



CASE STUDIES

Walter Willis, *Shaw Environmental*

Transfer Station Development Options

- Case Study 1: Shelby County
- Case Study 2: Guthrie County
- Case Study 3: Rathbun Planning Area
- Case Study 4: Poweshiek County
- Question & Answer

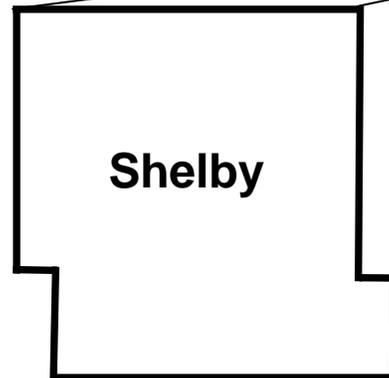


CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS

Case Study 1:

Shelby County Transfer Station





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

■ Decision Making Process

- Planning process involved only Planning Area authorities (no public involvement).
- January 1993 to January 1994: Evaluation of 4 options
 - 1) Close the landfill by July 1, 1994 and construct a transfer station.
 - 2) Stay open until the landfill is full (July 1, 1996) and then build a transfer station.
 - 3) Vertically expand the landfill to provide an additional 2 years of capacity then close the landfill when full (July 1, 1998) and build a transfer station.
 - 4) Stay open, vertically expand the landfill, then expand laterally on the same property.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 1 - Close the Landfill and Build Transfer Station



Considerations

- If the groundwater tested "good," leachate management and groundwater monitoring systems would not be required (note: the regulations have since changed, requiring groundwater monitoring systems to be in place).
- Financial assurance for closure / post-closure would not be required.
- A plan must be submitted to Iowa DNR with notice of intent to close.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 1 - Close the Landfill and Build Transfer Station

■ Considerations (cont'd)

- A transfer station building must be constructed by date of landfill closure - - estimated cost \$180,000 (cost in 1993).
- Must identify a landfill that will accept Shelby County waste, then negotiate and contract for hauling and disposal services.
- Landfill must be closed and final cover constructed - - estimated cost \$300,000 to \$400,000.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 2 - Stay Open Until Landfill is Full (July 1, 1996)

■ Considerations

- The groundwater and leachate management systems must be constructed and operated - - estimated construction cost \$68,000 to \$70,000 and operating cost \$8,000 to \$10,000 per year.
- Financial assurance fund for closure / post-closure required - - estimated cost \$500,000.
- Landfill must be closed when full and final cover constructed - - estimated cost \$300,000 to \$400,000.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 2 - Stay Open Until Landfill is Full (July 1, 1996)

- **Considerations** (cont'd)

- Must identify a landfill that will accept Shelby County waste, then negotiate and contract for hauling and disposal services.
- A transfer station building must be constructed by date of landfill closure - - estimated cost \$190,000 (cost in 1995-96).



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 3 - Vertically Expand Landfill and Close July 1, 1998

■ Considerations

- A more extensive leachate system would be required
 - - estimated cost \$172,000 to construct and \$10,000 to \$15,000 per year to operate.
- Financial assurance fund for closure / post-closure required
 - - estimated cost \$250,000 per year for 4 years.
- Landfill must be closed when full and final cover constructed
 - - estimated cost \$300,000 to \$400,000.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 3 - Vertically Expand Landfill and Close July 1, 1998

- **Considerations** (cont'd)

- Must identify a landfill that will accept Shelby County waste, then negotiate and contract for hauling and disposal services.
- Operating costs will remain at the current rate with inflation factor - - estimated cost \$205,000 to \$210,000
- A transfer station building must be constructed by date of landfill closure - - estimated cost \$190,000.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 4 - Vertically and Laterally Expand Landfill

■ Considerations

- A more extensive leachate system would be required
 - - estimated cost \$178,000 to construct and \$10,000 to \$15,000 per year to operate.
- Financial assurance fund for closure / post-closure required
 - - estimated cost \$200,000 per year for 5 years.
- The existing landfill (with vertical expansion) must be closed when full and final cover constructed - - estimated cost \$300,000 to \$400,000.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

Option 4 - Vertically and Laterally Expand Landfill

- **Considerations** (cont'd)
 - The lateral expansion would require a state of the art design and permitting - - estimated cost to construct \$1,100,000.
 - Operating costs will remain at the current rate with inflation factor - - estimated cost \$205,000 to \$210,000 per year.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Factor(s) Influencing Decision**
 - The economics were more favorable for Option 1 (close the landfill and build a transfer station).



