

# **Vanpooling in North Dakota: Feasibility and Operating Scenarios**

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Prepared by:

Jon Mielke  
Small Urban & Rural Transit Center  
North Dakota State University  
Fargo, North Dakota

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## **Disclaimer**

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# EXECUTIVE SUMMARY

Vanpooling is generally defined as 5 to 15 people commuting to and from work together in a van. The vehicle's capital costs and all related fuel, maintenance, and insurance expenses are paid by the participants. Vanpools are most successful in situations where one-way trip lengths exceed 20 miles, where work schedules are fixed and regular, where there is a sufficient number of workers from the same residential area to form a pool, where public transit is unable to satisfy worker needs, and where there is some parking or traffic congestion.

North Dakota operated a successful commuter vanpool program from the late 1970s through the mid-1980s. That program gradually declined and was eventually discontinued, however, as fuel prices and interest rates declined and as major energy industry construction projects were completed. North Dakota's experiences mirrored national trends, where the number of operating vanpools declined from approximately 15,000 in 1980 to about 8,500 in 1999.

This national trend has, however, been reversed. Pool numbers have increased along with fuel prices and the total number of pools in operation again stands at over 10,000. This study focuses on the feasibility of reestablishing a commuter vanpool program in North Dakota.

Vanpool ownership options are largely unchanged since the late 1970s but the utilization rates of each option have changed considerably. In the 1970s and 1980s, most commuter vanpools were organized and operated either by individuals or employers. Liability issues and reluctance on the part of employers, drivers, and riders to make related long-term commitments have, however, discouraged these types of ownership.

There has, however, been a corresponding increase in programs that are operated by third-parties such as state and local units of government (departments of transportation, transit operators, transportation management associations, etc.). Some of these operations are run in-house while others are managed on a contract basis with commercial service providers.

Most publicly sponsored vanpool operations provide some level of subsidy to underwrite pool operating costs. These subsidies encourage participation by enticing commuters to give up the freedoms associated with commuting via personal automobile. In exchange for these freedoms and slightly longer commute times, participants typically achieve lower commuting costs (fuel savings, reduced vehicle depreciation, lower toll and parking fees, etc.), a more relaxing commute, and an alternative means of commuting.

In exchange for providing a subsidy, program operators receive benefits associated with:

- Reduced fuel consumption,
- Reduced vehicle emissions and improved air quality,
- Reduced traffic on state and local roads,
- Reduced need for roadway construction and maintenance, and
- Reduced parking needs at participating facilities.

In rural areas like North Dakota, vanpooling may also increase the viability of rural communities and increase the number of workers that are available for employers.

The federal government has recognized the benefits associated with commuter vanpools and encourages employer and employee participation. Income and related payroll tax incentives are available for employers and their employees when employees commute via vanpool. Congress has also enacted legislation which gives state and local units of government the discretion to use funds appropriated for various programs to establish and operate commuter vanpool programs. Additional non-federal incentives are sometimes offered by state and local units of government and by participating employers.

This study reviewed the operations of eight state-run vanpool programs and another seven programs that are run by local units of government. This review focused on the size of each program, funding sources, passenger fares, and overall operations. Some of these services are run with in-house personnel while others contract with commercial vanpool companies to administer and promote their programs. The experiences of these programs may be beneficial if North Dakota decides to reestablish a vanpool program for the benefit of its business community and state residents.

Several of the state's major employers were surveyed to determine their receptiveness to vanpooling. Surveys were sent to 56 employers, all having more than 100 employees. Twenty-seven employers responded to the vanpool survey. This total represents a response rate of 48.2%. Of these 27 responses, 20 entities provided positive or non-negative responses to questions concerning their possible involvement in vanpool promotional efforts and/or the provision of incentives to participating employees.

These 20 respondents were subsequently contacted and asked to participate in a personal interview; 17 responded to this invitation. As a result of subsequent contacts and visits, 11 of these 17 major employers indicated that vanpooling may hold potential for their company. The major reasons for nonparticipation included seasonal schedules and unscheduled overtime.

These 11 employers employ approximately 5,550 people in North Dakota and operate 19 worksites in the state. It is anticipated that additional employers and individual commuter groups would participate if the state reestablishes a vanpool program. It does appear, therefore, that there is a potential market for vanpooling in North Dakota.

It should also be noted that there are several major energy-related construction projects being proposed for western North Dakota (ethanol plants, biodiesel plants, electrical generating facilities, etc.). This situation is very similar to the one that existed when North Dakota initiated its original vanpool program in the late 1970s. If any of these facilities become a reality, multiyear construction programs and long distance commutes may be involved. These projects would, in all likelihood, create additional demand for a state vanpool program.

Based on the availability of federal funding, employer support, and the experiences of other government-run vanpool programs that were analyzed as a part of this study, a set of recommendations was developed concerning a new vanpool program in North Dakota. It is recommended that North Dakota reestablish a vanpool program using 100% federal funds and that the program contract with a commercial vanpool operator to initiate a turnkey service on a three-year trial basis.

This approach would result in higher passenger fares than comparable government programs that are run with in-house personnel who are responsible for procurement (vehicles, fuel, insurance, etc.), administration, and promotions. This approach is, however, very low risk and allows for an almost immediate start-up.



Based on the program's achievements during this three-year trial period, it can either be continued or terminated. If it is continued, the state may decide to retain the services of the commercial service provider or it may decide to assume all or some of related procurement, administrative, and promotional functions. State and local entities that perform these functions in-house tend to achieve lower costs which translate into lower participant fares. This should presumably result in higher participation.

The following is a list of related study recommendations:

- Reestablish a commuter vanpool program in North Dakota on a three-year trial basis using 100% federal funds.
- Set a goal of establishing 10 vanpools per year during each year of the three-year trial period.
- Contract for procurement, administrative, and promotional services from a commercial vanpool company during the program's three-year trial period.
- Use vehicles equipped with features that promote rider comfort and safety.
- Subsidize nondriver passenger fares by approximately \$60 per month.
- Provide free transportation to primary drivers and provide backup drivers with an additional subsidy of \$100 per year.
- Subsidize revenue losses associated with empty seats by up to \$300 per vanpool per year.
- Base fares on an assumed ridership of one less than each vehicle's capacity and charge riders lower fares in exchange for actively recruiting riders to keep pools full.
- Allow pool drivers and riders to cancel their participation agreement on 30-days notice.
- Establish a guaranteed-ride-home program to ensure that participants can respond to emergency situations.
- Require primary and backup drivers to take defensive driving courses; primary and backup drivers must have satisfactory driving records and primary drivers must have satisfactory credit backgrounds.
- Market the program primarily through major employers.
- Monitor the program closely and redesign it, as appropriate, to achieve maximum efficiencies and results.

It is estimated that this program will cost approximately \$112,700 during its first year of operations. Second and third year operations are estimated at \$171,200 and \$243,600, respectively. Subsidy costs are estimated at \$2.73 per ride during Year One, \$2.08 during Year Two, and \$1.98 during Year Three. These subsidy levels are well below the \$2.91 per ride achieved by the state's publicly supported transportation programs in 2004.

The end results of this phase-in approach would be an enhanced personal mobility program for state residents and the achievement of many of the attributes that are traditionally associated with ridesharing via vanpool. This approach will also put the state in a better position to determine if its residents and its business community want and need vanpooling. The responses from both should ultimately determine what, if any, long-term role the state should play in commuter vanpooling.



# 1. VANPOOLING IN NORTH DAKOTA

Vanpooling is generally defined as 5 to 15 people commuting to and from work together in a van. The vehicle's capital costs and all related fuel, maintenance, and insurance expenses are paid by the participants.

Some vanpools are independently organized by their participants and operate with a vehicle that is owned by one of the pool's members. Most vanpools, however, are part of larger programs which involve employers and/or third parties such as government transit organizations or commercial service providers. Typically, vanpool programs are most successful in situations where one-way trip lengths exceed 20 miles, where work schedules are fixed and regular, where there is a sufficient number of workers from the same residential area to form a pool, where public transit is unable to satisfy worker needs, and where there is some parking or traffic congestion (Evans and Pratt).

High fuel costs and double-digit interest rates contributed to a massive growth in vanpooling in the 1970s and early 1980s. From the start of the first vanpool program by 3M Company in 1973 until 1980, it is estimated that approximately 15,000 vanpools were placed in service around the United States. Most of these pools had some form of employer involvement; some were of the owner-operator variety (Evans and Pratt).

North Dakota had an active, state-sponsored vanpool program of its own during this time. The North Dakota State Highway Department (now the Department of Transportation) used federal highway monies to provide interest-free loans to help individuals purchase vans for use in vanpooling. At its peak, the department had over 30 vanpools in operation around the state. Each pool was independently owned and operated, either by an individual or an employer. Given the double-digit interest rates that were prevalent at the time, the department's interest-free loans helped reduce the cost of operating and participating in vanpools.

As was the case around the country, participation in North Dakota's vanpool program declined as fuel prices and interest rates dropped in the 1990s. These factors and the completion of several major power plant construction projects contributed to the program's discontinuance.

The situation facing many North Dakota commuters has now changed again. Fuel prices have again risen to historic levels and the cost of commuting is consuming a greater and greater portion of their personal income. Vanpooling at the national level is again increasing, up from 8,500 pools in 1999 to 10,000 pool in 2005 (Evans and Pratt).

This study identifies changes that have taken place relative to vanpooling since North Dakota's program was discontinued in the mid-1980s. This identification process includes a review of operating characteristics of several state and local vanpool programs that are in operation around the country and discusses federal incentives that have been created to encourage vanpooling.

The ultimate goal of this study is to determine whether or not North Dakota should renew its vanpool program and, if so, in what form. This study furthers a related recommendation in the August 2005 report, "Personal Mobility in North Dakota: Trends, Gaps, and Recommended Enhancements," which was prepared for the North Dakota Department of Transportation (NDDOT) by the Small Urban & Rural Transit Center (SURTC). That report recommended that NDDOT encourage and facilitate ridesharing to

help meet commuting-related transportation needs in both urban and rural areas of North Dakota (Mielke, Miller, Ripplinger, Peterson, and Hough).

The vast majority of the vanpool programs that are in place in the United States involve pools that originate or terminate in urban areas. This study will consider not only the feasibility of this type of pool, but also pools that start and end in small urban and/or rural areas.

This approach is considered vital because commuters in small urban and rural areas have very few mobility options relative to traveling to and from work. In many instances, existing public transportation systems are designed to transport students and/or to meet the needs of elderly and disabled residents. Quite often, there are no commercial transportation services available. The distances involved and extreme climatic conditions may make walking or bicycling seasonally attractive, at best. This often leaves the personal automobile as the only viable option for getting to and from work.

Commuting by personal automobile is becoming increasingly expensive as vehicle and insurance costs rise and as fuel costs sometimes exceed \$3 per gallon. Related costs are especially high given the fact that one-way commutes of 25 to 75 miles or more are common in North Dakota.

Vanpooling may be one way of addressing the mobility needs of some of North Dakota's commuting population. This population includes two primary groups of people. The first group entails individuals who live in small towns or rural areas and commute to urban sites or to employer locations in another small town. Rather than relocating, these people choose to commute, either for cost of living reasons or because of perceived quality of life considerations. The availability of housing may also be a factor.

The second group of long-distance commuters includes individuals who are employed at sites that are situated in smaller communities but who choose to live in an urban area and commute out to their work site. Again, availability of housing and perceived quality of life concerns may be contributing factors.

Ultimately, the decision of where to work and where to live will vary with each and every individual. Freedom of choice is, however, important to each person involved. Having this freedom may also make a significant contribution to local economies, especially in rural areas. Given the cost of commuting, long distances involved, and lack of other alternatives, vanpooling may hold significant promise as a component of a comprehensive mobility program to meet the needs of North Dakota residents.

Except for the impact of lower interest rates, the inherent economic advantages that were associated with vanpooling in the late 1970s and early 1980s still exist today. In addition to these advantages, the federal government has also created new incentives to encourage individuals to commute in something other than single-occupant automobiles. The federal rules and related funding which facilitated North Dakota's vanpool program in the 1970s and 1980s are still in place and have been augmented by Internal Revenue Service provisions which provide tax incentives to participating commuters and their employers.

It also appears that the energy-related construction environment that existed in western North Dakota in the 1970s and early 1980s may be reemerging. There is considerable speculation regarding the construction of several ethanol, biodiesel, and electricity production facilities in the western half of the state. The construction of any of these facilities could result in numerous long-distance commutes during related multiyear construction schedules.

There are numerous private and publicly supported vanpool programs in operation in the United States. In a 2004 "Best Workplaces for Commuters" brochure, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation (USDOT) estimate that just a portion of these programs:

- Involve 2 million employees and 1,100 employers nationwide,
- Reduce miles drive by nearly 9 million miles a day,
- Save \$4.5 million annual in car maintenance and fuel costs,
- Save over 106 million gallons of fuel per year,
- Prevent the release of 936,000 metric tons of greenhouse gas emissions, and
- Eliminate the need for more than 275,000 parking spaces.

The benefits outlined above are typically associated with vanpools that are affiliated with major employers in urban areas. It is worth noting, however, that vanpooling is not just an urban phenomenon. To the contrary, the EPA states that, “Vanpools . . . are particularly well suited for areas with limited mass transit and long distance commutes.” ([http://www.ergweb.com/projects/ccli/empkit/files/section3/vanpool\\_benefit\\_brief.pdf](http://www.ergweb.com/projects/ccli/empkit/files/section3/vanpool_benefit_brief.pdf)).

Given all these factors, it may be appropriate to reinstitute a publicly supported vanpool program in North Dakota. Having an attractive and aggressive vanpool program available for state residents could:

- Reduce fuel consumption for commuting in North Dakota,
- Reduce vehicle emissions and improve air quality,
- Increase the viability of rural communities that provide workers for distant employers,
- Increase the pool of available workers for employers,
- Reduce commuting costs for North Dakota employees/increase personal income,
- Reduce payroll tax costs/increase net income for participating employers,
- Reduce traffic on state and local roads, and
- Reduce parking needs at participating facilities.

This study will help determine the feasibility of vanpooling in both urban and rural North Dakota. To aide in this determination, this study will:

- Discuss typical vanpool operations and ownership options (Chapter 2),
- Investigate funding possibilities and related incentives that might be available to help establish vanpools (Chapter 3),
- Present information on vanpool programs that are in operation around the country (Chapter 4),
- Determine employer receptivity concerning the initiation of a vanpool program in North Dakota (Chapter 5),
- Present program design considerations and recommendations concerning the establishment of a publicly supported commuter vanpool program in North Dakota (Chapters 6 and 7), and
- Identify sample materials that could be used to administer and promote a commuter vanpool program in North Dakota (Appendix B).

The study will hopefully provide North Dakota commuters, employers, and government policymakers with information that will lead to more informed decisions concerning commuting and the use of vanpools to satisfy a portion of the state’s personal mobility needs.



## 2. OPERATING AND OWNERSHIP OPTIONS

Americans love their personal automobiles and the independence that they provide. This independence does, however, come with a price. The price of mobility independence includes a wide variety of individual and societal costs. These costs include:

Individual vehicle costs:

- Purchase price, taxes, and finance charges.
- Operating costs (fuel, oil, tires, etc.).
- Maintenance.
- License and insurance.
- Parking.

Societal costs:

- Polluting emissions.
- Depletion of natural resources.
- Highway construction and maintenance.
- Traffic congestion.
- Accident injuries and deaths.

As these costs rise, individuals continually reassess the value of independent vehicle operations. At some point, some operators seek alternative means of commuting to and from work. Options include walking, biking, transit, carpooling, and vanpooling.

This chapter discusses traditional vanpool operations and related cost allocations. These discussions will be preceded by a brief analysis of costs associated with private car ownership and followed by a review of ownership options and operating issues associated with vanpools.

### 2.1 Cost of Private Car Ownership

According to a 2002 U.S. Labor Department Bureau of Labor Statistics report, personal vehicle purchase and operating costs account for 14.9% of all consumer expenditures (<http://www.bls.gov/cex/csxann02.pdf>). The American Automobile Association (AAA) estimates that the cost of owning and operating a new automobile was 56.2 cents per mile in 2004, up from 39.4 cents per mile in 1994. Total 2004 annual vehicle ownership and operating costs were estimated at \$8,431 (<http://www.csaa.com/global/articledetail/0,,1008010000%257c4512,00.html>).

Commuting to work via vanpool may or may not eliminate the need for one or more of a household's personal automobiles. If the need for a personal vehicle is eliminated, savings could approach the \$8,431 amount cited above. If, on the other hand, the need for a vehicle is not eliminated, annual savings would be based on variable cost per mile cost estimates, exclusive of fixed costs such as depreciation, licensing, etc.

AAA estimates that operating a 2005 Chevrolet Cavalier costs 12.1 cents per mile, based on fuel priced at \$1.939 per gallon. Per mile operating cost for a 2005 Ford Taurus is estimated at 15 cents per mile (<http://www.ouraaa.com/news/library/drivingcost/driving.html>).

Fuel prices rose considerably after AAA developed these cost estimates. Table 2.1 presents revised operating cost estimates for a 2005 Ford Taurus based on a variety of fuel costs. These estimates assume mileage at 25 miles per gallon, 22 working days per month, and a daily round-trip commute of 50 miles.

**Table 2.1 Personal Automobile Operating Costs**

<b>Fuel Cost</b>	<b>Per Mile Operating Cost</b>	<b>Monthly Commute Cost</b>	<b>Annual Commute Cost</b>
\$1.75 / gal.	14.2 cents	\$156	\$1,872
\$2.00 / gal.	15.2 cents	\$168	\$2,016
\$2.25 / gal.	16.2 cents	\$178	\$2,136
\$2.50 / gal.	17.2 cents	\$189	\$2,268
\$2.75 / gal.	18.2 cents	\$200	\$2,400
\$3.00 / gal.	19.2 cents	\$211	\$2,532
\$3.25 / gal.	20.2 cents	\$222	\$2,664

As indicated earlier, these cost estimates are based on the assumption that commuting via vanpool would not eliminate the commuter's need for a vehicle. Conversely, if vanpooling did eliminate the need for a vehicle, annual savings would range from approximately \$8,400 to almost \$9,100, depending on the price of fuel.

Americans love the independence that commuting in a personal automobile provides but the cost of this independence is significant. Vanpooling may provide a viable alternative.

## 2.2 Traditional Vanpool Operations

Generally speaking, a vanpool is a group of people who ride to and from work together in a van that is designed to carry 5 to 15 passengers, including the driver. One of the pool's members is typically responsible for driving, scheduling vehicle maintenance, collecting fees, etc. Pool passengers recruit riders, as necessary, and pay all associated, fully-allocated costs.

Drivers typically ride free in exchange for the services that they provide. Drivers may also have access to the vehicle for personal use up to some prescribed limit (e.g. 20% of total vehicle miles), as long as this use does not interfere with the needs of the pool.

Figure 2.1 presents a fare calculation worksheet that could be used to estimate the cost of operating and riding in a traditional vanpool as described in the preceding paragraphs. This worksheet has been completed to determine monthly ridership costs for a pool involving seven paying riders who commute 50 miles per day in a nicely equipped van. As indicated earlier, these cost calculations are based on an assumed vehicle life of four years. Fuel-related expenses are based on a price of \$2 per gallon and a vehicle that averages 12 miles per gallon. Corresponding calculations involving fuel prices ranging from \$2 to \$3.25 per gallon are presented in Table 2.2.



**Figure 2.1 Sample Fare Calculation Worksheet**

<b>I.</b>	<b>Amortized Monthly Costs</b> (assume \$25,000 cost, 5% tax, and 7% interest)	
A.	10% Down Payment + Sales Tax at 7% interest for 48 months	\$ <u>68</u>
B.	Monthly Loan Payments (balance + interest / 48 months)	\$ <u>540</u>
C.	Annual Vehicle License (divided by 12 months)	\$ <u>8</u>
D.	Insurance (specifically for vanpools – divided by 12 months)	\$ <u>170</u>
	<b>Total Monthly Fixed Costs (A + B + C + D)</b>	\$ <b><u>786</u></b>
<b>II.</b>	<b>Monthly Maintenance Costs</b> (Manufacturer Suggested Maintenance at \$1,765)	
A.	Periodic Maintenance (lifetime cost / 100,000 miles)	\$ <u>.02</u>
B.	Oil Change, Tire Rotate, and Balance (cost / 3,000 miles)	\$ <u>.02</u>
C.	Tires (cost / 50,000 miles)	\$ <u>.01</u>
D.	Monthly Per Mile Maintenance Costs (A + B + C)	\$ <u>.05</u>
	<b>Total Monthly Maintenance Costs (D x monthly miles: <u>1,100; 50 / day</u>)</b>	\$ <b><u>55</u></b>
<b>III.</b>	<b>Monthly Fuel Costs</b>	
A.	Average Per Gallon Cost of Fuel	\$ <u>2.00</u>
B.	Average Miles Per Gallon	<u>12</u>
C.	Cost of Fuel Per Mile (A divided by B)	\$ <u>.167</u>
	<b>Total Monthly Fuel Costs (C x monthly miles: <u>1,100; 50/day</u>)</b>	\$ <b><u>183</u></b>
<b>IV.</b>	<b>Miscellaneous Expenses</b>	
A.	Contingencies (\$.05 x monthly miles: <u>1,100; 50/day</u> )	\$ <u>55</u>
B.	Cleaning	\$ <u>40</u>
C.	Miscellaneous (Including: _____)	\$ <u>5</u>
	<b>Total Miscellaneous Expenses (A + B + C)</b>	\$ <b><u>100</u></b>
<b>V.</b>	<b>Total Monthly Costs (I + II + III + IV)</b>	\$ <b><u>1,124</u></b>
<b>VI.</b>	<b>Monthly Cost Per Rider (V. / by <u>7</u> paying riders; not counting driver)</b>	\$ <b><u>161</u></b>

As the Figure 2.1 worksheet illustrates, total monthly per passenger costs are estimated at \$161 or about \$7 per month less than the personal vehicle operating costs discussed earlier. As will be discussed in Chapter 3, however, actual vanpool participation costs may be significantly lower because of financial incentives provided by employers and various government agencies. As will be illustrated in Table 2.3, vanpool cost advantages increase significantly as fuel prices rise.

The monthly vanpool cost projections presented in Figure 2.1 decline as the number of paying passengers is increased from 7 to 8 or even up to 14. While the pool's total monthly costs would increase to reflect

higher vehicle acquisition and operating costs, per passenger costs could decline to between \$85 and \$150, depending on the number of riders in the pool.

As indicated earlier, fuel prices fluctuated dramatically in 2005. Table 2.2 reflects the impact that varying fuel costs have on the monthly vanpool costs presented in Figure 2.1. As Table 2.2 illustrates, modestly rising fuel prices do not have a dramatic impact on vanpools since the cost of fuel in vanpools is divided among several passengers.

**Table 2.2 Impact of Fuel Cost Changes on Monthly Vanpool Fares\***

<b>Fuel Cost</b>	<b>Monthly Fuel Cost</b>	<b>Total Costs</b>	<b>Cost per Rider</b>
\$1.75 / gal.	\$160	\$1,101	\$157
\$2.00 / gal.	\$183	\$1,124	\$161
\$2.25 / gal.	\$206	\$1,147	\$164
2.50 / gal.	\$229	\$1,170	\$167
\$2.75 / gal.	\$252	\$1,193	\$170
\$3.00 / gal.	\$275	\$1,216	\$174
\$3.25 / gal.	\$298	\$1,239	\$177

\* Calculations based on 50 round-trip miles per day and 12 miles per gallon.

