



CHAPTER IX

Service Alternatives

INTRODUCTION

The basis for any transit plan is the careful consideration of realistic transit services. The capital requirements, financial plans, and management options can then be developed to support the planned services. The main purpose of this chapter is to present different service options.

Different types of transit services that are used by transit providers are presented initially to provide an understanding of how different transit services function. This information—along with the vehicle types, goals, and objectives—was used in developing the transit service alternatives.

The second portion of this chapter presents the service options that LSC has developed based on input from the public, transit drivers, and Transportation Advisory Committee (TAC). The alternatives developed in this chapter were designed to address the issues of service area, level of service, type of service and coordination of existing services in the region.

TYPES OF TRANSIT SERVICE

The term “transit service” encompasses a wide range of alternatives. Traditionally, people think of transit service as buses operating on a strict schedule. A number of other transit service alternatives exist such as demand-response, fixed-route, flex-route, and commuter transportation.

Fixed-Route Service

Fixed-route service fits the popular description of a transit system with transit vehicles operating on specified routes and following set schedules. Specific bus stops are typically



Fixed-Route Service

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identified for the locations where passengers will be picked up and dropped off. Routes are usually laid out in either a radial or grid pattern.

Fixed-route service is particularly convenient for passengers without disabilities. Research has shown that fixed-route passengers are willing to walk up to one-quarter-mile to reach the bus stop. Therefore, a fixed-route service pattern may be efficiently laid out with routes having one-half-mile spacing. However, individuals with mobility impairments may have difficulty in accessing a fixed-route system.

The advantages of fixed-route service are that it can be provided at a relatively low cost on a per passenger-trip basis, schedule reliability is high since buses do not deviate from their routes, service does not require advance reservations, and service is easy to understand.

Fixed-route transit service is seldom attractive for people with automobiles in smaller communities and rural areas. A private automobile offers flexibility compared to the rigid schedule of a fixed-route system. The need to walk even a few hundred feet to a bus stop, wait for the vehicle, and the comparatively slow travel time make the option of a private automobile an easy choice. Where there are significant congestion issues or limited parking availability, fixed-route transit service becomes a more attractive alternative. The low cost of transit as compared to owning and operating a private automobile can also be attractive, especially to young working couples who may be able to use the bus rather than own two vehicles.

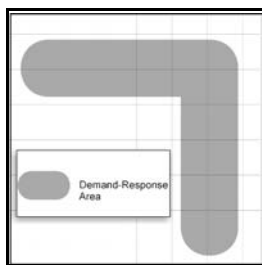
The Americans With Disabilities Act (ADA) requires that communities with fixed-route transit service also provide complementary paratransit service that operates, at a minimum, in a three-quarter-mile radius of each fixed route. Paratransit service is typically much more costly to operate than fixed-route service because of the service's characteristics. Fixed routes are established to meet the highest demand travel patterns, while paratransit service must serve many origins and destinations in a dispersed pattern. Therefore, fixed-route operations lack the flexibility to meet the needs of passengers with any special requirements in low density areas.

Demand-Response Service

Demand-response transit service, frequently termed dial-a-ride, is characterized as door-to-door transit service scheduled by a dispatcher. With demand-response service, advance reservations are typically required, although some immediate requests may be filled if time permits and if the service is particularly needed. The general public transit service operated by the Dawson County Urban Transportation District in Glendive, Montana and STAR in Rock Springs/Green River, Wyoming are examples of successful demand-response services.



Demand-Response Service

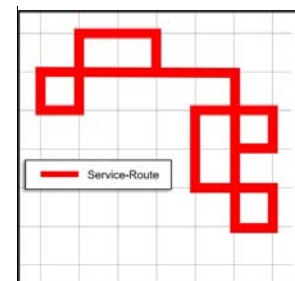


Demand-Response Service

The concept of demand-response was originally developed in the early 1970s as an alternate form of public transportation for the general public. The original efforts proved to be more expensive than envisioned and did not attract the ridership that was forecast. As a result, demand-response transit has been used almost exclusively in this country for elderly and disabled passengers. However, many communities are beginning to recognize the advantages of demand-response service for low density areas with low levels of transit demand. Improved technology has led to improvements in dispatching and scheduling which has increased the efficiency of demand-response service and allows for real-time dispatching.

Service Routes

One concept that is being implemented in some communities as an alternative to fixed-route or demand-response service is the service route. A service route is essentially a fixed route specifically designed to serve the elderly and disabled. Typically, a service route winds through residential neighborhoods with high concentrations of elderly and disabled persons in a pattern that passes within one or two blocks of all houses. The service route also directly serves major destinations such as senior centers, commercial areas, and medical centers. However, the service



Service Routes

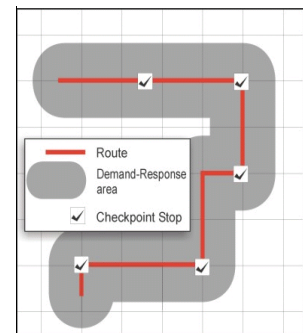
route provides a higher in-vehicle travel time and a longer wait for the bus than normally acceptable to the general public. The Bus in Butte, Montana and MET in Billings, Montana are examples of systems with successful service routes.