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Date of construction and location**
 - Transfer station built in 1994 at former landfill site
 - Recycling building previously built in 1991 at landfill site
- **Cost of facility**
 - Transfer station building: \$198,000
 - Recycling building: \$90,000
- **Facility size**
 - Transfer station building: 8,000 s.f.
 - Recycling building: 6,000 s.f.
 - Approximately 10,200 tons per year



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

**Shelby County Transfer Station,
Recycling & Scalehouse Buildings**



Transfer Station Bldg.



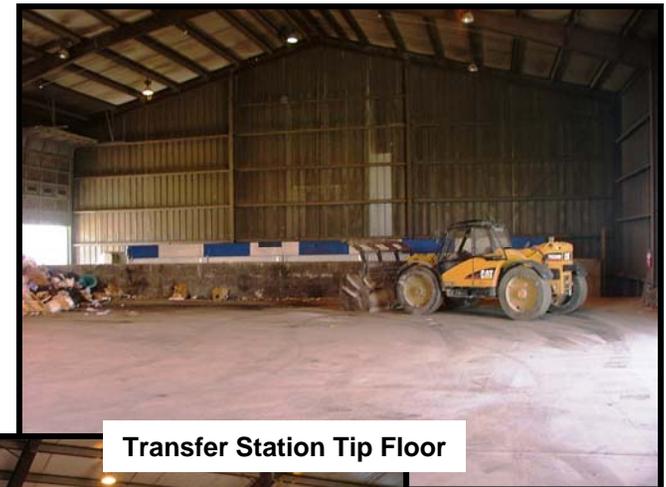


CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Transfer station building construction**
 - 8,000 s.f. pre-engineered metal building with cast-in-place concrete foundation
 - 80' x 100' rectangular footprint
- **Tipping floor construction**
 - 8"-thick reinforced concrete slab-on-grade
 - 84' x 80' tip floor area



Transfer Station Tip Floor

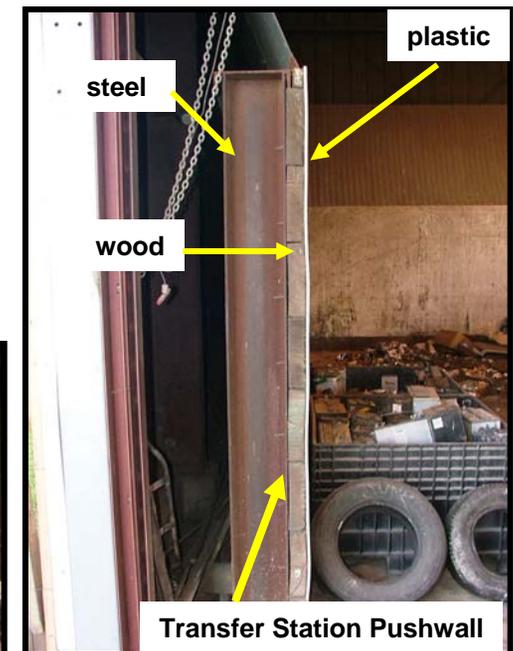


TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

■ Pushwall construction

- 16-feet high
- 18" x 12" vertical steel I-beams
- 3" x 12" wood bridge planks across I-beams
- 3/4"-thick panels of recycled plastic (from milk jugs) used as facing on top of wood planks