Table 2.3 compares the impacts that rising fuel costs have on commuters who ride alone (Table 2.1) to those who ride in a vanpool (Table 2.2). As Table 2.3 illustrates, based on the assumptions set forth earlier (vehicle purchase prices, miles traveled, fuel costs, miles per gallon, riders per vehicle, etc.), vanpools gain an economic advantage over single-occupant automobiles when fuel prices exceed \$1.75 per gallon. As indicated earlier, the vanpool-related savings identified in Table 2.3 do not include potential tax savings that may be realized by vanpooling commuters. These savings, which will be discussed in Chapter 3, are estimated at \$35 per month.

**Table 2.3 Impact of Fuel Cost Changes – Single Commuter vs. Vanpooler**

<b>Fuel Cost</b>	<b>Single Commuter Monthly Costs</b>	<b>Vanpooler Monthly Costs</b>	<b>Vanpooler Monthly Savings</b>
\$1.75 / gal.	\$156	\$157	-\$1
\$2.00 / gal.	\$168	\$161	\$7
\$2.25 / gal.	\$178	\$164	\$14
\$2.50 / gal.	\$189	\$167	\$22
\$2.75 / gal.	\$200	\$170	\$30
\$3.00 / gal.	\$211	\$174	\$37
\$3.25 / gal.	\$222	\$177	\$45

One commuting cost component that has not yet been discussed is parking. Given the fact that parking is typically available at no cost for most North Dakota commuters, no related expenses will be factored into these discussions. It is worth noting, however, that these costs are significant in many urban areas of the country. Similarly, parking expenses may be a factor for commuters in some of North Dakota's larger cities. The cost of parking is often a major factor for urban commuters and the cost of providing parking or its mere unavailability plays a major role in the creation of some of the vanpool incentive programs that are in place in other parts of the country.

It should also be noted that even though parking may be free to most North Dakota commuters, the providers of this parking do bear related costs (construction, maintenance, lighting, snow removal, etc.). To the extent that ridesharing reduces the need for parking, costs are avoided by someone.

In addition to potential out-of-pocket cost savings, vanpooling provides a number of other incentives which encourage individuals to commute via vanpool. Primary among these incentives is a more comfortable and relaxing commute – while one person drives, other riders can read, sleep, visit with other riders, etc. Depending on the amenities built into the vehicle, vanpooling may also offer a more comfortable ride.

It should also be noted that not all workers have the option of using their own personal vehicle to commute. For employees who are mobility disadvantaged for financial or physical reasons, ridesharing may be the only way to get to and from work, especially in rural areas where traditional transit services are not available. For these individuals, vanpooling provides significant benefits. Similarly, being able to help these individuals with their commuting needs may be rewarding to employers and other pool members.

Given the societal costs of commuting listed earlier, participating in a vanpool may also help riders achieve a degree of psychological comfort given the lower environmental costs that are associated with ridesharing. Based on the fact that an average commuting vehicle has 1.2 passengers, vanpools remove 0.83 cars from the road for each member of the pool. A pool with seven passengers therefore removes nearly five cars (net) from the road; a pool with 12 passengers eliminates nearly nine other commuting vehicles.

The removal of these vehicles from the roadway conserves energy, reduces polluting emissions, and reduces wear and tear on roadways. It also reduces the need for parking spaces and, in urban areas, it reduces congestion on roadways. Individual pool participants contribute to these efforts via their participation in the pool. In many instances, these and the out-of-pocket cost savings discussed earlier provide all the incentives that some people need to vanpool.

## **2.3 Ownership Options**

Vanpool vehicles are typically owned via one of three models – owner-operator, employer-provided, and third-party programs. These ownership options will be discussed in the following subsections of this chapter. These discussions will be followed by a review of operating issues related to insurance, licensing requirements, driver drug testing, background/credit checks, and Americans with Disabilities Act requirements.

### **2.3.1 Owner-Operator Vans**

In its simplest and probably its original form, vanpooling involves a group of individuals who decide to purchase a van and ride to and from work together. Such pools did not involve government or employer incentives – they exist simply because they save participants money, provide a more relaxing commute, etc.

Participants in these pools may jointly purchase vehicles or ownership may be confined to one of the pool's members. Fully allocated purchase and operating costs are paid for via monthly fares collected from riders.

Given vehicle title and insurance requirements, owner-operator vanpool vehicles are typically owned by one individual. This person is responsible for purchasing and maintaining the vehicle, calculating operating costs, assessing and collecting fees, and recruiting riders. Pools are almost always operated on a nonprofit basis.

In owner-operator vanpools, the owner is also typically the driver. In recognition of the services provided by the driver, he or she typically rides free. Vehicle life expectancy is usually estimated at 100,000 miles or four/five years, whichever comes first. At the end of its vanpool life, the vehicle is the owner's to do with as he or she pleases.

It should be noted that owner-operator vanpool vehicles may be purchased or leased via traditional methods. Related finance or lease charges are part of the pool's monthly operating expenses that are recovered from pool participants as illustrated earlier in Figure 2.1. Participants may be eligible for related incentive program savings as will be discussed in Chapter 3.

It should also be noted that this type of pool may entail a long-term commitment by the owner since rider fares may be required to make related purchase payments. If the vanpool ceases to exist, the owner is still responsible for making these payments. Owners in these situations may be expected to be especially active recruiters to keep their pools operable and full.

Owner-operator pools accounted for approximately 10% of the vanpools that were in operation in the United States in the mid-1990s (Evans and Pratt).

### **2.3.2 Employer Vans**

The most aggressive form of employer-promoted vanpools is one where the employer purchases vanpool vehicles and makes them available for commuting purposes. This option permits the greatest degree of employer control over program operations. This approach may also facilitate lower monthly fares since vehicle acquisition costs may be lower and monthly finance costs may be avoided. The employer generally assists with recruiting drivers and riders and may choose to subsidize pool operations.

3M Company is credited with initiating employer-sponsored vanpooling and gained national recognition for its Twin Cities vanpool program in the 1970s and 1980s. It is estimated that the majority of the 15,000 vanpools that were in operation in the United States in 1980 entailed some degree of employer involvement (Evans and Pratt).

This form of corporate ownership has diminished, however, because of related upfront costs, vehicle maintenance requirements, administrative obligations, and potential liability issues and also because of government's willingness, in many cases, to becoming involved with vanpooling. By the mid-1990s, employers were directly involved as sponsors in only about 25% of the 8,500 vanpools that were in operation around the country (Evans and Pratt).

In some cases, however, employer sponsorship may be a necessary tool to help employers recruit and retain employees or to avoid other operating costs such as the construction and maintenance of expensive parking facilities. It is sometimes also used when worksites are relocated and transportation services must be provided to avoid related employee resignations. Upfront costs may be reduced by leasing vehicles rather than purchasing them. This approach does, however, increase monthly fees assessed to riders.

As will be discussed later, some employers choose to subsidize vanpool operations even though they do not specifically own or sponsor the pools. They therefore achieve many of the benefits associated with vanpooling without incurring related long-term costs or liabilities.

### **2.3.3 Third-Party Vanpool Programs**

Rather than purchasing a van or leasing one via traditional means, individual operators or employers may choose to operate vanpools with a vehicle that is acquired via a program that is operated by a third party provider. Typical third parties include state or local transit authorities, metropolitan planning organizations, local transportation management associations, and state departments of transportation. This type arrangement began to evolve in the late 1970s and by the mid-1990s they accounted for approximately 65% of the 8,500 vanpools that were in operation around the country. From 1984 until 2001, the number of transit provider vanpools in the country grew from 447 to 3,932 (Evans and Pratt).

These programs typically acquire vans and lease them to individuals or employers for use in vanpooling. Lease payments usually include insurance coverage and vehicle maintenance; fuel may or may not be included. Passenger fares are often set by the sponsoring entity and may be subsidized to encourage participation.

In some cases, third party programs are run entirely by the sponsoring governmental entity. In other instances, the sponsoring entity may contract with a commercial service provider to perform functions such as vehicle procurement and maintenance, program administration and promotion, etc.

Two of the largest commercial operators in the country are VPSI, Inc. and Enterprise Rent-A-Car's Rideshare subsidiary. VPSI is a for-profit company which has been in operation since 1977. It has over 40 regional service centers and approximately 4,100 vans in operation around the country (Payne, 2005). Enterprise Rent-A-Car's Rideshare program has approximately 1,300 vans in service, primarily in California (Barnes, 2005). Local leasing companies also operate in a number of locations around the country.

As indicated earlier, monthly lease rates typically include all operating and maintenance expenses and an umbrella liability insurance policy. The program may also provide a replacement vehicle in case major maintenance or repairs are needed. Lease agreements typically provide that vanpools may cease operations on 30-days notice. Similarly, individual riders may drop out of pools with only 30-days notice.

As is the case with owner-operator vans, drivers typically ride free in exchange for driving, procuring scheduled maintenance, and performing administrative duties such as collecting monthly fees and submitting operating reports.

Monthly lease fees paid to commercial vanpool vendors are higher than the costs that would be incurred via a traditionally financed purchase as depicted in Figure 2.1 (e.g. \$1,200 vs. \$700 per month). This higher monthly fee is in recognition of maintenance and insurance that the vendor supplies plus the company also gives participants the ability to terminate the pool on 30-days notice; a profit margin should also be anticipated. As will be discussed in later chapters, the cost differential between traditional vanpools and those involving commercial vendors is sometimes financed with government incentives.

In many cases, the employer sponsorship model discussed earlier has been replaced by one where vanpool vehicles are leased from a commercial vanpool vendor and underwritten, in part, by a public

transportation entity. The public entity, in effect, takes the place of the employer in the traditional model. The employer may, however, remain active and work closely with the public entity to promote and facilitate vanpooling within its workforce. Employers may also choose to subsidize a portion of a pool's operating costs.

## **2.4 Atypical Operating Issues**

As discussed at the beginning of this chapter, there are a few atypical operating issues of which new and potential vanpool operators should be aware. These issues are somewhat unique because they involve matters other than normal day-to-day vehicle operations and related cost allocations. Included in this list of issues are supplemental liability insurance, driver's license requirements for high-occupancy vehicles, driver drug testing, background/credit checks, and Americans with Disabilities Act requirements. Each of these issues will be discussed in the following subsections.

### **2.4.1 Liability Insurance**

Motor vehicle insurance requirements are prescribed by state law. In North Dakota, a vanpool vehicle has the same insurance requirements as a personal automobile. This does not necessarily mean, however, that a personal automobile insurance policy provides adequate levels of coverage for vanpools.

Despite the fact that a vanpool may meet the state's vehicle insurance requirements by maintaining insurance levels that are comparable to those required for private automobiles, operators should recognize that more risks are associated with operating high-occupancy vehicles and that supplemental levels of insurance may be advisable. It should also be noted that insurance companies may consider a vanpool to be a commercial operation and may, therefore, refuse to pay related claims that are filed against a personal insurance policy.

Many vanpool operators and commercial vanpool lease companies obtain insurance policies which are especially designed for commuter vanpools and which provide greater levels of protection than the minimums prescribed by state law. The Washington Department of Transportation's "Do It Yourself . . . Vanpool Guide" recommends personal injury liability limits of at least \$500,000 to \$1 million, property damage liability coverage of at least \$250,000 to \$500,000, and medical benefits of at least \$5,000 to \$10,000 (<http://www.wsdot.wa.gov/mobility/tm/DoVanpool/05-Selecting.pdf>). These levels of protection are considerably higher than those required by state law in North Dakota.

Several commercial insurance companies have insurance programs specifically designed for commuter vanpool. Related policy costs vary depending on the driver's accident record, size of the van, passengers involved, trip lengths, etc. It is estimated, however, that a vanpool insurance policy may cost approximately \$2,000 per year, approximately twice the cost of a personal policy. Such a policy would, however, provide higher levels of protection and are, therefore, better suited for vanpools.

It may be beneficial for vanpool participants to check with their personal insurance company regarding their participation in a vanpool. Many major insurance companies reportedly offer policy discounts of 10-30% to drivers who designate their cars as recreational vehicles which are used solely for purposes other than driving to work. Related savings would create an additional financial incentive to commute via vanpool.

It should also be noted that North Dakota Century Code (NDCC) Section 26.1-41-13(2)(d) provides that insurance claims involving riders in a ridesharing vehicle must be covered by each individual's personal automobile policy. If a rider does not have personal automobile insurance, the insurance that is in place to cover the ridesharing vehicle must cover the claim, up to the limits of the policy.

## **2.4.2 Driver's License Requirements**

North Dakota's driver licensing laws are set forth in Title 39 of the NDCC. Chapter 39-06 contains specific provisions concerning operator licenses. Section 39-06-14 provides that a person with a Class D license may operate a motor vehicle having a gross vehicle weight of 26,000 pounds or less, a weight category that governs both passenger automobiles and vans with a passenger rating of 15 or less.

State law also provides that certain drivers are required to have a commercial driver's license. Corresponding provisions in NDCC Section 39-06.2-02 state, however, that a commercial motor vehicle is a motor vehicle that is designed to transport 16 or more passengers. Vanpool vehicles are not, therefore, considered a commercial vehicle and no special driver's license is required to operate one. This provision mirrors a Federal Highway Administration ruling which found that an individual who owns or leases a van for traditional vanpool purposes is not doing so for compensation and that the operations should not, therefore, be regulated by rules which govern commercial vehicles (1999. Federal Register Vol. 64, No. 171. September 3: p. 48514).

While there may not be any special licensing requirements for vanpool operators, many employers and public entities that provide start-up and operating incentives conduct driver's license background checks on potential drivers and backup drivers. Drivers with less than a good driving record may be precluded from operating vanpools. Some vanpool programs also require that operators attend driver training classes.

## **2.4.3 Drug Testing**

The U.S. Department of Transportation has rules in place which require that certain transit drivers be required to take routine drug and alcohol tests (49 CFR 382). Questions have therefore been raised concerning the need to expose vanpool drivers to routine drug testing, especially in instances where the vehicle involved was acquired with assistance from a federal program.

In addressing this question, the Federal Transit Administration (FTA) has determined that vanpool operators do not typically function as employees of the federal agency involved and that vanpool vehicles are not involved with a local transit service's "revenue service" activities. This being the case, the FTA has determined that a vanpool operator who is driving a vehicle that is a part of a program operated by an FTA recipient is not subject to the FTA's drug and alcohol testing rules. It is assumed that a comparable rationale applies to other vanpools, both private and government-supported (Winters and Cleland).

It should also be noted, however, that a vanpool vehicle with a capacity of more than 15 passengers would be considered a commercial vehicle and its drivers would need a commercial driver's license. This requirement could also potentially expose these drivers to drug and alcohol testing.

#### **2.4.4 Background/Credit Checks**

As indicated earlier, owner-operators who are applying for government assistance to initiate a vanpool may be subjected to motor vehicle background check to determine whether or not they have a good driving record. The same type check may be expected for individuals who plan to drive employer or third-party vanpools.

It is also common to conduct financial credit checks on vanpool drivers. Even though these drivers may not be borrowing funds in a manner that typically requires a credit check, these checks may reflect on the moral character of the individual involved. A positive check is potentially indicative of a responsible person who will do a good job of administering a vanpool (Arnold, 2005).

Vanpool drivers are also responsible for handling financial transactions involving the pool's operations (monthly remittances by riders, paying associated costs, preparing monthly operating and financial reports, etc.). Again, a positive financial check is believed to be indicative of a person who is trustworthy and capable of handling these obligations.

#### **2.4.5 ADA Requirements**

The Americans with Disabilities Act (ADA) prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation. This 1991 enactment applies not only to government but also to employers with 15 or more employees. It has been determined that the ADA does apply to FTA-supported vanpool programs (49 CFR 37.31); this and other forms of federal support will be discussed in Chapter 3.

Given a \$10,000 cost estimate to make a van fully accessible, it was originally feared that requiring that all vanpool vehicles be accessible would, in effect, put an end to many vanpools. It was ultimately determined, however, that vehicles need to be handicapped-accessible only on an as-needed basis. VPSI has committed to having accessible vehicles available but the demand has been very light. VPSI also indicates that the costs of creating accessibility will not normally be spread among a single pool's participants because doing so would make the monthly cost per rider uncompetitive with other modal choices. Rather, VPSI suggests that support for creating such accessibility be sought from other government programs such as Vocational Rehabilitation, Veteran's Affairs, etc. Successfully doing so would keep the costs associated with accessible pools approximately the same as other, nonaccessible pools (Arnold, 2005).



## 3. FEDERAL INCENTIVES AND FUNDING SOURCES

In addition to the inherent advantages associated with vanpooling, employers and various units of government also provide incentives to entice individuals to commute to work via vanpool. This chapter will review some of the major incentive programs that exist to encourage vanpooling.

At the outset, it should be noted that the incentives discussed in this chapter are not necessarily synonymous with one of the various ownership models discussed in Chapter 2. Employers may, for example, participate in and promote a vanpool tax incentive program regardless of the ownership model involved. Any one or a combination of the incentives discussed in this chapter may be available to one or more of the ownership models described earlier. As a result, a wide variety of ownership-incentive combinations are possible. Individual situations will dictate which combination is most advantageous to the entities involved.

It may be helpful to note that this chapter discusses general forms of incentives that are available to promote vanpooling. Chapter 4 takes these a step further and is devoted to discussing specific state and local programs, many of which utilize incentives which are made possible by the programs discussed in this chapter.

### 3.1 Federal Vanpool Incentives

While some commuters do not need additional incentives to entice them to participate in vanpools, the bare economic and societal values associated with vanpooling may be insufficient to warrant participation by many workers. Widely fluctuating fuel costs and interest rates also cause gyrations in participation.

Given the societal costs associated with commuting vehicles, Congress has taken several steps to encourage employees to commute via means other than by single-occupant automobiles. Some of these incentives include services and amenities such as ridesharing matching services and dedicated driving lanes for high-occupancy vehicles. In other instances, actual financial incentives have been created to encourage individuals to commute via transit, carpools, and vanpools.

Federal incentives to encourage vanpooling target commuters, their employers, and other units of government. These incentives come primarily from two sources, namely the U.S. Department of Transportation (DOT) and the Internal Revenue Service (IRS). The DOT, through its Federal Highway Administration and Federal Transit Administration (FHWA/FTA) encourages vanpooling by allowing federal funds to be used to make direct payments to establish and operate vanpools. IRS incentives relate to tax deductions that may be taken by both employees and employers if they participate in eligible commuting programs. These incentive programs are discussed in more detail in the following subsections.

### 3.1.1 Tax Incentives

Section 132(f) of the Internal Revenue Code governs congressionally authorized benefits which are available to individuals who commute to work via vanpool, carpool, or transit. To qualify for certain vanpool-related benefits, commuters must travel in a vehicle that is designed to transport at least six passengers, plus the driver.

The code also provides benefits to employers who encourage or facilitate ridesharing and/or transit use. It is important to note that federal law provides incentives to employers that offer vanpooling benefits to their employees. An employee cannot take advantage of corresponding federal tax incentives that are available to commuters if his or her employer chooses not to participate in the program.

Federal qualified transportation incentives work in one of two ways, both of which reduce a participating employee's taxable income. These reductions can occur either through employee elections in a flexible spending account or via direct transportation payments made by employers in lieu of corresponding salary amounts.

Under either scenario, both the employee and the employer realize savings as a result of lower gross taxable salaries associated with reduced federal income tax payments, lower Social Security withholdings, etc.

Figure 3.1 presents an example of savings that might result for an employee who commutes via vanpool and uses a flexible spending account to achieve related benefits.

**Figure 3.1 - Vanpool Tax Benefits**

(Assuming \$2,500 monthly salary and monthly vanpool costs of \$105)	
<b>Net Take Home Pay without Flexible Spending Account Benefits</b>	
Gross taxable salary	\$2,500
Federal and state income-related taxes (at 33%)	- 825
Vanpool commuting cost	- 105
Net take home pay	\$1,570/month
<b>Net Take Home Pay with Flexible Spending Account Benefits</b>	
Gross taxable salary	\$2,500
Pre-tax commuting cost (maximum deduction)	- 105
Taxable pay	\$2,395
Federal and state income-related taxes (at 33%)	- 790
Net take home pay	\$1,605/month
Net monthly savings	\$ 35
Net annual savings	\$ 420

Using a flexible spending program to pay for vanpool commuting expenses saves an employee who earns \$30,000 per year approximately \$35 per month or about \$420 annually. Related savings may be achieved by employers as a result of reduced tax remittances associated with lower gross taxable employee salaries.

In 2005, maximum allowable payments for vanpool commuting costs are \$105 per month. This amount is adjusted annually by the Internal Revenue Service to reflect changes in the cost of living. An additional \$200 per month may be deducted for qualified parking expenses.

Chapter 2's Table 2.3 presented pre-tax cost savings that vanpoolers enjoy vs. their counterparts who commute alone. Table 3.1 expands on that presentation to include the tax-related costs savings discussed above.

**Table 3.1 Vanpool Cost Advantages – Operating and Tax Savings**

<b>Fuel Cost</b>	<b>Single Commuter Monthly Costs</b>	<b>Vanpooler Monthly Costs</b>	<b>Vanpooler Monthly Savings</b>
			Operating + Tax
\$2.00 / gal.	\$168	\$161	\$ 7 + \$35 = \$42
\$2.25 / gal.	\$178	\$164	\$14 + \$35 = \$49
\$2.50 / gal.	\$189	\$167	\$22 + \$35 = \$57
\$2.75 / gal.	\$200	\$170	\$30 + \$35 = \$65
\$3.00 / gal.	\$211	\$174	\$37 + \$35 = \$72
\$3.25 / gal.	\$222	\$177	\$45 + \$35 = \$80

As Table 3.1 illustrates, vanpooling commuters may realize total operating cost and tax-related savings of \$42 to \$80 per month, depending on the cost of fuel. On an annual basis, these savings range from approximately \$500 to \$960. As indicated earlier, related tax savings are available only if the commuter's employer is willing to participate in federal incentive programs.

As indicated above, participating employers also benefit when employees vanpool. These savings occur because employees' net taxable salaries are reduced and corresponding reductions result in payroll taxes (Social Security at 6.2% and Medicare at 1.45%) and unemployment tax obligations at 6.2%. Assuming monthly tax-free benefits at \$105 per month, annual savings approach \$175 per participating employee. These financial benefits are in addition to other benefits that are typically associated with vanpooling (i.e. increased on-time performance, reduced need of parking, and greater recruitment and retention potential). These nonfinancial benefits are discussed elsewhere in this report.

Employers that chose to pay for vanpool costs as a company-paid benefit in lieu of payroll may do so via a voucher program administered by Commuter Check. Participating employers purchase vouchers from Commuter Check Services Corporation of Englewood, New Jersey, to give to their employees. These vouchers may be used to purchase transit tickets or to pay monthly vanpool expenses (<http://www.commutercheck.com/home.html>).

To be eligible for the vanpool commuting deduction, an employee must commute to work in a van with a seating capacity of at least six adults and at least half of the seating capacity must, in fact, transport employees. At least 80% of the vehicle's mileage must involve commuting.

### 3.1.2 Federal Funding Sources

Federal funding to promote and facilitate vanpool start-ups and subsequent operations come primarily from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), both of which are based in the U.S. Department of Transportation (USDOT).

Federal involvement with vanpooling started with the federal Surface Transportation Act of 1978, which required that special efforts should be made to promote commuter modes of transportation which conserve energy and reduce pollution and traffic congestion. The Act also provided that federal-aid primary, secondary, and urban systems funds could be used to promote ridesharing.

