

# Development of an NTD Tool for Vanpool Services

*Center for Urban  
Transportation Research  
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Final Report

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## **DISCLAIMER**

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the State of Florida Department of Transportation, or the U.S. Department of Transportation.

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# **EXECUTIVE SUMMARY**

## **Problem Statement and Objectives**

To be eligible for the Federal Urbanized Area Formula Grant Program (i.e., Section 5307), providers of vanpool services are required to report annual data on service provided and service consumed to the National Transit Database (NTD). For data on service consumed, providers must report both unlinked passenger trips (UPT) and passenger miles traveled (PMT). They must report a 100% count of annual total UPT, but may report an estimate of annual total PMT through random sampling. When reporting an estimate of annual total PMT through random sampling, it must meet Federal Transit Administration's minimum 95% confidence and 10% precision levels. For data on service provided, providers must collect and report a full count of what they actually provided in terms of vehicle revenue miles (VRM) and vehicle revenue hours (VRH).

Current practices, however, often deviate from these NTD requirements. Deviations occur in how providers count UPT, how they get an estimate of PMT, or how they collect data on service provided. These deviations occur for several possible reasons, including certain unique characteristics of vanpool services and a lack of specific tools and guidance for providers. Failure to meet these NTD requirements lead to poor data for policy decision-making and can lead to less funding from the Federal Urbanized Area Formula Grant Program.

The objective of this project is to help providers of vanpool services avoid these deviations from NTD requirements. Specifically, the project develops a simple spreadsheet template and guidance for providers of vanpool services to collect, record, process, and report their data on service provided and service consumed to the NTD in a way that meets the NTD requirements.

## **Findings and Conclusions**

The spreadsheet template and related guidance are applicable to providers who meet all of the following conditions:

- Provide vanpool services to commuters, i.e., transportation to a group of workers commuting directly between their homes and their regular work sites. The driver also is a commuter and keeps the van at home at night.
- Operate no more than 750 different vanpools annually. This count includes all vanpools operated in a given report year, regardless of their duration of operation.
- Report an estimate of their annual total PMT through random sampling.
- Collect and report 100% counts of UPT through daily recording by individual vanpools.
- Collect and report actual VRM and VRH through daily recording by individual vanpools.

The spreadsheet template requires four types of input data—general information, route data, sample data, and daily activity data. Once entered into it, the template processes the input data into data items for providers to report to the NTD through three NTD forms:

- M-10 – Monthly Ridership Activity Form
- S-10 – Annual Service Form
- FFA-10 – Annual Federal Funding Allocation Statistics Form

The report describes the spreadsheet template and how it should be used. In addition, it provides brief guidance for collecting data on service consumed. Providers of vanpool services are referred to the newly-developed *NTD Sampling Manual* for more detailed guidance on collecting data on service consumed. The *NTD Sampling Manual* is anticipated to be made available toward the end of 2008 at [www.ntdprogram.gov](http://www.ntdprogram.gov). The report provides detailed guidance on collecting a full count of service provided.

### **Benefits**

The implementation of the spreadsheet template and related guidance for vanpool services has several potential benefits. The results are expected to save administrative costs of data processing and reporting and to increase the quality of data reported to the NTD. They provide a centralized source of data on services provided and consumed by day and vanpool that providers can use for planning, marketing, and other internal purposes. They also may bring more federal funds as a result of more vanpool services reporting their data to the NTD that meet its requirements.

## TABLE OF CONTENTS

<b>Disclaimer .....</b>	<b>ii</b>
<b>Technical Report Documentation Page .....</b>	<b>iii</b>
<b>Executive Summary .....</b>	<b>iv</b>
Problem Statement and Objectives .....	iv
Findings and Conclusions .....	iv
Benefits .....	v
<b>Table of Contents .....</b>	<b>vi</b>
<b>List of Tables .....</b>	<b>vii</b>
<b>List of Figures.....</b>	<b>vii</b>
<b>Introduction.....</b>	<b>1</b>
Applicability .....	1
Motivation.....	1
References.....	2
Template Structure.....	2
Organization.....	3
<b>Data Items.....</b>	<b>4</b>
<b>Collecting the Data from Individual Vanpools .....</b>	<b>5</b>
Daily Activities .....	5
Sample Data .....	8
Route Information.....	10
<b>Recording the Data in the Template .....</b>	<b>13</b>
General Information.....	13
Route Information.....	14
Sample Data .....	15
Daily Activity Data.....	16
<b>Reporting the Data from the Template.....</b>	<b>18</b>
Monthly Reporting.....	18
Annual Reporting for Service Form S-10.....	19
Annual Reporting for Form FFA-10.....	19

## LIST OF TABLES

Table 1. Required Data Items for Monthly and Annual Reporting .....	4
Table 2. Guidance on Splitting Route Lengths .....	11
Table 3. Worksheets for Entering Daily Activity Data.....	17

## LIST OF FIGURES

Figure 1. Example of a Daily Activity Log .....	6
Figure 2. Example of Sample Data for a Vanpool Day .....	8
Figure 3. Ridecheck Report .....	9
Figure 4. Screen Capture of a Portion of the General Worksheet .....	13
Figure 5. <i>Routes</i> Worksheet.....	14
Figure 6. <i>Sample</i> Worksheet .....	16
Figure 7. <i>UPT250</i> Worksheet .....	17
Figure 8. <i>MR-20</i> Worksheet.....	18
Figure 9. <i>S-10</i> Worksheet .....	19
Figure 10. <i>FFA-10</i> Worksheet .....	20

## **INTRODUCTION**

This report is designed for providers of vanpool services who report their data on service provided and service consumed to the National Transit Database (NTD) through three of its forms—Monthly Ridership Activity Form M-20, Annual Service Form S-10, and Annual Federal Funding Allocation Statistics Form FFA-10. Service provided includes vehicle revenue miles (VRM) and vehicle revenue hours (VRH), while service consumed include unlinked passenger trips (UPT) and passenger miles traveled (PMT). The report describes an Excel template for these providers to record and process such data for reporting to the NTD. In addition, it provides guidance for these providers to collect their data on service provided and service consumed.

