenance and operational activities. For the purposes of this Report, it is assumed that these additional maintenance and operational expenses may increase the current operational expenses (excluding hauling and disposal costs) approximately $7,000 annually. Therefore the estimated operating expense with the additional tonnage would be approximately $64,925 (excluding hauling and disposal costs).

Assuming the containers could continue to be serviced by the current contractor it is estimated that the total operating expense for the Transfer Station would be approximately **$265,302** for the first year and approximately **$219,302** for following years. *This equals approximately **$124 per ton and $102 per ton** respectively.*

If the Transfer Station were to assume the responsibility for hauling the containers to the Landfill, Administrative staff estimate the Transfer Station would need two full-time employees (with commercial driver's licenses) and a part-time employee. The part-time employee would manage the Transfer Station operations and two full-time employees would manage the containers as well as provide staffing support for Transfer Station operations. It is estimated that adding two full-time staff with commercial driver's licenses (CDL) would add approximately $129,000 per year to the Transfer Station operational expense. This estimated cost includes estimated salary, FICA, IPERS, and health insurance costs for the two full-time positions. Changing the current full-time position to a half-time position could potentially provide a cost savings if sufficient personnel could be hired for the part-time

position. However, to present a conservative staffing cost assessment for this scenario, it is assumed that the County would have three full-time employees for this scenario.

The Transfer Station would need to purchase transportation equipment to manage the containers. Administrative staff estimated the cost of this equipment to be approximately $140,000 with $15,000 per year for operational maintenance. With the increase in tonnage received at the Transfer Station, it is assumed the general operational costs would increase approximately $7,000 per year.

Assuming the Transfer Station would be responsible for hauling containers to the Landfill it is estimated that the total operating expense for the Transfer Station would be approximately **$549,302** for the first year and approximately **$363,302** for following years. This equals approximately **$256 per ton and $170 per ton** respectively.

Walnut, Iowa is the furthest city from the Landfill of the communities within 10 miles of the Transfer Station. Assuming Walnut generates approximately 8 tons of MSW (2.89 pounds per person per day EPA estimate) per week and the community's residential waste is collected using front load packer trucks with a capacity averaging 8 tons, the community's service needs could likely be provided by two trucks per week. Thus, at most, two trips to the Landfill would be needed per week. Walnut is approximately 54 miles and 60 minutes from the Landfill. Assuming two front load packer trucks per week collect the residential waste from Walnut, these vehicles travel a total of approximately 216 miles (round trip to the Landfill and back to Walnut) per week, or 11,232 miles per year.

At the Federal mileage rate of $0.56 per mile (which includes costs associated with vehicle operation, depreciation, insurance, maintenance and repairs, and fuel), this is approximately $6,290 in hauling expenses per year. Assuming a labor rate of $20 per hour for hauling services and total hours per week for hauling services of 4 hours, the estimated labor cost is approximately $80 per week or $4,160 per year. The total estimated cost for hauling waste to the Landfill in this scenario is approximately $10,450 per year. The City of Walnut is charged $23.50 per ton for disposal at the Landfill. The estimated annual disposal fee expense is $9,550. The total estimated hauling cost ($10,450 per year) and estimated disposal fee equals approximately **$20,005** per year. Therefore, it is assumed that the hauling and disposal costs are approximately **$49 per ton**. (NOTE: This cost estimate does not include costs associated with providing waste collection services.)

The City of Walnut is approximately 10 miles from the Transfer Station. Using the previously identified information concerning waste collection frequency and quantities, it is estimated the residential waste collection vehicles would travel a total of 40 miles per week or 2,080 miles per year. Using the Federal Mileage rate, this is approximately $1,165 in hauling expenses per year. Using a labor rate of $20 per hour for hauling services and total hours per week for hauling services of 1 hour, the estimated labor cost is approximately $20 per week or $1,040 per year. The estimated cost for hauling waste to the Transfer Station in this scenario is approximately **$2,205** per year. This is a potential cost savings of nearly $8,245 per year for hauling compared to hauling waste directly to the Landfill.

As discussed previously in the Report, the estimated operational and maintenance costs (after initial capital expenditures during the first year) to accept the additional wastes from the three communities

equated to approximately between **$102 and $170 per ton** (after initial capital expenses and depending on who would be responsible for transporting containers to the Landfill). If the City of Walnut transported their waste to the Transfer Station, they would have to pay a minimum of **$102 per ton**. This is estimated to be approximately $41,471 in tipping fees at the Transfer Station. The City of Walnut would then have the estimated $2,205 per year in hauling expenses in addition to the tipping fees. The estimated total annual expense for the City of Walnut to use the Transfer Station is approximately **$43,676** per year. This is estimated to be approximately **$107 per ton** (NOTE: This cost estimate does not include costs associated with providing waste collection services.).

In these scenarios, while the City of Walnut could save approximately $8,255 in estimated hauling expenses by utilizing the Transfer Station, these savings are overcome by the tipping fee assessed at the Transfer Station to cover estimated operational and maintenance costs. It is assumed that the other cities within the 10 mile radius would experience a similar increase in waste management fees compared with current management practices if they elected to use the Transfer Station. *Therefore, it is unlikely that the communities would be interested in utilizing the Transfer Station unless operational and maintenance fees could be decreased*. It is estimated that in order for the cities to find the Transfer Station a desirable option, the tipping fee would have to be reduced to approximately **$49.00 per ton**.

2.1 Modifying Facility to Accommodate Transfer Trailers:

Typically landfills appreciate waste arriving in larger vehicles (i.e., transfer trailer) compared to single garbage vehicles as it decreases their daily vehicle traffic across their scale and haul roads. Decreasing the number of vehicles accessing the Landfill may limit or decrease potential traffic congestion, wear and tear on haul roads and scale, and may allow for more efficient waste management at the working face.

Rear load packer trucks typically hold between 5-7 tons and front load packer trucks hold between 7-9 tons of waste. Transfer trailers are available in a variety of capacities but typically a 53 foot trailer would be able to hold 21-24 tons of waste. Therefore, a transfer trailer may be able to transport the same amount of waste as nearly 4 rear load packer trucks and three front load packer trucks.

Over the past three years, the Transfer Station compactor container has averaged 6.6 tons per pull. A representative of Solid Waste Equipment Co, which services compactor systems, estimates that the Transfer Station should be able to achieve an average of 7-10 tons per pull when operating at maximum efficiency. Therefore, consolidating waste at the Transfer Station to achieve desired waste collection and hauling efficiencies (as well as potential benefits of decreasing vehicle traffic at the Landfill) are not realized. To realize collection and hauling efficiencies through consolidation of waste, the Transfer Station would need to achieve an average of 20 tons per pull. Therefore, the Transfer Station would need to be modified to accommodate a transfer trailer system.