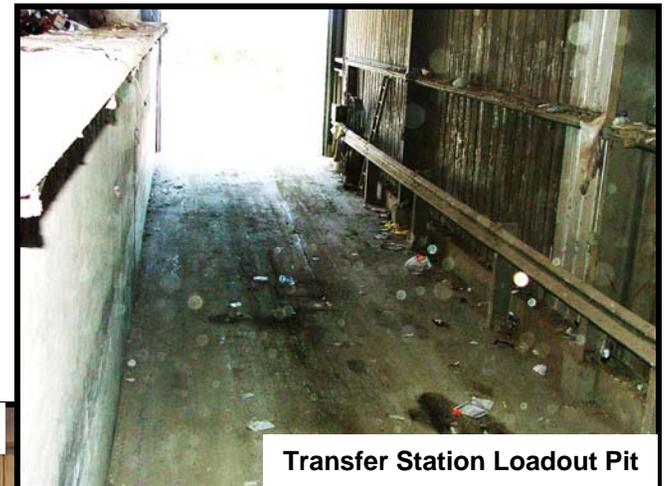
CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

■ Loadout pit construction

- 16-feet high reinforced concrete loadout pit wall
- 80' x 16' concrete slab-on-grade pit floor





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Transfer Station Tip Fee**
 - \$ 40 / ton
- **Landfill Fee: Transport & Disposal**
 - \$ 33.25 / ton (disposal fee \$22 / ton; July 1, 2005 through June 30, 2005 disposal fee will be between \$22 and \$25 / ton)
- **Recycling Fee (at Carroll Landfill)**
 - \$ 40 / ton
- **Subsidy for Transfer Station & Other Solid Waste Program Costs**
 - \$ 12.50 per capita fee





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Operating hours**
 - Mon-Fri, 8 a.m. to 4 p.m.
 - Sat, 8 a.m. to Noon

- **Number of employees**
 - 2 part-time scale attendants
 - 1 full-time transfer station operator
 - 1 full-time recycling facility operator



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Transfer station operation**
 - Approximately 95% of the municipal solid waste (MSW) is delivered by haulers and about 5% is dropped off by residents.
 - Construction and demolition debris (C&D) is delivered by contractors and haulers and is dumped onto the tip floor with MSW. C&D and MSW are loaded out into transfer trailers commingled and hauled to the Carroll County Landfill for disposal.
 - No recycling is done on the C&D materials.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

■ Recycling building operation

- Recyclables are curbside collected and delivered to the recycling building by the haulers.

- The recycling building has 3 separate tip floor areas

Area 1: commingled plastics, glass, and metal

Area 2: corrugated cardboard

Area 3: mixed paper

- Recyclables are loaded out separately into transfer trailers and hauled to Carroll County Landfill where the materials are further sorted by hand.

- Shelby County does not track recycling rates. The recycling rate as of Spring 2004 for the West Central Solid Waste Management planning region was 38.5%.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)

- **Household hazardous waste (HHW)**
 - HHW is dropped off by residents at the facility.
 - An 8' x 16' building on-site is used for the receipt and temporary storage of HHW.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Shelby County Transfer Station (cont'd)





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Decision Making Process**
 - Public involvement process included several meetings with local officials, residents, and haulers
 - January 1996: Evaluation of 4 options
 - 1) Expand the landfill horizontally and comply with Subtitle D.
 - 2) Close the landfill and let each city decide which planning area it wants to be in and where it wants its waste to go.
 - 3) Close the landfill and build a transfer station.
 - 4) Sell the entire landfill property (23-acre landfill + 80 acres of unused land) to a private company for a landfill development.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 1 - Horizontal Expansion

■ Advantages

- Convenience and service for residents and businesses.
- Source of revenue for closure and post-closure care of existing site.
- Source of revenue to support recycling programs.
- Property already owned by County.
- Long-term control of waste disposal location and costs.
- Limits the entities' liability to only one location - - the Guthrie County Landfill.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 1 - Horizontal Expansion (cont'd)

■ Disadvantages

- Major capital costs during first year.
- A high groundwater table on the undeveloped area of the subject property will limit the excavation depth or result in the additional cost for a groundwater diversion system below the liner to achieve the 5-foot separation requirement.
- Development of a new cell will require leachate treatment. Previously, local POTWs have refused to accept leachate for treatment. To construct and operate an on-site leachate treatment system would cost between \$85,000 and \$201,000 in capital costs and between \$20,000 and \$45,000 in annual operating costs.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 2 - Close Landfill and Each City Choose Their Own Disposal Site

■ Advantages

- Allows the County and entities to "get out of the landfilling business" and avoid the related regulations and costs.
- Does not require any large capital cost investments.

