

Rural Public Transportation in Alaska: Present and Future Options

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Environmental conditions and the isolation of communities in Alaska impose unique constraints on transportation. As a result, public transportation plays a more important role than would be experienced elsewhere. The objectives of this paper are to report on a study conducted to obtain general information on the type of transit and paratransit service options currently utilized in rural Alaska and to discuss issues related to future implementation of public transportation as well as future studies and information exchange. It was found that a wide range of options was utilized. Although it is not surprising that a taxi service is found in very small communities, the existence of a regular bus service there is unexpected. However, there is room for further implementation of public transportation in Alaska. Documentation on the use of public transportation in rural Alaska is largely nonexistent. Communities in Alaska could benefit greatly from the dissemination of public transportation case studies. These studies include the organization and regulation of public transportation, joint use of vehicles, and increased use of public transportation during emergencies and periods of inclement weather. The Rural Technology Transfer Program of the Federal Transit Administration could play a valuable role in the exchange of useful information.

The objectives of this paper are to report on a study conducted to obtain general information on the type of transit and paratransit service options currently utilized in rural Alaska (1) and to discuss issues related to future implementation of public transportation as well as future studies and information exchange. The focus was on local and regional transit and paratransit services insofar as they benefit communities on a regular basis. Intercity public transportation was not included.

By way of introduction, it should be noted that the environmental conditions and the isolation of communities in Alaska impose unique constraints on transportation. Walking and bicycling are especially difficult during the frequent periods of inclement weather, and other forms of transportation are also severely hampered at these times. During periods of very harsh, cold weather, large numbers of vehicles are immobilized. This was, for instance, very apparent during the winter of 1988–1989 when temperatures of -60°F were not uncommon and remained below -30°F in some areas for extended periods. The result is that even those who do own vehicles experience problems with transportation.

Because of the severe weather conditions, public transportation plays a more important role in rural Alaska than would be the case in other geographic areas, and a higher level of expertise is necessary to enable transit companies to cope with such conditions.

The isolation of communities also makes the role of public transportation more important. Although no statistics on vehicle ownership were obtained, it may be surmised that isolation decreases private vehicle ownership. There is simply less reason to own a vehicle when there are not many destinations reachable by road. When travel needs do arise, the need for substitute modes of transportation, including public transportation, should increase.

Alaska's limited accessibility is demonstrated on the map of the major road system (Figure 1). Not only the very small communities but Juneau also, the third-largest community in Alaska, has no access to a regional road system.

The degree of isolation is also demonstrated by an analysis of the access that Alaskan communities have to major transportation systems. The surface transportation systems considered are regional road systems, local road systems, coastal access, and river access. A total of 258 rural communities were classified according to population (figures obtained from the Alaska Department of Community and Regional Affairs) and access to surface transportation systems (Table 1). All but a few Alaskan communities for which statistics were not available and Anchorage, which cannot be classified as rural, are included.

The results of the classification show that only 22 percent of the communities have access to a regional road system. It is also evident from the statistics that the Alaskan communities are predominantly very small, which is not conducive to having public transportation systems.

A brief outline of the study approach and some of the constraints therein will be presented before the results of the study on the utilization of public transportation service options are discussed. Next, issues related to future implementation of public transportation options as well as future studies and information exchange will be presented. Finally, a summary of the major conclusions and recommendations will be provided.

STUDY APPROACH

Methodology

Very little information and documentation exist on rural public transportation in Alaska. At the time of the study there was no central agency that collected information or regulated or monitored public transportation in Alaska. One of the primary motivations of this study was to obtain general information on existing public transportation systems that could serve as a basis for further detailed study and research.