In order for the Transfer Station to accommodate a transfer trailer loading operating system that would be able to average approximately 20 tons per pull, it is anticipated that significant modifications would

be required. The compactor system would need to be removed and the base that the compactor is resting on would need to be brought down to ground level. The Transfer Station building would need to be expanded to the south by at least approximately 30 feet to establish a pit that the transfer trailer would be located (the semi-truck would not be covered by the building in this scenario). Backfill, grading, and concrete work to expand the tipping pad area would need to be performed. It is estimated that this area is approximately 15.5 feet wide by 30 feet long and 14 feet tall. This is approximately 6,500 cubic feet of fill area. Additionally, it would be advisable to add an additional overhead door to provide access to the expanded tipping pad area. It is assumed that the costs to modify and expand the Transfer Station to accommodate a transfer trailer loading operation would be significantly more than constructing a new facility. Traffic patterns and turning radius requirements for customers and the semi-trailer would have to be analyzed to determine whether the increased building size could still be accommodated. Furthermore, it should be evaluated to determine that expanding the Transfer Station at the current site is feasible while complying with zoning codes.

A recent transfer station construction project in northwest Iowa received bids between approximately $95 and $124 per square foot to construct an 8,100 square foot transfer station. Therefore, assuming the Board would elect to construct a 75 feet by 30 feet Transfer Station, the construction cost could be assumed to be between $213,700 and **$279,000** based on the recent bid history. However, every project is different and further exploration would need to be performed to establish a more accurate engineer's construction cost estimate based on the details associated with this potential project. It would also have to be determined if the current site can accommodate a larger building and comply with zoning codes.

All MSW and C&D materials would be accepted inside the Transfer Station and loaded into the transfer trailers. The expanded Transfer Station would have limited MSW and C&D storage space to coordinate optimal transfer trailer loading (i.e., mixing MSW and C&D materials) or to temporarily store materials in case equipment failure or Landfill closure due to inclement weather.

Assuming the Transfer Station could be modified (or constructed) to accommodate a transfer trailer that would average 20 tons of mixed MSW and C&D material per load, the Transfer Station operations would require that approximately 108 trips to the Landfill per year or approximately 2 trips per week (assuming a total of 2,142 tons) to dispose of received waste. In FY 2015, the Transfer Station pulled the MSW and C&D containers a total of 121 times to dispose of 837 tons.

If the transfer trailers could be serviced by the current hauling contractor, it is assumed the per pull rate may increase due to the increased per trip weights and anticipated longer unload times at the Landfill. For the purposes of this Report it is assumed that the per pull rate would increase from $340 to $500 per pull. Therefore, it is assumed that the contracted hauling rate would be approximately $53,550 per year. It is anticipated that the disposal fees ($23.50) would remain the same. Therefore, the annual disposal costs are estimated to be approximately $50,337. The combined hauling and disposal cost estimate is approximately **$103,887.**

As previously stated in the Report, it is anticipated that managing additional waste at the Transfer Station would increase operational expenses. In this scenario, the Transfer Station would be responsible

for not only the operation and maintenance of the Transfer Station, but also the two transfer trailers. The transfer trailers would be managing both MSW and C&D waste materials. Thus, maintenance costs are assumed to be higher than costs associated with maintaining compactor and open top containers. Therefore, the estimated increase to annual operational expenses is assumed to be approximately **$15,000.**

If the Transfer Station contracted for hauling services, it is likely the Transfer Station would purchase and own the transfer trailers. Owning the transfer trailers removes a potential financial burden on possible hauling service providers thus allowing more interested providers to submit service bids. The estimated cost of two transfer trailers is approximately **$175,000.**

If the Transfer Station contracted with a service provider to haul the transfer trailers, the estimated operational expense would be approximately **$630,812** for the first year (this includes estimated capital expenses of $279,000 for facility expansion and $175,000 for transfer trailers) and approximately $176,812 following years. This equals approximately **$295 per ton and $83 per ton** respectively.

If the Transfer Station were to be responsible for hauling the transfer trailers to the Landfill it is assumed that the Transfer Station would need two full-time employees (with CDLs) and a part-time employee. It is estimated that adding two full-time staff with CDLs would add approximately **$129,000** per year to the Transfer Station operational expense. This estimated cost includes estimated salary, FICA, IPERS, and health insurance costs for the two full-time positions. Changing the current full-time position to a half-time position could potentially provide a cost savings if sufficient personnel could be hired for the part-time position. However, to present a conservative staffing cost assessment for this scenario, it is assumed that the County would have three full-time employees for this scenario.

The Transfer Station would need at least one semi-tractor and two transfer trailers. The estimated cost for the semi-tractor is $98,000 and the cost estimate for two transfer trailers is $175,000. Therefore, the potential total capital investment is approximately **$273,000.**

As previously stated in the Report, it is anticipated that managing additional waste at the Transfer Station would increase operational expenses. In this scenario, the Transfer Station would be responsible for the operation and maintenance of the facility, transfer trailers, and the semi-tractor. It is estimated that the annual operational expenses may increase approximately **$25,000**.

Assuming the Transfer Station would be responsible for hauling the transfer trailers to the Landfill it is estimated that the total operating expense for the Transfer Station would be approximately $867,812 (this includes estimated capital expenses of $279,000 for facility expansion, and $273,000 for semi-tractor and transfer trailers) for the first year and approximately $315,812 for following years. This equals approximately **$405 per ton and $147 per ton** respectively.

The potential hauling efficiencies and savings that communities may achieve from using the Transfer Station compared to hauling directly to the Landfill are overweighed by the estimated costs associated with modifying the existing Transfer Station or constructing a new Transfer Station, the necessary capital acquisitions, and the estimated operational expenses.

3.0 Option 2 – Assess Facility Direct User Fees for All Customers

The operational expenses of the Transfer Station for FY 2015 were $118,735. Facility revenue for FY 2015 was $19,876. Facility revenue includes fees assessed to non-rural customers for depositing MSW and C&D, and fees assessed to all customers for appliances, and tires. Therefore, a $100,000 shortfall in revenue exists. The shortfall is currently covered by the Rural Services Fund.

