



# TOWN OF MANSFIELD DEPARTMENT OF PUBLIC WORKS

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## **Transfer Station Use Study, June 2004- July 2005**

### **Introduction**

Since 1990 the Town of Mansfield has been using a trash and recycling program modeled after the program in Seattle, Washington. A dedicated “enterprise” fund was set up in 1990 for refuse and recycling revenues and expenditures. Gradually all general taxation support was removed from this fund. For many years now user fees have supported all the Town’s costs associated with solid waste. Residents who want trash collection service sign-up with the Town and choose from one of five service levels. Residents electing instead to use the transfer station pay for the amount of trash they bring in each time. The goal in charging for the volume of trash is to reduce it. Through volume-based refuse fees, residents have been given the incentive to produce less waste by recycling more.

In 2003 a proposal was made to the residents of the Town to convert to a simplified collection service using pre-paid bags. The proposal suggested that each Mansfield household be charged a base fee per year for the “fixed” costs of solid waste collection and disposal. Town-issued bags would include the remainder of the solid waste collection and disposal costs. Residents would have control over their costs through their bag purchases; these bags would be purchased at local stores or the Town Hall. The transfer station would continue to operate and transfer station users would be included by paying a share of the system’s “fixed” costs. Residents would either bring Town-issued (pre-paid) bags to the transfer station or place them at the curb for collection. This would eliminate the need for signing up for service or staying within a specified service level.

Public hearings allowed residents to provide input into the proposal. At each public hearing concerns were raised from low-waste generators who use the Mansfield transfer station exclusively and infrequently. Their trash fees could triple if the proposal was implemented. Because of this input and only sketchy information about transfer station usage, staff decided to conduct a transfer station study to better understand how the transfer station is used and by whom. This study of the transfer station was conducted from May 2004 until July 2005.

### **Description of the Study**

In May of 2004, staff began issuing sequentially numbered stickers to each vehicle entering the transfer station. The address of the resident and the assigned sticker number were logged in a notebook. For each transaction the sticker number was written on the ticket. The sticker numbers with the addresses were cross-referenced with the residential collection service listing. All the issued sticker numbers,

corresponding addresses and collection service information were input into a database. Daily transaction tickets were input into the database in order of date and time. The sticker number, date, time, type of material brought in and cost of each were input. Stickers were issued throughout the study period, however the bulk of the stickers were handed out in the first few months. Every several weeks, office staff would add the newly issued stickers to the database. Each household could have several sticker numbers. The database was designed to aggregate this information by household. Eight reports were developed to evaluate the different aspects of transfer station use.

## **Study Limitations/Problems Encountered**

The study did not capture all of the users of the transfer station. The transfer station attendants were responsible for remembering to write in the sticker number for each transaction; this was particularly challenging at the beginning of the study, on Saturdays when fill-in staff was helping at the entrance and when it was very busy. The first three months' worth of data was not used because of this problem.

Some of the residents coming in to pick up compost or bring in leaves may not be included in the use study since vehicles can bypass the entrance shed to get to the leaf and compost piles.

The collection and compilation of the data was very labor intensive for both operational and office staff.

A portion of the sticker numbers was assigned to two different households making the transactions from those stickers invalid.

Swap shop user fees were not listed separately in this study. The charge was either included as refuse or bulky waste.

Fees for capacitors were included under the category of CFCs or electronics, a very small portion of the data.

## Results and Reports

**Table 1 - Frequency of Use**

*August 1, 2004 to July 30, 2005*

Table 1 summarizes the number of households that visit the transfer station daily, weekly, every two weeks, once a month, once per quarter or less frequently. Total households are listed as well as those who have single-family or multi-family collection service and only use the transfer station.

<b>Frequency</b>	<b>Households Using Transfer Station Only</b>	<b>Households with Single-family Collection</b>	<b>Households with Multi-family Collection</b>	<b>Total Users</b>
Daily	0	0	0	0
Weekly	7	0	0	7
Bi-weekly	78	3	2	83
Monthly	215	32	2	249
Quarterly	340	231	11	582
Less Than Quarterly	255	591	55	901
<b>Totals</b>	<b>895</b>	<b>857</b>	<b>70</b>	<b>1,822</b>

1,822 households used the transfer station during this study period. Of that 895 households used the transfer station exclusively, with another 927 users that have residential collection service. 47% of the users have single-family trash collection service. The vast majority frequent the transfer station once a month or less.