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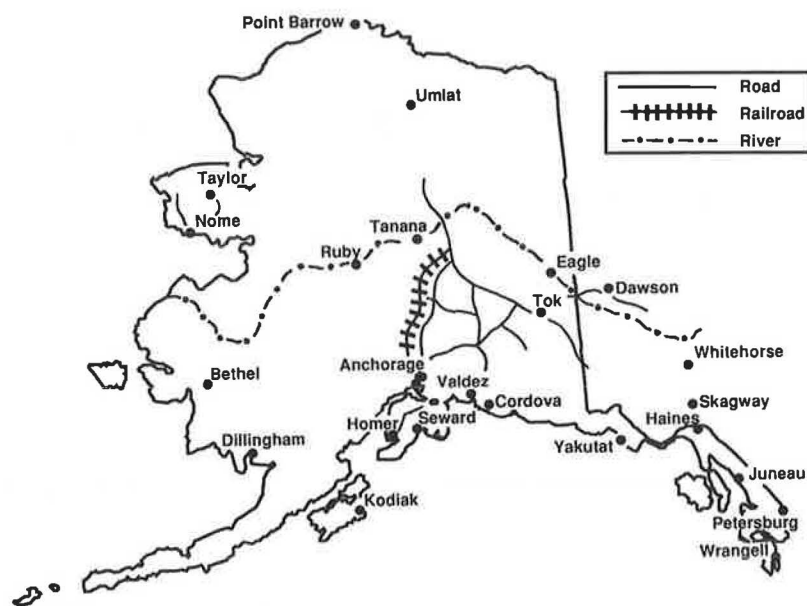


FIGURE 1 Major Alaskan road systems.

TABLE 1 SUMMARY OF ACCESS CHARACTERISTICS OF CITIES IN ALASKA

Population	Coast River						Nothing	Total
	Coast	River	RRS ^a	LRS ^b	& LRS	& LRS		
>10000	1 0.4%		1 0.4%				2 0.8%	
5000-10000	2 0.8%		1 0.4%		1 0.4%		4 1.6%	
1000-5000	8 3.1%	1 0.4%	12 4.7%		4 1.6%		25 9.7%	
200-1000	55 21.3%	35 13.6%	21 8.1%		3 1.2%	2 0.8%	117 45.4%	
0-200	48 18.6%	32 12.4%	23 8.9%	1 0.4%	2 0.8%	3 1.2%	110 42.6%	
TOTAL	114 44.2%	68 26.4%	58 22.5%	1 0.4%	10 3.9%	5 1.9%	258 100%	

^aRRS - Access to major regional road systems.^bLRS - Access to local road systems only.

For this study, it was decided to use a mail survey as the major source of information on existing public transportation systems. It was decided to send the survey to all communities in which public transportation services could be expected to exist. This included the communities in which it was known that public transportation systems were in operation as well as other communities of similar size and type.

Available documentation was reviewed to determine where public transportation systems were in existence. Personal interviews with transportation officials were used to supplement this information, since it became clear at a very early stage that very little documentation was available.

All the communities in Alaska except Anchorage were considered in the study. The Fairbanks area was retained as part

of the study sample even though its population of 60,000 exceeds the rural area population limit defined by the former Urban Mass Transportation Administration [now the Federal Transit Administration (FTA)]. FTA defines a small city or rural area as having a population of less than 50,000 (2); however, the Fairbanks population is dispersed over a relatively large area. This gives it a rural character and made it appropriate to include it in the study sample.

It should be noted that the study was carried out under some constraints. Lack of road access and the great distances between communities in Alaska make personal contact expensive. It is therefore difficult to obtain information and clarify issues. In many cases, even communication by telephone is difficult. Also, as a result of the lack of technical personnel, technical data are not collected for public transportation in many communities.

Classification of Rural Transit and Paratransit Service Options

As a basis for this study, a classification of public transportation service options was required. After consideration of several detailed classifications (2-5), the classification used in the project was simplified to the following:

- Regular transit
 - Conventional bus
 - Commuter or shuttle bus
 - Ferry
- Paratransit
 - Limousine
 - Taxicabs
 - School bus
 - Car rental
 - Charter bus
 - Carpool

- Vanpool
- Dial-a-ride bus
- Jitney
- Subscription bus
- Other shared transportation
 - Services for the elderly and handicapped
 - Other transportation for community services

Because of the small community populations, rail-based options were omitted from the classification. Both general and target market options were included, that is, those options that are available to the general public as well as those only available to specific segments of the public.

ALASKAN PUBLIC TRANSPORTATION SYSTEMS

Document Review

The only document available that focused on existing public transportation in Alaska was a report prepared by Peter Eakland and Associates (6) for the Alaska Municipal League and the Alaska Department of Transportation and Public Facilities (AKDOT&PF), which primarily addressed meetings held in communities throughout the state of Alaska. This report, together with the State Transportation Policy Plan (7), management plans for UMTA Section 18 funds (8) and Section 16(b)(2) funds (9), as well as various lists related to the funding of public transportation in Alaska, gave some information on existing public transportation systems at various dates. To illustrate, a summary of the systems existing in 1981-1982 (primarily obtained from the Eakland report and the State Transportation Policy Plan) is presented in Table 2. It should be noted that the information obtained was sometimes vague. Only those systems that were identified with a reasonable amount of certainty were included in the table. Since this information was used only as the basis for the mail survey, accuracy was not critical.