In FY 2015 the Transfer Station accepted 362 tons of MSW and 475 tons of C&D for a total of 837 tons. The total expense for hauling and disposing of these tons was $60,810. Therefore, the cost to transport and dispose of the received tons was approximately $73 per ton. Inclusion of all operation and hauling expenses, minus revenue results in a cost of approximately **$142 per ton**.

Non-rural customers are currently assessed a $5 per car, $50 per truck or $0.05 per pound (including $5 scale ticket fee from the Co-Op) tipping fee. In 2015 these fees accounted for nearly $5,000 in revenue.

Since most customers do not scale their loads, the available data does not provide the opportunity to determine exactly how many tons are from rural versus non-rural customers. Therefore, a cost per ton by customer type is not available. In FY 2015 there were assumed to be a total of 207 (or approximately 3% of the total number of vehicles) non-rural vehicles that used the Transfer Station. Assuming non-rural customers delivered 3% of the total tons in FY 2015 (837 total tons) to the Transfer Station, this would equate to 29 tons assumed to be generated by non-rural customers. This equals approximately $677 in landfill tipping fees ($23.50 per ton) and approximately $1,399 in hauling fees ($340 per load assuming an average of 7 tons per load based on the total number of loads delivered to the landfill in FY 2015), or $2,076 in combined hauling and disposal expenses. When 3% (the assumed percentage of tons delivered by non-rural customers) of the total facility operational expenses (excluding the total hauling and disposal costs) are included, this adds another approximately $1,993 to the total expenses for FY 2015. In total, the cost of providing service to non-rural customers in FY 2015 was approximately **$4,069** (approximately $19.60 per vehicle or approximately **$141 per ton**). With non-rural customer tipping fees raising nearly $5,000 in FY 2015 and the estimated service costs totaling approximately $4,000, the Transfer Station operated at an estimated revenue gain of approximately $1,000 from servicing non-rural customers.

Rural customers are not currently assessed a facility user fee. The Rural Services Fund currently covers the difference between the total revenues received at the Transfer Station and the total operational costs. In FY 2015 there were assumed to be a total of 5,808 (or approximately 97% of the total number of vehicles) rural vehicles that used the Transfer Station. Since customer weight data is not available, this Report uses the percentage of total customers that were rural to estimate the total tonnage those customers may have delivered.

Approximately 97% of the total customer traffic (i.e., total number of vehicle trips) was made up of rural customers. Assuming rural customers delivered 97% of the total tons in FY 2015 (837 total tons) to the transfer station, this would equate to 808 tons assumed to be generated by rural customers. This equals approximately $18,993 in landfill tipping fees ($23.50 per ton) and approximately $39,255 in hauling

fees ($340 per load assuming an average of 7 tons per load based on the total number of loads delivered to the landfill in FY 2015), or $58,248 for hauling and disposal. When 97% (the assumed percentage of tons delivered by rural customers) of the total facility operational expenses (excluding the total hauling and disposal costs) are included, this adds another approximately $55,932 to the expenses for a total operating expense of approximately $114,179 in FY 2015 ($19.60 per vehicle or approximately **$141 per ton**).

If the Transfer Station is going to continue to provide ISWM services, the Board would need to evaluate the identified facility repair and maintenance items (identified in Section 1.6 of this Report) to determine which items would need to be performed in order to safely continue providing ISWM services. These repair and maintenance items may add approximately $149,000 or more to the facility's capital improvement budget.

3.1 Charging a User Fee:

There are a variety of methods to choose from when assessing a Transfer Station user fee. The Board would need to determine the purpose of the fees which would then lead to the potential selection of a fee strategy.

If the purpose of the fees would be to recover the costs of the services from those that use the facility, all customers should be charged a fee. If the purpose is to decrease the amount of Rural Services Fund dollars dedicated to providing the service, then it may be plausible to assess non-rural and rural customers different rates. In this case, the rural customers would pay a lesser rate than the non-rural customers as the Rural Services Fund would help subsidize the rural fees.

Unless the non-rural rates are increased from the current rates or a significant change in procedure occurs (i.e., requiring all non-rural customers to scale at the Co-Op.), a decrease in facility usage by these customers is not anticipated. A decrease in facility usage would be anticipated with any user fee assessed to rural customers. Calculating an exact decrease usage rate correlated to fee levels is complex and beyond the scope of this project. However, it can be assumed that a percentage of current customers will stop using the facility altogether, others will decrease their facility usage, and others will continue to use the facility as they have in the past.

Those that stop using the facility may transport their waste directly to the Landfill or contract with a private hauler for collection disposal services. Staff indicated that several rural customers use the facility more than twice a week and deliver small amounts of waste. It is anticipated that these customers would decrease their frequency of use but may still bring the same total amount of material. Those customers that find the facility's location and services convenient or necessary will likely continue to use the facility as they are now.

The data for customers utilizing the Transfer Station in FY 2015 (see Table 7 page 11) indicates that approximately 84% of the rural customers used the facility no more than once a month. Approximately

6% of the rural customers used the facility more than twice a month in FY 2015. The data also shows that there were no non-rural customers that used the facility more than once a month. Staff provided customer and vehicle use data for users of the Transfer Station. This data indicated that a total of 6,015 vehicles used the Transfer Station in FY 2015.

It is assumed that the number of rural vehicles using the facility more than once a month will decrease as direct user fees are assessed. Therefore, it is assumed that a majority (95%) of the rural vehicles using the facility more than 36 times in FY 2015 will decrease their usage frequency to at least between 25 – 36 times. For the purposes of this Report, the customer's frequency of facility usage is equally divided into the remaining 0 – 12, 13 – 24, and 25 – 36 categories. The decrease in facility usage frequency is assumed to be minimal (25%) for those customers using the facility more than 12 times in 2015. For the purpose of this report these customers are placed in the 1 – 12 facility usage categories.

Table 10 shows the number of non-rural and rural customers by frequency use, as well as the estimated number of vehicles. Table 10 assumes no increase or decrease in the number of facility customers (based on 2015 figures), only a change to the frequency of usage for rural customers.

Table 10 – Estimated Number of Customer Vehicles by Facility Usage Category Based on Assumed Decreased Usage Frequencies

Category	Number of Times A City Address Used the Facility	Number of Times A County Address Used the Facility					Total
	1-12	1-12	13-24	25-36	37-48	>49	
Total Facility Users in FY 2015	121	708	84	29	15	10	967
Total Number of Vehicles in FY 2015	207	2,413	1,468	872	661	394	6,015
Assumed Number of Total Vehicles Due to Assessment of Direct User Fee	207	3,499	1,352	905	33	19	6,015

Table 10 shows an estimated 6,015 total vehicles using the facility in FY 2015 with the estimated decreases in facility frequency usage.