■ Disadvantages

- Dramatically reduces the entities' control over their waste disposal location and costs.
- Increases the entities' liability to other sites besides the current Guthrie County Landfill.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 2 - Close Landfill and Each City Choose . . . (cont'd)

■ Disadvantages (cont'd)

- Potentially would allow the haulers to transport and dispose of waste at any landfill they chose.
- Restricts the ability of the Planning Area to monitor its tonnages for achieving the State Reduction Goal.
- Will not provide for any revenue mechanism for financing the closure and post-closure costs associated with the current landfill site.
- Might result in increased road-side dumping problems.
- Residents and businesses may be inconvenienced, unwilling to accept the additional transportation distance, and/or unwilling to hire a local hauler to provide the service.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 3 - Close Landfill and Build Transfer Station

■ Advantages

- Allows the entities some control over the location and cost for disposal of their residents' waste.
- Allows the entities to determine the best disposal site as opposed to the haulers being free to choose.
- A transfer station has fewer and less costly regulatory requirements compared to those required for the construction and operation of a landfill.
- The transfer station tipping fees could serve as a financing mechanism for the closure and post-closure costs of the landfill.
- The Planning Area may be able to implement other recycling programs, such as the separation of cardboard or wood wastes on the tipping floor, etc.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 3 - Close Landfill and Build Transfer Station

- **Disadvantages**

- Results in some capital costs and some increase in annual operating costs.
- Hauling to another site will spread the entities' long-term liability.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

Option 4 - Sell Site to Private Company

■ Disadvantages:

- Requires negotiation with a private company to purchase and operate the site. Likely will result in out-of-county wastes being received. County would lose control of operation and long-term planning.
- Would eliminate ability to finance closure and post-closure costs and the recycling programs.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

December 1996: Further Consideration Given To Options 1 & 2

- Cost Evaluation of Options 1 & 2 Conducted:

Summary of Options 1 & 2 Costs		
Option	Initial Capital Cost	Estimated Cost / Ton
Option 1: Subtitle D Landfill Expansion	\$513,325	\$70.57
Option 2: Transfer Station and Hauling	\$383,000 - \$468,000	\$57.18



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Guthrie selected Option 2 - close landfill & build transfer station**
- **Date of construction and location**
 - Transfer station building constructed in 1997 at former landfill site
 - Recycling building previously constructed in 1995 at landfill site
- **Cost of facility**
 - Transfer station building: \$161,860
 - Recycling building: \$120,000
- **Facility size**
 - Transfer station building: 8,000 s.f.
 - Approx. 5,000 to 6,000 tons per year (population approx. 10,000)



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)



Transfer Station, Recycling & Scalehouse Buildings



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Transfer station building construction**
 - Approx. 8,000 s.f. pre-engineered metal building with cast-in-place concrete foundation
 - 100' X 80' rectangular footprint
- **Tipping floor construction**
 - 80' x 80' floor area
 - 8" thick reinforced concrete slab-on-grade





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Pushwall construction**
 - 50' x 8' wood plank pushwall
- **Loadout dock construction**
 - 80' x 10" x 7' dock wall (steel reinforced concrete)
 - 80' x 20'-6" dock floor area (8"-thick concrete slab-on-grade)





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Transfer Station Tip Fee**

- \$ 38 / ton
- \$ 40 / ton (as of July 1, 2005)

- **Hauling Fee from Transfer Station to Carroll County Landfill**

- Currently \$ 45 / hour (125 cubic yard transfer trailer truck)
- A fuel surcharge is added to the hourly haul rate when the cost of diesel fuel increases: for each .10¢ per gallon price increase the hourly rate will increase by \$1.00 per hour.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Landfill Disposal Fee (at Carroll County Landfill)**
 - \$ 22 / ton
 - \$ 23 / ton (as of July 1, 2005)