### **Applicability**

The spreadsheet tool and related guidance are applicable to providers who meet all of the following conditions:

- Provide vanpool services to commuters, i.e., transportation to a group of workers commuting directly between their homes and their regular work sites. The driver also is a commuter and he keeps the van at home at night.
- Operate no more than 750 different vanpools annually. This count includes all vanpools operating in a given report year regardless of their duration of operation. It is in general greater than the number of vanpools operated in maximum service for the same year.
- Report an estimate of their annual total PMT through random sampling.
- Collect and report 100% counts of UPT through daily recording by individual vanpools.
- Collect and report actual VRM and VRH through daily recording by individual vanpools.

### **Motivation**

The NTD has requirements on collecting and reporting data on service provided and service consumed. Providers must report UPT and PMT annually and UPT monthly as well. They must report 100% counts of annual total UPT but may report an estimate of annual total PMT through random sampling. Estimates of annual total PMT through random sampling must meet FTA's minimum 95% confidence and 10% precision levels. Providers must also collect and report a full count of the service actually provided rather than an estimate of the service actually provided.

These requirements are not always followed in practice. Deviations occur in how providers count UPT, how they get an estimate of PMT, and how they collect data on service provided. Vanpool services for commuters are unique among all transit services in several ways, and these characteristics may have played a role in these deviations. In contrast to bus or rail transit, the vans would not be in revenue service during the working hours of the participating workers. The drivers also are riders. While vanpool service for commuters does not follow a fixed schedule or a fixed route, its schedule and route are largely fixed. The individual vanpools collect the field data

on both service provided and service consumed. The template and related guidance in this report help providers better meet the NTD requirements and avoid deviations from these requirements.

Following the NTD requirements has benefits. It increases the quality of data reported to the NTD. Better data lead to better policy planning and decision-making at various levels of government. Better data also lead to fair allocations of Section 5307 funding. It avoids the possibility that Section 5307 allocations to a particular UZA are withheld due to poor data quality. More importantly, it avoids the possibility that vanpool as a mode becomes ineligible for reporting to the NTD if deviations from the NTD requirements become serious and widespread among many providers.

## References

This guidance and the design of the template are based on the requirements and guidance contained in three references:

- The annual *National Transit Database Reporting Manual* specifies FTA's requirements on the reporting of annual data on service provided and service consumed.
- The annual *Monthly Reporting Manual* specifies FTA's requirements on the reporting of monthly data on service provided and service consumed.
- The recently-developed *National Transit Database Sampling Manual* provides guidance on the collection and processing of both monthly and annual data on service consumed according to FTA's requirements as specified in the annual *National Transit Database Reporting Manual* and the annual *Monthly Reporting Manual*.
- The reporting manuals are available at [www.ntdprogram.gov](http://www.ntdprogram.gov). The *NTD Sampling Manual* is anticipated to be made available at the same site toward the end of 2008.

## Template Structure

### *NTD Reporting*

The template provides a convenient tool for providers to record and process their data on service provided and service consumed into a format that is ready for reporting to the three NTD forms mentioned above. The template consists of an introduction worksheet, a set of worksheets for recording input data, and a set of worksheets for output information.

The template requires four types of input—general information, route data, sample data, and daily activity data. Providers enter the general information into the *General* worksheet, route information into the *Routes* worksheet, and the sample data into the *Sample* worksheet. They record their daily activities on UPT, VRM, and VRH in the UPT, VRM, and VRH worksheets, respectively.

For each activity type, the template has three worksheets. Depending on the number of different vanpools operated in a year, providers may use one or more of these worksheets:

- The first is used if they operate no more than 250 vanpools.
- The first two are used if they operate more than 250 but no more than 500 vanpools.
- All three are used if they operate more than 500 but no more than 750 vanpools.

Using up to three worksheets for each activity type is based on the tradeoff that the template covers almost all providers of vanpool services but it would not use too many of these worksheets for each activity type. In addition, the template is built in 2003 Excel, which allows no more than 256 columns. While 2007 Excel allows more than 16 thousand columns, 2003 Excel is used so that the template is applicable to users of both versions.

The template processes the input data that providers enter in these worksheets into output data items for them to report to the NTD through the three NTD forms. These output data items are presented in three separate worksheets with one for each form.

### ***Data Transferring***

The template also includes two worksheets for providers to distribute to each of their vanpools so that it can electronically transfer the data it has collected from the field to them. One is the *Log* worksheet that is designed for daily activities from all vanpools. The other is the *Ridecheck* worksheet that is designed for field sample data from vanpool days in a sample.

### **Organization**

The rest of this report is organized into four sections:

- **Data Items** identifies the data items on service provided and service consumed that are covered in the template and in this report.
- **Collecting the Data from Individual Vanpools** provides guidance for collecting data on service provided and service consumed.
- **Recording the Data in the Template** describes how the collected data should be entered into the template.
- **Reporting the Data from the Template** describes the processed data that are in the format of NTD forms and are ready for NTD reporting.

## DATA ITEMS

Through its Monthly Ridership Activity Form M-20, Annual Service Form S-10, and Annual Federal Funding Allocation Statistics Form FFA-10, the NTD requires that providers submit both monthly and annual data on both service provided and service consumed. Table 1 summarizes the required data items that are relevant for vanpool services.