**Table 2 - Materials Delivered***August 1, 2004 to July 30, 2005*

Table 2 summarizes the type of material brought to the transfer station by household.

<b>Materials Delivered</b>	<b>Households Using Transfer Station Only</b>	<b>Households with Single-family Collection</b>	<b>Households with Multi-family Collection</b>
Recycling	824	633	44
Refuse	813	619	34
Bulky waste	461	533	36
Swap shop	236	181	14
Scrap metal	142	165	3
Electronics	95	120	8
Oil & antifreeze	107	89	14
Brush	89	78	6
Leaves	36	37	2
Wood chips	36	32	0
CFC	29	30	2
Tires	42	46	4
<p>The most delivered items are cans, bottles, mixed paper and cardboard. Most deliveries of recyclables are accompanied with a delivery of refuse. After recyclables and refuse, bulky waste is the most frequently delivered item. The swap shop is also a popular destination. Deliveries of leaves are probably underreported since the drive to the leaf pile can bypass the entrance shed.</p>			

**Table 3 - Quantity of Refuse Per Visit***August 1, 2004 to July 30, 2005*

Table 3 summarizes the average amount spent on refuse (and assumed quantity) per household by user sector.

<b>Quantity of Refuse with Each Visit</b>	<b>Households Using Transfer Station Only</b>	<b>Households with Single-family Collection</b>	<b>Households with Multi-family Collection</b>	<b>Percent of Users</b>
1 bag (\$3)	218	239	19	32%
2-4 bags (\$3.01 - \$12)	561	333	11	62%
5-8 bags (\$12.01- \$24)	26	40	4	5%
9-17 bags (\$24.01 - \$50)	8	7	0	1%
> 17 bags (\$50.01+)	0	0	0	0%
Total # of Households	813	619	34	100% = 1,466
Percent of Users	55%	42%	2%	
<p>On average 32% bring in 1 bag of trash with each visit, followed by 62% who bring two to four bags of trash per visit. 1,466 households use the transfer station for refuse, of which about 44% has trash collection service.</p>				

**Table 4 - Frequency of Use with Quantity of Refuse***August 1, 2004 to July 30, 2005*

Table 4 combines the average quantity of refuse per household paired with the frequency of use.

<b>Frequency of Use with Amount of Refuse per Visit</b>	<b>1 Bag</b>	<b>2 – 4 Bags</b>	<b>5-8 Bags</b>	<b>9-17 Bags</b>	<b>18+ Bags</b>
Daily	0	0	0	0	0
Weekly	0	1	0	0	0
Every 2 Weeks	4	57	1	0	0
Monthly	35	179	0	0	0
Quarterly	80	301	18	3	0
Less than Quarterly	357	367	51	12	0
<b>Total Households</b>	<b>476</b>	<b>905</b>	<b>70</b>	<b>15</b>	<b>0</b>
There were 472 households that averaged one bag of trash every 4 weeks or less. The majority of households, 847, averaged 2 to 4 bags of trash every 4 to 12 weeks.					

**Table 5 - Low-Waste Generator***August 1, 2004 to July 30, 2005*

Table 5 summarizes the number of households that spend \$3 each transaction (assumed 1 bag of trash) at the transfer station daily, weekly, every two weeks, once a month, once per quarter or less frequently. The households are broken down by those who use the transfer station exclusively and those with collection service.

<b>Frequency</b>	<b>Households Using Transfer Station Only</b>	<b>Households with Single-family Collection</b>	<b>Households with Multi-family Collection</b>	<b>Total Users</b>
Daily	0	0	0	0
Weekly	1	0	0	1
Bi-weekly	24	0	0	24
Monthly	151	2	2	155
Quarterly	236	43	1	280
Less Than Quarterly	299	396	23	718
<b>Totals</b>	<b>711</b>	<b>441</b>	<b>26</b>	<b>1,178</b>
1,178 households used the transfer station during this study period to dispose of one bag of trash. For purposes of this study, low-waste generators are considered those who bring in one bag of refuse monthly, quarterly or less. Of the low waste producers, 686 households used the transfer station exclusively, with another 467 users that have residential collection service. 37% of the users have single-family trash collection service, most of them using it less than quarterly. This might be attributed to refuse that is over their collection service level.				