According to the FY 2015 facility usage figures, 50% of the non-rural customers were cars and the remaining 50% of non-rural customers were trucks. 12% of the rural customers were cars and the remaining 88% of rural customers were trucks. These figures are used in Table 11 to estimate the types

of vehicles assumed to use the facility if a fee were assessed thus causing a decrease in facility usage (as described in Table 10).

Table 11 – Assumed Number of Facility Customers by Vehicle Type

Category	Number of Times A City Address Used the Facility	Number of Times A County Address Used the Facility					Total
	1-12	1-12	13-24	25-36	37-48	>49	
Assumed Total Number of Vehicles Using the Facility Usage Category Average	207	3,499	1,352	905	33	19	6,015
City Cars (50% of total)	104						104
City Trucks (50% of total)	104						104
Rural Cars (12% of total)		420	162	109	4	2	697
Rural Trucks (88% of total)		3,079	1,190	796	29	17	5,111

This estimated change in customer facility frequency provides a starting point to assess the potential decrease in customers and number of vehicles based on the assessed fee strategy (including fee levels).

Possible fee strategies may include the following:

- Charge all customers a user fee
- Charge rural customers cost of transportation and disposal
- Charge all customers by weight
- Charge by vehicle type
- Different fees for MSW or C&D materials

Below is a brief description of potential fee strategies. Following the descriptions are estimates as to the potential total revenue raised from facility tipping fees.

3.2 Charge All Customers a User Fee:

The Board could elect to apply the current non-residential fees to all customers of the Transfer Station. The current non-rural user fee structure is $5 per car, $50 per truck or $0.05 per pound tipping fee. Additionally these customers weighing their vehicles pay $5 to scale their vehicle. Charging all

customers the same fee would help eliminate confusion of charging customers the appropriate rate (i.e., rural versus non-rural addresses), potential ISWM service abuse (i.e., rural customers delivering waste generated by non-rural customers), and would fund operational expenses.

Assessing a uniform user fee per customer would likely result in a reduction of number of vehicles and potential customers (i.e., unique addresses) utilizing the Transfer Station. Determining the potential decrease in customer base as a result of assessing fees is beyond the scope of this Report. However, the reduction in frequency of use by customer (see Table 10 on page 27) is used to help address this anticipated reduction in usage.

Since rural customers are not currently assessed a user fee, weight data is not available for those customers. The total number of non-rural customers electing to weigh their loads versus paying the per vehicle fee is also unavailable. However, data is available for the number and type of customer vehicles for both rural and non-rural customers.

Table 12 – Number of Vehicles by Customer and Waste Type for FY 2015

Vehicle and Customer Type	Total Number of Vehicles	Percentage of Total Vehicles by Customer Type
Non-Rural Car (MSW)	104	100%
Non-Rural Truck (MSW)	62	60%
Non-Rural Truck (C&D)	42	40%
Total Non-Rural Vehicles	**207**	**100%**
Rural Car (MSW)	697	100%
Rural Truck (MSW)	4,089	80%
Rural Truck (C&D)	1,022	20%
Total Number of Rural Vehicles	**5,808**	**100%**

Table 12 shows that 80% of all trucks delivered MSW and 20% of all trucks delivered C&D materials.

Table 13 uses the data from Table 11 and Table 12 to show the total number of vehicles by vehicle type and fee. It is assumed that all customers delivering MSW with a truck would elect to pay by weight versus the truck fee as they likely delivered less than 1,000 pounds of MSW. Table 13 also shows the estimated revenue generated from the assessed fees.

Table 13 – Total Number of Assumed Vehicles and Estimated Direct User Fees for FY 2015

Category	Number of Estimated Vehicles by User Fee			Total
	Car ($5.00)	Truck ($50.00)	Per Pound ($0.05)[1]	
Total Assumed Number of Vehicles	800	1,064	4,151	6,015
Total Estimated Direct User Fees	$4,002	$53,178	$30,400	$87,580

([1]) Assumes this customer type delivered approximately 304 tons (or 84% of all MSW tons) in FY 2015.

Table 13 shows an estimated $87,580 in direct user fees could potentially be collected in this scenario. These estimated fees would have covered the total FY 2015 hauling and disposal costs ($60,810).

If the Board elected that direct user fees need to cover all of the operating expenses of the Transfer Station ($118,735 in FY 2015), an additional $31,155 in direct user fees need to be collected.

3.3 Charge Rural Customers Cost of Transportation and Disposal:

The Board could elect to charge rural customers the costs of hauling and disposing of the MSW and C&D material and use Rural Services Funds to pay the facility operational expenses. Using Rural Service Funds to cover operational expenses helps create a lower tipping fee for rural customers (when compared to assessing the full expenses), potentially allows Rural Service Funds to be used for facility maintenance and repair activities without increasing historical funding levels, and helps establish a more financially equitable service.

As previously stated in the Report, approximately 97% of the total customer traffic (i.e., total number of vehicle trips) for FY 2015 were made by rural customers. It is assumed these customers delivered approximately 808 tons (97% of all tonnage received) of MSW and C&D. This equals approximately $18,993 in landfill tipping fees ($23.50 per ton) and approximately $39,255 in hauling fees ($340 per load assuming an average of 7 tons per load based on the total number of loads delivered to the landfill in FY 2015), or $58,248 for hauling and disposal. Therefore, it is assumed that servicing the rural customers in FY 2015 cost a total of approximately **$58,248** for hauling and disposal. This is approximately $72 per ton or $0.04 per pound.

Instead of charging rural customers by weight, the Board could elect to establish a per vehicle fee to cover the estimated hauling and disposal expenses. Table 10 assumes a total 5,808 rural vehicle trips to the facility in FY 2015. Assuming 5,808 rural vehicle trips and an estimated hauling and disposal fee of $58,248, the Board could elect to assess a $10 per vehicle fee.

The Board could also elect to assess a lower tipping fee for cars than trucks, as it is assumed that a truck will deliver a greater quantity of material than a car. Using the data presented in Table 11 (page 28), it can be assumed that there would be a total of approximately 697 cars and 5,111 trucks. The Board could charge $2 per car, $40 per truck, or $0.04 per pound.