**Table 1. Required Data Items for Monthly and Annual Reporting**

<i>Data Items</i>	<i>Monthly Reporting</i>	<i>Annual Reporting</i>				
	<i>M-20</i>	<i>S-10</i>				<i>FFA-10</i>
	<i>Total</i>	<i>Total</i>	<i>Average Weekday Schedule</i>	<i>Average Saturday Schedule</i>	<i>Average Sunday Schedule</i>	<i>Total by Area</i>
Unlinked Passenger Trips (UPT)	X	X	X	X	X	
Passenger Miles Traveled (PMT)		X	X	X	X	
Vehicle Revenue Miles (VRM)	X	X	X	X	X	X
Vehicle Revenue Hours (VRH)	X	X	X	X	X	
Vehicles Operated in Maximum Service	X					
Vehicles in Operation			X	X	X	
Regular Service Days	X					
Days Schedule Operated			X	X	X	

Each of the data items is defined below for vanpool services for commuters:

- UPT - The one-way rides to and from work, including those made by the driver.
- PMT - The distances ridden by all riders to and from work.
- VRM - The miles that vanpools actually travel to and from work.
- VRH - The hours that vanpools actually travel to and from work.
- Vehicles Operated in Annual Maximum Service - The maximum number of daily vanpools operated in a month.
- Vehicles in Operation - The maximum number of daily vanpools actually operated by day type.
- Regular Service Days - The number of days during a month that the provider operates normal weekday service. Saturdays and Sundays should not be included. Holidays should not be included either if they happen to be on weekdays and the number of vanpools operating is significantly smaller than what is normally operated on weekdays.
- Days Schedule Operated - The number of days when service is operated.

In contrast to fixed-route services, the determination of the data items by average daily schedule for annual reporting should include all days of service.

## COLLECTING THE DATA FROM INDIVIDUAL VANPOOLS

To determine the data items in Table 1 through the template, providers need to collect three of the required four types of data from their individual vanpools:

- **Daily Activities.** They are UPT, VRM, and VRH recorded daily by individual vanpools and sent to the providers, typically on a monthly basis. Data on these daily activities are used to determine the 100% count of annual total UPT and the total actual VRM and VRH.
- **Sample Data.** They are ridecheck data in terms of on-and-off counts of riders and distances between consecutive on-and-off locations for a sample of vanpool days selected at random according to their NTD sampling plan. The sample data are used with the 100% count of annual total UPT to estimate annual total PMT.
- **Route Information.** It is the length of each vanpool route across areas served. Route information is used to attribute annual total VRM to these service areas.

The collection of these three types of data is discussed below in three separate sub-sections.

### Daily Activities

Collecting data on daily activities from individual vanpools involve the following three steps:

1. **Recording the Field Data.** For each day a vanpool operates, it must record the distance and duration it traveled and the number of one-way rides its driver and other riders rode to work and from work separately in a daily log.
2. **Summarizing the Field Data.** After it has recorded the field data in such a log for each day, a vanpool should immediately summarize the recorded field data for the round trip.
3. **Transferring the Summary Data.** After it has summarized the field data for each vanpool day of an entire month, a vanpool should immediately transfer the data to its provider.

### Recording the Field Data

Providers should distribute a form for each vanpool to record the field data on daily activities for an entire month. Such a form should include the first three vertical sections of Figure 1:

- The first section shows the days of an entire month. This section is pre-specified, and vanpools do not need to fill in anything. However, it is critical that individual vanpools align the days of the month correctly with the data they enter in the other sections.
- The second section requires each vanpool to enter data about the one-way trip to work, including the odometer reading and clock time when the driver leaves home and the total number of riders, including the driver, for the trip to work. The odometer reading and clock time should be recorded by the driver just before the driver leaves home. The total

number of riders, including the driver, should be recorded after the last pickup but before the first drop-off.

- The third section requires similar data for the one-way trip from work. Each vanpool should record the odometer reading and clock time when the driver leaves his workplace and the total number of riders, including the driver, should be recorded after the last pickup but before the first drop-off.

Day of the Month	Trip TO Work					Trip FROM Work					ROUND Trip		
	Trip START		Riders, including driver	Trip END		Trip START		Riders, including driver	Trip END		Distance (miles)	Duration (minutes)	One-way Rides
	Odometer Reading	Time		Odometer Reading	Time	Odometer Reading	Time		Odometer Reading	Time			
1													
2	1105	6:45	9	1150	7:45	1155	5:10	8	1201	6:30	91	140	17
3													
4													
5													
6													
7													
8													
9													
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31													

**Figure 1. Example of a Daily Activity Log**

Figure 1 also shows an example of recorded information on day 2 of a month. For the trip to work, the driver left home at 6:45 AM with the last four digits of the odometer reading at 1105; a total of 9 people rode to work, and the driver arrived at his work site at 7:45 AM with the odometer reading at 1150. For the trip from work, the driver left his work site at 5:10 PM with the odometer reading at 1155; a total of 8 people rode from work; and the driver arrived at home at 6:30 PM with the odometer reading at 1201.

### ***Summarizing the Field Data***

Individual vanpools should summarize their field data into round-trip information daily immediately after the trip from work is complete.

Providers should distribute the *Log* worksheet in the template to their individual vanpools for the individual vanpools to summarize their field data. The *Log* worksheet has the same format as Figure 1, but differs from it in that some of its sections are shaded in colors. The second and third sections are shaded green for individual vanpools to enter their field data. The last section is shaded purple and has pre-entered formulas to summarize the field data. Providers should also instruct individual vanpools on how individual vanpools should name their filled log worksheets for each month. The name, for example, should include the fiscal year, the month, and the vanpool ID in a particular order.

Before a new calendar month starts, individual vanpools should have such a monthly log worksheet ready. Getting a log worksheet ready includes saving a blank copy of the worksheet to a new name according to the instruction from their provider. Immediately after the trip from work is complete on any day they operate, individual vanpools should enter their field data from that vanpool day into the already named log worksheet. They should follow the instructions provided in the *Log* worksheet.

For vanpools that do not have the capability to take advantage of such an Excel worksheet for summarizing their field data, providers may allow them to calculate the summary information manually and enter the summary information to the last section of a hard-copy format of a daily log. For the example used in Figure 1, the vanpool traveled 91 miles in 140 minutes with a total of 17 one-way rides shown in the last vertical section.