- **Recycling Tip Fee (at Carroll County Landfill)**
 - \$ 2,048.40 per month

- **Subsidy for Transfer Station & Other Solid Waste Program Costs**
 - \$20 per capita fee (urban area residents)
 - \$13 to \$16 per capita fee - - varies each year (rural area residents)



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

■ Operating hours

- Mon-Fri, 8 a.m. to 4 p.m.
- Sat, 8 a.m. to Noon (April-October)
- 1st Saturday of each month, 8 a.m. to Noon (November-March)

■ Number of employees

- 1 full-time scale attendant
- 1 full-time transfer station / recycling facility operator





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

■ Transfer station building operation

- Approximately 60% of the municipal solid waste (MSW) is delivered by haulers and about 40% is dropped off by residents.
- Construction and demolition debris (C&D) is delivered by contractors and haulers and is dumped onto the tip floor with MSW. C&D and MSW are loaded out into transfer trailers commingled and hauled to Carroll County Landfill for disposal. No recycling is done on the C&D materials.
- Tires, lead-acid batteries, fluorescent bulbs, used oil and antifreeze are dropped off by residents and are handled separate from the MSW and C&D materials.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Guthrie County Transfer Station (cont'd)

- **Recycling building operation**
 - Recyclables are separated at the curbside and collected and delivered to the recycling building by the haulers.
 - Collected recyclables include plastics, glass, metal, corrugated cardboard and mixed paper
 - Recyclables are loaded out separately into transfer trailers and hauled to Carroll County Landfill where the materials are further sorted by hand.
 - Current recycling rate is approximately 35% (recycling rates were approximately between 30% and 32% when the Guthrie County Landfill was still operating).



CASE STUDIES

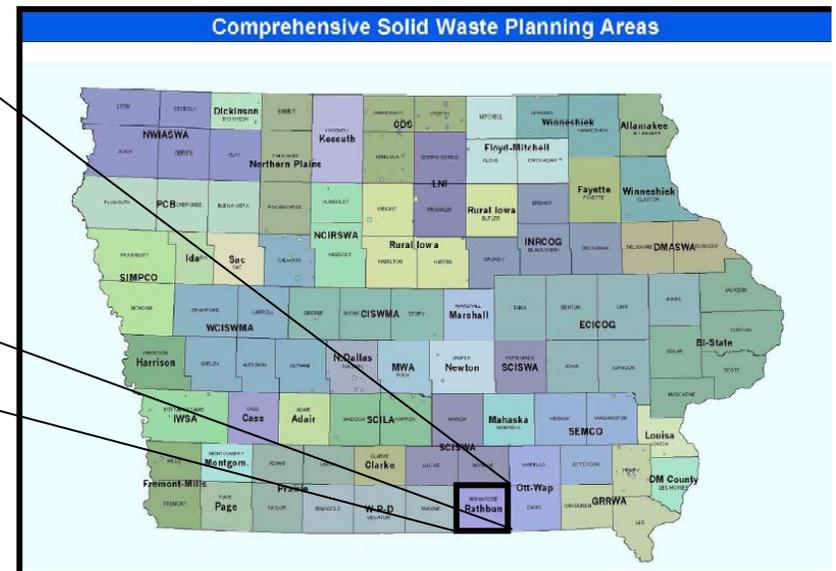
TRANSFER STATION DEVELOPMENT OPTIONS

Case Study 3:

Rathbun Area Solid Waste Commission

Rathbun Planning Area

- Wasteshed includes:
 - Appanoose County
 - Seymour (Wayne County)
 - Promise City (Wayne County)
 - Princeton, Missouri





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

- **Decision Making Process**
 - Public involvement process included several meetings
 - Met with local industry for their input
 - Economic study of 3 options:
 - 1) Subtitle D compliant landfill
 - 2) Transfer station without recycling
 - 3) Transfer station with recycling center

- **Factor(s) Influencing Decision**
 - Cost of complying with Subtitle D requirements was the primary influence on the final decision