Charging rural car customers $2 per car would produce approximately $1,394 in revenue. Estimating the revenue from rural truck customers is difficult due to the lack of per customer weight data and not knowing the number of customers that would elect to pay the flat fee ($40 per truck) versus paying by weight ($0.04 per pound). However, if it can be assumed that the rural truck customers (88% of the total rural customers) delivered 88% of the estimated total rural tonnage in FY 2015 (808 tons), then approximately 711 tons were delivered by rural truck customers. Using this figure and assuming that all rural truck customers would elect to pay by weight ($0.04 per pound), the facility would receive approximately $56,880 in revenue. Combining this estimated revenue with the estimated revenue from the rural car customers totals approximately $99,154 in revenue.

3.4 Charge All Customers By Weight:

The Board could elect to charge all facility users a set fee by weight. In FY 2015 the facility accepted 837 tons of waste and had a total operational expense (included hauling and disposal fees) of $118,735. Therefore, the estimated operational cost is approximately **$142 per ton**. This is approximately a $0.02 per pound increase to the current $0.05 per pound rate. Therefore, the Board could elect to charge all customers a $0.07 per pound tipping fee. The Board could also elect to apply a rate of $7 per car, $70 per truck, or $0.07 per pound to all customers.

Table 14 uses the data from the assumed number of vehicles and vehicle type identified in Section 3.2 of this Report and estimated fees as described above.

Table 14 – Total Number of Assumed Vehicles and Estimated Direct User Fees for FY 2015

Category	Number of Estimated Vehicles by User Fee			Total
	Car ($7.00)	Truck ($70.00)	Per Pound ($0.07)[1]	
Total Assumed Number of Vehicles	800	1,064	4,151	6,015
Total Estimated User Fees	$5,603	$74,449	$42,560	$122,612

([1]) Assumes this customer type delivered approximately 304 tons (or 84% of all MSW tons) in FY 2015.

Table 14 shows an estimated $122,612 in direct user fees could potentially be collected in this scenario.

Assuming that a majority of the truck customers would rather pay by weight than a per vehicle fee would increase the use of the Co-Op's scale facilities. It is unlikely that the Co-Op in Hancock would continue to allow the use of their scale if the volume of customers significantly increased. Therefore, it is assumed that if the facility was to assess fees based on weight, a scale would need to be installed. The facility would need to either install an above ground portable scale or an in-ground pit scale.

The above ground scale would require approximately 110 feet of level ground for proper installation of a 30 foot scale. 30 feet on both ends of the scale would be ramps leading onto/off of the scale and two 10 foot concrete aprons would be needed adjacent to the scale. The purchase and installation of an above ground scale was estimated to be approximately **$80,000** by Siouxland Scales. A 30 foot in-ground pit scale would require at least 50 feet of level ground. There would need to be two 10 foot concrete aprons adjacent to the scale. The purchase and installation of an in-ground pit scale was estimated to be approximately **$118,000** by Siouxland Scales. Both cost estimates include the ancillary equipment (i.e., indoor/outdoor weight display, ticket printer, and serial ports for computer connections).

The space requirement for the above ground scale (110 feet) limits the potential location for placement at Transfer Station. The optimal location appears to be on the west side of the Transfer Station along the current container haul road and access road to the Hancock Tree Disposal site. If the scale was to be placed at this location, it would be recommended that a different access road to the Hancock Tree Disposal site be established to limit non-customer traffic across the scale. A camera and communication device (either audio or signal) would be needed so that staff can direct scale traffic.

Customers would access the scale when given permission by staff. The customer would then continue around the south and east side of the Transfer Station. Once they tipped their waste, the customer would then return to the scale to weigh out. To limit cross traffic on the southeast of the access road (i.e., customers leaving the scale and those attempting to return to the scale to weigh out), it may be necessary for the scale traffic to be counterclockwise. Once customers have weight out, they would then need to go the Transfer Station office to receive a ticket and provide payment.

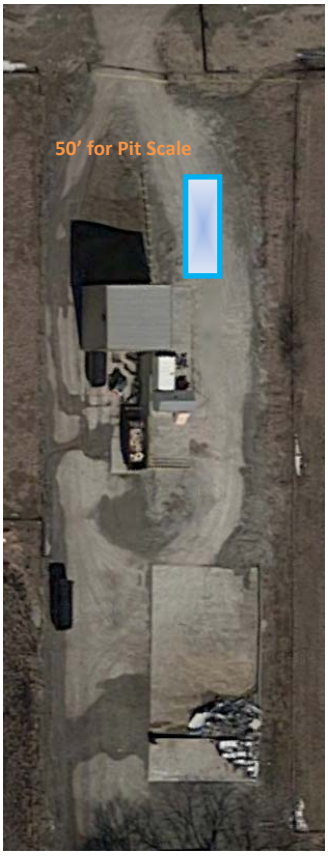
Figure 5 shows the potential optimal location for an above ground scale and recommended modifications to current traffic flow.

Figure 5 – Potential Location for Above Ground Scale

The pit scale option establishes a much smaller footprint that the above ground scale. Grading along the northeast access road or southeast access road would be necessary to establish an appropriately sized and level area for scale operations. The scale could be placed such that staff can see customers accessing the scale. A communication device (i.e., audio or signal) would assist with managing scale traffic.

Customers would access the scale when given permission by staff. The customer would then continue south along the east side of the Transfer Station. Once they tipped their waste, the customer would then return to the scale to weigh out. If the scale was located on the northeast corner of the access road, customers would return to the scale the same way they entered the facility. Figure 6 shows the potential location for an in-ground pit scale.

Figure 6 – Potential Location for In-Ground Pit Scale



Since this location may create traffic congestion which may cause traffic to back-up onto Mahogany Road, it may be necessary to place the scale either on the west side of the Transfer Station (similar location to the 110 foot scale) or on the southeast access road. Figure 7 shows the potential locations for an in-ground pit scale that may lessen the chance of creating traffic safety concerns during high volume customer traffic.

Figure 7 – Potential Locations for In-Ground Pit Scale

3.5 Charge by Vehicle Type:

To avoid the potential cost of installing a scale, the Board could elect to charge a per vehicle fee to all customers. Again, depending on the Board's purpose of the fee, the fees could be different for rural and non-rural customers. However, for the purpose of this Report, the fee assessed will be assumed to be the same for all customers with the goal of covering the operational costs.

Using the assumed number of facility customers by vehicle type (Table 11 page 28) that incorporates the assumed decrease in facility usage, Table 15 shows the potential revenue generated from the estimated number of vehicles using the facility.