### ***Transferring the Summary Data***

Individual vanpools should send their filled daily log for a particular month to their provider immediately after the month has ended.

Providers should inform individual vanpools the contact information for them to transfer their daily logs each month. For vanpools that use an Excel log worksheet, the contact would be a designated e-mail address, a FTP site, or any other electronic method. For vanpools that use a hard-copy of the daily log, the contact would be a designate person and a fax number or a postal address.

It is critical that providers have a designated person who is responsible for keeping track of these filled daily logs from individual vanpools each month. When delays by individual vanpools occur, providers should have procedures for this person to contact and encourage the delayed vanpools to send their filled logs.

## Sample Data

To estimate annual total PMT with 100% counts of UPT, providers need an estimate of the average passenger trip length (APTL) with sample data collected from a sample of vanpool days selected at random according to a sampling plan that is certified to meet FTA’s 95% confidence and 10% precision levels.

### *Recording the Field Data*

Providers should design a form for sampled individual vanpools to collect the sample data from the field. The most practical format is likely to be a hard-copy form. Figure 2 shows an example form for collecting the sample data from one sampled vanpool day. The vanpool on this day had 6 riders with a round-trip-distance of 78 miles. The driver picked up all 5 riders at a single location but dropped them off at three different locations in the morning. In the afternoon, the process reversed itself.

Direction	Pickup or Drop-off Locations	Record in the Field		
		#of people who got <b>ON</b> the Van	# of people who got <b>OFF</b> the Van	Van odometer reading when people got <b>ON/OFF</b> the Van
TO WORK	1	1		29,366.0
	2	5		369.1
	3		3	395.3
	4		1	396.8
	5		1	397.5
	6		1	405.0
FROM WORK	1	1		29,405.0
	2	1		412.5
	3	1		413.2
	4	3		414.7
	5		5	440.9
	6		1	444.0

**Figure 2. Example of Sample Data for a Vanpool Day**

### *Transferring the Field Data*

Providers should distribute the *Ridecheck* worksheet in the template to each vanpool day in their NTD sample to enter the field data before it sends the data to them. Figure 3 shows a screen capture of this worksheet. Sampled vanpools enter their field data into the green columns separately for the trip to work and the trip from work. In addition, the first purple column automatically calculates the number of people who was on the van at each pickup or drop-off location, while the second purple column automatically calculates the distance to the next pickup or drop-off location. Finally, the first purple cell at the bottom automatically calculates the total number of one-way rides (i.e., UPT) for the sampled vanpool day, and the second purple cell at the bottom automatically calculates the total PMT for the sampled vanpool day.

	A	B	C	D	E	F	G	H	
1				<b>Ridecheck Report</b>					
2									
3			-- Enter the sample date in D8.						
4			-- Enter the vanpool ID in H8.						
5			-- Enter the sample data from the field in the green columns (i.e., D-F).						
6			-- Do not leave blank rows between any two pickup or drop-off locations for the same direction.						
7									
8		Direction	<b>Sample Date:</b>			<b>Vanpool ID:</b>			
9			Pickups or Drop-offs	<b>RECORD</b> # of People who got <b>ON</b> the Van	<b>RECORD</b> # of People who got <b>OFF</b> the Van	<b>RECORD</b> Van Odometer Reading when people got <b>ON/OFF</b> Van	<b>CALCULATE</b> # of People who was on the Van	<b>CALCULATE</b> distance to next Pickup or drop-off	
10		TO WORK	<b>1</b>	1		29,366	1	3	
11			<b>2</b>	5		29,369	6	26	
12			<b>3</b>		3	29,395	3	1	
13			<b>4</b>		1	29,396	2	1	
14			<b>5</b>		1	29,397	1	8	
15			<b>6</b>		1	29,405			
16			<b>7</b>						
17			<b>8</b>						
18			<b>9</b>						
19			<b>10</b>						
20			<b>11</b>						
21			<b>12</b>						
22		FROM WORK	<b>1</b>	1		29,405	1	8	
23			<b>2</b>	1		29,413	2	1	
24			<b>3</b>	1		29,414	3	1	
25			<b>4</b>	3		29,415	6	26	
26			<b>5</b>		5	29,441	1	3	
27			<b>6</b>		1	29,444			
28			<b>7</b>						
29			<b>8</b>						
30			<b>9</b>						
31			<b>10</b>						
32			<b>11</b>						
33			<b>12</b>						
34									
35									
36		UPT (one-way rides)	12		PMT		344		

**Figure 3. Ridecheck Report**

Providers should inform individual vanpools the contact information for them to transfer their ridecheck report. For vanpools that use the *Ridecheck* worksheet, the contact would be a designated e-mail address, a FTP site, or any other electronic method. For vanpools that use a hard-copy, the contact would be a designate person and a fax number or a postal address. These contacts may differ from those for daily activity data.

Individual sampled vanpools should send their filled ridecheck report to their provider immediately after they have collected for those vanpools that use a hard-copy only and have entered the field data into a copy of the *Ridecheck* worksheet for other vanpools.

It is critical that providers have a designated person who is responsible for keeping track of whether and when they have received the ridecheck report for each sampled vanpool day. When delays by individual sampled vanpools occur, providers should have procedures for this person to contact and encourage the delayed vanpools to send their filled ridecheck report.

### ***Detailed Guidance***

The *NTD Sampling Manual* provides detailed guidance on all aspects of getting sample data for all modes, including vanpool. Rather than repeating this guidance, providers are referred to the *NTD Sampling Manual* on the following for collecting their sample data:

- Getting a sampling plan.
- Having a sampling plan certified.
- Selecting a sample of vanpool days at random.
- Collecting the sample data.
- Summarizing the sample data in UPT and PMT for each vanpool day in the sample.