**Table 6 - Quantity of Bulky Waste Per Visit**

*August 1, 2004 to July 30, 2005*

Table 6 summarizes the amount spent on bulky waste (and assumed quantity) per household by sector.

<b>Quantity of Bulky Waste with Each Visit (cy= cubic yard)</b>	<b>Households Using Transfer Station Only</b>	<b>Households with Single-family Collection</b>	<b>Households with Multi-family Collection</b>	<b>Percent of Users</b>
1/4 cy (\$5 or less)	195	215	14	41%
Up to 1 cy (\$5.01-\$20)	231	273	19	51%
1-2 cy (\$20.01- \$40)	30	38	1	7%
2-5 cy (\$40.01 - \$100)	5	7	1	1%
> 5cy (\$100.01+)	0	0	1	0%
Total # of Residences	461	533	36	100%=1,030
Percent of Total	45%	52%	3%	

92% of the users do not exceed 1 cubic yard of bulky waste per visit. Some of this may be attributed to charging residents for items they bring in to the swap shop. More than half of the bulky waste deliveries come from residents who have trash collection service. A total of 1,030 households use the transfer station for bulky waste.

**Table 7 - Frequency of Use with Quantity of Bulky Waste**

*August 1, 2004 to July 30, 2005*

Table 7 combines the quantity of bulky waste brought per household paired with the frequency of use.

<b>Frequency of Use with Amount of Bulky Waste</b>	<b>¼ cubic yard</b>	<b>Up to ½ cubic yard</b>	<b>1 cubic yard</b>	<b>2 cubic yards</b>	<b>2-5 cubic yards</b>	<b>More than 5 cubic yards</b>
Daily						
Weekly						
Every 2 Weeks			1			
Monthly			3	1		
Quarterly	19	50	44	8	2	
Less than Quarterly	405	243	182	60	11	1
Total # of Residences	424	293	230	69	13	1

Of the total 1,030 households that disposed of bulky waste, the majority of deliveries (70%) is less than 1 cubic yard and brought in less than quarterly.

### Table 8 - Visits by Time of Day

August 1, 2004 to July 30, 2005

Table 8 summarizes the number of visits counted by day and time.

Visits by Time of Day	Tuesday	Thursday	Saturday
8:30- 10:30	808	closed	1748
10:30- 13:00	1083	*466	1748
13:00-14:30	752	816	1447
14:30-16:00	673	759	1559
Total Visits	3316	2041	6502
*The transfer station opens at noon of Thursdays. Resident use is the highest on Saturdays. Although there are fewer transactions on Tuesday and Thursday, use is steady throughout open hours.			

### Discussion and Trends

Over 2,500 sticker numbers were issued to residents; some of these were duplicates – either multiple cars per household or reissue of stickers.

1,822 households use the transfer station.

Over 1,400 households use the transfer station for household trash.

The most frequent use of the transfer station is the disposal of cardboard, mixed paper, cans and bottles, followed closely by the disposal of household trash.

The majority of households disposing trash at the transfer station bring in one to four bags every time.

Households with collection service account for half of the users.

The majority of users bringing in bulky waste are charged for less than a cubic yard.

The majority of bulky waste deliveries are infrequent – quarterly or less.

### Conclusions

There is a significant amount of households with single-family collection service that use the transfer station (927 household), 50% of the total users.

There is a larger number than expected of low-waste generators that use the transfer station exclusively – 472 households that *averaged* one bag of trash once a month or less and 686 households that actually spent \$3 (cost of one bag of trash) once a month or less.

The overall number of households (1,822) using the transfer station is significantly higher than originally assumed (assumed 500-600 residents).

Bulky waste may not be covering its costs because residents are consistently being charged for less than a cubic yard.

The transfer station is used consistently through the weekdays. Saturday is by far the busiest day.

## **Recommendations**

Further limiting of the transfer station hours is not recommended.

With the large number of low waste refuse generators that use the transfer station who would be affected by a base fee, we do not recommend implementing the pre-paid bag proposal at this time.