TABLE 2 EXISTING TRANSIT AND PARATRANSIT SYSTEMS (1981-82) OBTAINED FROM REVIEW OF AVAILABLE INFORMATION

	Number of Communities	Population Range
Regular Transit		
Conventional bus	11	237 - 73,540
Commuter/Shuttle bus	3	524 - 44,280
Ferry	- ^a	-
Paratransit		
Limousine	6	565 - 27,141
Taxicabs	15	712 - 44,280
School bus	14	565 - 27,141
Car rental	-	-
Charter bus	-	-
Car pool	-	-
Van pool	-	-
Dial-a-ride bus	-	-
Jitney	-	-
Subscription bus	-	-
Other shared transportation		
Services for the elderly and handicapped	2	3,705 - 4,303
Other transportation for community services	28	565 - 44,280

^aNo data reported

Results of Document Review

The document review indicated that several types of public transportation were being utilized. An important observation was that public transportation systems were operating not only in the larger centers, but also in the smaller centers. Whereas taxicab service might be expected in the small centers, it was surprising to find that a regular bus service existed not only in a large community, such as the Fairbanks North Star Borough, but also in several smaller communities. Publicly owned as well as privately owned systems were in operation.

Since the review indicated that public transportation systems existed in all types and sizes of rural communities, it was decided to include all the rural communities in the survey. As mentioned before, the lack of information necessitated that the survey be directed to obtain general information on the type of public transportation service available. This information can then be used as a basis for more detailed future studies.

Personal Interviews

Personal interviews were conducted with four AKDOT&PF transportation officials and one local authority representative. The interviews with transportation officials confirmed the conclusions reached on the basis of the document review. Some interesting facts related to public transportation in Alaska were also revealed:

1. In some communities, because of the lack of roads, water and air transportation, together with all-terrain vehicles (ATVs) and snowmobiles, is the only means of transportation available.
2. Airplanes and boats are not widely used as local public transportation. Nevertheless, there are exceptions. At least one mining company in the Juneau area transports its employees to the work site by boat on a daily basis.
3. The combination of the Alaskan physical environment, the distribution of the population over a large area, and the relative smallness of the communities has resulted in some unique forms of what may be broadly defined as paratransit. Privately owned vehicles, which include ATVs and snowmobiles, are used on a pooled basis. An example of this is an air carrier agent in some villages who makes regular trips to the airport to meet incoming airplanes and transports people either in a trailer hooked to an ATV or in the back of a truck.
4. Joint use of vehicles is made. In at least one community, Kaltag on the Yukon River, a city-owned school bus is used to convey passengers to the airport free of charge.

As a result of this preliminary analysis, it was decided to provide adequate opportunity for additional comments in the questionnaire used in the mail survey to allow for the inclusion of unusual transportation situations. It was also decided to include a question on the joint use of school buses.

Mail Survey

The primary objective of the mail survey was to determine what type of public transportation service was provided within

each community. In order to obtain a clearer picture of the service, additional data were requested. Space does not allow the inclusion of the questionnaire used in the mail survey, but the contents are summarized.

Data on the purpose of service, ownership, vehicles, seats available, operating hours, fares, ridership, routes, regulating agencies, times during the year when service is available, and general comments were obtained for the service options that were expected to be encountered frequently: conventional bus, commuter bus, ferryboat, limousine, taxicab, school bus, and car rental. For the options carpool, vanpool, charter bus, dial-a-ride, jitney, and subscription bus, the respondents were requested to check whether these types of services were available and make general comments. Additional questions were included on the availability and type of services for the handicapped and elderly, as well as on the joint use of school buses.

Since the document review indicated that public transportation systems may exist in communities of all sizes, questionnaires were sent to all 203 cities and boroughs in Alaska for which addresses were available. The questionnaires were addressed to the city or borough manager, administrator, or clerk. The responses were, in many cases, completed by another city or borough official.

Results of the Mail Survey

Seventy-seven communities returned the questionnaire. Each of the public transportation service options reported in the mail survey was cross-classified according to the factors of population (as reported in the survey) and the type of major transportation system to which the community had access. The reason for the classification was to determine if there was a correlation between these two factors and the number and types of public transportation services.