### **Route Information**

Depending on the areas they serve, providers may need to collect data on the percent split of route lengths across the different areas each route serves. The NTD uses three area types:

- Urbanized areas with at least 200,000 population (to be referred to as large UZAs here)
- Urbanized areas with fewer than 200,000 population (to be referred to as small UZAs here)
- Non-UZA

Providers can be categorized into three groups in terms of the relevance of this section:

1. None of their vanpool routes start in, go through, or end in a UZA of any size. These providers do not need to report for form FFA-10, and this section is irrelevant to them.
2. All of their vanpool routes start, go through, and end in a single UZA. These providers need to report for form FFA-10, and this section is irrelevant to them also.
3. All other providers. These providers need to use the *FFA-10* worksheet, and this section is relevant to them.

Table 2 shows the guidance on how the third group of providers split the lengths of their vanpool routes for various possible scenarios. Splitting their routes by area must meet these requirements:

- Any portion of a route that is within a large UZA must be attributed to this large UZA. If parts of the route also are within small UZAs or non-UZAs, providers have options in attributing the parts within small UZAs or in non-UZAs. Scenarios 1, 3, 4, 6, 8, and 9 in Table 2 represent this case.

- If a route does not start in, go through, or end in any large UZA, any portion of this route within a small UZA must be attributed to this small UZA. If some parts also are within non-UZA, providers have options in attributing the parts within a non-UZA. Scenarios 2, 5, 7, and 10 in Table 2 represent this case.

**Table 2. Guidance on Splitting Route Lengths**

Scenario	Large UZA (≥ 200,000 population)		Small UZA (< 200,000 population)		Non UZA	Guidance
	A	B	A	B		
0					X	a. Attribute the whole route to non-UZA
1	X					a. Attribute the whole route to large UZA A
2			X			a. Attribute the whole route to small UZA A
3	X				X	a. Attribute the whole route to large UZA A, or b. Split the route between large UZA A and non-UZA
4	X		X			a. Attribute the whole route to large UZA A, or b. Split the route between large UZA A and small UZA A
5			X		X	a. Attribute the whole route to small UZA A, or b. Split between small UZA A and non-UZA
6	X	X				a. Split the route among the large UZAs
7			X	X		a. Split the route among the small UZAs
8	X	X			X	a. Split among to the large UZAs, or b. Split among the large UZAs and non-UZA
9	X		X		X	a. Attribute the whole route to large UZA A, or b. Split between large UZA A and small UZA A, or c. Split among large UZA A, small UZA A, and non-UZA
10			X	X	X	a. Split among the small UZAs, or b. Split among the small UZAs and non-UZA

Notes: Areas A and B for each UZA size are to illustrate cases of 2 or more UZAs of the same size.

One practical rule that is easy to remember and also meets NTD’s reporting requirements is to split a route among non-UZAs and each UZA that it starts in, goes through, or ends in. Guidance 0a, 1a, 2a, 3b, 4b, 5b, 6a, 7a, 8b, 9c, and 10b in Table 2 represent cases under this practical rule.

An alternative practical rule that is likely to involve less measurement and also meets NTD’s reporting requirements is to split a route only among the areas of the largest type. Large UZAs are the largest type of areas, followed by small UZAs, then non-UZAs. Guidance 0a, 1a, 2a, 3a, 4a, 5a, 6a, 7a, 8a, 9a, and 10a in Table 2 represent cases under this practical rule.

The choice of these practical rules can affect how a particular provider may benefit from Section 5307 funding. Most of the 5307 funding goes to large urbanized areas through specific statutory formulas, and but some goes to small urbanized areas through the Small Transit Intensive Cities formula. If the provider is located in a large UZA, it is likely to benefit more from Section 5307 with the alternative practical rule. If the provider is located in a small UZA, on the other hand, it is likely benefit more with the first practical rule. In each case, however, how the provider can benefit from Section 5307 funding depends on what public institution is the recipient of 5307

funding in the UZA and how this recipient allocates the 5307 funds to different NTD reporters in the UZA typically through an intergovernmental agreement.

In each urbanized area there exists a designated recipient of Urbanized Area Formula funds. This is a public body with legal authority to receive and dispense Federal funds. In urbanized areas of 200,000 or more population, the Governor has typically designated a single recipient such as an MPO or a regional transit agency or commission.

Reporters should always check and follow the current guidance in the annual *NTD Reporting Manual* for current reporting requirements.

## RECORDING THE DATA IN THE TEMPLATE

While some users of the template do not need to enter any route information, all users of the template need to enter data on the general information, sample data, and daily activities. The following sections describe how each of the four types of input data should be entered.

### General Information

General information is entered into the *General* worksheet and covers the provider's fiscal year, whether or not its sampling plan involves grouping to improve sampling efficiency, and its holidays. Figure 4 shows a screen capture of it. While the information on the provider's fiscal year is clear, the other two information items are discussed further.

#### *Service Grouping*

Grouping one's service can often lead to more efficient sampling (i.e., smaller sample size). It involves dividing the service into two or more groups with the objectives of reducing within-group differences and increasing between-group differences. For example, separating a provider's vanpool routes with longer route lengths in miles from the routes with shorter route lengths is likely to reduce differences in APTL across vanpool days within each group. The provider should refer to the *NTD Sampling Manual* for more guidance on service grouping.

#### *Holidays*

Three pieces of information need to be entered for each holiday: date, name, and day type to which the number of operating vanpools on a holiday is closest. Suppose that 100, 10, and 5 vanpools typically operate on weekdays, Saturdays, and Sundays, respectively. A holiday should be treated as a Saturday if it happens on a weekday with 15 vanpools operating.