Neither the FHWA nor the FTA have funding sources that are solely designated for vanpooling. Rather, each agency's budget has programs which may be used for, among other things, vanpooling. Related provisions allow individual states and urban metropolitan planning organizations to use portions of their federally appropriated highway and transit funds to be used to administer and support ridesharing programs (Berman, 2005, and Menczer, 2005).

Despite the lack of funding sources that are specific to vanpooling, USDOT does have rules which govern the use of federal funds to support ridesharing programs (Title 23 Code of Federal Regulations Part 656 - <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=890000813700e8baa66b9de8e79b0aab&rgn=div5&view=text&node=23:1.0.1.7.30&idno=23>). These rules identify eligible activities (vehicle acquisitions, promotional efforts, demonstration programs, etc.) and prescribe program parameters (vehicle sizes, acquisition repayments, etc.)

As a precursor to discussions on available funding sources, it should be noted that state departments of transportation must prepare a state transportation improvement plan (STIP) prior to spending FHWA or FTA funds. This plan is, in effect, a list of needs and corresponding cost estimates and recommended implementation dates. A STIP projects at least three years into the future and must be updated at least every two years. A state's metropolitan planning organizations must develop companion transportation improvement programs. These long-range transportation plans are subject to review and approval by both the FHWA and the FTA (<http://www.fhwa.dot.gov/hep/23cfr450.htm>).

The following subsections discuss some of the primary federal programs that are used by state and local governments to support vanpooling.

FHWA – Congestion Mitigation and Air Quality – One of the largest federal funding sources for vanpool programs is the FHWA's Congestion Mitigation and Air Quality (CMAQ) program. CMAQ pays for transportation projects and/or services that help reduce vehicle emissions in areas with substandard air quality. CMAQ funds are allocated to states but may then be passed through to local metropolitan planning organizations. Shared-ride services, including vanpools, are one of the activities that are eligible for CMAQ funding.

Funding for CMAQ projects is typically limited to three years but many state and local vanpool programs find ways to make their projects eligible for longer periods of time. Several CMAQ-supported vanpool activities will be discussed in Chapter 4.

North Dakota's air quality meets or exceeds federal standards and the state does not, therefore, have any CMAQ nonattainment areas. CMAQ funds are, however, distributed on a formula basis and every state receives at least some program funds each year. North Dakota's annual program allocation is

approximately \$8 million. These funds have been used primarily for roadway construction in urban areas. (Horner, 2005).

CMAQ funds typically require a 20% local match. The federal share of select projects, including commuter vanpooling, may, however, total up to 100% (<http://www.incog.org/Transportation/Surface%20Transportation%20Program%202008.doc>).

FHWA – Surface Transportation Program – The Surface Transportation Program (STP) provides flexible funding that may be used by states and localities for projects on any federal-aid highway; a portion of the program’s funds may also be used for rural projects. Typical projects include highway and bridge construction and maintenance. Transit projects, including vanpooling, are eligible uses of STP funds (<http://www.fhwa.dot.gov/tea21/suminfra.htm#nhs>).

STP funds are distributed to states based on each state’s lane-miles of federal-aid highways, total vehicle-miles traveled on those highways, and estimated contributions to the Highway Trust Fund. North Dakota’s 2005 STP apportionment was \$30.6 million. Projects typically require a 20% local match (<http://www.fhwa.dot.gov/stea04/tbl4pt1a.htm>).

FHWA – National Highway System Funds – The National Highway System (NHS) is a 163,000-mile interconnected system of principal roadways that facilitate commerce and serve the nation’s population centers, border crossings, other transportation facilities, etc. Congress appropriates NHS funds to construct and maintain this system and to finance related projects, including vanpooling (<http://www.fhwa.dot.gov/tea21/suminfra.htm#nhs>).

NHS funds are distributed to states on a formula basis similar to the Surface Transportation Program described earlier. North Dakota’s 2005 apportionment for NHS projects and programs was \$56.7 million. Federal funding routinely requires a 20% local match (<http://www.fhwa.dot.gov/stea04/tbl3pt3a.htm>).

FTA – Section 3037 – Job Access and Reverse Commute (JARC) – JARC is a grant program that provides states and urban areas with funding to develop flexible transportation services related to employment. States, metropolitan planning organizations, transit agencies, etc. may apply for competitive grants. The federal Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) authorized \$150 million per year for fiscal years 1999-2003. Grant funds may not be used to finance more than 50% of program costs but non-FTA federal transportation-related monies may be used to provide the 50% local share requirement. Funding flows directly to communities with populations of over 200,000; small communities receive program funding via designated state agencies. Vanpooling projects are an eligible use of JARC funds (<http://www.fhwa.dot.gov/tea21/factsheets/jobaccs.htm>).

FTA - Section 5307 – Urbanized Area Formula Grants Program – Section 5307 funds are apportioned to areas of 50,000 to 199,999 based on legislative formulas. For areas of 200,000 or more, the formula is based on population, population density, bus revenue vehicle miles, bus passenger miles, etc. The federal share is 80% of capital costs. 5307 money may be used to support vanpool program capital costs and vanpool miles may be included when calculating a community’s 5307 apportionment. Grant recipients are required by statute to submit program data to the FTA for inclusion in the National Transit Database ([http://www.fta.dot.gov/grant\\_programs/specific\\_grant\\_programs/urbanized/4133\\_7940\\_ENG\\_HTML.htm](http://www.fta.dot.gov/grant_programs/specific_grant_programs/urbanized/4133_7940_ENG_HTML.htm)).

FTA – Section 5309 – Discretionary Capital Improvement and Acquisition Funds – Section 5309 funds are granted on a discretionary basis by the FTA for capital acquisition and improvement projects such as vehicle purchases, park-and-ride facilities, etc. Program funds may also be directed to specific projects by Congress. The federal share of 5309 projects is typically 80% but in some cases Congress has

authorized 100% federal funding ([http://www.pbworld.com/library/technical\\_papers/pdf/44\\_FTA\\_New\\_Starts.pdf](http://www.pbworld.com/library/technical_papers/pdf/44_FTA_New_Starts.pdf)).

FTA – Section 5311 – Rural Public Transportation Program – Section 5311 funds are apportioned to state and local governments, American Indian tribes, etc. to enhance personal mobility in nonurbanized areas with less than 50,000 residents. Apportionments are based on census figures. The maximum federal share of capital acquisitions is typically 80% but projects that meet the requirements of the federal Clean Air Act (i.e. vanpooling) may be eligible for 90% federal funding; 5311 operating assistance grants are limited to 50%. Section 5311 money may be used to support vanpool programs in rural areas [http://www.fta.dot.gov/grant\\_programs/specific\\_grant\\_programs/non\\_urbanized/4159\\_7945\\_ENG\\_HTML.htm](http://www.fta.dot.gov/grant_programs/specific_grant_programs/non_urbanized/4159_7945_ENG_HTML.htm)).

### **3.1.3 Federal Promotional Efforts**

The federal government has taken numerous and repeated steps to promote vanpooling, carpooling, and the use of transit by creating programs and materials which can be used to promote related concepts to employers and their employees. Federal agencies involved with these promotional efforts include the DOT, FTA, FHWA, and the Environmental Protection Agency (EPA).

Examples of some of the materials and programs involved with these efforts include:

- “Best Workplaces for Commuters” program sponsored by the EPA and DOT,
- “Vanpool Programs: Implementing Commuter Benefits Under the Commuter Choice Leadership Initiative” sponsored by the EPA,
- “Strategies for Increasing the Effectiveness of Commuter Benefits Programs” sponsored by the FTA, and
- “Vanpool Pricing and Financing Guide” developed by the University of Southern Florida and the FHWA.

In addition to providing program flexibility to allow available FTA and FHWA funds to be used for state and local vanpool programs, the federal government also provides funding to support local transportation demand management (TDM) programs. In many instances, these funds are used to support local transportation management associations or organizations (TMAs or TMOs) which operate programs and provide technical assistance to area businesses that are willing to promote ridesharing and transit to their employees. Funding for this program was initially provided in 1991 by the Intermodal Surface Transportation Efficiency Act (ISTEA). TMAs and TMOs will be discussed further in the following section.

## **3.2 State and Local Vanpool Incentives**

Virtually all of the FHWA and FTA vanpool incentive programs discussed in the preceding paragraphs are programs that states and/or urban areas may utilize, if they so desire. In most cases, related programs, if offered, detract funding from other eligible programs and projects. Government-support vanpool programs must, therefore, compete with other highway and transit programs for available funds. It therefore becomes a matter of priorities when states and cities decide whether or not to use available federal funds to support vanpooling. The value of vanpooling as a component to a comprehensive transit and personal mobility program is evidenced by the fact that many states and urbanized areas do, in fact, utilize available federal funding to encourage and support vanpooling.

Some states also offer income and vehicle tax and/or licensing incentives to promote and recognize vanpooling. Other common forms of incentives include preferential parking for vanpool vehicles, special traffic lanes for high-occupancy vehicles, guaranteed emergency ride programs for vanpool participants, and start-up incentive payments to vanpool drivers. Some states also allow vanpool operators to purchase vehicles under state contracts and to obtain insurance coverage through state-run programs, thereby achieving lower purchase prices and related monthly payment savings for pool participant. Some states provide qualified vanpool vehicles with free annual vehicle registration and license plates.

As indicated earlier, many states, including North Dakota, provide an indirect incentive to vanpoolers who receive federal commuter tax benefits. To the extent that federal tax benefits reduce a participant's taxable income, corresponding savings are experienced relative to state taxes in those states where state income tax is based on federal taxable income.

Chapter 4 discusses a number of vanpool programs that are in place around the country, all of which use federal funds to encourage commuting via vanpool. Some of Chapter 4's presentations focus on state programs while others address locally sponsored programs.

As discussed in the preceding section, many cities and/or metropolitan councils of government have established "transportation management associations" or "transportation management organizations" to promote and facilitate "non-drive alone" commuting options. These organizations typically work closely with employers to promote ridesharing as a means of reducing traffic and parking congestion and improving air quality. Common promotional activities include on-site commuter fairs, commuter surveys, ride matching, transit information services, and informational e-mail newsletters.

TMOs and TMAs are eligible for federal funding support and operate primarily in metropolitan areas with populations of 200,000 or more. There are, however, also TMOs in smaller urban areas such as Missoula, Montana. There are currently over 125 TMO/TMAs in the country, five of which operate in the Twin Cities.

### **3.3 Employer Vanpool Incentives**

Many employers across the country have embraced vanpooling to the extent that they offer incentives to employees to encourage them to share a ride to work. These incentives come in a variety of forms and are offered for a variety of reasons.

Given America's private enterprise system, businesses typically focus on activities that enhance profit, either by increasing income or reducing expenses. Businesses typically promote vanpooling to their employees because doing so makes good economic sense. Primary benefits include:

- Reduced payroll tax payments,
- Reduced need for employee parking spaces,
- Expanded recruitment and retention potential,
- Increased employee productivity (increased job satisfaction, reduced absenteeism, increased on-time arrivals, and less employee stress),
- Improved employer-employee relations,
- Improved public image, and
- Contributions to a healthier environment.

To achieve these benefits, employers may promote vanpooling in any of a number of ways. Promotional efforts may involve as little as employee newsletter articles or more aggressive initiatives such as ride matching services, reserved parking for vanpools, or even the provision of financial incentives to participating employees.

As indicated earlier, an employee may not participate in federal tax-related commuter benefit programs unless his or her employer participates. An employer must, therefore, provide either a tax-free employer-paid benefit for vanpooling and/or a pretax flexible spending account program with a vanpool option. Comparable options may also be made available for employees who have access to a transit system which meets their commuting needs.

The U.S. Department of Transportation and the U.S. Environmental Protection Agency co-sponsor a program entitled “Best Workplaces for Commuters” to promote employer participation in ridesharing programs and to recognize employers for related efforts. The program also provides employers with resources and ideas that may be used for individual employer programs ([www.bwc.gov](http://www.bwc.gov)).

Employer vanpool incentives may be divided into two groups – nonfinancial and financial. Nonfinancial incentives include things such as preferential parking spaces for vanpool vehicles, expanded work-hour flexibility to facilitate vanpool operations, and ride-matching programs to bring willing employees together to form vanpools. While some of these “nonfinancial” incentives may have some indirect costs associated with them, these costs are typically minimal and nonrecurring in nature.

Employer-provided financial incentives may be relatively minor or they may take on a more significant profile. Perhaps the most significant form of employer incentive is one where the employer provides a vehicle to be used by vanpooling employees. The vehicle is obtained by the employer, either via purchase or lease. Pool participants may ride free or on a less than fully allocated cost basis, a benefit that is provided in lieu of salary. Related tax benefits accrue to both the employer and employees as a result of corresponding federal incentives and lower taxable salaries.

Similar tax savings may also be realized in cases where vanpool vehicles are owned or leased by one of the pool members. These savings may result if the employer has a flexible spending account program in place which allows employees to have commuting expenses deducted from their pretax salary. As discussed earlier, employees may deduct up to \$105 per month. Corresponding tax savings result for both employees and employers. Many employers go beyond permissible federal tax incentives and pay for even those commuting expenses that are not deductible under federal or state laws.

One of the major impediments to vanpooling is participant fears related to needing to leave work in case of emergency, medical appointments, etc. Many employers address this issue by providing participants with a guaranteed ride when the situation warrants. In urban areas, these rides may be via employer-paid transit or taxi rides. In rural areas where transit and taxi services may not be available, employers may allow vanpool participants to use company vehicles for personal trips in emergency situations.

The need for a personal vehicle to make lunch hour meal or shopping trips may also discourage vanpool participation. Employers may choose to address this employee need by offering lunchtime shuttle trips between the work site and area shopping or restaurant sites.

Beyond the provision of actual incentives, many employers take other steps to promote vanpooling. These promotional steps many include providing employees with time and space to meet with rideshare promoters or sponsoring rideshare events to encourage participation. In some cases, employers may even work with other area employers to gain the critical mass necessary to make vanpools feasible.



Some employers may even sponsor promotional events to encourage or recognize ridesharing. Events may be as small as a coffee or ice cream social or something larger such as special drawings or gifts to acknowledge sign-ups or ongoing participation. Santa Barbara County in California provides employees who commute to work via walking, biking, transit, or ridesharing additional annual leave at a rate of 0.6 hours every two weeks (<http://www.sbcountyhr.org/staffing/hb/hb4.html>).



## 4. EXISTING VANPOOL PROGRAMS

There are numerous organized commuter vanpool programs in the United States. Some of these programs are fairly new while others have been in place for decades. The majority of these programs operate with some form of government incentives but some operate without subsidies. Some programs involve a form of partnership between participating commuters and a governmental entity while others involve a three-way partnership involving commuters, government, and a commercial vanpool facilitator. Others represent only an informal agreement among a group of commuters.

The following subsections of this chapter describe a variety of vanpool programs that are in place around the United States. Many of these programs have common themes but some have features which are uniquely designed to meet the needs of local commuters, funding sources, etc.

While this review cannot discuss all the vanpool programs in existence in the United States, it will include a wide variety of programs. Selection criteria include levels of government that are involved in various programs (federal, state, local, etc.), funding sources, urban vs. rural programs, etc. The ultimate goal is to identify features which make programs successful. Special attention will be paid to identifying features that may be well-suited to relatively rural environments like North Dakota.

### 4.1 Federal Programs

In addition to encouraging state and local governments to promote vanpooling, the federal government also encourages its employees to commute via vanpool. On April 22, 2000, President Clinton issued Executive Order 13150 which directed federal agencies to subsidize commuting costs for employees who use transit and vanpools to get to and from work. The order was aimed at reducing greenhouse gas emissions and other forms of pollution and to help reduce roadway congestion.

Executive Order 13150 initially targeted federal employees in and around Washington, D.C., but it has since been expanded to include all federal employees. The program is administrated by the U.S. Department of Transportation under contract with other agencies. Each agency is required to finance the cost of the project within their normal operating budget. Current monthly subsidies are a maximum of \$105 per employee. In effect, federal agencies pay up to \$105 of an employee's monthly commuting costs if he or she commutes via transit or vanpool.

This benefit is provided tax-free. Assuming a federal and state tax-related savings at 33%, this incentive has an annual pre-tax value of approximately \$1,680 for participating employees. Vanpooling is reportedly a popular option, especially in areas that are not served by conventional transit (Skipper – 2005).

Chapter 3 discussed other major federal programs which are in place to promote commuter vanpooling. Some of these programs create tax advantages for participating employers and employees, some create assistance programs which promote the creation of vanpools, some allow federal funding to be used to facilitate state and local vanpool-creation projects, and some encourage federal workers to commute via transit and vanpools. Several federal agencies are involved in this promotional effort.

Virtually all of the state and local vanpools programs which are discussed in this chapter involve incentives which are provided by the federal government. In most cases, however, these federal incentive

programs are not funded with monies that are earmarked for vanpooling. Rather, available federal funds are part of larger programs which have flexible guidelines to allow state and local administrators to use the funds in a variety of ways. In each case, a decision was made at the state or local level to use at least a portion of available funds to create incentives to vanpool. As the following discussions indicate, in many cases additional state and local incentives were added to further encourage workers to commute via vanpool.

## **4.2 State Programs**

This portion of Chapter 4 is devoted to presentations regarding state-sponsored vanpool programs that may hold promise for North Dakota. These presentations include discussions regarding programs that are being run in Utah, New Jersey, Connecticut, Michigan, Hawaii, Maine, Colorado, and Idaho.

### **4.2.1 Utah**

UTA Rideshare is a quasi-state agency that promotes and provides transportation services in Utah. The Utah Transit Authority (UTA) has two programs that individuals can use to establish and operate vanpools. One program provides vehicles on a lease-basis and one helps individuals purchase vehicles for use in vanpooling (<http://www.utarideshare.com/>).

Under the lease program, UTA uses approximately \$540,000 per year in CMAQ money to purchase vanpool vehicles. These vehicles are purchased under state contract at prices substantially lower than would be achievable by individual buyers (e.g. \$23,000 for a 12-passenger van). UTA then leases these vehicles to groups or individuals for use as vanpools. UTA leases typically cover fuel, insurance, and maintenance.

Lease costs are quite low given UTA's purchasing capabilities, self-insurance program, and nonprofit structure. In July 2005, UTA's monthly rider charge for vanpool with 10 paying riders and a daily round-trip commute of 50 miles was approximately \$50 per month.

UTA drivers typically ride at no cost. Vehicles are assumed to have a usable life of eight years or 100,000 miles, whichever comes first. At the end of that time, the pool is given a new replacement vehicle and the old vehicle is either sold or kept for backup service.

As is the case with many vanpool programs, UTA allows pools to dissolve with 30-days notice. Pool participants also enjoy a guaranteed ride home program which provides up to six rides home per year.

In July 2005, the program had 264 vanpools in operation. It expected to have funding for another 23 pools in the latter half of 2005 and has 60 groups or individuals waiting for vehicles.

Using FHWA funds provided via the Utah Department of Transportation (UDOT), UTA also has a program which allows individuals to purchase vans interest-free. Individuals who are interested in establishing a vanpool must submit an application to UTA, along with purchase bids from at least two dealers. Upon completion of a credit check, an approved application may proceed with the vehicle purchase. The applicant is required to make a vehicle down payment of 6.77% plus taxes and license. The remainder of the vehicle's cost is paid for by UTA. The applicant's initial payments and subsequent UTA loan payments are financed, along with other operating costs, via monthly payments from pool participants. Drivers ride at no charge.

Drivers are allowed to use the vehicle for personal travel except to the extent that this use may not interfere with the vanpool's needs and related usage may not exceed 30% of the vehicle's total. Drivers are required to submit monthly reports, along with loan payments. Pools are subject to audits in the form of verification phone calls to pool participants and/or assessment audits conducted by UTA, UDOT, or FHWA.

With only three pools in the program, the UTA's purchase program is far less popular than its lease program. Reasons for this differential include the lease program's easy termination and vehicle maintenance provisions and its low monthly costs.

UTA's vanpools operate throughout Utah. Given the provisions of the federal workforce transportation program (Executive Order 13150), the program is especially attractive to federal employees (Miklos – 2005).

#### **4.2.2 New Jersey**

New Jersey has a state-promoted Vanpool Sponsorship Program which is run by NJ Transit, a transportation services affiliate of the New Jersey Department of Transportation (NJDOT) – ([http://www.njtransit.com/db\\_ep\\_vanpool.shtml](http://www.njtransit.com/db_ep_vanpool.shtml)). NJ Transit uses FTA funds to provide eligible vanpools with monthly operating subsidies of \$150; these subsidies are divided among each pool's riders. With 144 vanpools and over 1,250 riders in the program, annual subsidy payments total about \$260,000 or about \$208 per participant.

New Jersey's vanpool program began in 1998 and requires that applicants work through a local Transportation Management Association (TMA) to complete funding requests. Monthly subsidy payments can go directly to owner-operators but in virtually all cases they are sent to certified vanpool vendors that are leasing vehicles to pools. Leases are typically based on an estimated vehicle life of five years or 120,000 miles, whichever comes first.

The largest vendor, Vanpool of New Jersey, is a local company. It is considered the most competitive vendor in the New Jersey market; it has 93 pools in operation. National vendor VPSI has 35 pools in service. NJDOT is also recognized as a program vendor; it leases state-owned vehicles to its employees for use in vanpooling. NJDOT has nine pools in operation (Stocker – 2005). Vanpool of New Jersey General Manager Mark Tornquist estimates that it costs about 5 cents per passenger mile to operate a vanpool with 11 paying passengers, plus fuel. Based on this estimate, a pool with a 50 mile daily round-trip commute would see monthly rider fees of approximately \$55 plus an additional \$13 per month per passenger for fuel (Tornquist – 2005).

Some of New Jersey's TMAs make additional incentives available to program participants. Typical incentives include guaranteed rides home in case of emergency and short-term empty seat subsidies. NJDOT has a statewide ride-matching service that TMAs can use to help vanpools organize and find replacement riders.

Participation in the New Jersey vanpool program has declined from over 200 pools to the current level of 144. Program administrator Sally Stocker speculates that much of this decline is due to employer demands related to extended workdays. These demands make it difficult for employees to commit to riding in a pool with consistent commute schedules. (Stocker – 2005).

### **4.2.3 Connecticut**

Easy Street is a statewide commuter vanpool service sponsored by the Connecticut Department of Transportation (<http://www.easystreet.org/>). The department works with three private, nonprofit companies which cover various parts of the state to operate its 300-pool program. CMAQ monies are used to purchase vans and operate the program. These funds are basically an interest-free loan which is repaid as monthly pool revenues repay the original vehicle purchase price and cover ongoing operating costs. This interest-free feature was important when interest rates were high but it is of virtually no value when commercial rates are low and dealers are offering interest-free financing.

The monthly fare for a person traveling a total of 50 round-trip miles each day in a minivan is \$112, including fuel. The fare for people traveling the same distance in a 12 or 15 passenger van is \$100 per month. Passengers receive a \$25-\$50 reward for recruiting new passengers. The program also features a traditional guaranteed ride home program.

Pool vehicles are purchased directly by pool operators from authorized vendors. Vehicle titles remain with the program when vehicles reach the end of their useful life (100,000 miles). Easy Street drivers use fleet credit cards to purchase fuel, a program which avoids state fuel taxes. Maintenance is performed by commercial vendors and is paid for by the program. Insurance is provided via a state insurance program at a rate of \$238 per vehicle per year, an extremely attractive rate compared to \$2,000 per vehicles prices charged by some commercial providers.