Table 15 – Potential Revenue Generated from Per Vehicle Fees

Vehicle Type	Assumed Number of Customers	Per Vehicle Fee	Total Revenue
City Car	104	$5	$520
City Truck	104	$26	$2,704
Rural Car	697	$5	$3,485
Rural Truck	5,111	$26	$132,886
Total Estimated Revenue			$139,595

Note: It is assumed that vehicles with dump trailers would still be directed to haul to the Landfill rather than use the Transfer Station. However, if dump trailers were to be accepted at the Transfer Station, a higher user fee rate than the listed per truck fee would need to be established due to the increased tonnages and volumes dump trailers can haul.

Table 15 shows that a $5 per car and $26 per truck (for both non-rural and rural customers) could potentially generated approximately $139,595 in revenue. This estimated potential revenue figure includes the assumed facility usage decrease as described in Table 10.

The estimated revenue of $139,595 is slightly above the FY 2015 total operational budget of $118,735.

3.6 Charge by Material Type:

The Transfer Station accepts and compacts MSW into a compactor. C&D materials are loaded (by the customer) into open top containers and are not compacted. The Board is currently assessed a $340 per pull fee by the hauler to transport the container (be it the compactor box or open top box) to the Landfill.

Tonnage and container pull data from FY 2013 through FY 2015 (Table 2 on page 6) indicated that the average tons per pull was approximately 6.4 tons for the open top containers and 6.7 tons for the

compactor container. The average per pull weight for the open top (primarily contains C&D material) and compactor container (primarily contains MSW material). Staff indicated that one customer with a truck or trailer vehicle type may unload C&D materials and may completely consume the available space in the open top containers. This necessitates that the container quickly be replaced with an empty container. This does not occur with the compactor container mainly due to the material being MSW and the material being compacted into the container.

The Board may elect to charge a different rate for C&D materials than MSW materials due to the increased potential for customers to bring large volumes of C&D materials to the facility and thus requiring more frequent container management (i.e., pulls).

3.7 Rural Waste Collection and Disposal Services:

Some rural residents may not currently utilize curbside waste collection and disposal services. It may be difficult for commercial haulers to establish and maintain service routes for rural customers when customer subscriptions are low, collection frequencies or service levels fluctuate, and customer densities (i.e., number of service stops per mile) are low. However, there are hauling companies that currently provide waste collection and disposal services to rural (including eastern rural portions of Pottawattamie County) customers in Pottawattamie County and those companies have indicated that they have the ability and are willing to expand those services. Services range from 96 gallon tote to 1.5 cubic yard container weekly collection services. Prices for these services range from $20 to $70 a month, respectively. Commercial haulers also offer special collection services that include 20 and 40 cubic yard container collection, and bulky item (i.e., couches) and appliance collection.

The rural weekly collection service fees ranging from $20 to $70 per month per customer may be comparable to the current non-rural customer fee structure of $5 per car, $50 per truck, or $0.05 per pound.

Determining the waste generation of the facility users (i.e., households) for a period of time (i.e., per week) is possible since the facility captures a user's address and receives total tonnage reports from the Landfill. In FY 2015 there were a total (non-rural and rural) of 578 individual customers (i.e., unique address) and the total tonnage received at the Landfill was 837 tons. This equates to approximately 55.7 pounds per week or 223 pounds per month per household. This figure is close to the national average of 53 pounds per week per household (Source: 2013 United Stated Environmental Protection Agency and 2013 United States Census Bureau).

Assuming all facility users paid on a per pound basis ($0.05 per pound), the average monthly cost would be approximately $11.15. Assuming all facility users paid on a per car basis ($5.00 per car) and used the facility once a week, the average monthly cost would be approximately $20. This assessment indicates that rural weekly curbside waste collection services at $20 per month, which is on the lower end of the service cost scale, is comparable to the facility direct user fees. *However, rural weekly curbside waste collection service fees above this range appears to be more costly than using the facility.*

It is important to note that there are additional expenses to use the facility than just a direct user fee (i.e., tipping fee). The $20 per month estimated expense for using the facility (assuming paying the $5 per car and using the facility once a week) should also consider labor hours for transporting the waste to the facility and returning, driver license fees, vehicle insurance, vehicle registration, vehicle depreciation, fuel, and vehicle maintenance. Assuming a customer has to drive 10 miles round trip to use the facility and using the Federal mileage rate of $0.557 per mile, this is a potential expense of $5.57 per trip to the facility. The Federal mileage rate includes fixed and variable costs for operating the vehicle, depreciation, insurance, repairs and maintenance, and fuel. Therefore, it may cost a customer living 5 miles from the facility approximately $22.28 per month in transportation expenses. Combine this potential expense with the tipping fee (using $5.00 per car), the total cost per month could be $42.28. This figure does not account for labor expenses. The estimated $42.28 per month fee for using the facility is near the mid-range of costs for receiving rural curbside weekly collection service from private haulers.

As additional rural residents' sign up for waste collection and disposal services, additional rural routes and services can be established. As additional rural routes are established it is likely that existing service fees may decrease or long-term service rate agreements could be established due to increased number of customers, route collection efficiencies, and potential increased customer densities.

4.0 Option 3 - Cease Accepting MSW and C&D Waste from All Customers

As previously stated in the Report, the Transfer Station was constructed for the primary purpose of providing ISWM services to the small communities of Pottawattamie County. The customer base from the communities (i.e., commercial haulers servicing the communities) provided the necessary revenue to establish and maintain ISWM service options. As the communities began directly hauling waste to the Landfill, the revenues received at the Transfer Station significantly decreased. Therefore, to continue to provide the same level of ISWM services to rural customers, the County has elected to fund Transfer Station operation expenses using the Rural Services Fund.

In FY 2015, the Transfer Station was utilized by 496 rural customers (i.e., unique rural addresses) at least one time. The Rural Services Fund contributed $97,800 for Transfer Station operations in FY 2015. Therefore, the Rural Services Fund contributed approximately $197 per rural customer in FY 2015.

There are nearly 900 rural addresses within 10 miles of the Transfer Station. With 496 rural customers utilizing the Transfer Station at least once during FY 2015, this represents approximately 55% of the rural addresses within 10 miles of the facility. It is assumed that the remaining 45% of the rural addresses receive waste collection service from a private company, transport their waste directly to the Landfill, or dispose of their waste using other methods (i.e., burning, on-site burial, etc.).