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Historical Gate Fees

Year	RASWC Gate Fee	State Tonnage Fee	Total Tipping Fee
1989	\$16.00	\$2.00	\$18.00
1990	\$22.50	\$2.50	\$25.00
1991	\$22.00	\$3.00	\$25.00
1992	\$21.50	\$3.50	\$25.00
1993	\$25.75	\$4.25	\$30.00
1994	\$25.75	\$4.25	\$30.00
1995	\$25.75	\$4.25	\$30.00
1996	\$33.25	\$4.25	\$37.50
1997	\$33.25	\$4.25	\$37.50
1998	\$33.25	\$4.25	\$37.50
2000	\$36.75	\$4.25	\$41.00



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Option 1 - Subtitle D Compliant Landfill Annualized Costs:

■ Debt Service-Sub-Title D Landfill Cell with Leachate Collection	\$ 83,900.00
■ Future Landfill Cell Development	\$ 25,000.00
■ Landfill Operating Cost	\$402,000.00
■ Financial Assurance Cost	\$150,000.00
■ Leachate Hauling, Testing and Treatment	<u>\$ 25,000.00</u>
	Total
	\$685,900.00
	Landfill Disposal Tonnage
	14,000 tons
■ Cost per Landfill Ton	\$49.00 per ton
■ Net Cost Per Landfill Ton For Recycling	<u>\$ 4.00 per ton</u>
■ Cost Per Landfill Ton Including Recycling Cost	\$53.00 per ton

Note: Debt service assumes financing at 5% for 15 years.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission

(cont'd)

Option 2 - Transfer Station Annualized Costs:

■ Debt Service – Transfer Station & Equipment	\$ 67,300.00
■ Operation & Maintenance	\$200,000.00
■ Landfill Tipping Fee @ SCISWA	\$345,660.00
■ Transfer Cost to Landfill	<u>\$140,000.00</u>
Total	\$752,960.00

Tons Transferred to Landfill 14,000 Tons

■ Cost per Transferred Ton	\$53.78 Per Ton
■ Net Cost Per Landfill Ton for Recycling	<u>\$ 4.00 Per Ton</u>
■ Cost Per Transferred Ton	\$57.78 Per Ton

Note: Debt service assumes financing at 5% for 15 years.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Option 3 - Transfer Station & Recycling Center Annualized Costs:

■ Debt Service – Transfer Station, Recycling Center & Equipment	\$ 116,400.00
■ Operation & Maintenance	\$ 263,000.00
■ Landfill Tipping Fee	\$ 345,660.00
■ Transfer Cost to Landfill	\$ 140,000.00
■ Revenue from Sale of Recyclable Materials	<u>\$(140,000.00)</u>
Total	\$ 725,060.00
Tons Transferred to Landfill	14,000 tons
■ Cost Per Transferred Ton Including Recycling Cost	\$51.79 per ton

Note: Debt service assumes financing at 5% for 15 years.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

SUMMARY OF 3 OPTIONS			
	Sub-Title D Compliant Landfill	Transfer Station	Transfer Station & Recycling Center
Cost	\$685,900	\$752,960	\$725,060
Cost Per Landfill Ton including Recycling	\$53.00	\$57.78	\$51.79
Landfill Disposal Tonnage: – 14,000 tons Net Cost Per Landfill Ton for Recycling - \$4.00			



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

SUMMARY OF 3 OPTIONS with REDUCED TONNAGE

	Sub-Title D Compliant Landfill	Transfer Station	Transfer Station & Recycling Center
Cost	\$685,900	\$718,964	\$691,064
Cost Per Landfill Ton including Recycling	\$56.68 (\$3.68)	\$59.22 (\$1.44)	\$53.08 (\$1.29)

- Landfill disposal tonnage: 13,020 tons
- Net cost per landfill ton for recycling - \$4.00
- Numbers shown in parenthesis represent cost increase with reduced tonnage (excludes tons from Princeton, Missouri)



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Draft Disposal Agreement with South Central Iowa Solid Waste Agency

- Tip fee: \$20.44 per ton plus DNR tonnage fees collected as a surcharge.
- Tip fee may increase pursuant to the Agreement on July 1, 2010 and July 2, 2013 to reflect actual increases in Agency costs to provide disposal service.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Draft Disposal Agreement with South Central Iowa Solid Waste Agency (cont'd)

- Environmental Liability - liability for any remediation costs resulting from environmental contamination of the Agency's Landfill will be assessed as follows:
 - Any generator of waste deposited at the Landfill causing contamination will be liable for all damage caused by the contamination.