The results are presented in Tables 3 through 9 and summarized in Table 10. When two or fewer communities reported a particular service option, which was the case for ferry systems, a data table was not created. With one exception, ferry systems were part of the Alaska Marine Highway System, which primarily serves the intercity market, and therefore they did not qualify as local public transportation.

Based on the data and the comments from the respondents, some major conclusions and observations were made, some of which reaffirmed the conclusions from the document review and personal interviews:

1. A wide range of public transportation service options has been implemented. The one option that was not utilized at the time of the survey was dial-a-ride bus for the general public. However, the responses indicated that such systems were being utilized for transportation of the elderly and handicapped.
2. The data set proved to be too sparse to draw general conclusions regarding the influence of population and accessibility to major transportation systems on the increase and decrease in implementation of public transportation service options.
3. The options implemented cover a wide range of community sizes. As was found in the document review, regular bus service was reported in communities with small popula-

TABLE 3 STATISTICS FOR CONVENTIONAL BUS

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Nothing	Total
> 10,000	1		1					2 29%
5,000-10,000	1							1 14%
1,000-5,000	1		1					2 29%
200-1,000	2							2 29%
0-200								
Total	5		2					7 101%
	71%		29%					

^aAccess to major regional road systems.

^bAccess to local road systems only.

TABLE 4 STATISTICS FOR COMMUTER SHUTTLE SERVICE

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Nothing	Total
> 10,000								
5,000-10,000	1				1			2 33%
1,000-5,000			3		1			4 67%
200-1,000								
0-200								
Total	1		3		2			6 100%
	17%		50%		33%			

^aAccess to major regional road systems.

^bAccess to local road systems only.

TABLE 5 STATISTICS FOR LIMOUSINE SERVICE

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Total
> 10,000					1		1 20%
5,000-10,000	1				1		2 40%
1,000-5,000	1						1 20%
200-1,000	1						1 20%
0-200							
Total	3				2		5 100%
	60%				40%		

^aAccess to major regional road systems.

^bAccess to local road systems only.

tions. One community reporting a regular bus service had a population of only 324. Although the definition of regular bus service in such a small community may bear further consideration, the example of Ketchikan definitely indicates that a regular bus service can be established in such a community. At the time of the survey, Ketchikan had a population of 12,982 and its bus service had more than one vehicle, operating with very specific hours and fares, as well as detailed ridership records.

The existence of a bus service in such small communities may be an indication that, in general, the isolation of Alaskan

communities and the harsh environmental conditions lead to a greater need of and use for public transportation.

4. Unconventional transportation modes appear to play an important role in public transportation in Alaska. Several communities mentioned the use of riverboats, snowmobiles, ATVs, and airplanes in the context of local public transportation.

5. Some communities took the opportunity to express their need for public transportation in the section provided for general comments. Some needs were based on economic reasons, and others were related to "captive" riders, that is, those

TABLE 6 STATISTICS FOR TAXICABS

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Total
> 10,000			1		1		2 8%
5,000–10,000	2		1		1		4 17%
1,000–5,000	5		3		3		11 46%
200–1,000	4	2					6 25%
0–200	1						1 4%
Total	12 50%	2 8%	5 21%		5 21%		24 100%

^aAccess to major regional road systems.^bAccess to local road systems only.

TABLE 7 STATISTICS FOR SCHOOL BUSES

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Total
> 10,000			1		1		2 6%
5,000–10,000	2		1				3 10%
1,000–5,000	4		4		3		11 35%
200–1,000	4	6	3				13 42%
0–200	1	1					2 6%
Total	11 35%	7 23%	9 29%		4 13%		31 99%

^aAccess to major regional road systems.^bAccess to local road systems only.

TABLE 8 STATISTICS FOR CAR RENTAL

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Total
> 10,000			1		1		2 11%
5,000–10,000	3		1				4 22%
1,000–5,000	3		3		3		9 50%
200–1,000	2	1					3 17%
0–200							
Total	8 44%	1 6%	5 28%		4 22%		18 100%

^aAccess to major regional road systems.^bAccess to local road systems only.

who do not have other means of transportation. It is important to note that some of the factors influencing these needs are related to unique Alaskan conditions such as a lack of roads, harsh weather, and a wilderness environment. Some communities indicated that public transportation was needed during periods of inclement weather, emergency situations, and also to provide children with a safe means of getting to and from school. Attacks by wild animals were included as one of the dangers. Others thought that increased public trans-

portation would lead to benefits for commercial fishing, hunting, and tourism.