There are approximately 7,600 rural addresses in Pottawattamie County. *Therefore, approximately 12% of the total number of rural addresses utilized the Transfer Station for their ISWM service needs in FY 2015 (a total of 846 rural customers used the Transfer Station in FY 2015).* The location of the Transfer Station (eastern portion of Pottawattamie County) and the low utilization rates for all rural addresses of Pottawattamie County may infer that the Transfer Station services are inequitable for rural households. With the Rural Service Fund contributing $97,800 to the Transfer Station operations in FY 2015, this equates to a fee of approximately $13 per rural household per year. Using the $13 per rural household per year estimate, the 496 rural customers (i.e., unique addresses) that used the Transfer Station in FY 2015 contributed approximately $6,448. Using this figure and assuming a total rural customer tonnage of 808 tons (97% of total tons received in FY 2015), this is approximately **$8 per ton**.

If the ISWM service provided is considered inequitable as a county-wide service and with the understanding that rural curbside waste collection service is already available, then it is conceivable that the service could be eliminated and the Rural Service Funds re-allocated to other services. Other services could include funding countywide drop-off recycling services, supporting the establishment of citizen convenience centers (CCCs) to accept MSW and C&D from rural customers, subsidizing community clean-up events that allow rural residents to participate, and or modifying the existing Transfer Station to provide additional recycling services. A summary description of these potential services is discussed below.

4.1 Countywide Drop-Off Recycling Program:

According to the most recent Solid Waste Comprehensive Plan Update for the Iowa Waste Systems Association Planning Area, only the communities of Carson and Council Bluffs, and the Transfer Station

have drop-off recycling locations. While some communities and rural customers may have access to curbside recycling services, those that do not have these programs and wish to participate in recycling either use programs at their place of business or use the available drop-off locations.

In FY 2015 the Transfer Station received nearly 9 tons of recyclables and delivered these materials to the Council Bluffs Recycling Center for processing. The hauling costs were $2,380 ($340 per pull) and the processing fees totaled $180 ($20 per ton). The total recycling costs for FY 2015 were $2,560 or **$284 per ton**. The recyclable tonnages received at the Transfer Station have steadily decreased over the past 10 years. This decrease may possibly be attributed to the communities of Hancock and Walnut no longer taking their waste (and therefore some collected recyclables) to the Transfer Station, a general decrease in the overall number of customers using the Transfer Station, an overall decrease in recycling participation, or other recycling collection programs (i.e., curbside recycling services) being offered by private entities.

As the costs for providing drop-off recycling services continue to increase, the potential pressure to eliminate or reduce services (i.e., reduce number of pulls or drop-off locations) due to financial considerations increases. The Board could elect to partially subsidize existing and/or future drop-off recycling programs to help increase the opportunities for rural residents to participate in recycling. The Board would provide communities that wish to establish drop-off recycling sites for rural residents an agreed upon annual fee or work with the communities to purchase needed containers. The Board could consider establishing a mobile recycling collection program with set for use in identified communities or rural locations.

4.2 Establish Citizen Convenience Center(s):

A citizen convenience center (CCC) provides similar services as a transfer station but is limited to accepting MSW and C&D materials from citizens and small businesses that do not utilize waste collection vehicles. The CCC does not need to be a fixed facility, but could be a fixed location. As an example, a CCC could be a set location when a container or vehicle is available for residents and small businesses to dispose of their waste. It would be recommended that a CCC location be selected that could be fenced and near a location that is regularly staffed (i.e., County maintenance building) to help discourage illegal dumping. Establishing these types of CCCs can be less expensive that a fixed facility and would allow the Board to work in establishing optional service locations. CCCs services could be performed by County personnel, contracted with a private company, or a combination of the two.

According to the user data for the Transfer Station, 91% of all rural customers used the Transfer Station no more than twice a month, and 75% of all rural customers used the Transfer Station no more than once a month. Table 16 shows the average number of customers per day for the period between January 2015 and July 2015.

Table 16 – Average Number of Transfer Station Customers per Day Between January 2015 and July 2015

Category	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
Average Number of Customers	27	17	19	29	52	144
Percentage of Total Customers	19%	12%	13%	20%	36%	100%

Table 16 indicates that nearly 70% of all Transfer Station customers between the period of January 2015 and July 2015 used the Transfer Station between Thursday and Saturday.

With the data indicating that approximately 91% of the rural customers used the Transfer Station no more than twice a month and that nearly 70% of the customers used the Transfer Station between Thursday and Saturday, it is possible that the CCC location(s) could be open to customers twice a month from Thursday through Saturday.

Establishing CCC locations to be serviced by containers or vehicles (versus a permanent facility) would limit any facility operational expenses and allow a majority of the program finances to be directly used for ISWM services (i.e., contract CCC management services, hauling and disposal fees, site-personnel expenses, etc.).

Figure 8 shows a 10 mile radius map centered on the Transfer Station and two additional site options, and the number of rural addresses that are within each location. Figure 8 excludes all addresses within municipal boundaries.