	A	B	C	D	E	F	G	H	I	J
1	<b>General Information</b>									
2										
3	<b>Fiscal Year</b>	Enter the following information about your fiscal year								
4		-- First Month of Your Fiscal Year (e.g., 7 for July)								7
5		-- Calendar Year of the First Month of Your Fiscal Year (e.g., 2006)								2006
6										
7	<b>Grouping</b>	Enter 1 if your sampling plan is based on service grouping and 0 otherwise								1
8		Refer to the National Transit Database Sampling Manual on service grouping								
9										
10	<b>Holidays</b>	a. Enter the following for each holiday in columns H, I, and J:								
11		-- Date of the holiday (e.g., July 4, 2006)								
12		-- Name of the holiday								
13		-- Similarity to Saturday, Sunday, or weekday service								
14		b. If there are more than six holidays, insert more rows above the red bar.								
15										
16										
17										
18										

  

Date	Name	Service
4-Jul-06	Independence	Sunday
4-Sep-06	Labor	Saturday
23-Nov-06	Thanksgiving	Sunday
25-Dec-06	Christmas	Sunday
1-Jan-07	New Year	Sunday
28-May-07	Memorial	Weekday

**Figure 4. General Worksheet**

## Route Information

Route information is entered into the *Routes* worksheet, and Figure 5 shows a screen capture of it. Part of the route information covers the name and the UZA number of each UZA served by a vanpool. A code assigned by the FTA, the UZA number is a numerical ranking by UZA population size. For each vanpool operated in a year, regardless the duration of its operation, the route information also covers the following:

- Its vanpool ID
- Its group identification if the sampling plan is based on service grouping
- The % split of its route length in miles across the non-UZA and each UZA it serves

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	<b>UZA/Non-UZA and Route Information</b>															
2																
3	<b>UZA/Non-UZA Information:</b>															
4	-- Enter the names of the urbanized areas (UZA) you serve in range F17:O17.															
5	-- Enter the UZA numbers of these urbanized areas in range F18:O18.															
6																
7	<b>Route Information:</b>															
8	-- Enter the ID of your vanpools in column C.															
9	-- Enter group identification in Column D if you sampling plan is based on service grouping.															
10	-- Enter % split of route length across non-UZA and each UZA for each vanpool in range E16:O768.															
11	+ Use range E19:O268 if your number of different vanpools is no more than 250															
12	+ Use range E19:O518 if your number of different vanpools is no more than 500															
13	+ Use the full range if your number of different vanpools is no more than 750.															
14																
15					<b>% Split of Route Length</b>											Must be blank ↓
16	<b>Count</b>	<b>Vanpool ID</b>	<b>Grouping</b>	<b>Non-UZA</b>	<b>UZA</b>											
17					AAA	BBB	CCC	DDD	EEE	FFF	GGG	HHH	III	JJJ		
18					#045	#01	#83	#063	#041	#153	#174	#034	#186	#053		
19	1	1	2	0	100	0	0	0	0	0	0	0	0	0	0	0
20	2	6	2	0	63	0	0	0	0	0	0	0	0	0	0	31
21	3	8	1	0	100	0	0	0	0	0	0	0	0	0	0	0
22	4	10	1	0	100	0	0	0	0	0	0	0	0	0	0	0
23	5	12	2	0	75	0	0	0	0	0	0	0	0	0	0	25
264	246	88070	1	0	100	0	0	0	0	0	0	0	0	0	0	0
265	247	88071	2	0	100	0	0	0	0	0	0	0	0	0	0	0
266	248	88077	2	0	100	0	0	0	0	0	0	0	0	0	0	0
267	249	88078	2	0	100	0	0	0	0	0	0	0	0	0	0	0
268	250		1													
269	251	1	2	0	100	0	0	0	0	0	0	0	0	0	0	0
270	252	6	2	0	63	0	0	0	0	0	0	0	0	0	0	31
271	253	8	1	0	100	0	0	0	0	0	0	0	0	0	0	0
272	254	10	1	0	100	0	0	0	0	0	0	0	0	0	0	0
273	255	12	2	0	75	0	0	0	0	0	0	0	0	0	0	25
514	496	88070	1	0	100	0	0	0	0	0	0	0	0	0	0	0
515	497	88071	2	0	100	0	0	0	0	0	0	0	0	0	0	0
516	498	88077	2	0	100	0	0	0	0	0	0	0	0	0	0	0
517	499	88078	2	0	100	0	0	0	0	0	0	0	0	0	0	0
518	500		1													
519	501	1	2	0	100	0	0	0	0	0	0	0	0	0	0	0
520	502	6	2	0	63	0	0	0	0	0	0	0	0	0	0	31
521	503	8	1	0	100	0	0	0	0	0	0	0	0	0	0	0
522	504	10	1	0	100	0	0	0	0	0	0	0	0	0	0	0
523	505	12	2	0	75	0	0	0	0	0	0	0	0	0	0	25
764	746	88070	1	0	100	0	0	0	0	0	0	0	0	0	0	0
765	747	88071	2	0	100	0	0	0	0	0	0	0	0	0	0	0
766	748	88077	2	0	100	0	0	0	0	0	0	0	0	0	0	0
767	749	88078	2	0	100	0	0	0	0	0	0	0	0	0	0	0
768	750		1													

Figure 5. Routes Worksheet

The *Routes* worksheet has three blocks of cells in which providers can enter the above route information. Depending on the annual number of different vanpools operated, providers need to use:

- the first block if the annual number of different vanpools operated is no more than 250
- the first two blocks if the annual number vanpools is no more than 500
- all three blocks if the annual number of vanpools is no more than 750

The sum of the % splits across the columns for any given vanpool must be 100. The column shaded gray checks that necessary condition. It should be blank if the sum is 100 and would be “Not 100” otherwise.

Providers should follow the instructions in the *Routes* worksheet on entering the above information.

### **Sample Data**

The sample data need to be entered into the *Sample* worksheet. Figure 6 shows a screen capture of it with some rows hidden to save space here.

The *Sample* worksheet has two sections. The top section provides directions on how providers should enter their sample data, while the bottom section is where providers enter their sample data.