The Department of Transportation is reportedly rethinking the way that the Easy Street program functions and may restructure it within the next few years. Two major changes that are being considered are the elimination of third-party vendors and the creation of a state bond fund to provide short-term financing. Eliminating third-party vendors would allow the DOT to work more directly with pool operators and to have greater control over program costs and pool operations. Utilizing a state bond fund to finance the program would facilitate cash management and eliminate requirements associated with the use of federal funds (Jolly - 2005).

### **4.2.4 Michigan**

MichiVan is a vanpool program that is run by the Michigan Department of Transportation (MDOT) -- (<http://www.vpsiinc.com/Home/index.asp?OID=27>). The program was initiated when MDOT solicited proposals from commercial vendors to help establish and operate vanpools around the state.

MDOT ultimately contracted with VPSI. The vendor is responsible for helping organize and running vanpools. Once pools are established, they submit operating data and rider fees to VPSI. The company, in turn, compiles aggregate reports and submits them to MDOT, along with a corresponding bill to cover each pool's operating subsidy plus the management fee that MDOT has agreed to pay VPSI for its services. MDOT chose to contract for operational and administrative services since it seemed cost-effective to do so, thereby avoiding related costs associated with fleet management, ride matching, promotions, etc.

MDOT negotiates operating lease rates with VPSI based on the number of miles run by each pool each month and sets corresponding rider fares. As of August 2005, the monthly lease rate for a seven- to eight-passenger pool operating 50 miles round trip per day was \$940 and the passenger fare was \$50. If such a pool had six paying passengers and collected \$300 in fares, VPSI would bill MDOT for the \$640 balance.

In addition to the monthly fee that is used to recover a portion of VPSI's lease, passengers are also responsible for paying their pool's fuel expenses. With six paying passengers, this expense increases each rider's total monthly fee to approximately \$73.

As of June 2005, MDOT had 133 vanpools in operation under its MichiVan program. These pools transported an average of 1,103 riders, up 135 from the preceding quarter. For the quarter, MDOT paid approximately \$175,000 to subsidize the operations of these pools plus an additional \$73,000 to VPSI to administer the program. Operational subsidies therefore equal about \$440 per pool per month or about 46% of the amount required to operate a 50-mile-per-day pool. The cost of the program, including administrative costs, equals approximately \$620 per pool per month or about \$75 per rider.

The vast majority of MichiVan's costs are covered with FTA CMAQ funds. About \$195,000 in annual state funding is provided from gasoline tax revenues (Reustman – 2005).

#### **4.2.5 Hawaii**

The state of Hawaii has a program very similar to Michigan's. The Hawaii Department of Transportation also contracts with VPSI to run its program and uses CMAQ funds to finance related administrative costs and rider subsidies. Hawaii has approximately 150 vanpools operating in its Vanpool Hawaii program. Monthly fees vary by island. The fee for a person with a 50 mile round-trip commute in a 15-passenger van ranges from \$55 to \$72, plus fuel ([http://www.vanpoolhawaii.com/vanpool/costs/big\\_isle.htm](http://www.vanpoolhawaii.com/vanpool/costs/big_isle.htm)).

#### **4.2.6 Maine**

GO MAINE is a commuter program that has been operated by the Maine Department of Transportation since the late 1970s (<http://www.gomaine.org/vanpool/>). MaineDOT is actively involved with the program but it also contracts with the Greater Portland Council of Governments to assist with its implementation and day-to-day operations. As of July 2005, nine pools were operating in the program. Plans call for the addition of three more pools during each of the next five years.

MaineDOT uses about \$175,000 in federal CMAQ monies and \$115,000 in Maine Turnpike revenues each year to finance its GO MAINE program. MaineDOT purchases program vehicles and sets rider fees. Fees are established for each route and do not vary with month-to-month fluctuations in rider numbers. Monthly rider fees are set at a level that is intended to cover the fully allocated cost of running the program's vehicles, exclusive of program administration expenses. The estimated fare for a 50-mile daily round trip is \$54 (Kish – 2005).

MaineDOT uses its own mechanics to maintain program vehicles. Vanpool operators are encouraged to fuel vans at department fueling sites. In cases where using a state fueling site is impractical, vanpool operators may use a department credit card to pay for fuel. Via this program, pool operators have virtually no out-of-pocket expenses. MaineDOT indicates that many of its vehicles achieve a vehicle life of 200,000. Other than the savings associated with purchasing vehicles via state contract, using state employees to maintain them, and running them on fuel purchased at state bulk rates, there are no state subsidies built into the GO MAINE vanpool program. (Moreau – 2005).

GO MAINE riders have access to an emergency ride home program which provides them with up to two trips per month with a maximum of eight trips per year. Service is provided via taxi. For longer trips, needy passengers are provided with a rental car.

The program has also been revised to encourage participation by state employees. Participants are provided with preferred parking plus they can use the state's flexible spending account program to gain related tax savings. GO MAINE also has real time computer software to facilitate ride matching by all potential carpoolers and vanpoolers.

#### **4.2.7 Colorado**

The Colorado Department of Transportation's website encourages vanpooling as a commuter option and the department employs a travel demand management coordinator. The site indicates that more than 100 pools are operating in the Denver, Colorado Springs, and Ft. Collins areas (<http://www.dot.state.co.us/CommuterChoice/Vanpool/Vanpool.htm>).

Colorado is like many other states to the extent that it does not have a significant vanpool program at the state level. Calls to the Colorado Department of Transportation or visits to its website direct inquiries to one of the local vanpool programs that are in operation in the state. Each of Colorado's local vanpool programs will be discussed later in this chapter.

#### **4.2.8 Idaho**

The Idaho Transportation Department provides financial assistance, via FHWA Surface Transportation Program funds, to support four local ridesharing agencies in the state. Assistance totals approximately \$67,000 per year and is used by metropolitan planning organizations to promote carpooling and vanpooling and to support ride-matching services (<http://itd.idaho.gov/PublicTransportation/aboutus.html>).

### **4.3 Local Programs**

As indicated in the preceding subsection, many of the vanpool programs in the country are operated at the local level in urban areas. Despite North Dakota's relative lack of urban areas, looking at a sampling of these programs may provide valuable insights concerning attractive program features and funding alternatives. The following subsections discuss programs that are in operation in the Twin Cities, Ft. Collins, Denver, Colorado Springs, Boise, Missoula, and Fargo.

#### **4.3.1 Twin Cities**

The Minneapolis-St. Paul Metropolitan Council is a regional planning agency that encompasses seven counties in the Twin Cities region. The council promotes vanpooling in the Twin Cities metropolitan area via its Van-Go! program ([http://www.metrocommuterservices.org/van\\_go.htm](http://www.metrocommuterservices.org/van_go.htm)). The program was initiated in 2001 and had 55 pools in operation as of May 2005.

The Metropolitan Council contracts with VPSI to promote and administer Van-Go! It uses CMAQ and FTA 5307 funds for administrative purposes and to subsidize pool operations. As of May 2005, VPSI also had contracts with 15 unsubsidized pools that were operating in the Twin Cities region.

Program participants typically lease vehicles from VPSI but it is also allowable for employers to lease vans for use by employees. The monthly lease rate includes vehicle maintenance and liability insurance.



Each pool's driver is responsible for pool operations, driving, submitting monthly reports, etc. Approximately 55% of each pool's monthly vehicle lease is paid by the council. Rider fees are set to recover the remainder of the lease plus other expenses such as fuel.

Based on an average monthly lease rate of \$1,250, each pool receives a monthly subsidy of nearly \$690 or about \$63 per passenger in a pool with 11 paying riders. The after-subsidy, out-of-pocket cost per passenger in a pool with 11 paying riders is approximately \$62. Adding the cost of fuel to this monthly fare increases the total cost per rider to about \$75 per month (Arnold – 2005).

The Metropolitan Council provides additional incentives to encourage participation. Primary drivers receive \$200 after their first six months of driving and \$100 per year thereafter. Backup drivers receive \$50 per year. Drivers also ride free and are allowed to use the vehicle for limited personal purposes. The program also has a guaranteed ride home feature which provides pool participants with two \$25 transit vouchers every six months. These vouchers are to be used when emergency situations necessitate an unscheduled trip home. Lease agreements between VPSI and established pools may be cancelled with 30 days notice.

The Metropolitan Council works with several Twin Cities TMOs and major employers to promote ridesharing throughout the urban area. Electronics retailer Best Buy has 12 vanpools in operation as a part of the Van-Go! program in the Twin Cities area (Christianson – 2005).

#### **4.3.2 Ft. Collins**

There are three vanpool programs in operation in Colorado's Front Range region. These programs serve the region around Greeley and Ft. Collins, the seven-county Denver metropolitan area, and the area around Colorado Springs. An informal consortium, Front Range Vanpool Services, is used to jointly market the programs.

The regional Metropolitan Planning Organization operates the VanGo/SmartTrips vanpool program that serves Ft. Collins, Greeley, and the surrounding areas (<http://www.smarttrips.org/>). The program was originally operated by the city of Ft. Collins but was subsequently taken over by the MPO. With 45 pools in services and 300 riders, VanGo is Colorado's largest vanpool program. The primary route for many of the program's pools is from Ft. Collins, Loveland, and Greeley to Denver and Boulder, a one-way distance of approximately 60 miles. Nine of the program's pools were started during the first half of 2005.

Program funding comes from rider fares, FHWA Surface Transportation Program funds that are administered by the Colorado Department of Transportation, and National Transit Database (FTA Section 5307) monies that comes to the program via Denver's Regional Transportation District (RTD) transit system. Passenger fares cover the vast majority of the program's non-administrative costs.

A lack of funding forces VanGo to operate with vehicles that are leased from a local automobile dealership. Dealers are reportedly reluctant to lease vehicles to the program for long periods of time because relatively old, high-mileage vehicles have little residual value. Lease terms are therefore for two-year terms and an estimated 60,000 miles of use. Lower program costs would be achievable if the program could purchase vehicles and run them for longer periods of time. VanGo hopes to procure CMAQ funding in the future to facilitate outright vehicle purchases, hopefully under a government contract price.

VanGo sets rider fees on a per vehicle basis. Monthly fees include all costs including lease payments, maintenance, fuel, and insurance. Vehicle maintenance is performed by transit system personnel in Ft. Collins and Greeley and fuel is procured with fuel cards at transit service prices (\$1.60 vs. \$2.25 per gallon). Insurance is provided via a government risk-sharing program at a savings of approximately \$100 per vehicle per month over current commercial rates (\$1,200 vs. \$2,400 per year). As of mid-2005, the monthly fee for a daily round-trip commute of 50 miles in an eight-passenger van is \$70-\$80.

Approximately 80% of VanGo's pools involve long-distance, round-trip commutes of 120 miles or more, much of which is in high traffic conditions. Participants are, therefore, reluctant to drive on a full-time basis. As a result, all of the program's pools share driving duties among several of the pool's participants and most pools split month pool costs among all of the pool's riders.

Given safety issues related to larger vehicles, all of the program's vans have a capacity of 12 passengers or less; 80% of the vans have a capacity of seven to eight passengers. Operating smaller vehicles also facilitates pick-up and drop-off duties because there are fewer people involved. The program has been operating with a large number of Chevrolet Astro minivans. Chevrolet is discontinuing production of its Astro model and the program has selected the Toyota Sienna minivan as its replacement vehicle.

In addition to paying for the program's administrative costs, VanGo also subsidizes pools by paying expenses associated with empty seats. When pools run at less than capacity, participants are not required to pay an additional amount to cover the fully allocated costs associated with the pool. VanGo pools run 89% full. The vast majority of the program's vanpools were instigated by individuals with little or no employer involvement. Riders who recruit new passengers receive two weeks of free rides, as do newly recruited riders. New riders receive their free passage during their second month of riding.

VanGo has a guaranteed ride home feature like most other vanpool programs. Up to twice a year, participants can either hire a taxi or rent a car to make emergency trips home. Cab and rent-a-car companies bill VanGo directly for incurred costs. VanGo administrators indicate that the program is used very sparingly; perhaps in aggregate as little as six times per year (Blair – 2005).

### **4.3.3 Denver**

Denver's RideArrangers program is operated by the Denver Regional Council of Governments and the Regional Transportation District (RTD) – (<http://www.drcog.org/index.cfm?page=Vanpool>). CMAQ funds are used to purchase program expansion vehicles and FTA National Transit Database (FTA Section 5307) funds are used to subsidize pool operations. As of July 2005, RideArrangers had 56 pools in service. Program growth is anticipated. RTD considers the program as one means of addressing local transportation needs that cannot be readily satisfied with its traditional transit and paratransit services.

RideArrangers purchases vans under a state contract. Seven-passenger minivans account for 85% of the fleet. New vehicles cost approximately \$20,500. The life expectancy of vehicles is 100,000 miles or about five to six years of use. Vehicles have a salvage value of about 18%.

Vanpool operators are issued fleet credit cards which are used for fuel and maintenance. RideArrangers also provides insurance coverage which is purchased commercially from Lancers Insurance of Long Beach, New York. Lancers is the largest vanpool insurer in the country.

RideArrangers sets fares for all vanpools in its program. Fares are based on the number of people in each pool and the miles traveled. The fare for a minivan with six passengers and at a 20-40-mile, one-way trip

is \$85 per month, including fuel. It is estimated that this fare would be doubled without the subsidy being provided via RTD. As is the case with most vanpool programs, drivers ride free.

RideArrangers uses local cab companies to provide program participants with a guaranteed ride home in case of emergencies. Cab operators bill RideArrangers directly for costs incurred. The guaranteed ride home feature is considered necessary but it is seldom used (Bates, 2005).

#### **4.3.4 Colorado Springs**

Colorado Springs' Ridefinders program is operated by the city of Colorado Springs with CMAQ monies (<http://www.springsgov.com/Page.asp?NavID=3928>). Vanpooling is only one of the program's components and its overall \$300,000 annual budget is divided among several transportation demand management projects. Ridefinders has 12 vanpools in service and has money available to grow at a rate of about one pool per year; demand exceeds supply.

Ridefinders purchases vans, provides maintenance with local transit system personnel, provides fuel at state fueling sites or with system credit cards, and insures vanpools with coverage through a commercial provider. With all associated expenses being paid by Ridefinders, it is in a position to set fares for each pool. Fares are set based on the number of people in each pool and the miles traveled. Pools with eight or few members pay a flat per person rate; pools with more riders pay lower per person rates. Drivers ride free.

Most of Ridefinders' pools operate between Colorado Springs and Denver – a one-way trip of about 75 miles. For comparison purposes with other programs, Ridefinders' shortest trip length is 80 miles roundtrip. Riders in those pools pay a monthly fare of \$85, including fuel. Because of the length of the daily commute and the quality of maintenance being provided, Ridefinders vans typically achieve a vehicle life of up to 150,000 miles.

Ridefinders has a guaranteed ride home program that is virtually identical to the one in place in Ft. Collins. As is the case in Ft. Collins, it is seldom used. Most of the program's pools were instigated by individuals; few employers have taken the initiative to get directly involved with promoting vanpooling to their employees (Evergreen, 2005).

#### **4.3.5 Boise**

Commuteride is a 25-year-old vanpool program operated by the Ada County Highway District in southwest Idaho (<http://www.commuteride.com/alttrans/vanpooling/index.html>). The district's program grew from 25 pools in 2001 to 60 in mid-2005 and another 15 are scheduled for the near future. Pools operate in six counties but they must originate or terminate in Ada County. Twenty-five of the program's pools serve military personnel.

The program is largely self-supporting but it does receive \$40,000-\$60,000 per year in FHWA Surface Transportation Program funds to help administer the program. It also uses FTA Section 5309 funds to help purchase vehicles but the primary benefit of this funding source is to permit timelier vehicle purchases; related payments are eventually offset as fares are collected from resulting pool operations. Vehicle depreciation rates are based on a six-year estimated vehicle life.

Commuteride operates exclusively with 15-passenger vans. The program purchases vehicles and provides commercial insurance via Lancers Insurance. Maintenance is performed by approved local vendors and fuel is purchased with fleet credit cards. Commuteride sets pool fares based on 12 paying passengers per pool. Full-time drivers ride free but many pools operate with multiple drivers. In such cases, all pool passengers are assessed a monthly fee but gift cards are used to recognize frequent drivers. All pools originate at designated locations; there are no home pick-up points. The monthly fare for a pool traveling 50 round-trip miles per day is \$80. A recently fare increase had little, if any, impact on ridership.

Commuteride provides vanpool riders with up to six guaranteed rides home per year; with a maximum total cost of \$300. Related services are provided by local taxi operators. To attract new riders, the program also has a first month free program. The national Commuter Checks program is also available to allow employers to purchase vouchers that can be used to provide their employees with tax-free commuting benefits. As discussed in Chapter 3, participating employers also benefit via reduced payroll taxes.

Commuteride also employs employer assistance representatives to work with local employers to encourage ridesharing. Rider fares are gradually being increased to help cover some of the administrative costs associated with the Commuteride program (Hochett, 2005).

#### **4.3.6 Missoula**

Vanpool services in Missoula and the surrounding region are managed by the Missoula Ravalli Transportation Management Association (MRTMA) – ([http://www.mrtma.org/car\\_pool.htm](http://www.mrtma.org/car_pool.htm)). Missoula has a population of approximately 60,000 and serves as the regional hub for Missoula County and the surrounding area.

MRTMA is a private, nonprofit organization that is funded by the Montana Department of Transportation with matching funds from a consortium of Ravalli, Missoula, and Lake County organizations. Its mission is to develop transportation alternatives for area residents.

MRTMA's vanpool program started in 1997. In many respects, it is very similar to other programs but it is unusual in others, specifically in the way that it accepts occasional riders and uses pool vehicles during the day for noncommuting purposes. These features will be discussed in greater detail later.

The program grew out of a consultant's recommendation concerning traffic congestion on Highway 93 in western Montana. It was originally funded with FTA Section 5311 monies and started with one donated van. Shortly thereafter, the program began leasing vans from VPSI. Later, MRTMA took greater control of the program and began purchasing vans to transport area commuters.

Program funding comes from a variety of sources including state-directed CMAQ funds, the city of Missoula, Missoula County, the Missoula Parking Commission, and the University of Missoula. Earmarked FTA Section 5309 funds were procured with the help of U.S. Sen. Conrad Burns to assist with program capital improvements and acquisitions.

MRTMA has nine, 13-passenger vans in operation and transports about 120 riders per day on a regular basis. These riders work at 65 different worksites around the region. Program vehicles are purchased by MRTMA with the above-mentioned 5309 funds. Vehicle life expectancy is estimated at five years or 100,000 miles, whichever comes first. In most cases, vehicles reach the 100,000 mile threshold and the five-year threshold concurrently.

MRTMA solicits bids to maintain its vans. The program has one backup vehicle but each pool is expected to have its own alternate plan in case of breakdowns or other periods of unavailability. Fuel is purchased at the state rate at commercial service stations using program credit cards. Liability insurance is purchased commercially through Lancer Insurance at a \$1 million per occurrence level.

As with most vanpool programs, drivers ride free in exchange for managing the pool, collecting fees, and cleaning/maintaining the vehicle. The program uses a local taxi company to provide guaranteed rides home in case of emergency. Riders can make emergency trips home up to four times per year. There is a 50-mile limit on such trips; MRTMA has a prepaid account with the local taxi company for any related fares. The guaranteed ride home feature is seldom used (Haines, 2005).

MRTMA's vanpool program is somewhat unique in that it accepts occasional riders on a space-available basis. The program's fare structure provides for commuters who ride one, two, or three times per week or on a full-time basis. Commuters can call MRTMA if they need a ride on a particular day and will be put in touch with a vanpool driver if a corresponding pool has available capacity.

MRTMA worked with the Montana Department of Transportation when Highway 93 was under construction to develop numerous park-and-ride sites along the corridor. These sites and designated shopping centers and churches serve as typical pick-up points.

Fares start at approximately nine cents per mile for full-time riders and escalate for persons who commit to ride for longer periods of time. The fare for a person who rides 50 miles per day and who commits to a monthly fare is \$76 per month, including fuel.

As discussed in Chapter 3, TMAs such as MRTMA are created for transportation demand management purposes. They operate programs and provide technical assistance to area businesses in an attempt to influence driving patterns and to reduce congestion on local roads.

MRTMA may be unique given the fact that it not only promotes ridesharing but also owns vans and operates a vanpool program. It may also be one of the least populated TMA regions in the country. TMAs usually exist in urban areas with considerable traffic congestion. The Missoula region does have traffic congestion in some corridors but it has far fewer residents than a typical TMA. MRTMA is the only TMA in Montana.

MRTMA is also atypical in that it uses vanpool vehicles from 9 a.m. to 3 p.m. for noncommuter purposes. During the day when pool vehicles are not in use, they are available for use to transport elderly and disabled citizens that cannot be served by other local transit services. Transit service drivers pick up vehicles at worksites and use them to provide related services. Vehicles are refueled and returned to the worksite in time for the commuters' trip home.

MRTMA's vanpool program is the only active program in Montana. There is reportedly interest being expressed by other urban areas in the state and MRTMA's program may serve as a template for other areas (Hellegaard, 2005).

### 4.3.7 Fargo

The Fargo-Moorhead Metropolitan Council of Governments (F-M COG) – (<http://www.fmmetroco.org/>) formally initiated a local vanpool program in September 2005; it contracted with VPSI to promote and administer vanpooling in the Fargo-Moorhead area. VPSI will work through a local vehicle dealership to provide vans and F-M COG will use FTA Job Access Reverse Commute (Section 3037) grant monies to subsidize each pool's operations.

F-M COG had approximately \$26,000 available to get the program started. VPSI's monthly lease rate will vary depending on the size of the van involved and the miles traveled each month. The lease rate for a nine-passenger van traveling 1,100 miles per month (50 miles per workday) is \$1,200, plus fuel. Lease rates include maintenance and insurance.

F-M COG encourages participation via subsidies offered to the pool and drivers. During the first year of operation, each pool will be given \$50 per month to offset a portion of the pool's fuel costs. An additional 10% subsidy will be given to offset a portion of each pool's vehicle lease expense. Drivers will be given an additional subsidy to cover 50% of their monthly lease-related fare.

Assuming fuel costs at \$2.75 per gallon, usage at 50 miles per day, and vehicle mileage at 12 miles per gallon, monthly fuel costs should equal about \$252. FM-COG will cover \$50 of this amount during the pool's first year of operation, thereby making each passenger's monthly fuel expense at about \$22. Adding this expense to the subsidized lease expense mentioned earlier yields monthly passenger fares of \$142 for nondrivers and \$88 for the driver. The estimated cost per passenger, without fuel, will be approximately \$120 per month during each pool's first year of operation.

As discussed in Chapter 3, additional tax-related savings may be realized if participants have access to an employer-provided flexible spending account that allows pre-tax payroll deductions for vanpooling. Based on the example set forth in Figure 3.1, participants could realize related savings of \$35 per month, thereby reducing their net monthly commuting costs to \$80. Driver savings would be lower since tax-related saving estimates are based on total monthly costs that are higher than those that would be paid by drivers.

FM-COG's JARC grant extends over a three-year period. The council hopes to start five vanpools per year during this timeframe. Subsidy adjustments may be made if the initial offering proves to be insufficient to attract participants.

F-M COG decided to contract with VPSI to manage the program, rather than running it with local personnel. The decision was based on the limited amount of funding that was available for the program and a lack of involvement by local transit administrators. If the program shows significant growth, it may become feasible for F-M COG or local transit operators to get involved with program operations (i.e. vehicle procurement, fuel, insurance, maintenance).

Routes of potential interest include daily commutes between Fargo-Moorhead and Wahpeton (56 miles one-way), between Fargo-Moorhead and Gwinner (86 miles one-way), and Fargo and Grand Forks (78 miles one-way) (Kunza, 2005). F-M COG believes that having a local TMO to assist with ongoing promotions would be highly beneficial.