Figure 8 – 10 Mile Radius Map of Transfer Station and Select Locations

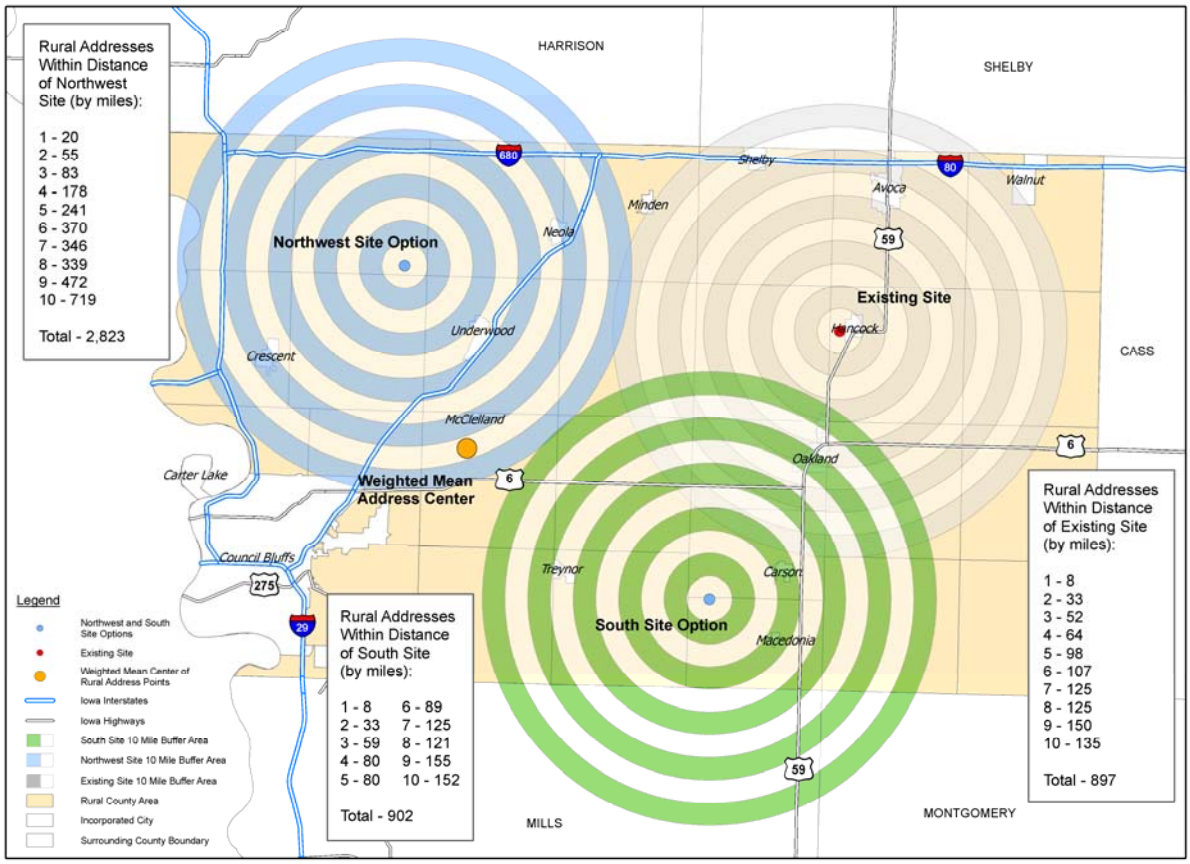


Figure 8 shows that the current Transfer Station location has 897 rural addresses within a 10 mile radius. The Northwest Site Option has a total of 2,823 rural addresses and the South Site Option has a total of 902 rural addresses within a 10 mile radius of the selected location. The site selection for the Northwest and South Site Options were not based on any optimal physical locations (i.e., County owned land, access to concrete roads, proximity to manned facility, etc.). Rather, the sites were selected to maximize service coverage for rural customers.

Assuming the Board elected to convert the existing Transfer Station into a CCC and establish CCCs at the estimated locations identified as the Northwest and South sites, the Board could potentially provide ISWM service options to a total of 4,622 rural households that are within 10 miles of the three locations. This represents approximately 60% of the total number of rural households. A majority of the remaining rural households are located in close proximity to the municipal borders of Council Bluffs. These rural households could still use one of the CCC locations, but would likely receive curbside ISWM service from private service providers. The current Transfer Station and South Site Option location have approximately 230 rural households that are within each other's 10 mile service radius. This is the only duplication of 10 mile radius service areas for the facilities that includes more than 5 rural households.

Although the potential three CCC locations have a total of 4,622 rural households within a 10 mile radius, it is unlikely that all of these households would participate in their services. In FY 2015, 55% of the rural households within 10 miles of the Transfer Station used the facility at least once. It is assumed that the rural households that are closer to densely populated areas (such as Council Bluffs) are likely to have greater access to and utilize curbside ISWM services provided by private companies. Therefore, it is assumed that at most 2,564 rural household (55% of total rural households within 10 miles of a CCC location) would potentially use the CCC at least once a year.

It is also assumed that the types of waste generated by rural households that are closer to more densely populated areas (i.e., less acreage or farmsteads) will generate a different waste stream that those in less densely populated areas. It is assumed that more densely populated areas may generate more MSW than C&D materials due to the likelihood that they would have less construction activities (i.e., farmstead infrastructure repairs, etc.). This helps further support the strategy of establishing CCC locations that are not permanent facilities and are more flexible such that appropriately sized and numbers of containers can be used to accommodate the ISWM service needs of the customers the location is servicing.

If the current Transfer Station were converted into a CCC, the Board would need to evaluate the identified facility repair and maintenance items to determine which items would need to be performed in order to safely continue providing ISWM services.

4.3 Subsidize Community Clean-Up Events:

It is possible that the Board could elect to use a portion of the Rural Service Funds currently allocated to Transfer Station operations to subsidize community clean-up events in select communities. The Board could work with communities that have established community clean-up events to allow rural customers to also participate in the service. The clean-up contractor could either allow the rural customers to deliver their material to a designated location or collect the material at the rural household location.

Contributing funds to an existing community clean-up service contract to include rural households is assumed to be less costly than establishing a new contract. However, to help identify the type and quantity of service, the Board could consider establishing a pre-selection process that limits the number of rural household that can participate, the quantity of material that can be delivered or collected, or both. Establishing participation limits such as these would help narrow the scope of the service and allow for the ISWM service practice to be piloted on a small scale to assess potential for future service expansion.

4.4 Modify the Transfer Station to Offer Additional Recycling Opportunities:

The Transfer Station could be modified to accept and store recyclable materials in the current tipping area. Recyclable materials could include home furnishings (i.e., cabinets, light fixtures, electrical wiring, plumbing fixtures, wallboard, trim, windows, dimensional lumber, etc.) generated from deconstruction activities performed by contractors and/or volunteer organizations, and good condition furniture and

household items. Some materials that would not be impacted by exposure to weather could be accepted and stored outside in containers which would increase the facility's storage capacity. The Board could partner with restore programs (i.e., Habitat for Humanity Restore, Goodwill, etc.) to have the materials collected, processed, and then sold at their locations as part of their programs.

This type of program would require the facility to be staffed when accepting items to supervise unloading and to ensure prohibited materials are not accepted. It would be recommended that the facility would be open at least a Friday and Saturday and according to a regular schedule (i.e., first Friday and Saturday of the month). It is undetermined how successful the County would be in securing part-time employees to cover this type of a schedule.

Potential Transfer Station modifications would likely include sealing the compactor chute and removal of the staircase and barriers. Additional modifications may be necessary to ensure site safety and security (i.e., backfill replacement, retaining wall construction, roof replacement, site surveillance system etc.).

If the current Transfer Station were to be modified to provide additional recycling opportunities, the Board would need to evaluate the identified facility repair and maintenance items to determine which items would need to be performed in order to safely continue providing ISWM services.