Some respondents reported that individuals provided transportation on an "as needed" basis in the absence of public transportation. Others stated that they were skeptical of the potential financial burden of a public transportation system.

6. There appears to be a substantial amount of what is termed "helping out" other people with transportation. In a place like Alaska, "helping out" in extreme weather condi-

tions or emergencies or in the absence of public transportation appears to mean something different from the usual "helping out." Severe weather conditions prevail for a large part of the year and "helping out" may occur more often out of real necessity than mere convenience. In some responses, "helping out" was clearly stated as a substitute for public transportation.

7. Most responses to the questions on regulating agencies indicated that the municipality was the regulating agency. In a few cases (for limousine service, taxicabs, and car rental) the state of Alaska was listed as the regulating agency.

8. Joint use of school buses occurred only in 6 of the 31 school bus systems reporting.

FURTHER CONSIDERATIONS

Implementation of Public Transportation Options in Alaska

The results of the study lead to the conclusion that there are opportunities for further implementation of public transportation service options in all of the communities except those with a population greater than 10,000. The case of limousine service is an example. Only two communities in the 5,000 to 10,000 population category and one in the 1,000 to 5,000 category reported a limousine service. Since the survey showed that a limousine service may be feasible in such communities,

TABLE 9 STATISTICS FOR SPECIAL TRANSPORTATION FOR THE ELDERLY AND HANDICAPPED

Population	Coast	River	RRS ^a	LRS ^b	Coast and LRS	River and LRS	Total
> 10,000			1		1		2 8%
5,000-10,000	2		1		1		4 16%
1,000-5,000	3		2		3		8 32%
200-1,000	5	3	1				9 36%
0-200		1	1				2 8%
Total	10 40%	4 8%	6 24%		5 20%		25 100%

^aAccess to major regional road systems.

^bAccess to local road systems only.

TABLE 10 SUMMARY OF PUBLIC TRANSPORTATION SYSTEMS REPORTED IN MAIL SURVEY

	Number of Communities	% of Total Number Reporting	Population Range
Regular Transit			
Conventional bus	7	9%	324 - 60,000
Commuter/Shuttle bus	6	8%	1,207 - 12,982
Ferry	1	1%	12,982
Paratransit			
Limousine	5	6%	712 - 29,946
Taxicab	24	31%	55 - 60,000
School bus	31	40%	165 - 60,000
Car rental	18	23%	202 - 60,000
Charter bus	8	10%	712 - 60,000
Car pool	1	1%	29,946
Van pool	1	1%	29,946
Dial-a-ride bus	- ^a	-	
Jitney	1	1%	132
Subscription bus	2	2%	1,207 - 3,700
Other shared transportation Services for the elderly and handicapped	25	32%	45 - 60,000
Other transportation for community services	59	77%	45 - 29,946
Total Responses	77		

^aNone reporting

it is possible that there are other communities in these categories that could benefit from this service.

Another example of an opportunity for further implementation of service options is vanpools and carpools. Juneau was the only city that indicated an operating vanpool or carpool system. Locations that have concentrated employment centers, such as the University of Alaska in Fairbanks, may also benefit from such programs.

The question arises as to how further implementation may be effected against the background of poor communication and lack of technical staff in isolated communities. A desirable approach to the problem would be for experts to analyze and advise on the situation in each community. Questions related to locating appropriate experts and who will bear the responsibility for the cost of analysis and implementation will have to be resolved. In the long term, federal, state, and local agencies can work to find solutions to these problems.

Further Studies and Information Exchange

Further study and information exchange can be very helpful in the short term. The results of studies and other information relevant to public transportation in Alaska can be used by the Alaskan communities to decide on appropriate public transportation service options and to improve existing service. Case studies of successful public transportation operations for each type of service option would be very useful. In addition, other transportation issues that are relevant to the Alaskan situation warrant further study.

The pooling and organization of resources call for further investigation. Some responses to the mail survey indicated that private vehicles were sometimes used for public transportation, including automobiles, trucks, riverboats, snowmobiles, and ATVs. This points to some very informal means of "pooling" resources. Since some of the community structures are based on different customs, a special approach may be used in the organization of pooled resources and public transportation. A study of these organizational structures may benefit other communities in Alaska and elsewhere that encounter similar conditions.