## 5. EMPLOYER RECEPTIVITY

Vanpool program success is enhanced by employer participation (Evans and Pratt, 2005). In an attempt to determine employer receptivity to vanpooling, more than 50 of North Dakota's largest employers were surveyed regarding business locations, numbers of employees, commuting distances, work schedules, etc. On-site visits were subsequently held with employers that provided affirmative or non-negative responses to the survey. This chapter presents the findings of this survey and related information gleaned during the on-site visits.

### 5.1 Survey Participants

Survey participants were selected based on Job Service North Dakota information concerning employee numbers and related information obtained from local chamber of commerce websites. Fifty-six employers were identified for participation in the survey. All are relatively large employers with more than 100 employees. Some are located in urban areas and some are situated in small cities or rural areas. Employer worksites included each of the North Dakota cities with populations of 4,500 or more. Some large employers were omitted from the survey based on the understanding that their employees are seasonal or work variable hours.

Questionnaires were mailed in late May of 2005 and a reminder request was sent approximately one month later. A copy of the initial questionnaire and cover letter are presented in Appendix A.

### 5.2 Survey Responses

Twenty-seven employers responded to the vanpool survey. This total represents a response rate of 48.2%. Of the 27 responses, 20 entities provided positive or non-negative responses to questions concerning their possible involvement in vanpool promotional efforts and/or the provision of incentives to participating employees. Unless otherwise indicated, the information presented in this subsection is based on the responses received from these 20 respondents.

The 20 survey respondents employ over 9,100 people in North Dakota and operate 38 worksites around the state. Three of the respondents have over 500 employees at single locations. The group includes employers with worksites in 10 of North Dakota's 13 largest cities. Two of these respondents are based in cities with populations of fewer than 750 residents.

Businesses were queried concerning the number of employees that commute more than 15 miles one-way. The 15-mile threshold was used since that was commonly considered to be the distance at which vanpooling became competitive with private automobiles. A recent study sponsored by the Federal Transit Administration suggests that 20 miles may be a more appropriate threshold (Evans and Pratt). This differential is considered inconsequential for the purposes of this study.

As summarized in Table 5.1, five respondents reported having 10-24 employees who commute more than 15 miles and four indicated that 25-49 of their employees commute a comparable distance. Three respondents have between 50 and 100 employees who travel over 15 miles to get to work and five reported having over 100 employees who commute more than 15 miles one-way each day. Of these

employers with over 100 long-distance commuters, two indicated that they have 450-500 employees who travel more than 15 miles to work.

**Table 5.1 Employees Commuting More Than 15 Miles One-Way**

<b>Responding Employers</b>	<b>Number of 15+ Mile Commuters</b>
5	10-24
4	25-49
3	50-100
5	Over 100
3	Unknown

It therefore appears that many of the responding businesses have the critical mass of long-distance commuters that is required to make vanpooling feasible.

Businesses were also asked about employee work schedules and the need to work unscheduled overtime. Eight of the 20 respondents said that 50-100% of their employees work regular shifts with little unscheduled overtime. Of the remaining 12 respondents, three said that less than 10% of their workers are on regular shifts with little overtime; five have 10-24% of their workers on regular shifts and four more have 25-49% of their workers on regular shifts.

Unpredictable work schedules are a detriment to participating in vanpools. As was the case with commuting distances, it appears that many of the respondents have large numbers of employees who work regular shifts with little unscheduled overtime. This situation lends itself of vanpooling.

The majority of respondents, 11 of 20, said that they did not know if their company would be willing to promote vanpooling to their employees while eight said that they would be willing to be directly involved in promotional efforts. One expressed an unwillingness to promote vanpooling but did indicate a willingness to provide incentives to employees who did vanpool.

Concerning incentives, eleven of the 20 respondents identified incentives that they would consider providing incentives to employees who vanpool. Some respondents identified multiple incentives. This may be considered a strong willingness to promote and support vanpooling. Table 5.2 identifies incentives that employers may be willing to provide to participating employees.

**Table 5.2 Potential Employer-Provided Incentives to Vanpoolers**

<b>Incentive</b>	<b>Number of Respondents</b>
Preferred Parking	6
Vehicle for Emergency Trips	4
Employee Flex-Comp.	6
Employer-Paid Benefit Option	3
Employer-Provided Van	3

To further assess employer receptivity to the concept of vanpooling, SURTC attempted to schedule on-site visits with all survey respondents that submitted non-negative responses. The findings of these visits and related employer contacts are discussed in the remaining pages of this chapter.



### 5.3 Site Visits

As indicated earlier, 20 of North Dakota's major employers responded to a SURTC survey and provided positive or non-negative replies regarding vanpooling. In an attempt to gather further information and to explain possible program options, SURTC contacted each of these employers by mail and offered to visit their work site for related discussions. Follow-up phone calls were made to entities that did not respond to these written invitations.

Seventeen of the 20 survey respondents initially identified as candidates for an on-site visit responded to either the initial written invitation or a subsequent telephone contact. Related phone conversations with two of these employers indicated that it was unlikely that vanpooling would be a viable commuting option for their employees given the nature of the work environment (seasonal employment, etc.) or employee commuting patterns (short distances). On-site visits were not scheduled with these employers.

As a result of these contacts, on-site visits or telephone interviews were conducted with 15 employers. These visits were held to further describe various ways that vanpools might operate and to assess what approaches might be most attractive to potential employer participants.

On-site visits were conducted from September through November 2005. Phone interviews were conducted when scheduling conflicts made on-site visits unworkable. By way of introduction, company representatives were briefed on the rapid growth of state and national vanpool programs in the late 1970s and early 1980s. It was explained that North Dakota's program was discontinued in the mid-1980s as a result of falling fuel prices and interest rates and the completion of several major energy plant construction projects in western North Dakota. Vanpool numbers also declined nationwide.

Interview participants were then told that vanpooling has seen national resurgence in recent years and that SURTC and the North Dakota Department of Commerce are investigating the feasibility of reestablishing a vanpool program in North Dakota. It was explained that the survey and interview process was being used to assess the compatibility of vanpooling with employment and commuting patterns and to hopefully design a program that meets the needs of both employers and their employees.

As indicated earlier, on-site or telephone interviews were held with 17 employers. Participants and related employment statistics are summarized in Table 5.3.

**Table 5.3 On-Site Visit and Telephone Interview Participants**

<b>Employer</b>	<b>Location</b>	<b>Employees</b>	<b>Participation</b>
Ag-Air	Valley City	225	Unlikely
Basin Electric	Bismarck	1,569	Possible
Cargill	Wahpeton	120	Unlikely
Case New Holland	Fargo	700	Possible
Cavendish Farms	Jamestown	250	Possible
Choice Hotels	Minot	375	Possible
Imation	Wahpeton	550	Possible
Killdeer Manufacturing	Killdeer	222	Possible
Lake Region State College	Devils Lake	200	Unlikely
Minnkota Power	Grand Forks/Center	308	Possible
NISC	Mandan	281	Unlikely
North American Coal	Falkirk/Beulah	436	Possible
Phoenix International	Fargo	600	Possible
Primewood	Wahpeton	420	Possible
Sitting Bull College	Ft. Yates	50-100	Unlikely
Tesoro Refinery	Mandan	220	Unlikely
Wil-Rich	Wahpeton	120	Possible

A focal point of each interview was to determine whether or not the employer had concentrations of employees who live in common locations at least 15 miles from the work site, who work similar hours, and who are full-time, non-seasonal workers. In many instances, it appears that there may be the critical mass necessary to permit the establishment of one or more commuter vanpools.

One employer in Wahpeton provided SURTC with a computer printout which identified where each of its employees lives. Even though most of the employer's workers live in Wahpeton-Breckenridge, numerous employees commute from Fergus Falls (23 miles) and Hankinson (27 miles). It therefore appears that the potential may exist for the creation of one or more commuter vanpools. Related discussions were initiated with each employer. While each company representative indicated that he or she believed that similar concentrations may exist within his or her workforce, more in-depth verification would be required.

Several employers indicated that their employees work 4-10 hour days each week or that they work 12 hour shifts that result in seven work days during each two-week period. In most instances, however, workers tend to work with the same group of coworkers and overtime tends to be on an extra-day basis rather than at the end of a regular workday. Vanpooling is compatible with these work patterns.

Several employers pointed out that some employees might be resistant to vanpooling based on the fact that they perceive the need to have a personal automobile to run lunchtime or after-work errands. This need appears to be especially prevalent in situations where employees live in small communities and commute to a worksite located in a larger city. These employees reportedly conduct a significant amount of their personal business (grocery shopping, banking, etc.) in the city where they work.

Researchers pointed out that some of these needs might be addressed by using the van to schedule lunchtime trips within the community. Individual vanpools could also establish their own rules to provide for scheduled stops (e.g. a 30-minute stop at a local retailer every Wednesday). These accommodations would have to be made selectively, however, since they would be attractive to some riders while others might view them as a deterrent.

Employers and researchers also discussed the need for some form of guaranteed ride home program to provide riders with a way home in case of emergency. Without exception, employers agreed that such a feature would make vanpooling more appealing.

For employer worksites that are located in larger communities, it was agreed that the best ways to provide emergency transportation might be via taxi. If taxi service was unavailable, using rented vehicles from rent-a-car companies or automobile dealers was considered a viable option.

A few of the employer worksites identified in Table 5.3 are remote and are not conducive to the use of taxis or rented vehicles to provide emergency trips home. In most of these situations, the employers indicated a willingness to consider the use of company vehicles to provide corresponding transportation.

Each employer was asked if they had a flexible spending plan in place which allowed workers to pay for things such as childcare and medical expenses on a pre-tax basis. In all cases, they did. SURTC researchers then explained that federal law makes vanpool expenses an allowable deduction under such plans and that employees and employers could both realize related tax savings. All were unaware of this ability and felt that it would encourage participation.

Preferential parking for vanpools was also discussed. In most instances, on-site parking is not a problem so preferential parking was not considered a significant incentive by most employers. Many did indicate, however, that a preferential parking place and possibly a winter electrical plug-in might be made available for vanpool vehicles.

In addition to the topics discussed in the preceding paragraphs, employers were asked a variety of questions concerning other features they would like to see if the state reestablished a vanpool program. There was unanimous concurrence that technical assistance should be available for both employers and participating commuters and that program personnel should also be available to help promote the program. Employers seemed willing to help educate employees concerning vanpooling and to promote participation via worksite posters, information meetings, etc.

Employers were also receptive to the idea that vanpools should not involve long-term commitments on the part of employers or riders. The concept of including insurance and maintenance expenses in monthly lease rates was also endorsed.

One participant indicated that his company had sponsored employee vanpools in the late 1970s and 1980s. That program was eventually discontinued because of liability concerns. As explained in earlier chapters, similar actions were common nationwide and the number of employer-sponsored vanpool programs has diminished significantly. There has been a corresponding increase in government-sponsored programs which are either operated directly by a government agency or indirectly by a government agency through a commercial contractor.

One company indicated that it might be willing to subsidize vanpool operations. This willingness was directly tied to recruiting difficulties and the potential need to provide transportation services in order to attract workers from farther distances. Government subsidies could entice more employees to consider vanpooling as an option to commuting via personal automobile. The level of subsidy required is unknown; trial and error may be required to determine what price would make people willing to give up the convenience of commuting alone.

As indicated in Chapter 4, the Fargo-Moorhead Council of Governments implemented a vanpool program in September 2005. SURTC researchers made Fargo-area employers aware of this program during the interview process discussed in the preceding pages. That information was reportedly disseminated to

company employees and resulted in a number of inquiries to F-M COG regarding its program. It therefore appears that interest does exist regarding vanpooling, both by North Dakota employers and their workers.

In summary, 11 of the employers that were interviewed as a part of this study indicated that vanpooling may hold potential for their workers. These employers employ approximately 5,550 people in North Dakota and operate 19 worksites in the state. It does appear, therefore, that there is a potential market for vanpooling in North Dakota.

It is also anticipated that additional employers and individual commuter groups would participate in the program if it established. It is also worth noting that there are several major energy-related construction projects being proposed for western North Dakota (ethanol plants, biodiesel plants, electrical generating facilities, etc.). This situation is very similar to the one that existed when North Dakota initiated its original vanpool program in the late 1970s. If any of these facilities become a reality, multiyear construction programs and long-distance commutes may be involved. These projects would, in all likelihood, create additional demand for a state vanpool program.

## 6. PROGRAM GOALS AND DESIGN CONSIDERATIONS

### 6.1 Program Goals

As illustrated by Chapter 4's discussions of state and local vanpool programs, numerous options are available concerning the establishment and subsequent operations of publicly supported vanpool programs. Ultimately, however, publicly managed programs have common goals. These goals and the underlying program design considerations that contribute to their attainment are the focus of this chapter.

The primary goals of virtually all vanpool programs are fuel conservation, improved air quality, reduced traffic congestion, and reduced parking congestion. These goals have been discussed elsewhere in this study and will not be reiterated here.

It should be noted, however, that this list of goals might be expanded upon, especially in rural areas, to include the enhancement of personal mobility. Vanpooling provides a mobility option that may create mobility for some individuals or provide an alternative means of mobility for others. As such, it should be an integral part of state and local personal mobility plans.

The fact that vanpooling may be an important component in a comprehensive mobility plan and a low-cost alternative to new or expanded transit operations is confirmed by the growth in transit system vanpool programs. In 1984, public transit agencies in the United States had 447 vanpools in operation. This number grew to 1,503 in 1994 and totaled 3,932 in 2001 (Evans and Pratt, 2005). According to the National Transit Database, ridership in these programs has increased at a corresponding rate from 3.2 million daily trips in 1991 to 7.9 million in 1996 and 13.5 million in 2003 (<http://www.ntdprogram.com/NTD/NTST/2003/HTMLFiles/2003%20National%20Transit%20Summaries%20and%20Trends.htm>).

The achievement of many program goals is dependent on commuter participation. These goals cannot be achieved or maximized unless commuters participate in the program. Latter sections of this chapter will, therefore, focus on factors that encourage commuter participation, such as costs, convenience, commute times, etc.

Publicly sponsored vanpool programs have two additional goals that influence the way they are structured. These goals involve program efficiency and administrative manageability. Public trust demands that public program managers design and manage programs to run efficiently to attain the maximum benefit for related public expenditures.

The desire for maximum program efficiency must, however, be tempered by the need to make programs manageable and to work within available fiscal and human resource budgets. While some program features might create maximum benefits, reality may make those features impractical. For example, the desire to control costs by purchasing all of a program's vehicles, fuel, maintenance, and insurance might need to be reassessed given the fact that the program may only have one part-time employee and a \$30,000 budget.

Chapter 4 reviewed a sampling of public vanpool programs that are being operated by a number of states and localities around the country. This review illustrated that these entities take a variety of approaches to

achieve common goals. The remainder of this chapter is devoted to identifying and discussing major program factors that need to be considered when vanpool programs are being designed prior to implementation. These organizational and operational factors include:

- State vs. local control
- Self-administered vs. contractor-operated programs
- Vehicle purchases and ownership
- Fuel purchases and vehicle maintenance
- Government money—seed vs. subsidy
- Small vs. large vans—safety, management, and drive time
- Fares—pricing options and elasticity of demand
- Driver incentives
- Guaranteed rides home
- Employer support

These discussions will ultimately lead to the formation of recommendations which will be presented in Chapter 7.

## **6.2 Design Considerations**

### **6.2.1 State vs. Local Control**

Chapter 4 discussed seven state-level programs which promote and support commuter vanpools. This list of states is by no means all-inclusive but related discussions did illustrate that state programs may take several forms ranging from little formal involvement to a comprehensive operational, promotional, and administrative state-run programs. In many instances, states contract with local public or nonprofit entities to manage major portions of their state's commuter vanpool program.

Several factors may influence a state's decisions regarding the extent to which it wants to be involved with vanpooling. Considerations may include fuel conservation, traffic and parking congestion, air quality concerns, citizen and community needs, availability of local managers, critical mass requirements, funding, and program control. Each of these considerations will be discussed in the following paragraphs of this subsection.

As discussed earlier, traffic and parking congestion and air quality are major issues that may be influenced by vanpooling. In many states and urban areas, these are the primary reasons for having vanpool programs.

In rural areas like North Dakota, however, these issues are not major concerns. While traffic congestion may exist at certain times of the day in some of the state's larger cities, it is not a major issue, especially in comparison to virtually all of the country's large metropolitan areas. Similarly, while vehicle emissions and air quality are important in rural states, reducing polluting emissions to help bring air quality back to within acceptable levels is not necessary since air quality is already acceptable. Rural states may, therefore, need other reasons to become involved with vanpooling.

While rural states may lack many of the traditional reasons for commuter vanpools, they may have several other reasons to create vanpool programs. These reasons include enhanced personal mobility, rural community viability, and employee attraction and retention by rural employers. Even in rural

states, vanpooling may create commuting options that create benefits for state residents, urban and rural communities, and employers. State involvement may, therefore, be warranted.

Despite the fact that vanpooling has the potential to benefit for both urban and rural states, it appears that many states have decided, either consciously or passively, against the creation of a state-level vanpool program. In many instances, this decision may relate to the ability of local communities to implement programs of their own.

Many communities may, for example, be able to access FTA funds without the involvement of the state department of transportation. This ability is often tied to cities or communities with populations of 50,000 to 200,000 people and also to areas with over 200,000 residents. These size categories allow them to work directly with various federal agencies. It also enables them to act somewhat independently of their state DOT and to initiate programs that may not exist at the state level. This ability may influence a state's decision concerning a statewide vanpool program. Conversely, the inability of large areas within a state to directly access federal funds may necessitate state-level involvement, assuming that there is a related need in those areas.

Critical mass is another factor that may influence state decisions regarding vanpooling.

This critical mass relates to both the number of homogeneous commuters that it takes to operate a single pool and the number of pools that it takes to operate a viable multipool vanpool program with either state or contractor personnel.

In some cases, this critical mass may be achievable in a single worksite or in a single city or urban area while in other instances a program may need to encompass a larger multicounty region or even an entire state. Related determinations may serve as the basis for how vanpool programs are structured. In some areas, it may take state-level involvement to create the critical mass necessary to create program viability.

Funding is certainly an issue that will contribute to a state's decisions concerning the promotion of vanpooling. As indicated earlier, major funding sources within the Federal Highway Administration and the Federal Transit Administration are not specifically tied to vanpooling. Rather, states and communities are often allocated funds that may be used for a variety of programs. Vanpooling must compete with these programs to access funds. If vanpooling is not a priority of state or local policymakers, these funds will be directed elsewhere.

Initiating a state-level vanpool program requires a conscious decision by state policymakers. Once that decision is made, program design features must be crafted, one of which relates to the possible involvement of local/regional entities to administer the program.

The literature review that was conducted as a part of this research effort suggests that many of the vanpool programs in the United States are run at the local/regional level. In some instances there is some degree of state support for these programs but in others cases they are operated with little or no state involvement.

Running a statewide program with little or no local involvement may also be reflective of a desire for statewide continuity and visibility, the state's level of commitment to vanpooling, the state's ability to dedicate both financial and human resources to the program, and/or the existence of local entities which are willing and able to be involved. Other factors may also contribute to the approach taken by a state to develop and manage a commuter vanpool program.

Like North Dakota's vanpool program of the late 1970s and 1980s, states like Utah and Michigan operate programs that require little involvement by local entities. These programs are run at the state level and

include overall administration, promotion, vehicle purchases, pool creations, ride-matching services, etc. Pools may be created as a result of direct contacts between the state or its contracting agent and an individual pool operator. No involvement is required on the part of local units of government, employers, etc.

Local or regional vanpool programs which operate with state support may, in some cases, represent an optimum situation. Locally run programs have the ability to tailor themselves to meet the precise needs of area commuters and employers. Adding state support to such programs may make them stronger and even more viable. Five of the seven state vanpool programs discussed in Chapter 4 require involvement by local entities such as transportation management associations (TMA) or councils of government (COG).

The fact that these programs require the involvement of local TMAs or COGs is an important consideration for rural states since they may not, as a matter of population densities, have many communities which have these types of entities in place. New Jersey's vanpool program, for example, requires that each individual vanpool be initiated with the involvement of one of the state's eight TMAs. This type of arrangement would obviously be unworkable in many rural states like North Dakota because they do not have any organized TMAs.

As indicated in Chapter 4, the state of Maine has a state-sponsored vanpool program but it contracts with the Greater Portland Council of Governments to administer the program's day-to-day activities. Even though the contract is with a specific council of government, the contract reported provides for the provision of related services on a statewide basis. The COG therefore functions much like a commercial entity and provided services outside its traditional service area.

Some of the state support for locally run programs is significant while in others it is relatively minor. In Maine's program, for example, the Maine Department of Transportation purchases program vehicles and sets rider fees. Conversely, New Jersey requires the involvement of TMAs and encourages pools to procure vehicles via authorized vendors; participating pools receive a monthly subsidy of \$150. Both programs have monthly rider fees of between \$52 and \$54 for a person riding a total of 50 miles per day.

Colorado and Idaho are on the lower end of the spectrum in terms of state-level support that is given to local vanpool programs. Both states provide small amounts of ridesharing and technical assistance to programs that are operated within their respective state. While this involvement is indicative of a degree of state support of ridesharing in general and vanpooling in particular, it may be inconsequential in terms of the overall success of local programs.

State involvement with vanpooling, whether via a state-level program or one that coordinates with local/regional programs, helps emphasize the importance vanpooling and lends credibility to related programs. Making ridesharing and vanpooling a part of state-level policy determinations indicates that ridesharing is, in fact, important and warrants state involvement.

## **6.2.2 Self-Administered vs. Contractor-Operated Programs**

As discussed in the preceding section, some state vanpool programs are run almost totally by state agencies or related entities. In other instances, states contract with some other entity to administer nearly all or portions of their programs. Some of these contractors are local/regional nonprofit organizations and sometimes they are private, for-profit contractors. Both approaches have benefits and disadvantages and state policymakers need to determine which approach best suits their state's needs.



Utah's UTA Rideshare program is perhaps one of the most comprehensive state-level programs in the country. The cost savings achieved through the state's intensive involvement in the program and its purchasing of vehicles, insurance, etc. makes UTA fares among the lowest in the country. The estimated fare for a person traveling a total of 50 miles per day is \$50 per month or less than five cents per passenger per mile.

The attractiveness of Utah's program is reflected initially in its fare structure and more importantly in its participation numbers. In July 2005, the program had 264 pools in operation and expected to have another 23 in place by later in the year. It had 60 new potential pools on a waiting list.

North Dakota's vanpool program of the late 1970s and early 1980s would be representative of a slightly less comprehensive state-level program. Under that program, the state made funding available on an interest-free loan basis for employers and individuals who wanted to start vanpools. Vehicles were purchased by the operator, along with insurance and fuel. Maintenance was also the responsibility of the owner-operator. At the end of the vehicle's useful life (four years or 100,000 miles), the vanpool commitment was considered satisfied and the vehicle became the owner's to use as he or she pleased.

Michigan's MichiVan program also represents a less aggressive approach to state-level involvement since it contracts with a private vendor to administer the program and to supply vans and related maintenance, and insurance. Assuming comparable state and contractor cost structures, the involvement of a for-profit contractor should increase program costs to provide the required profit. This profit margin must come from either higher passenger fares and/or an ongoing subsidy that is provided by a sponsoring entity (state, city, employer, etc.).

While using a private contractor may result in higher program costs, doing so may be warranted. Newly established programs may especially benefit from the involvement of a private contractor since they lack both the economies of scale and the expertise that may be required to operate a successful program. These same attributes may also encourage the involvement of private contractors in established programs.