Flexible Routes

Another alternative is flexible routes such as route-deviation or checkpoint service. With flexible routes, transit vehicle dispatching and scheduling must be done carefully to ensure that vehicles are available to serve the designated stops at the scheduled times. To provide a reasonable amount of flexibility, a lenient definition of on-time performance is typically used with a 10- to 15-minute window at each designated stop.

Route Deviation

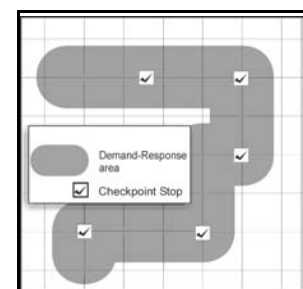
With route deviation, transit vehicles follow a specific route, but can leave the route to serve demand-response origins and destinations. The vehicles are required to return to the designated route within one block of the point of deviation to ensure that all intersections along the route are served. The passengers on the bus may have a longer travel time than for fixed-route service and the service reliability is lower. However, the ADA-mandated complementary paratransit service is not necessary since the bus can deviate from the route to pick up disabled passengers.



Route Deviation

Checkpoint Service

Under checkpoint service, the transit vehicles make periodic scheduled stops at major activity centers. The specific routes are not established between checkpoints, which allows the vehicles to provide demand-response service and alleviates the need for the ADA-mandated complementary paratransit service. Riders are picked up, typically at a reduced fare, at the checkpoints and are taken either to another checkpoint or to a demand-response specific destination. Service between the checkpoints does not require advance reservations. However, service from any



Checkpoint Service

other location on a demand-response basis requires an advance reservation so that the vehicles can be scheduled for pick-up and drop-off. Checkpoint service offers an advantage over route deviation because there is no specified route for the vehicles to use. Checkpoint service requires only that the vehicle arrive at the next checkpoint within the designated time window.

Regional and Commuter Service

With regional and commuter service, the route is primarily designed to link different communities together for employment purposes. These communities may be within the same geographic area. In urban areas, this type of service is commonly known as express or limited express service. In rural areas, the regional and commuter service links communities across the study area with each other and with communities outside the study area.

Vanpool Service

Vanpool service operates more of a point-to-point function. Vanpool service gathers riders within a community and then travels directly to a major employment center (such as the Frontier Mall). Normally, a transit agency owns and maintains the vehicles. Individuals using the vanpool share the travel cost and may even share the driving responsibilities. The schedule and route of the vanpool service depends upon the individuals participating in the vanpool. Vanpool service is limited to individuals within the program and has limited service for medical or shopping trips. Vanpool service is primarily for employment trips for non-disabled individuals, since there are liability issues with disabled individuals riding on vanpool service.

TRANSIT SERVICE ALTERNATIVES

A basis for any transit plan is the careful consideration of the realistic transit service alternatives. Capital requirements, financial plans, and management options can then be developed to support the planned transit services. Each alter-

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native must be evaluated using locally established goals and objectives. Any alternative which does not support the mission statement of public transportation or the corresponding goals and objectives should not be considered for implementation. The main purpose of this alternatives analysis is to determine the type and level of service that the Quinault Indian Nation (QIN) can implement to meet the needs of the community if the funding becomes available. The main issues that these alternatives are designed to examine include demand-response service in the rural areas, delay times of routes, low productivity, and Title VI service area gaps.

The following discussion evaluates the various transit service alternatives, each of which is made up of several different types of transit services. The alternatives were based on information and input gathered from the TAC meetings, public comments, and the onboard survey results.

Maintain Status Quo

Services

A good starting point for the evaluation of transit service alternatives is the consideration of the “status quo.” The status quo alternative involves no change in the service provided by the existing transportation services. This alternative is a viable option which may be appropriate when the current service meets the community’s needs and satisfies the goals and objectives for public transportation services.

There are several existing transportation providers in the region. These transportation providers include Jefferson Transit, Grays Harbor Transit, Mobility Transport, Coastal Community Action Program, and several other human service providers. However, little transportation service is provided to and from the QIR and no transportation links the villages on the Reservation. At this time, only Jefferson Transit and Grays Harbor Transit provide service to the QIR. The total operational budget is estimated at \$130,000. This amount does not include the transportation cost that the QIN’s health services program provides each year. Based on the goals and objectives identified in this study, the status quo alternative will not meet the existing needs within the service area.

Advantages

The advantage of maintaining the existing transit service and transportation providers is that there is no additional cost for the QIN.