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Rathbun Area Solid Waste Commission (cont'd)

Draft Disposal Agreement with South Central Iowa Solid Waste Agency

- Environmental Liability (cont'd)
 - If the source of the contamination cannot be accurately determined, liability will be assessed on all users of the Landfill based on the proportionate amount of waste delivered by that user as a percentage of the total waste delivered to the Landfill by all users since it opened. The determination of tonnages will be based on the Landfill records.

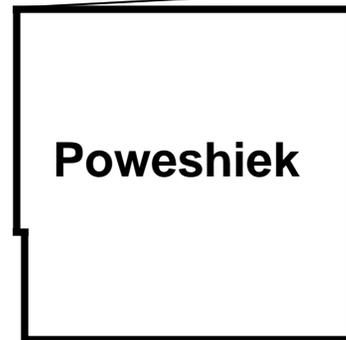


CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS

Case Study 4:

Poweshiek County Transfer Station





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)





CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

■ **Overview of Transfer Station**

- 1992: County built the transfer station on its landfill property to address closure of first phase of the landfill
- Waste diverted to South Central Iowa Solid Waste Agency (SCISWA) Landfill, 57 miles away
- 2003: County faced limited available engineering resources and considered ownership and operations alternatives



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

■ Decision Making Process

- Considered multiple transfer station ownership options
 - 1) County owns transfer station but contracts with another entity for operations
 - 2) SCISWA acquires and operates transfer station
 - 3) A private entity purchases the transfer station
- Considered ownership and management requirements for the closed landfill located on the same property
- Held county meetings to inform public through process
- Decided to sell the facility and operations to SCISWA



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

■ Factors Influencing Decision

- **Professional expertise:** SWISWA has sufficient engineering capabilities and solid waste experience
- **Continuance of Service:** Ownership was transferred without changing accessibility for Poweshiek waste generators
- **Continued County Use:** SWISWA contractually allows County to fuel vehicles, use storage facilities, and have access to property
- **Use of subsidies:** SWISWA landfill had sufficient funds to allow the County to shift subsidies to landfill maintenance
- **Liability changes:** SWISWA assumed liabilities of the transfer station



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

- **Date of construction and location**
 - 1992 at former landfill site
- **Cost of facility**
 - Transfer station building: \$550,000
 - Transfer station acquisition to SWISWA (2004): \$1
- **Facility size**
 - Transfer station building: 8,000 s.f.
 - 13,000 to 14,000 tons per year (permitted to 19,500 tons)



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station Building & Scalehouse



Transfer Station Building



Scalehouse



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

- **Transfer station building construction**
 - 8,000 s.f. pre-engineered metal building with cast-in-place concrete foundation
 - 80' x 100' rectangular footprint
- **Tipping floor construction**
 - 8"-thick reinforced concrete slab-on-grade
 - 86' x 80' tip floor area



Transfer Station Tip Floor



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

- **Recyclable Services:**
 - Diversion Rate of 8-9 %
 - Collected in a rented roll-off container
 - Processing contracted to private party
 - Costs \$250-\$275 per month



Recycling Roll-off Area



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

- **Transfer Station Tip Fee**
 - \$ 50 / ton

- **Landfill Fee: Transport & Disposal**
 - \$ 29.75 / ton

- **SCISWA Subsidy (from Landfill \$)**
 - \$ 0.45 / ton



Disposal at SWISWA Landfill



CASE STUDIES

TRANSFER STATION DEVELOPMENT OPTIONS (cont'd)

Poweshiek County Transfer Station (cont'd)

- **Operating hours**
 - Mon-Fri, 7:30 a.m. to 3:30 p.m.
 - Sat, 8 a.m. to Noon

- **Number of employees**
 - 1 part-time scale attendant
 - 1 full-time scale attendant
 - 2 full-time operators



CASE STUDIES

QUESTION & ANSWER