Two of the state programs discussed in Chapter 4, namely Maine (nine pools) and Connecticut (300 pools), contract with nonprofit organizations to provide day-to-day administrative services to their respective statewide vanpool program. Maine's program deals exclusively with one entity while Connecticut works with three services providers, each of which covers a different region of the state.

The remaining three state programs that were discussed in Chapter 4 (New Jersey, Colorado, and Idaho) work with transportation management associations or local units of government to promote vanpooling. New Jersey's program is more formalized in that it places certain operating requirements on individual pools (i.e. using certified vehicle providers and submitting monthly reports in exchange for a \$150 monthly subsidy). Colorado and Idaho's programs, on the other hand, appear to be limited and largely refer inquiries to local program operators. There is little, if any, financial support provided by these states and there are no related state requirements placed on local programs or individual pool operators.

### **6.2.3 Vehicle Purchases and Ownership**

As the discussions in Chapter 4 illustrate, vehicle purchases are handled in a variety of ways by various vanpool programs. In most instances, however, vehicles are either purchased by the program or provided by a leasing company that is hired to administer the program. Of the state programs highlighted in Chapter 4, two purchase program vans were under state purchase contracts. Most of the local programs discussed in Chapter 4 also purchase their own vehicles under contract.

Purchasing vehicles via a state contract creates substantial savings for the program and ultimately for its riders. Several program managers report savings between \$2,000 and \$5,000 per vehicle. Vehicles are then leased to individual pools and related costs are recovered via monthly fares charged by the program. At the end of a vehicle's useful life, the pool is given a replacement vehicle and the fully depreciated unit is disposed of and the proceeds are credited back to the program.

For programs that operate in conjunction with commercial vendors, such as VPSI or Enterprise, vehicles are typically provided by the vendor. As with most programs that purchase their own vehicles, monthly lease rates cover not only the cost of the vehicle but also fuel, maintenance, and insurance.

As described earlier, North Dakota's vanpool program of the late 1970s and early 1980s allowed pool operators to purchase vehicles from local dealers with interest-free money provided by the state. At the end of the vehicle's useful life (four years or 100,000 miles), the vanpool commitment was considered satisfied and the vehicle became the owner's to use as he or she pleased.

This type of arrangement is virtually nonexistent in today's vanpool environment. Such an approach would result in costs being significantly higher than might be achievable under state purchase contracts. Higher program costs also resulted because the residual value of depreciated vehicles belonging to pool operators rather than to the program itself.

It should also be noted that North Dakota's program required a multiyear commitment on the part of the purchasing operator. Conversely, most of today's programs allow operators and individual riders to discontinue participation on 30 days notice. Apparently, free rides, no initial investment, and a lack of long-term commitment are sufficient incentives to attract potential pool drivers in today's environment.

Given state government's purchasing power and the lack of a profit motive, a totally state-run purchase program has the potential to achieve significant cost savings – savings that may be passed on to participants in the form of lower monthly fares. Lower monthly fares, in turn, encourage continued and increased participation.

It should also be noted that some local/regional programs are as large as or larger than many of the state programs discussed in Chapter 4. Absent any benefits that might be created by governing state laws or rules, these large non-state programs may achieve the same economies of scale as their state counterparts and may, therefore, be able to offer comparable levels of service with comparable or even lower fares.

#### **6.2.4 Fuel Purchases and Vehicle Maintenance**

As is the case with vehicle purchases, virtually all of today's vanpool programs have provisions for the use of fleet credit cards which may be used to purchase fuel at designated commercial service stations and/or, in some cases, at state government fueling sites. This approach offers several advantages over the operator-pay method used in North Dakota's earlier vanpool program.

In North Dakota's 1970s and 1980s program, pool operators estimated retail fuel costs and usage and built related costs into their monthly fare calculations. Over-collections became part of the pool's financial reserve and under-collections required fare increases to recover shortages and future purchases.

This same approach is used by many vanpool programs today but it is handled at a macro-level based on costs incurred by all the program's pools and with fares set by the program rather than by individual pools. The result is less dramatic shifts in fares. The use of fleet credit cards also eliminates out-of-

pocket costs and fare-related burdens for pool operators, a feature that is presumably attractive to many participants.

Government-operated programs may have a fuel-related cost advantage over programs that utilize third-party commercial vendors such as VPSI. Many programs which utilize commercial, for-profit operators charge, in effect, two monthly fares – one to cover lease costs, maintenance, and insurance and one to cover fuel costs. Fuel costs are typically reflective of retail prices.

Conversely, many government programs are often able to purchase fuel at a rate that does not include state taxes. Assuming state tax rates of 20-25 cents per gallon and a retail fuel price of \$2.50 per gallon, programs can reduce overall fuel costs by up to 10% if purchases are tax exempt. Additional savings may result for programs are able to negotiate quantity discounts with select vendors.

Regarding vehicle maintenance, some programs use state or local government maintenance personnel to maintain vanpool vehicles. Programs that use third-party vendors such as VPSI typically have maintenance costs included in monthly vehicle lease rates. Programs that do not use one of these two approaches typically negotiate maintenance contracts with select vendors and have related expenses paid directly by the program, thereby avoiding out-of-pocket expenses by pool operators. Warranty work is performed by authorized vehicle dealerships.

As is the case with vehicle and fuel purchases by government-operated programs, these programs would appear to have a cost advantage related to vehicle maintenance. The basis for this advantage is the lack of a profit margin that is built into related services by commercial vendors. This cost advantage may be overcome, however, if higher costs (e.g. maintenance, personnel wages) are incurred by government service programs. If this did occur, however, it is expected that the vanpool program would reevaluate this function and begin using commercial service providers.

### **6.2.5 Government Money – Seed vs. Subsidy**

As indicated in Chapter 4, virtually all publicly supported vanpool programs use some form of federal money for vehicle purchases, promotions, and/or administrative purposes. In some cases, a portion of this money is eventually recovered via monthly passenger fares and reused by the program. In other instances, the money represents an ongoing subsidy that is used to offset commercial lease payments.

Several programs attempt to operate on a break-even basis, except for administrative services that are provided by state or local government personnel. Some programs also specifically limit related subsidies by specifying that passenger fares must also cover administrative costs to some specified amount (e.g. the program will pay no more than 25% of related administrative expenses).

Federal Highway Administration rules allow programs to use FHWA funds to purchase vehicles if there are related provisions to recover these costs within the projected life of the vehicle. FHWA funds may also be used, without repayment, for things such as ride matching services, promotional expenses, etc.

Many of the programs discussed in Chapter 4 have existed for several years and are replacing vehicles with money collected from monthly fares. Many of the programs are also experiencing growth so additional money is needed for expansion vehicles. While fare collections may allow programs to continue on a status quo basis, an infusion of capital is needed to both start programs and to facilitate expansion. FHWA and FTA monies often cover these needs.

Some vanpool programs, such as those in operation in New Jersey and in the Twin Cities, provide ongoing subsidies to vanpools. As reported in Chapter 4, New Jersey provides participating vanpools with a \$150 per month subsidy. The Twin Cities Van-Go! program pays 55% of each pool's monthly VPSI lease. This subsidy amounts of nearly \$700 per pool per month.

Many programs attempt to recover their fully allocated, nonadministrative costs via month passenger fares. In some cases, programs are planning to increase fares to cover an increasing percentage of their administrative costs. Some hope to recover all administrative costs while others plan to provide an ongoing subsidy by requiring that fares cover only a specified percentage of such costs.

In each instance, state and/or local policymakers must decide how much of a subsidy, if any, they are willing and able to provide to the program. These and related decisions will ultimately impact each individual commuter and influence whether or not they will become or stay involved with the program.

### **6.2.6 Small vs. Large Vans – Safety, Management, and Drive Time**

A review of the state and local programs discussed in Chapter 4 reveals an interesting dichotomy regarding the vehicles that are used by various systems. Systems such as the ones in operation in Boise and Missoula, for example, use high-capacity 13-15 passenger vans. Others, such as Denver's RideArrangers program, use primarily seven-passenger minivans. Several programs provide flexibility which allows pools to select whatever size vehicle best suits their needs.

Specifying a certain standard size vehicle for program use simplifies vehicle purchases and maintenance. This simplification will also ultimately impact program costs and participant fares.

Programs which use primarily large vans do so to keep passenger fares low. There is relatively little difference in cost between a seven-passenger minivan and a 13-15 passenger van. Similarly, there are few significant differences in terms of monthly operating costs. Given these minor differences, increasing vehicle occupancy from 6 to 12 paying passengers can have a significant impact on monthly fares.

Despite the fare advantage of larger vans, some programs have made a conscious decision to use smaller vehicles. This decision is based primarily on safety and pool management.

Several safety warnings have been issued in recent years concerning the use of large vans. These warnings have not been restricted to vanpool programs but, rather, have been universally issued to anyone who operates such vehicles (schools, churches, daycare programs, etc.). These concerns have prompted some vanpool programs to focus more on smaller vehicles which are reportedly safer and easier for drivers to operate.

Smaller vanpools are also easier to manage. Rather than having 13 passengers to monitor and report on, operators may have as few as six riders to keep track of. Smaller pools also impact drive times since there are fewer passengers to pick-up and drop-off every morning and afternoon. Shorter commute times are the result.

Having a smaller pool may also prompt a pool to agree that door-to-door service is possible, rather than having a few designated pick-up points. To facilitate shorter ride times, some vanpool programs do not provide door-to-door service. Rather, they require riders to meet their van at designated locations at specified times. This requirement mirrors traditional transit operations and necessitates that individual riders walk to pick-up points or to get there via transit, private automobile, etc. Using designated pick-up

points may be especially necessary for pools with riders who live over a wide geographic area. Programs may similarly require that riders be dropped off at designated locations and may need to walk or use transit to get to their worksite.

Overall, vanpooling typically increases commute times relative to commuting via private automobile, especially in uncongested corridors without high-occupancy vehicle lanes. Increases of 10-12 minutes may be expected (Evans and Pratt). Riders are, therefore, sacrificing drive time minutes for things such as cost savings, more relaxing rides, etc.

Decisions regarding door-to-door service vs. designated pick-up and drop-off locations, whether they are made system-wide or by individual pools, will impact the desirability of vanpooling for individual riders. Value judgments and local conditions should be considered before final decisions are made.

## **6.2.7 Fares – Pricing Options and Elasticity of Demand**

As indicated in the preceding paragraphs, vanpool participants typically experience longer commute times than people who commute in private automobiles. Lower commuting costs are one way to offset this negative aspect of vanpooling.

A 2005 study sponsored by the Federal Transit Administration discussed the sensitivity of vanpool ridership to fare changes. The study found that some reports and research suggest that ridership is not sensitive to fare increases while other reports found that the relationship between fares and ridership was highly elastic (Evans and Pratt).

Given the inconclusive findings of this report, it may be impossible to accurately predict how important fares are to vanpool participation. It should also be noted, however, that this FTA study focused on fare changes within existing systems; it did not pertain to the importance of fares relative to attracting new riders. While fare increases may or may not influence a rider's continued participation, fare levels may be a major influencing factor relative to a commuter's initial decision regarding participation.

A review of the programs discussed in Chapter 4 indicates that all programs take steps to keep rider costs low. Some programs provide direct subsidies to control costs while others do so via cost-saving measures such as purchasing vehicles under state contracts, using government mechanics to maintain vehicles, purchasing fuel via tax-exempt methods, and procuring insurance from government self-insurance pools. Whatever approach is used, program managers attempt to control program costs and to keep related rider fares low, thereby helping vanpools compete with private automobiles. With monthly fares for a 50 mile daily roundtrip commute varying from around \$50 to over \$100, some are obviously more successful than others.

Some programs also provide one-time fare incentives to entice commuters to try vanpooling. Discounted fares are typically provided, for example, during the second month of usage, thereby eliminating the possibility of someone taking advantage of the discounted fare for one month and then dropping out of the pool. Other programs offer fare-related rewards for riders who recruit new riders into the system.

In 2000, the University of Florida's Center for Urban Transportation Research developed a Vanpool Pricing and Financing Guide for the Florida Department of Transportation and the Federal Highway Administration (Winters and Cleland). This research identified 17 pricing strategies that are used by vanpool programs around the country. Some of the common strategy considerations identified by the study include:

- Bundled or unbundled services – package services and pay one price or conversely use cafeteria pricing.
- Trial pricing – provide low price incentives to encourage trial period usage.
- Pay one price – charge a set amount and provide unlimited use during the specified time period (e.g. charge by the month and provide unlimited use).
- Break point pricing – traditional psychological pricing; charge \$59 instead of \$60.
- Product line pricing – charge different fares based on vehicle size and amenities.
- Differential pricing – charge different client groups different amounts (e.g. charge a higher fare for vanpools that are not in a program’s specific target market).
- Quantity discount – offer discounts for larger quantities (e.g. provide discounts for employers that operate multiple pools).
- Accounting system pricing – adjust the payment structure to fit the customers’ buying constraints (e.g. time payments to coincide with rider paydays).

This study’s findings relative to pricing strategies reinforce the pricing discussions contained in Chapter 4. In summary, it appears that there is no one right way to price vanpooling services. Different programs use different approaches to match their objectives and the needs of their clients.

### **6.2.8 Driver Incentives**

Virtually all vanpool programs provide incentives to vehicle drivers in recognition of duties and responsibilities they assume. Common incentives include free monthly rides and limited personal use of the vanpool vehicle. Responsibilities typically include driving, collecting monthly fares, submitting reports, and arranging for vehicle maintenance and cleaning. Some programs also require that drivers take a safety course prior to operating a vanpool vehicle. Some programs, such as Van-Go! in the Twin Cities, provide semi-annual cash payments to both primary and backup drivers.

As discussed earlier, North Dakota’s vanpool program of the 1970s and 1980s provided a major incentive to drivers, above and beyond the fact that they rode free. Under that program, drivers were required to pay a portion of their pool’s start-up costs and to both drive and administer the pool. The driver’s contribution to start-up costs were eventually recovered via passenger fares and, as a major bonus, the vehicle became the property of the driver once it reached the end of its useful life (four years or 100,000 miles, whichever came first).

Except for a little-use program offered in Utah, none of the vanpool programs reviewed as a part of this study offer any incentives comparable to those that were available in North Dakota 25 years ago. They are apparently not necessary to attract and retain willing drivers or, conversely, related obligations are greater than today’s drivers are willing to undertake. Today’s programs do not necessitate long-term commitments.

### **6.2.9 Guaranteed Rides Home**

One of the risks faced by vanpool drivers and riders relates to the unavailability of a personal vehicle for emergency trips during the workday. Almost all of the programs discussed in Chapter 4 have some form of guaranteed ride home feature to address this need.

Programs that operate in urban areas tend to use existing transit systems and taxi services to provide vanpoolers with access to emergency transportation services. In some cases, users must pay for the service and then seek reimbursement while in many instances the service provider may agree to bill the vanpool program for services provided, thereby avoiding any out-of-pocket costs for the commuter.

Some vanpool programs are confronted with long-distance commutes or related situations where traditional transit and/or taxi services are not available. In these instances, some program operators provide guaranteed ride home services via car rental companies.

Programs vary relative to the number of emergency trips that commuters can make. Some programs permit only two trips per year while others allow as many as eight. Some place dollar limits on expenses that may be incurred during a specified time period.

Without exception, managers of the programs discussed in Chapter 4 indicated that guaranteed ride home programs are necessary but seldom used. No managers reported concerns with their respective program or any significant cases of abuse.

### **6.2.10 Employer Support**

According to the 2005 FTA-sponsored vanpool study referred to earlier, the success of vanpool programs is heavily influenced by the degree of employer support (Evans and Pratt). Employees are more likely to vanpool if related programs are supported by their employers.

As discussed in Chapter 3, employer support and related incentives come in a variety of forms. Some support is primarily promotional and involves publicity or providing workday opportunities for employees to gather to learn about new or existing pools, etc. Higher degrees of nonfinancial support might include things like preferential parking for vanpool vehicles and flex-time alternatives to facilitate vanpool operations.

Employers may also provide financial incentives to encourage vanpooling. Options might include employer-provided vehicles or using flexible spending account programs to access tax advantages associated with vanpooling. According to a 2000 report prepared in cooperation with the Florida Department of Transportation and the Federal Highway Administration, vanpool ridership increases 0.02% for every \$1 increase in monthly employer-provided subsidies (Winters and Cleland).

As indicated in Chapter 3, an employee may not participate in federal tax-related commuter benefit programs unless his or her employer participates. There are also numerous federally sponsored programs and services that are designed to encourage and facilitate employer participation in vanpool programs. Examples include the Commuter Choice Leadership Initiative and the previously discussed Best Workplaces for Commuters program (<http://www.commuterchoice.gov/>). Related services are also available from the Association for Commuter Transportation ([www.actweb.org](http://www.actweb.org)) and local TMOs and TMAs.

Vanpool programs can be successful without direct employer participation but their success will not be maximized unless employers agree to be involved. As discussed in previous chapters, employer involvement benefits the program, participating employees, and, in most cases, the employer.



## 7. SUMMARY AND RECOMMENDATIONS

In many respects, vanpooling produces the greatest benefits for commuters who work in urban areas. For these commuters, benefits accrue via not only fuel savings but also as a result of reduced parking and toll fees, shorter commute times related to the availability of high occupancy vehicle lanes, etc. Additional societal benefits result from reduced vehicle emissions, reduced traffic and parking congestion, fuel conservation, etc.

While many of these personal and societal benefits may not be factors in rural areas, some are. These benefits are related mainly to lower commuting costs, fuel conservation, and reduced vehicle emissions. Vanpooling in rural areas also produces additional benefits related to rural community viability and employer access to an expanded workforce.

North Dakota's ultimate decision regarding the creation of a state vanpool program will be a policy determination concerning the role that vanpooling should play in a comprehensive personal mobility program and the resources that the state is willing/able to devote to the program. If a program is reestablished, participation will then be up to individual employers and commuters. The benefits associated with the program will determine whether or not commuters will give up the personal freedoms associated with commuting via private automobile in favor of commuting with coworkers in a 7-15 passenger van.

From an economic perspective, commuting via vanpool in North Dakota will save participants money almost exclusively via vehicle operating costs rather than from costs associated with parking, toll roads, etc. Savings will vary depending on the price of fuel, the size and value of the cars and vans being used, daily commute distances, government subsidies, etc.

As discussed in Chapter 3, vanpoolers save the greatest amount if their participation in a vanpool allows them to function with one less vehicle, thereby eliminating all related operating and ownership costs. In many instances, however, vanpoolers will not be able to eliminate a vehicle. They will, therefore, continue to incur expenses such as loan repayments, insurance, etc. The only costs that will be eliminated are per mile operating costs and possibly lower insurance expenses. For comparison purposes, these are the costs that have been considered throughout this study. As discussed in Chapter 3, additional savings may be realized if the commuter's employer has a flexible spending plan which allows employees to pay for not only medical expenses and child daycare but also commuter vanpooling on a pre-tax basis.

Table 7.1 summarizes the cost advantages that vanpools have over single-occupant vehicles. This table is based on a 25-mile one-way commute, a van with seven paying passengers, and a flexible spending account that resulted in tax-related savings of \$35 per month.

It should be noted that the hypothetical vanpool fares presented in Table 7.1 are reflective of a private vanpool that is operated with no related government incentives or cost-reducing features (see Figure 2.1 for underlying costs). These fares also assume the absence of a profit margin for a commercial vanpool company. The presences of any of these items would cause fare changes. Ultimately, actual vanpool charges and available tax incentives must be compared with actual private automobile commuting costs to determine true savings.

**Table 7.1 Monthly Commuting Costs—Personal Automobile vs. Private Vanpool**  
(assuming 50 miles per day, 22 days per month, and 7 paying vanpool passengers)

<b>Fuel Cost</b>	<b>Private Auto @ 25 mpg</b>	<b>Vanpool Fare / Net Savings</b>	<b>Net Fare / Gross After-Tax Savings</b>
\$1.75 / gal.	\$156	\$157 / (\$1)	\$122 / \$34
\$2.00 / gal.	\$168	\$151 / \$7	\$125 / \$42
\$2.25 / gal.	\$178	\$164 / \$14	\$129 / \$49
\$2.50 / gal.	\$189	\$167 / \$22	\$132 / \$57
\$2.75 / gal.	\$200	\$170 / \$30	\$135 / \$65
\$3.00 / gal.	\$211	\$174 / \$37	\$139 / \$72
\$3.25 / gal.	\$222	\$177 / \$45	\$142 / \$80

As Table 7.1 illustrates, vanpoolers achieve monthly savings over single-occupant vehicles regardless of whether the price of fuel is \$2 per gallon or \$3.25 per gallon; savings increase along with the price of fuel. As indicated in Table 7.1 and in Chapter 2, based on the assumptions outlined therein, the actual pre-tax cost advantages of vanpooling begin to occur when fuel prices exceed about \$1.75 per gallon.

Additional savings, over and above those presented in Table 7.1, would also be realized if the number of paying passengers was increased to more than seven. Employer-provided incentives may also increase available incentives beyond those outlined above.

As discussed in Chapter 4, virtually all of the government-sponsored vanpool programs in the country provide some form of incentive to entice commuters to give up the personal mobility associated with private automobiles. In some instances, the incentives are highly visible and come in the form of monetary subsidies to offset monthly lease and operating costs. In New Jersey, for example, each program vanpool receives a monthly subsidy of \$150 per month. In the Twin Cities, monthly vehicle lease rates are subsidized at a 55% rate; an incentive that is worth between \$600 and \$700 per month. Most programs offer ongoing incentives while a few limit them to initial offers to entice people to try vanpooling.

While some programs have readily visible incentives, others provide less visible cost-cutting services that reduce participants' monthly fares and bring them down to or below those ultimately achieved when directly subsidies are involved. These services are generally associated with programs that use government employees and purchase and maintain their own vehicles, purchase fuel, provide insurance, etc.

Whatever approach is taken, programs must ultimately achieve monthly fares that are attractive enough to entice commuters to give up the convenience of a personal automobile in favor of a multipassenger van. The exact fare that is necessary to cause this conversion will vary by individual and will be influenced by not only car vs. van cost comparisons but also by other economic factors (parking and toll fees, etc.) and noneconomic issues such as commute times, ride comfort and safety, reduced vehicle emissions, etc.

This chapter will discuss these and related matters and will present program design recommendations that the state may want to consider if it decides to reestablish a state-sponsored commuter vanpool program. Topics of discussion will include:

- Availability of financial resources
- Management
- Program features

- Marketing
- Cost estimates
- Monitoring

Recommendations specific to each of these topics will be presented at the beginning of each related section. Subsequent discussions will present the rationale related to each recommendation.

## 7.1 Availability of Financial Resources

### 7.1.1 Recommendation—Reestablish Vanpooling in North Dakota

*It is recommended that North Dakota reestablish a vanpool program on a trial, turnkey basis using short-term funding sources that require little or no local match and/or approaches which allow passenger fares to be used as local match. The program should set a goal of establishing 10 vanpools per year during its three-year trial period.*

*This approach should be reassessed as the program matures. Based on the reception that it receives and the availability of future funding and manpower, alternate approaches may be warranted to make the program more attractive and to increase its cost-effectiveness and long-term viability.*

As discussed in previous chapters, federal agencies such as the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have rules in place which provide considerable flexibility regarding the use of program funds for vanpool programs. While there are no program funds that apply specifically to vanpooling, states are able to use a variety of federal highway and transit funds to operate vanpool programs. Redirecting these funds to vanpooling does, however, reduce the amount of money that would otherwise be available to support other programs. A state must, therefore, make corresponding policy decisions concerning the use for federally appropriated monies.