The bottom section has two sets of columns. The columns shaded green are for providers to enter their sample data, while the columns shaded purple contain formulas that determine the day type and the group identification if the sampling plan is based on service grouping.

For each vanpool day in the sample, providers need to enter four pieces of information into the green columns (i.e., columns C-H):

- Date (e.g., July 4, 2008)
- Vanpool ID
- UPT
- PMT

There are two sets of columns for providers to enter the date and vanpool ID in the green columns. If the sample data are from a vanpool day in their original sample, enter the date and vanpool ID in the columns for Original Sample. If the sample data are from a replacement vanpool day because the sample data from the original vanpool day were not collected or were not usable due to various reasons, enter the date and vanpool ID in the columns for Replacement Sample.

Providers do not need to do anything with the purple columns for any existing rows in the bottom section. If they insert additional rows, however, they must copy the formulas from the row above in the purple columns (i.e., columns I-J) to the inserted rows.

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>Recording Your Sample Data</b>											
2												
3	<b>Directions:</b>											
4	-- Enter the following for each sampled vanpool-day in the original sample:											
5	* Sample Dates (e.g., July 1, 2008) in column C											
6	* Vanpool ID in column D											
7	* UPT in column E											
8	* PMT in column F											
9	-- Enter replacement sample information as follows:											
10	* Sample dates in column G											
11	* Vanpool ID in column H											
12	-- Insert additional rows above the red bar if needed.											
13	-- Copy formulas from another row for columns I-J-K-L to the inserted new rows.											
14												
15	<b>Sample Data:</b>											
16	<b>Original Sample</b>		<b>UPT</b>	<b>PMT</b>	<b>Replacement Sample</b>		<b>Day Type</b>			<b>Grouping</b>		
17	<b>Sample Date</b>	<b>Vanpool ID</b>			<b>Sample Date</b>	<b>Vanpool ID</b>	<b>Weekday Schedule</b>	<b>Saturday Schedule</b>	<b>Sunday Schedule</b>			
18	01-Jul-06	88019	4	132.6			0	1	0	2		
19	01-Jul-06	482	8	340.0			0	1	0	1		
20	07-Jul-06	614	18	650.0			1	0	0	1		
21	07-Jul-06	618	10	358.0			1	0	0	1		
22	13-Jul-06	20278	20	490.0			1	0	0	2		
115	15-Apr-07	112	12	671.0			0	0	1	1		
116	21-Apr-07	20255	14	585.5			0	1	0	1		
117	21-Apr-07	333	18	446.0			0	1	0	2		
118	27-Apr-07	20274	14	486.0			1	0	0	1		
119	27-Apr-07	88006	18	307.4			1	0	0	2		
120	<b>Enter new rows for sample data above this red row (i.e., row 120).</b>											
121												

**Figure 6. Sample Worksheet**

Providers should follow the guidance in the *NTD Sampling Manual* on collecting and processing their sample data before entering them into the template. Providers should follow the instructions in the *Sample* worksheet on how to enter their sample data.

### Daily Activity Data

The daily activity data come from the round-trip summary in the daily activity log on the number of one-way rides, round-trip distance (in miles), and round-trip duration (in minutes) as shown in the last three columns of Figure 1. These daily activity data need to be entered into three sets of worksheets for UPT, VRM, and VRH, respectively. Each set has three worksheets, and how many of these worksheets providers need to use depends on the number of different vanpools operated in their report year. Table 3 summarizes the worksheets they need to use by type of daily activity and their number of different vanpools operated in their report year.

**Table 3. Worksheets for Entering Daily Activity Data**

<b>Number of Different Vanpools Operated in a Report Year</b>	<b>Type of Daily Activity</b>		
	<b>UPT</b>	<b>VRM</b>	<b>VRH</b>
1-250	<i>UPT250</i>	<i>VRM250</i>	<i>VRH250</i>
251-500	<i>UPT250</i> <i>UPT500</i>	<i>VRM250</i> <i>VRM500</i>	<i>VRH250</i> <i>VRH500</i>
501-750	<i>UPT250</i> <i>UPT500</i> <i>UPT750</i>	<i>VRM250</i> <i>VRM500</i> <i>VRM750</i>	<i>VRH250</i> <i>VRH500</i> <i>VRH750</i>

Each of these worksheets for daily activity data has the same structure, as illustrated in Figure 7 for the *UPT250* worksheet:

- Column A lists the dates for a provider’s entire fiscal year according to what the provider has entered into the *General* worksheet about its fiscal year.
- Columns D through IS are for a provider to enter its daily amount of UPT, VRM, or VRH for each vanpool and each day the vanpool operated.
- Row 3 lists the count of the number of different vanpools operated in a report year. These numbers start at 1 and end at 250 for the 250 worksheets, start at 251 and end at 500 for the 500 worksheets, and start at 501 and end at 750 for the 750 worksheets.
- Row 4 lists the vanpool IDs automatically taken from the *Routes* worksheet.

If a particular vanpool did not operate or did operate, but the activity data from it are unavailable on any day, enter a zero in the corresponding cell or leave the cell blank.

	A	D	E	F	G	H	I	J	K	IK	IL	IM	IN	IO	IP	IQ	IR	IS
1	<b>Recording UPT by Date (column A) and by Vanpool (row 4)</b>																	
2																		
3		1	2	3	4	5	6	7	8	242	243	244	245	246	247	248	249	250
4	<b>Date \ ID</b>	<b>1</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>29</b>	<b>36</b>	<b>40</b>	<b>88052</b>	<b>88053</b>	<b>88059</b>	<b>88065</b>	<b>88070</b>	<b>88071</b>	<b>88077</b>	<b>88078</b>	<b>0</b>
5	1-Jul-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2-Jul-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	3-Jul-06	5	6	0	4	8	12	12	0	4	8	10	4	12	0	0	4	
8	4-Jul-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	5-Jul-06	10	16	0	12	14	14	14	19	10	18	16	16	22	0	0	8	
366	26-Jun-07	7	0	12	20	12	18	18	16	20	18	26	17	24	0	0	6	
367	27-Jun-07	9	0	8	20	12	16	16	20	12	20	22	15	16	0	0	8	
368	28-Jun-07	8	0	6	17	16	18	12	18	14	15	22	18	20	0	0	2	
369	29-Jun-07	9	0	4	18	12	16	12	18	6	12	14	19	15	0	0	4	
370	30-Jun-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

**Figure 7. UPT250 Worksheet**

## REPORTING THE DATA FROM THE TEMPLATE

Once a provider has entered all of the data described in the last section for an entire report year, the template processes them and summarizes the results in formats similar to those in NTD forms MR-20, S-10, and FFA-10.