The regulation of public transportation in Alaska, or the lack thereof, is also an issue that warrants further study. Regulated or nonregulated models that work well in some communities may be suitable for other communities. It should be noted that overregulation in these types of communities may prevent the provision of much-needed transportation options.

Another issue that warrants further consideration is the joint use of vehicles for different purposes in the formal sector of public transportation. Six communities reported multiple uses of school buses in the mail survey. It would appear that there should be more opportunity for joint use in small communities that have various needs but limited resources. School buses could, for instance, be used for mail delivery or for transportation of the elderly and handicapped either during the time of transporting students to and from school or outside these hours. During the interviews with transportation officials, however, it was noted that there may be some problems in the administration of a system used by different groups for different purposes, for instance, problems with priorities of

use and cost allocation. These issues may be explored further together with the regulatory issue.

A study of the possible increased use of public transportation during emergencies or periods of inclement weather would also be worthwhile. As mentioned before, because of their greater expertise public transportation agencies may be better qualified to cope with these situations than members of the general public. A discussion with transportation officials on this issue revealed that although this may be a reasonable objective, some problems would have to be overcome to fully implement the desired service. One of the problems is availability of labor, because the service that can be provided during periods of emergency or inclement weather is limited by the number of trained drivers. Perhaps a driver pool similar to volunteer fire-fighting organizations could be developed.

It could be cost-efficient to develop a sketch-planning technique for the purpose of assessing the applicability of different public transportation options to the various types of communities in Alaska. A brief examination of available sketch-planning methods, such as those outlined in the *Guide to Screening Community Paratransit Service* (5) and *Analyzing Transit Options for Small Urban Communities—Analysis Methods* (10), led to the conclusion that these methods are generally not suitable for use in Alaska. They require a substantial amount of data and are, for the most part, unsuitable for such small communities. For instance, planning nomographs based on population are not calibrated for the low population of Alaskan communities.

Studies can be carried out and disseminated by government organizations, academic institutions, and consultants. The Rural Technology Transfer Program (RTTP) was established by FTA for the purpose of developing and facilitating the exchange of information and technology among rural public transportation operators and agencies. The program is administered by the state of Alaska. RTTP could play a valuable role in the studies and serve as a means to exchange information among the communities.

SUMMARY OF MAJOR CONCLUSIONS AND RECOMMENDATIONS

The major conclusions and recommendations are summarized below:

1. There is very little documentation available on public transportation systems in Alaska.
2. The existing public transportation systems in Alaska cover a very wide spectrum of both paratransit and transit options. These systems range from some unique forms of what may be termed paratransit to regular bus service.
3. The public transportation systems in Alaska appear to be unique in that public transportation options are utilized in very small communities.
4. The need for public transportation in Alaska is related to economic reasons and the lack of an alternative means of transportation. Because of the harsh environmental conditions in Alaska, the lack of an alternative means of transportation is a more compelling reason for having public transportation than might be the case elsewhere.

5. There appears to be room for further implementation of public transportation in Alaska.

6. Topics that may warrant further study and development include

(a) Cases of successful public transportation operations.

(b) The organization of informal pooling of vehicles.

Models that work well in Alaskan communities should be identified. Special attention should be given to the different lifestyles and cultures present in Alaska.

(c) The regulation or lack thereof of public transportation in Alaska.

(d) The joint use of vehicles for public transportation.

(e) Increased use of public transportation in Alaska during periods of inclement weather or other emergency situations.

(f) Sketch-planning techniques for the type of communities encountered in Alaska.

7. RTTP, established by FTA, can play a valuable role in serving as a means to exchange information on public transportation.

ACKNOWLEDGMENTS

This research was funded by TransNow at the University of Washington (sponsored through the U.S. Department of Transportation UTC Grant Program); the School of Engineering at the University of Alaska, Fairbanks; and the Alaska Department of Transportation and Public Facilities. Support was also provided by the Department of Civil Engineering and Applied Mechanics, San Jose State University.

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The contents of this paper reflect the views of the author, who is responsible for the facts and the accuracy of the data presented herein. The United States Government assumes no liability for the contents or use thereof.

Publication of this paper sponsored by Committee on Rural Public and Intercity Bus Transportation.