In North Dakota's case, the North Dakota Department of Transportation (NDDOT) has appropriations in major funding categories that are typically used by other states to support vanpool programs. These categories and their match requirements, as discussed in Chapter 3, include:

- FHWA – Congestion Mitigation and Air Quality (CMAQ) – up to 100%
- FHWA – Surface Transportation Program (STP) – 80%
- FHWA – National Highway System (NHS) – 80%
- FTA – Section 3037 - Job Access and Reverse Commute (JARC) – 50-100%
- FTA – Section 5307 – Urbanized Area Formula Grants Program – 80%
- FTA – Section 5309 – Discretionary Capital Imp. and Acquisition Funds–80-100%
- FTA – Section 5311 – Rural Public Transportation Program – 50-90%

Program funds are typically used to administer and promote the program and to purchase or lease vehicle purchases. Programs that purchase vehicles typically cannot use passenger fares for local match.

Given the availability of discretionary funds, reestablishing a state-sponsored vanpool program in North Dakota is not a matter of funding, but rather one of competing interests. As will be discussed in a later subsection, the amount of money required to operate a vanpool program is relatively small compared to highway construction costs or the costs associated with some transit programs. Vanpooling must, nonetheless, compete with other programs for available dollars.

With the goal of establishing ten pools per year during a three-year trial period, the program would have ten pools in operation at the end of Year One, 20 at the end of Year Two, and 30 at the end of Year Three. Related discussions throughout the remainder of this chapter are based on this level of activity.

## **7.2 Management**

### **7.2.1 Recommendation—Contract for Program Operations and Promotions**

*If North Dakota decides to reestablish a commuter vanpool program, it may be advisable to use a turnkey approach to initiate service with little staffing commitment or long-term risk.*

As discussed in Chapter 4, states and various local vanpool promoters have taken different approaches regarding the management of their respective programs. Some are run almost entirely with government personnel while, in other instances, commercial contractors are used.

While North Dakota may have theoretical access to sufficient federal money to support a vanpool program, corresponding human resources may be more difficult to provide. Agencies must operate with employee numbers authorized by the Legislature. If all agency positions are required to complete other work, little or no time may be available to administer a vanpool program.

These manpower needs extend, in some instances, beyond program administration. Many states, for example, purchase program vehicles via state contracts and some even maintain these vehicles with state maintenance personnel. Some programs provide vanpool insurance via state insurance mechanisms and several states provide vanpool fuel at state fleet fueling sites or at commercial sites via state credit cards.

All of these devices help reduce vanpool operating costs but they all have manpower costs associated with them. In some cases, these manpower needs may not result in incremental increases in personnel numbers or related costs but in others, additional manpower would be required to provide related services.

The advisability of providing these products and services in-house must be made on an item-by-item basis and is beyond the scope of this study. If it is determined that they can be procured or provided without hiring additional staff, it may, in fact, be beneficial to provide them internally. These same assessments should also be made if and when a program becomes sufficiently large to justify full-time positions to provide related products or services or when other related state programs have surplus staff time which may allow portions of various positions to be fully or partially assigned to a vanpool program.

In some instances, state or local vanpool programs are too small to fully internalize their program's operations or they do not have direct access to corresponding services or manpower. In such cases, administrators may choose to contract with a commercial entity to organize, administer, and/or promote the program.

Conversely, in some cases, related contracts may be executed with other governmental or nonprofit entities such as metropolitan planning organizations or transportation management associations. These entities do not face the personnel constraints that may limit many state agencies. Corresponding programs may be tied to a particular region or community or, as is the case in Maine, related programs may be offered on a statewide basis. These operating entities may also be able to procure many of the benefits that are sometimes associated with state-run programs (tax-exempt fuel purchases, state contract vehicle purchases, etc.).

Timely implementation is also an issue. Developing and implementing a vanpool program is likely to take longer if internal mechanisms are required for all the various functions that might be handled by state personnel. Contracting for services, especially from an entity that is already operating similar programs elsewhere, should permit the program to be up and running in far less time than might be possible otherwise.

There does not seem to be a correlation between management models and the size of a program. As discussed in Chapter 4, Connecticut's 300-pool program is run via contracts with private, nonprofit organizations while Utah's 264-pool program is run with state personnel. Michigan runs its 133-pool program via a contract with a commercial service provider. Maine's modest nine-pool program purchases vehicles via state contract and contracts with a local council of governments to promote and manage the program.

As indicated earlier, the proposed approach should be reassessed as the program matures. The ability to access various state purchasing programs (vehicles, fuel, insurance, etc.), to procure personnel to promote and administer the program, and the overall size of the program may suggest that internalization may, in the future, produce greater efficiencies, lower fares, and increased participation.

It may be necessary to use a state employee on a one-quarter time basis to oversee the program and to assist the contractor with administration and promotion. Assuming an annual salary of \$40,000 and fringe benefits at approximately 33%, the cost of this function would be approximately \$13,500 per year. A similar amount might be spent annually for related office expenses, travel, etc. Double this amount might be appropriate during the first year to cover initial start-up costs such as printing brochures, etc.

The cost of contract management is estimated at 10% of annual vehicle lease costs. As will be discussed in later sections of this chapter, vehicle lease rates may equal about \$1,250 per vehicle per month or about \$15,000 per year, including maintenance and insurance. Assuming a ten-pool program and management costs at 10%, the Year One cost of this service is estimated to be about \$15,000. Year Two costs would be \$30,000 and Year Three costs would be \$45,000.

## **7.3 Program Features**

There are several potential disincentives associated with vanpooling. These disincentives include things such as reduced vehicle comfort, longer commute times, loss of personal freedoms, need for emergency transportation, etc. Some of these disincentives may be overcome via the economics associated with ridesharing and some may be addressed by program features that help eliminate or reduce them. The following subsections present recommendations related to these inherent disincentives. Hopefully these program features and incentives will make North Dakota's vanpool program attractive to a significant number of state commuters.

### **7.3.1 Recommendation—Vehicle Size, Style, and Age**

*The program should operate with vehicles designed to transport between seven and twelve passengers. Vehicles should be equipped with features such as front and rear heating and air conditioning, individual reading lights, etc. Pools should also have the option of equipping their vehicles with adjustable reclining seats rather than traditional bench seats.*

It is doubtful that many commuters will convert to vanpooling based strictly on economics. Commuting convenience and comfort are also important considerations. This is the basis for recommending that program vehicles be nicely equipped and that pools have the option of specifying vehicles with individual (vs. bench) seats. These features are especially important for longer distance commutes. For safety reasons, it may be advisable to avoid vehicles that are designed to carry 15 passengers.

The vanpool programs discussed in Chapter 4 have varying expectations concerning vehicle life. Some continue to use the traditional four years or 100,000 mile measure while others expect as much as eight years or 200,000 miles of use.

It is recommended that detailed maintenance records be maintained to help the program determine how long program vehicles should be kept in service. This information will be invaluable when assessments are eventually made concerning the long-term use of commercial operators to provide and maintain program vehicles.

From a participant's perspective, a vanpool program should provide reasonably priced, competitive rates. Services should be provided in a manner that minimizes commuting times and provides rides in a comfortable and safe setting. Participation commitments should be of short duration and provisions should be made to accommodate mid-day emergency trips by riders. Drivers' administrative responsibilities should be minimal and they should be compensated for their efforts (driving, maintenance, administrative, etc.). Program personnel should be available to answer questions. Recommendations related to each of these items are presented in subsequent subsections.

Concerning vehicles sizes, styles, and ages, a few of the vanpool programs discussed in Chapter 4 operate 15-passenger vans but it appears that the majority operate either seven passenger mini-vans or 9- to 12 passenger vehicles. The primary reasons cited for not operating larger vehicles include safety, comfort, and the logistics of dealing with a larger number of passengers.

Vehicle comfort may be one excuse that some commuters would cite as a reason for not riding in a vanpool. Some programs overcome this potential obstacle by equipping all vehicles with individual adjustable reclining seats for each passenger. This enhancement would have some impact on initial vehicle costs and would reduce the capacity of a traditional 12-passenger van down to nine. The capacity of a traditional nine-passenger model would be reduced to seven.

As discussed in Chapter 3, commercial vanpool operator VPSI uses a four-year, 100,000 mile vehicle replacement schedule. Many of the publicly operated programs discussed in Chapter 4 use something similar but some have higher use and age expectancies. Pools which accrue 100 vehicle miles per workday will travel approximately 100,000 miles in four years.

### **7.3.2 Recommendation—Subsidize Monthly Fares**

*Fares should be subsidized by approximately \$60 per nondriver passenger per month and pools should set their own fares to cover related lease payments and fuel costs..*

There are several real and/or perceived disadvantages associated with vanpooling (less comfort, longer ride times, loss of freedom, etc.). Some of these items may be addressed directly by various program design features while others are best addressed via competitive pricing. For a variety of reasons, what works in one part of the country may not necessarily work somewhere else.

As stated in the Federal Transit Administration’s 2005 Transit Cooperative Research Program report on vanpools, vanpooling does not lend itself to quantitative analyses and empirical evidence may be the best means of establishing direction and scale (Evans and Pratt). Trial and error may be the ultimate test and North Dakota should especially monitor both its experiences and those of Fargo-Moorhead to determine what program modifications are warranted in future years.

Chapter 4’s discussions concerning existing vanpool programs included information on monthly passenger fares charged by each program. Where possible and for comparison purposes, this information focused on pools which travel a total of 50 miles per day. Pool sizes vary widely depending on the size vehicles used by each program. Table 7.2 summarizes the fare information presented in Chapter 4.

Some of the vanpool programs discussed in Chapter 4 charge a monthly rate plus the cost of fuel. Where fuel expenses represent a supplemental expense for passengers, monthly fare amounts in Table 7.2 are adjusted to reflect these costs based on gasoline at \$2.50 per gallon; a price that was representative of prices in effect when fare information was obtained from the programs listed. Fargo-Moorhead’s program initiated service in September 2005; its fare is calculated as if fuel was available at a price comparable to the other programs listed.

**Table 7.2 Monthly Passenger Fares**

<b>Program / Operator</b>	<b>Daily Mileage</b>	<b>Paying Passengers</b>	<b>Fare with Fuel*</b>
Boise/County	50	12	\$80
Colorado Springs / City	80	7	\$85
Connecticut / State DOT	50	11	\$100
Denver / Council of Government	50	6	\$85
Fargo / Council of Government	50	8	\$142
Ft. Collins / Metro Planning Org.	50	7	\$70-\$80
Hawaii / State DOT	50	14	\$65-\$82
Maine / State DOT	50	8	\$54
Michigan / State DOT	50	6	\$73
Missoula / Trans. Mgmt. Assoc.	50	12	\$76
New Jersey / State Transit Authority	50	11	\$76
Twin Cities / Council of Government	50	11	\$83
Utah / State Transit Authority	50	10	\$50

\* Fare amounts were adjusted to include estimated fuel costs if those costs are not included in the monthly fare charged by the program’s operator.

It should be noted that the monthly fares reported in Table 7.2 are not fully allocated costs. As discussed in Chapter 4, these fares represent the amount that passengers are charged. In many instances a portion of the costs are paid by the sponsoring program – a subsidy to encourage participation.

As discussed elsewhere in this report, vanpoolers in some areas realize cost savings beyond the differential that exists between personal vehicle operating costs vs. monthly vanpool fares. These savings relate primarily to factors such as toll and parking fees. Vanpoolers in rural areas like North Dakota typically do not achieve these savings.

It should also be noted that Fargo-Moorhead is only planning to subsidize fares during each pool’s first year of operation. Thereafter, fares will increase by slightly over 10% for riders and by over 50% for drivers. FM-COG’s fare structure is admittedly experimental and changes may be made, if necessary, to

encourage participation. Based on the comparisons presented in Table 7.2, higher fare subsidies may be necessary.

As reported earlier, vanpool fares are relatively inelastic – once passengers are committed to vanpooling, they are not likely to return to commuting via automobile because of modest fare increases. Attractive fares may, however, be required to achieve initial involvement.

As discussed in Chapter 4, some programs require that pool participants pay the cost of fuel. Excluding the two lowest fares in Table 7.2 (programs which use state fleet fuel and mechanics and Fargo's admittedly experimental fare) produces an average monthly fare of approximately \$81, including fuel. Reducing this monthly total by the cost of fuel produces a monthly fare of approximately \$56.

As indicated in Table 2.1, it costs about \$189 to commute to work in a single-occupant automobile, assuming a 50-mile daily round trip and fuel at \$2.50 per gallon. The program's summarized in Table 7.2 do, therefore produce significant financial savings for participants. Additional tax-related, toll, and parking savings may also result.

Based on anticipated average monthly leases of \$1,250 per month and the \$60 per passenger monthly subsidy, a pool with seven paying passengers would incur monthly lease-related payments totaling \$830 or approximately \$120 per passenger per month. Subsidy payments would total \$420 per month (\$60 for each of seven paying passengers). By way of comparison, the Twin Cities' vanpool program discussed in Chapter 4 provides an average monthly subsidy of \$690 to its pools.

This \$120 monthly fare for a 50-mile daily roundtrip is considerably higher than the fares summarized in Table 7.2. It may, however, be inadvisable to undercut those being initially charged by Fargo-Moorhead's new program. This fare, plus anticipated fuel costs, would still produce monthly vanpool vs. private automobile savings of nearly \$50 (25%) for participating commuters.

As discussed in Chapter 3, additional tax savings of up to \$35 per month may be achievable for some participants. Time will tell if this savings and other vanpool advantages are significant enough to entice commuters to forego the independence associated with commuting via personal automobile. Participation should be monitored to make a more accurate assessment.

A later subsection will recommend that monthly passenger fares be set on a per vehicle, rather than a per passenger, basis. This approach would provide incentives for pools to operate at full capacity and to thereby reduce actual monthly fares below the level discussed in preceding paragraphs. Further related discussions will be presented in a subsequent subsection of this chapter; corresponding fare information will be presented in Tables 7.3 and 7.4.

It is also recommended that each pool be allowed to set its own monthly fare to cover related lease payments and fuel costs. Most of the vanpool programs discussed in Chapter 4 prescribe monthly lease rates; some include the cost of fuel in quoted rates and some do not. Administrative burdens and budgetary risks obviously occur when quoted rates include fuel costs, especially when prices fluctuate as they did throughout 2005. These problems can be avoided by charging pools a set rate which covers all nonfuel expenses. Pool members should then assess themselves whatever is required to cover this lease expense plus the cost of fuel; adjustments can be made as each pool's situation dictates.

Based on an average subsidy of \$420 per pool per month, the program would incur related subsidy costs of \$5,040 per pool per year. Assuming 10 start-ups per year, Year One subsidy costs would total \$50,400. Year Two costs would equal \$100,800 and Year Three costs would total \$151,200.



### **7.3.3 Recommendation – Subsidize Drivers**

*Drivers should ride free of charge and be able to use the vehicle for personal use of up to 10% of its total mileage, as long as that use does not interfere with the vanpool's needs. Up to two backup drivers per pool should receive an annual subsidy of \$100.*

North Dakota should draw from the experiences of other programs and allow drivers to ride free. This compensation is in recognition of the responsibilities undertaken by drivers. These responsibilities include driving, recruiting riders, scheduling maintenance, collecting and remitting fees, and satisfying reporting requirements. Backup drivers should also be compensated for their services.

The cost of subsidizing primary drivers will not increase program costs beyond those discussed in the previous subsection since those costs are based on recovering all unsubsidized lease payments from each pool's passengers. Spreading those subsidies out over all the passengers in each pool, both driver and passengers, does, however, actually reduce per passenger subsidies from \$60 per passenger per month to \$51.25 per passenger per month.

The proposed \$100 per year subsidy for up to two backup drivers per pool would cost the program \$2,000 in Year One, \$4,000 in Year Two, and \$6,000 in Year Three.

### **7.3.4 Recommendation – Subsidize Empty Seats**

*The program should make allowances for costs associated with vacant seats. Fare structures should be based on the assumption that all vehicles will operate with one vacant seat. The program should pay for the cost of any additional vacant seats for up to one month after the seat becomes vacant. Thereafter, riders would experience a fare increase until that seat is filled. Exceptions could be made for extenuating circumstances.*

Requiring passengers to bear the cost of empty seats would discourage participation. The program should give pools up to one month to fill vacant seats and to thereby avoid related expenses. Corresponding subsidies could be limited to \$300 per pool per year to control costs and to encourage aggressive recruitment by pool riders when vacancies occur. Assuming a \$300 empty seat subsidy payment per pool per year, a ten-pool program would incur corresponding costs of \$3,000 annually.

### **7.3.5 Recommendation – Calculate Fares on a Per Vehicle Basis**

*Passenger fares should be calculated on a per vehicle basis based on the assumption that drivers ride free and that one seat will be vacant at all times.*

Establishing a fare structure on a per passenger basis would require the program to estimate how many passengers would be riding in each vehicle. This approach would produce obvious shortfalls if vans run at less than projected levels. It would also provide riders with no incentives to recruit additional passengers when vacancies occur.

To address these deficiencies, it may be beneficial to quote passenger fares on a per vehicle basis. Corresponding fares could be calculated based on the assumptions that drivers ride free of charge and that one seat would be vacant at all times. Doing so would encourage pools to operate with no vacant seats

and to thereby reduce actual monthly fares below projected levels. This approach would also negate the need for other incentives designed to encourage riders to recruit new participants to fill vacant seats.

Table 7.3 presents a hypothetical monthly per vehicle fee schedule based on the approximate vehicle lease being charged the new Fargo-Moorhead program by VPSI. These monthly lease costs are then reduced by \$60 per passenger, based on the assumptions that drivers ride free of charge and that there will be one vacant seat in every vehicle at all times. The end results of these calculations are monthly fee amounts that would be required from each of the various size vans identified in Table 7.3.

**Table 7.3 Hypothetical per Vehicle Monthly Fees**  
**Monthly Lease / Monthly Subsidy / Monthly Vehicle Fee**

<b>Daily Mileage</b>	<b>7-Passenger Minivan</b>	<b>8-Passenger Branch Seats</b>	<b>9-Passenger Individual Seats</b>	<b>12-Passenger Bench</b>
0-30	\$1140/\$300/\$840	\$1140/\$360/\$780	\$1190/\$420/\$770	\$1190/\$600/\$590
31-60	\$1200/\$300/\$900	\$1200/\$360/\$840	\$1250/\$420/\$830	\$1250/\$600/\$650
61-90	\$1300/\$300/\$1000	\$1300/\$360/\$940	\$1350/\$420/\$930	\$1350/\$600/\$750
91-120	\$1480/\$300/\$1180	\$1480/\$360/\$1120	\$1530/\$420/\$1110	\$1530/\$600/\$930
121-150	\$1600/\$300/\$1300	\$1600/\$360/\$1240	\$1700/\$420/\$1280	\$1700/\$600/\$1100
151-180	\$1750/\$300/\$1450	\$1750/\$360/\$1390	\$1850/\$420/\$1430	\$1850/\$600/\$1250
Over 180	Pricing Determined on a Case-by-Case Basis			

As per the recommended fee per vehicle approach, vanpools would be required to remit monthly payments equivalent to the amounts shown in Table 7.3. Each pool would calculate its per passenger fees based on the number of passengers in the pool.

As indicated earlier, the subsidies and fee amounts in Table 7.3 are based on the assumptions that drivers rider free of charge and that there will be one vacant seat in each pool at all times. Table 7.4 is an extension of Table 7.3 in that it divides each pool’s monthly vehicle fee by the number of paying passengers in each pool to determine each passenger’s monthly fare. The table also calculates what fares would be required and savings that would result if the each pool is operating at full capacity rather than with one vacant seat.

**Table 7.4 Hypothetical Per Passenger Fees  
With One Vacant Seat / With No Vacancies / Monthly Occupancy Savings  
(cost of fuel and tax benefits not included)**

Daily Mileage	7-Passenger Minivan	8-Passenger Branch Seats	9-Passenger Individual Seats	12-Passenger Bench
0-30	\$168/\$140/\$28	\$130/\$112/\$18	\$110/\$97/\$13	\$59/\$54/\$5
31-60	\$180/\$150/\$30	\$140/\$120/\$20	\$119/\$104/\$15	\$65/\$60/\$5
61-90	\$200/\$167/\$33	\$157/\$135/\$22	\$133/\$117/\$16	\$75/\$69/\$6
91-120	\$236/\$197/\$39	\$187/\$160/\$27	\$159/\$139/\$20	\$93/\$85/\$8
121-150	\$260/\$217/\$43	\$206/\$178/\$28	\$183/\$160/\$23	\$110/\$101/\$9
151-180	\$290/\$242/\$48	\$232/\$199/\$33	\$205/\$179/\$26	\$125/\$114/\$11

The hypothetical fares in Table 7.4 are based on a five-day work week and do not take fuel costs and possible tax-related savings into consideration. As presented in Chapter 2's Table 2.2, fuel costs for a van that travels 50 round-trip miles per month would total approximately \$229 per month, assuming fuel priced at \$2.50 per gallon. For a pool with seven paying passengers, this expense would increase monthly commuting costs by about \$32.70 per month. As discussed in Chapter 3, participants with access to tax savings related to flexible spending accounts might experience offsetting savings of \$35 per month.

The fares presented in Table 7.4 are higher than many of the fares being charged by the programs reviewed in Chapter 4, as summarized in Table 7.2. As indicated earlier, vanpoolers in urban areas save additional money in ways that North Dakotans would not, most notably via reduced parking and toll fees.

Table 7.5 presents a comparison of the personal automobile operating costs originally presented in Table 2.1 and hypothetical vanpool fares for a nine-passenger van, as described in Table 7.4, with one vacant seat. The costs presented in Table 7.4 are based on 50 miles per day and are adjusted to include the cost of fuel. Additional van savings of \$15 per month would be realized by passengers if they recruit to keep the vehicle running at full capacity.

**Table 7.5 Private Automobile vs. Vanpool – 50-Mile Cost Comparison  
Automobile Costs / Vanpool Fare With Fuel / Vanpool Cost Advantage**

Fuel Cost	Private 9- Passenger Auto	Van with Fuel	Van Monthly Cost Advantage	Van Advantage Post-Tax
\$1.75 / gal.	\$156	\$139	\$17	\$ 52
\$2.00 / gal.	\$168	\$142	\$26	\$ 61
\$2.25 / gal.	\$178	\$144	\$34	\$ 69
\$2.50 / gal.	\$189	\$147	\$42	\$ 77
\$2.75/ gal.	\$200	\$150	\$50	\$ 85
\$3.00 / gal.	\$211	\$152	\$59	\$ 94
\$3.25 / gal.	\$222	\$155	\$67	\$102

As Table 7.5 illustrates, the vanpool cost advantage over private, single-occupant automobiles increases along with fuel prices. Similar occurrences result as daily mileages and/or occupancy numbers increase.

As a result of the relatively high fares being proposed and the lack of these other cost-saving factors, North Dakota's vanpool program may not be as attractive as those operated in other areas. As Table 7.5

illustrates, however, these fares do represent a significant savings versus the cost of commuting in a single-occupant vehicle. As is the case with all of the vanpool programs discussed in Chapter 4, only time will tell if the proposed fare schedule and related incentives are significant enough to lure commuters out of their personal automobiles.

### **7.3.6 Recommendation – Easy Termination**

*Program participants should be allowed to cancel their pool rider agreement with 30- days notice.*

Requiring vanpool drivers or riders to enter into long-term commitments regarding their participation in a vanpool would create a significant program disincentive. None of the programs discussed in Chapter 4 required termination notices of more than 30 days. North Dakota's vanpool program should be constructed in a similar manner.