### Monthly Reporting

The *MR-20* worksheet contains the summary data on UPT, VRH, VRM, the number of vehicles operated in maximum service (VOMS), and the number of regular service days by month for monthly reporting in range C3:I18 that is shaded blue (Figure 8). The column labels in the blue range, a-e, match those in NTD form MR-20 as of report year 2008.

Also shown in this worksheet are the cumulative totals for UPT, VRH, and VRM in row 20. They should match the annual totals in the *S-10* worksheet as shown in row 22. Providers should check this each month before submitting their monthly data.

	A	B	C	D	E	F	G	H	I
1	<b>NTD Form MR-20 for Monthly Reporting</b>								
2									
3									
4									
5			Unlinked						
6			Calendar	Passenger Trips	Vehicle Revenue	Vehicle Revenue		Vehicles Operated	Regular
7			Year	(UPT)	Hours (VRH)	Miles (VRM)		in Maximum	Service
8								Service (VOMS)	Days
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

**Figure 8. MR-20 Worksheet**

### Annual Reporting for Service Form S-10

Range B3:J22 of the *S-10* worksheet shows the summary data on vehicles in operation, total actual VRM, total actual VRH, UPT, PMT, and days schedule operated for average weekday schedule, average Saturday schedule, average Sunday schedule, and annual total, respectively (Figure 9). The row numbers (e.g., 6 for vehicles in operation) and column labels (e.g., d for annual total) in this range match those for NTD form S-10 as of reporting year 2008.

	A	B	C	D	E	F	G	H	I	J
1		<b>NTD Form S-10 for Annual Reporting</b>								
2										
3							a	b	c	d
4										
5							Average Weekday Schedule	Average Saturday Schedule	Average Sunday Schedule	Annual Total
6										
7		<b>Service Supplied</b>								
8										
9		6	Vehicles in Operation				735	54	132	
10										
11		12	Total Actual Vehicle Revenue Miles				54,545.0	2,104.7	1,766.3	14,068,431
12										
13		15	Total Actual Vehicle Revenue Hours				1,290.7	50.5	42.9	333,000
14										
15		<b>Service Consumed</b>								
16										
17		18	Unlinked Passenger Trips				8,423	228	228	2,164,872
18		20	Passenger Miles Traveled				301,775.8	7,714.7	8,802.8	79,738,529
19										
20		<b>Service Operated (Days)</b>								
21										
22		21	Days Schedule Operated				254	53	58	

**Figure 9. S-10 Worksheet**

NTD form S-10 also requires total actual vehicle miles and total actual vehicle hours. With the type of vanpool services described in the introduction, however, these two quantities equal to total actual VRM and total actual VRH, respectively.

### Annual Reporting for Form FFA-10

Providers do not need any information from the *FFA-10* worksheet if they do not serve any UZA or if they serve only one UZA. Otherwise, they can use the summary data in the *FFA-10* worksheet for their annual reporting for NTD Form FFA-10.

The *FFA-10* worksheet shows total actual VRM for non UZA and each UZA in columns E through O of row 8 (Figure 10). The corresponding UZA numbers are listed in row 6. The total actual VRM in cell D8 comes automatically from the *S-10* worksheet, while the number in P8 is the sum of the actual VRM across non UZA and each UZA. These two totals should be the same.

	A	B	C	D	E	F	N	O	P
1		<b>NTD Form FFA-10 for Annual Reporting</b>							
2									
3			a	b	c	k	l	z	
4									
5					Non-UZA	UZA #			
6		01 UZA Number				#045	#186	#059	
7									
8		13 Actual Vehicle Revenue Miles		14,068,431	2,485,142	3,890,161	23,157	311,681	14,068,431

**Figure 10. FFA-10 Worksheet**

To use the summary data in the *FFA-10* worksheet, providers should be aware the following:

- The *FFA-10* worksheet also shows the column labels in row 3(a-i, z) and row numbers in column B (01 and 13) used by NTD Form FFA-10 as of report year 2008.
- NTD form FFA-10 automatically lists the UZA numbers from NTD form B-10. This list is based on the physical location of the vanpool services and on the service areas served by all modes a provider operate.
- NTD form FFA-10 automatically takes the total actual VRM from NTD form S-10 and places it in its cell a13.
- NTD form FFA-10 also automatically sums the actual VRM for individual areas in its cell z13.
- NTD form FFA-10 also requires data on UPT, PMT, VRH, and operating expenses by area.

To report the summary data in the *FFA-10* worksheet to NTD form FFA-10, providers should follow these steps:

1. Select Actual Vehicle Revenue Miles from the drop-down menu in NTD form FFA-10's row 02 as the reporting method.
2. Select the box below non UZA and each of the UZAs to which they have chosen to split the route lengths of their vanpools in the *Routes* worksheet.
3. Report their actual VRM from the *FFA-10* worksheet to each of the selected areas. It is critical that they match their actual VRM to each of the selected areas correctly in terms of non UZA and their UZA numbers.

Once providers have entered their actual VRM as above, NTD form FFA-10 will then automatically allocate the rest of their service data based on the proportions of their VRM in each area. The other service data include actual vehicle revenue hours, passenger miles traveled, unlinked passenger trips, and operating expenses.