### **7.3.7 Recommendation – Emergency Rides Home**

*North Dakota's vanpool program should include a guaranteed ride home feature to provide riders a guaranteed ride home up to twice a year in case of emergency.*

As is the case with short-term cancellation provisions, virtually all of the vanpool programs discussed in Chapter 4 have provisions which provide riders with a way to get home during the workday in case of emergency. Most of these programs use transit, taxis, or rental cars; in some cases employers provide vehicles to accommodate such trips.

The means used to provide guaranteed rides will, in many instances, be dictated by the services available at the worksite. All of North Dakota's cities with populations of 5,000 or more have local taxi operators and presumably have auto dealerships that would be willing and able to rent vehicles on an emergency basis. Employers that are located in rural areas may not, however, have access to transit or taxi services. Local car dealerships could, in some instances, be called on to rent vehicles on a per-day basis. In other instances, the program may need to work with employers regarding the use of company vehicles.

None of the programs discussed in Chapter 4 reported any abuses regarding the use of their guaranteed ride home program. Most do, however, place limits on participant utilization of the program. Two trips per year and a maximum of \$50 per trip may be reasonable. Corresponding agreements should be worked out, in advance, with local taxi operators, rental car companies, or auto dealerships.

As indicated earlier, the state and local vanpool programs discussed in Chapter 4 considered their guaranteed ride home programs vital but they were, nonetheless, seldom used. Assuming a utilization rate of one per rider per year and a per use cost of \$50, such a program would have an annual cost of \$400 for a pool with eight riders, including the driver. A state program with ten pools would have an associated annual expense of \$4,000.

### **7.3.8 Recommendation–Safety and Accountability**

*To promote program safety and sound pool management, driving record and credit checks should be performed on all primary drivers. Additional driving record checks should be performed on each pool's backup drivers. All primary and backup drivers should be required to take a defensive driving course prior to driving and at least once every four years thereafter.*

Several of the state and local vanpool programs discussed in Chapter 4 require that primary drivers undergo satisfactory driving and credit records checks prior to undertaking their driving duties. The need for a good driving record is self-explanatory. Having a good credit check relates to the individual's responsibilities regarding fee collections and remittances and overall trustworthiness. North Dakota's vanpool should impose similar requirements.

As is the case with primary drivers, most vanpool programs require that backup drivers have good driving records and that all drivers, both primary and backup, regularly attend a defensive driving course. North Dakota should have similar requirements. Defensive driving courses should be attend at least every four years – a schedule that is consistent with that required of state employees by NDDOT's Fleet Services Division.

It was recommended earlier that North Dakota's program avoid the use of 15-passenger vans. If that size vehicle is used, however, it is recommended that drivers have either a commercial driver's license or take a corresponding safety course. These requirements are consistent with NDDOT mandates regarding the use of Fleet Services' 15-passenger vans.

## **7.4 Program Marketing**

### **7.4.1 Recommendation – Work through Major Employers to Promote Program**

*North Dakota's vanpool program, if reestablished, should focus its promotional efforts on major employers.*

*Experiences with these employers and their employees may suggest that certain program refinements are warranted. It is also expected that related successes would create more widespread interest within the state's business community.*

*In addition to marketing the program directly to and via major employers, efforts should be made to educate other employers via associations such as the North Dakota Chamber of Commerce, local affiliate organizations, etc. Press release and other publicity mechanisms should also be used to reach not only the business community but the general public.*

Employer participation is not critical for a vanpool program to succeed but it is necessary for some commuters to achieve maximum benefits. This requirement is predicated on tax-related benefits that can be accessed by vanpoolers only if their employer has a flexible spending account program as described in Chapter 3 and if the program provides for deductions for commuting expenses.

As indicated in Chapter 3, related tax savings equal approximately \$35 per month for an employee who spends at least \$105 per month for vanpool fares. Participating employers also realize savings as a result

of lower taxable salaries and related obligations related to Social Security, unemployment taxes, etc. Annual savings may approach \$175 per participating employee.

As explained in Chapter 5, additional employer support may come in many forms. Common support mechanisms include information dissemination, preferential parking, flexible work hours, use of company vehicle in case of mid-day emergencies, ride-matching service to identify potential pool participants, or even direct subsidies to encourage participation.

Working through major employers is one way to promote vanpooling to a significant number of employees with relatively minor costs. These employers also have the largest concentrations of employees with common work schedules – a feature that facilitates vanpooling. They also have information regarding home addresses and can help identify workers who might be commuting over similar routes – another factor that is a prerequisite for vanpools.

## **7.5 Monitoring**

### **7.5.1 Recommendation – Monitor Program Achievements and Costs and Redesign to Achieve Maximum Efficiencies and Results**

*North Dakota's vanpool program should be monitored closely and redesigned, as appropriate, to achieve maximum efficiencies and results.*

The preceding recommendations call for the implementation of a turnkey vanpool program which uses a commercial vanpool company to initiate service. Subsidies comparable to those charged by Fargo-Moorhead are proposed to encourage participation.

It is unknown whether or not the proposed subsidies will be sufficient to encourage participation and it appears that program costs might be lower if the program transitions to one that is operated in-house. Ongoing assessments of both North Dakota's program as well as the one recently established by Fargo-Moorhead should be made to determine what level of rates is necessary to achieve desired levels of participation. Additional assessments should be made to determine what program features should be managed directly by the state (vehicle acquisitions, maintenance, fuel purchases, insurance, etc.) to reduce program costs and subsidy levels. Reduced program costs may also permit higher subsidies and higher participation without a corresponding increase in overall subsidies.

## **7.6 Cost Estimates**

As discussed in the preceding sections of this chapter, total program costs are going to depend on a number of factors including lease rates, trip lengths, the number of pools in operation, the level of subsidy provided to each pool, administrative manpower needs (internal or contracted), and program marketing expenditures. Based on the assumptions outlined earlier, it is estimated that fare subsidies will equal about \$410 per pool per month or about \$4,920 per pool year.

It was suggested earlier that North Dakota set a goal of establishing ten vanpools per year for each of the next three years. Based on this goal and the annual costs outlined above, Year Two fare subsidies would total \$98,400 and Year Three fare subsidies would equal \$147,600. Total projected program costs are presented in Table 7.5.

**Table 7.5 Projected Program Costs**

<b>Expense Item</b>	<b>Year One</b>	<b>Year Two</b>	<b>Year Three</b>
Contract management	\$ 15,000	\$ 30,000	\$ 45,000
Internal Staffing (1/4 time)	\$ 13,500	\$ 13,500	\$ 13,500
Operating Expenses	\$ 27,000	\$ 13,500	\$ 13,500
Vehicle Lease Subsidies	\$ 50,400	\$100,800	\$151,200
Backup Driver Subsidies	\$ 2,000	\$ 4,000	\$ 6,000
Empty Seat Subsidies	\$ 3,000	\$ 6,000	\$ 9,000
Guaranteed Rides Home	\$ 4,000	\$ 8,000	\$ 12,000
Total Expenses	\$114,900	\$175,600	\$250,200
Subsidy per Ride	\$ 2.73	\$ 2.08	\$ 1.98

Ft. Collins' vanpool program, as described in Chapter 4, operates with an occupancy rate of nearly 90%. Assuming a similar rate in North Dakota and vans with an average capacity of nine, a ten-pool program would provide 42,120 rides annually. As indicated in Table 7.5, the subsidy per ride during Year One would equal approximately \$2.73. Subsequent years' subsidies would drop to \$2.08 and \$1.98, respectively.

By way of comparison, in 2004 the average subsidy per trip for all of North Dakota's publicly supported transit systems was \$2.91 per one-way trip. Per trip subsidies for the state's fixed route transit systems ranged between \$2.76 and \$2.91. (Mielke, Miller, Ripplinger, Peterson, and Hough). As a component of a comprehensive personal mobility plan, vanpooling has the potential to operate at significantly lower per ride subsidies than other transportation service options.

## **7.7 Sequence of Events**

Based on the recommendations set forth in the preceding portions of this chapter, the following sequence of events might be considered for program implementation:

- Recommendations adopted.
- Funding sources identified and committed.
- Staff assigned to implement and administer program.
- Request for proposals prepared and sent to commercial service providers.
- Draft informational brochure and program guidelines prepared.
- Commercial service proposal selected and contract executed.
- Program guidelines finalized in conjunction with contractor.
- Informational brochure finalized and printed.
- Promotional efforts initiated and pools formed.
- Program administration, promotional efforts, and monitoring continue.
- Program reassessments made and modifications implemented.

Based on Fargo-Moorhead's recent experiences, it is anticipated that as little as three to six months may be required to initiate service.

## 7.8 Summary

In a traditional sense, vanpooling is a way to conserve energy and reduce commuting costs, pollution, traffic, and parking congestion. In a broader sense, vanpooling does all these plus it augments a community's comprehensive personal mobility program and provides commuters with alternate means of getting to and from work.

Vanpooling is especially attractive in urban areas where participants save money not only via the cost differential between vans and single-occupant automobiles but also as a result of lower parking fares, toll charges, etc. Additional savings are often realized as a result of governmental and/or employer subsidies and federal tax incentives.

Despite the additional advantages that may be available to urban vanpoolers, there are numerous vanpool programs in the country that operate in rural areas like North Dakota. Programs are designed to provide a combination of economic incentives and various program features that are significant enough to convince commuters to give up the personal freedoms associated with commuting in their private automobiles.

Vanpooling began in earnest in the 1970s and experienced significant growth through the mid-1980s; North Dakota was a part of that growth. Falling fuel prices and interest rates, along with concerns related to employer liability, caused vanpool numbers to decline from the mid-1980s through the 1990s. That trend has, however, been reversed and national vanpool numbers are rising again.

This resurgence in vanpool numbers relates to rising energy prices, new federal incentives which encourage vanpooling, and a trend that has related programs being operated by state and local units of government and local transportation management organizations. New program operating models have addressed the liability concerns of older, employer-run programs and new program features are making commuting via vanpool more and more attractive.

The federal government's involvement with vanpooling includes not only the tax incentives mentioned above but also latitude which allows state and local units of government to utilize various sources of federal money to underwrite all or a portion of the costs associated with their programs. These monies are not, however, set aside specifically for vanpooling. Rather, vanpooling must compete with other programs to achieve a priority which convinces state and local policymakers that some of these funds should, in fact, be used to encourage commuting via vanpool.

North Dakota has access to federal funds to reestablish a commuter vanpool program in the state. A survey of major employers and subsequent visits with affirmative respondents suggests that there may be sufficient interest to warrant such an action.

Many of the state and local vanpool programs that operate around the country do so with a wide variety of related services being provided by the sponsoring entity. These services include vehicle procurement, tax-free fuel purchases, government-provided liability insurance, and vehicle maintenance via government mechanics. This management and operational structure depicts a significant commitment on the part of program sponsors and helps the programs achieve some of the lowest fares in the country.

These programs did not, however, start overnight. In some cases, they have been operating continuously for several decades. Other programs, either as a factor of age, resources, or philosophy, use a different tactical approach and contract for services from other governmental entities, non-profit organizations, or commercial service providers.



In North Dakota's case, perhaps the quickest and most risk-free way to initiate service would be to contract with a commercial service provider. There are two major commercial vanpool operators in the United States; one operates over 4,100 vanpools and the other operates over 1,000. Their monthly lease rates appear, at first glance, to be relatively high but they do include things such as vehicle maintenance and liability insurance. Related services also come with little risk given the fact that individual pools or even the entire program may be terminated with little notice.

As the preceding paragraph suggests, vanpool programs that use commercial service providers tend to pay higher subsidies to offset the relatively higher costs associated with such services. These higher subsidies are necessary in order to make the programs competitive with private automobile commuting costs. A review of several vanpool programs around the country indicates that vanpool prices must typically be significantly below private car costs in order to entice commuters to give up the personal freedoms associated with driving alone.

It is recommended that North Dakota reestablish a commuter vanpool program and that it do so with services provided by a commercial vanpool operator. The program should be run on a three-year experimental basis. Related costs and utilization should then be reassessed and a determination made concerning its continuance. At that point, the state would also be in a better position to decide what types of modifications might be appropriate, up to and including the provision of related goods and services via state procurement contracts and state personnel.

The end results of this phase-in approach would be an enhanced personal mobility program for state residents, increased viability for rural communities and employers, and the achievement of many of the attributes that are traditionally associated with ridesharing via vanpool. This approach will also put the state in a better position to determine if its residents and its business community want and need vanpooling. The responses from both should ultimately determine what, if any, long-term role the state should play in commuter vanpooling.

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# APPENDIX A. Employer Questionnaire

May, 2005

Dear Employer:

Vanpooling may be the solution to some of the problems faced by your business and some of your employees. Vanpooling has the potential to:

- Reduce employee commuting costs,
- Provide tax benefits for both employees and employers,
- Improve employee morale and on-time performance,
- Reduce traffic and parking congestion,
- Assist employer recruiting and retention efforts, and
- Protect the environment – save fuel & reduce pollution.

Additional information on potential employer and employee tax benefits is attached.

NDSU's Small Urban & Rural Transit Center (SURTC), in cooperation with the North Dakota Department of Commerce, is surveying major employers in North Dakota to determine if there is a need and willingness on the part of employees, employers, and others to promote vanpooling as a way of commuting to and from work.

We would appreciate your assistance in this effort. Please take a few minutes to complete the enclosed survey and return it to us in the enclosed envelope. A prompt response would be appreciated.

SURTC is in the process of compiling related information on organizing vanpools, purchase / lease options, model operating guidelines, tax benefits, promotional efforts, etc. This information will be shared with interested employers and subsequent meetings could be held to further promote and hopefully help establish commuter vanpools.

Please note that vanpools do not necessarily require a financial commitment on the part of an employer. While related tax benefits do require employer involvement, other benefits may result with little more than encouragement.

We are looking forward to receiving your input.

Sincerely,

Jon Mielke  
SURTC

## **Vanpooling Tax Benefits for Commuters and Employers**

The Transportation Equity Act for the 21<sup>st</sup> Century amended the federal tax code (IRS Code Section 132 f) to create tax advantages for employer-sponsored commuter incentive programs. According to the Association for Commuter Transportation (<http://tmi.cob.fsu.edu/act/taxbenefit.htm>), the following benefits are available:

### **Employer Tax Benefit**

Employers have two options, both of which save them money. Under the first option, employers can give their employees up to \$100 / month to commute via vanpool; employee salaries are reduced by a corresponding amount. Employers experience related payroll tax savings.

The second option is to allow employees to use pre-tax income (flex comp) to pay up to \$100 for vanpooling. Again, employers save on related payroll taxes.

### **Employee Tax Benefits**

Employee tax benefits are directly related to the employer benefits outlined above. Under either option, employees pay vanpool commuting costs, either directly or indirectly, with pre-tax dollars and realize relative income tax savings.

Vanpooling may, therefore, reduce commuting costs in two ways. First, by sharing a ride and related expenses, commuting costs may be reduced significantly. Additional savings of 25-30% may be realized as a result of the tax benefits outlined above.

This information is provided for only general informational purposes. Tax advisors and payroll officers should be consulted for actual tax and payroll benefits and advice.

## Vanpool Questionnaire

How many people does your company employ in North Dakota?

- \_\_\_\_\_ Less than 10
- \_\_\_\_\_ 10 – 24
- \_\_\_\_\_ 25 – 49
- \_\_\_\_\_ 50 – 100
- \_\_\_\_\_ Over 100 (Please specify: \_\_\_\_\_)

How many business locations does your company have in North Dakota?

- \_\_\_\_\_ 1
- \_\_\_\_\_ 2
- \_\_\_\_\_ 3
- \_\_\_\_\_ 4
- \_\_\_\_\_ 5 or more

Approximately how many of your employees commute more than 15 miles one-way to work?

- \_\_\_\_\_ Less than 10
- \_\_\_\_\_ 10 – 24
- \_\_\_\_\_ 25 – 49
- \_\_\_\_\_ 50 – 100
- \_\_\_\_\_ Over 100 (Please specify: \_\_\_\_\_)
- \_\_\_\_\_ Unknown

Approximately what percentage of your employees work regular shifts with little unscheduled overtime?

- \_\_\_\_\_ Less than 10%
- \_\_\_\_\_ 10 – 24%
- \_\_\_\_\_ 25 – 49%
- \_\_\_\_\_ 50 – 100%

Would your company be willing to promote vanpooling to its employees?

- \_\_\_\_\_ Yes
- \_\_\_\_\_ No
- \_\_\_\_\_ Unknown

Would your company consider the provision of incentives to encourage employees to vanpool (check all those that may be considered):

- Preferential parking
- Use of company vehicle for emergency trips home
- Employee-paid benefit option (flex comp)
- Employer-paid benefit option (in lieu of salary – saves both employer and employee after-tax money)
- Employer provided van (repayment with monthly rider fares)
- Other (please elaborate)

Additional Comments:

If your company would like to hear more about commuter vanpooling as this project progresses, please provide us with a contact person.

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Phone Number: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_

Whether your company is interested or not, **please return** your completed questionnaire in the enclosed envelope to SURTC Box 5074, Fargo, ND 58105.

*Thank you for your cooperation!*



June 30, 2005

Dear Employer:

In late May we sent you the enclosed informational letter and questionnaire concerning commuter vanpooling. As you may recall, NDSU's Small Urban & Rural Transit Center and the North Dakota Department of Commerce are surveying major employers in North Dakota to determine if there is a need and willingness on the part of employees, employers, and others to promote vanpooling as a way of commuting to and from work.

We are sending this reminder notice and asking that you take a few minutes to complete and return the enclosed questionnaire. If you have already responded, please disregard this letter and accept our thanks for your cooperation.

A self-addressed, stamped envelope is also enclosed for your use.

Sincerely,

Jon Mielke  
SURTC Researcher

Enclosure

## APPENDIX B. Implementation/Promotional Materials

This appendix presents information on a variety of implementation and promotional materials that are used by various vanpool programs around the country. Given the fact that many of these materials are somewhat voluminous and difficult to reproduce in a report format, they are summarized in narrative form and information is presented concerning its Internet availability.

### **Establishing and Maintaining a Successful Car or Vanpool**

Metro Commuter Services – Twin Cities, Minnesota  
<http://www.metrocommuterservices.org/ridesharing.htm>

This document presents general information on how to organize a vanpool and establish rules to govern its subsequent operations.

### **Starter Kit**

Metro Vanpool – King County, Washington  
<http://transit.metrokc.gov/tops/van-car/vp-starterkit.html>

This Internet site contains a wide variety of start-up information for individuals who are potentially interested in starting a vanpool (sample recruiting posters, application forms, participant agreements, etc.).

### **Promotional Brochure**

Metro Commuter Services – Twin Cities, Minnesota  
[http://www.metrocommuterservices.org/van\\_go.htm](http://www.metrocommuterservices.org/van_go.htm)

This document is an online version of this program's promotional brochure. It outlines passenger and driver benefits and cost comparisons.

### **Vehicle Amenities**

Enterprise Rideshare / Rent-A-Car  
<http://www.vanpool.com/sitemap.shtml>

This Internet site presents information on this commercial service provider's available vehicle sizes and amenities and estimated passenger fares.

### **Fares**

Kitsap Transit – King County, Washington  
<http://www.kitsaptransit.org/Vanpool/VanpoolFares.html>

This Internet site presents a sample rate sheet that shows monthly vanpool fares for various length commutes in a variety of vehicle sizes.

### **Frequently Asked Questions**

Smart Trips – Ft. Collins, Colorado

<http://www.smarttrips.org/vanpool/vanpoolingFAQs.aspx>

This site contains a number of documents, each of which addresses questions that are frequently asked by potential vanpool participants.

### **Driver Application Form and Driver Qualification Information**

VPSI, Inc. – Honolulu, Hawaii

[http://www.vanpoolhawaii.com/vanpool/get\\_started/commuter.htm](http://www.vanpoolhawaii.com/vanpool/get_started/commuter.htm)

This document sets forth driver qualifications and contains an application form that must be filled out by primary and secondary vanpool drivers. The file also contains a consent form regarding the release of driving record and credit rating information.

### **Rider and Driver Agreement**

Kitsap Transit – King County, Washington

<http://www.kitsaptransit.org/Vanpool/driverspackage/VanpoolAgreement.doc>

This agreement, which is executed by each driver and rider and the vanpool authority, outlines the rights and responsibilities of each party in the program.

### **Vanpool Driver Handbook**

Triangle Transit Authority – Raleigh, North Carolina

[http://www.ridetta.org/Ride\\_Sharing/Vanpool/documents/vanDriverHandbook.pdf](http://www.ridetta.org/Ride_Sharing/Vanpool/documents/vanDriverHandbook.pdf)

This driver manual contains information concerning driver responsibilities, vehicle maintenance, fare collections, accident procedures, and etiquette.

### **Rider Wanted Poster**

Triangle Transit Authority – Raleigh, North Carolina

[http://www.ridetta.org/Ride\\_Sharing/Vanpool/documents/ridersWantedFlyer.pdf](http://www.ridetta.org/Ride_Sharing/Vanpool/documents/ridersWantedFlyer.pdf)

This Internet site contains a poster that may be used by vanpool organizers and participants to recruit riders.

### **Vanpool Routes and Contact Information**

Valley Vanpool – Salem, Oregon

[http://www.cwride.org/vanpool\\_routes.htm](http://www.cwride.org/vanpool_routes.htm)

This Internet site identifies vanpool routes that are a part of this program and presents contact, fare, and operational information concerning each pool.

### **Monthly Vanpool Log**

VPSI Commuter Services - Minneapolis, Minneapolis

<http://www.metrocommuterservices.org/mvl.pdf>

This form may be used by vanpool drivers to record daily usage by pool passengers and vehicle usage.

### **Vanpool Newsletter**

Vanpool Hawaii – Honolulu, Hawaii

[http://www.vanpoolhawaii.com/myvanpool/newsletters/2002\\_holiday.pdf](http://www.vanpoolhawaii.com/myvanpool/newsletters/2002_holiday.pdf)

This Internet site presents a sample newsletter that is published by Hawaii's vanpool program for the program's participants.

### **Employer Promotional Materials – Best Workplaces for Commuters**

U.S. Department of Transportation and U.S. Environmental Protection Agency

[http://www.bwc.gov/empkit/kit\\_section4.htm](http://www.bwc.gov/empkit/kit_section4.htm)

This Internet site contains a number of toolkits to help employers promote their ridesharing programs to employee and to publicize their efforts to the community.

### **Employer Services**

Go Maine Commuter Connections – Portland, Maine

<http://www.gomaine.org/employer/index.html>

This document contains promotional information to encourage employer participation in the state's commuter services program.

### **Employer Programs**

Metro Commuter Services – Twin Cities, Minnesota

[http://www.metrocommuterservices.org/general\\_info.htm](http://www.metrocommuterservices.org/general_info.htm)

This Internet site outlines services that are available to help employers who are interested in promoting vanpooling to their employees.

### **Commuter Benefits Programs**

Transit Cooperative Research Program – Federal Transit Administration

[http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_87.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_87.pdf)

This 2003 report identifies federal tax-related incentives that are available to help promote ridesharing and suggests strategies for encouraging utilization.

### **Vanpool Pricing and Financing Guide**

Florida Department of Transportation and Federal Highway Administration

[http://www.cutr.usf.edu/tdm/pdf/Vanpool\\_values.pdf](http://www.cutr.usf.edu/tdm/pdf/Vanpool_values.pdf)

This 2000 study by the University of Southern Florida analyzes the operations of a number of local vanpool programs and presents information on operating costs and pricing strategies.