Disadvantages

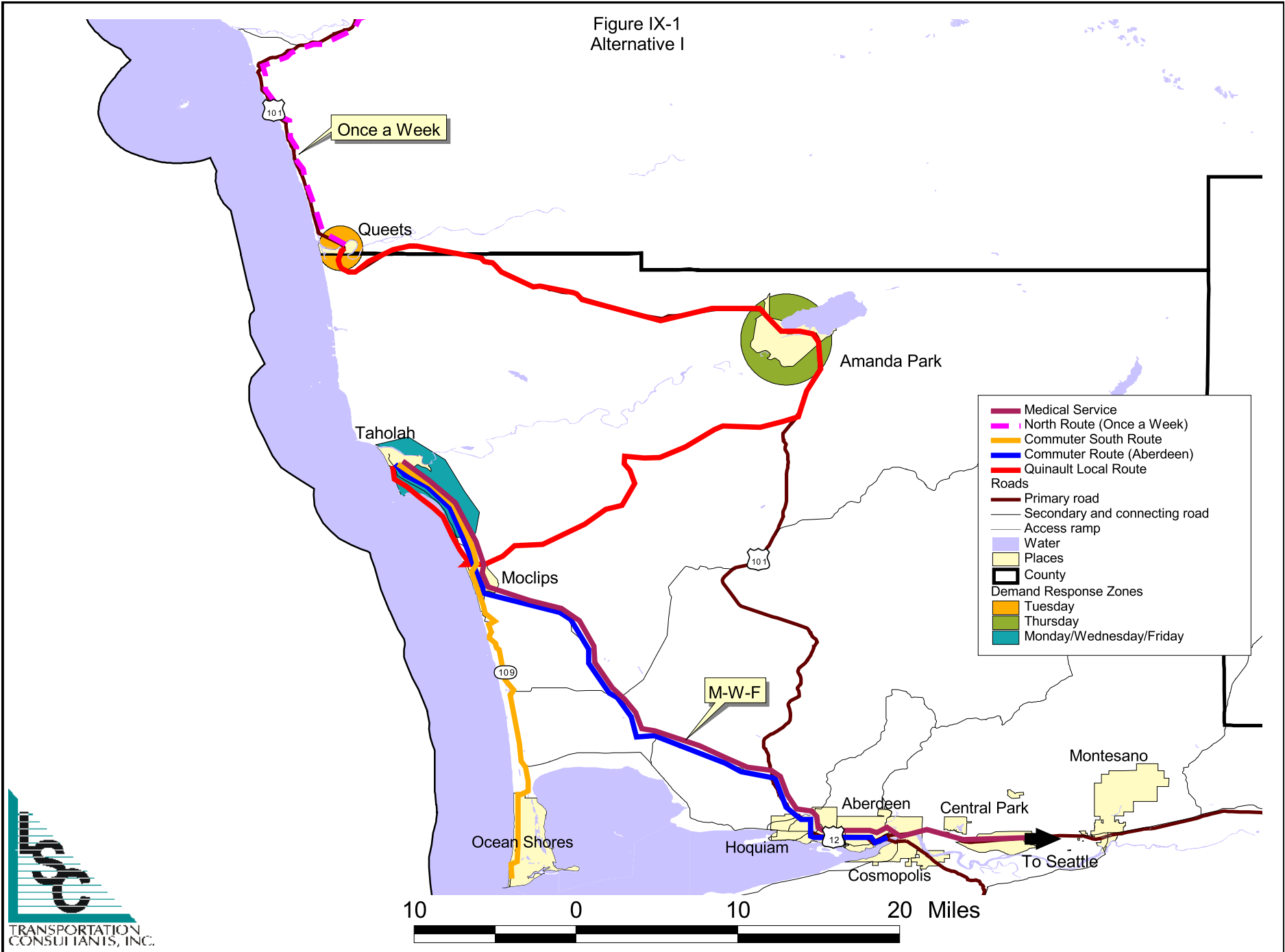
The major disadvantage of maintaining the existing service levels is that the unmet transportation needs will continue. These needs include medical, employment, and educational trips. This will continue to have a negative impact on the quality of life for the QIN's tribal members.

Alternative I - Quinault Service Plan

Services

In order to meet the QIN's transportation needs and based on public input, LSC and the TAC developed various transit service alternatives. Alternative I addresses all of the identified service gaps. Figure IX-1 presents the route structure of Alternative I. Table IX-1 presents the level of service for Alternative I. The Alternative I route service includes demand-response, local route, commuter/regional, and medical van service. The estimated level of service is 8,156 annual revenue-hours and the estimated annual ridership is 33,080 passengers. This was based on information from the peer community analysis, the Washington State average hourly cost for rural transit providers (for the QIN services), and the reported costs for the transportation provider agencies (for the contracted services).

Figure IX-1
Alternative I



**Table IX-1
Alternative I Level of Service - Cost Estimates**

Options		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Local Demand-Response Service	Three Zone varies days	1	54	6	13,770	1,530	255	4,590	3.0	\$99,450	\$21.67
Local Route Service on Reservation	Peak hours	1	237	6	72,894	1,842	307	5,279	2.9	\$119,730	\$22.68
Aberdeen Commuter Route	AM-Mid-PM	1	228	6	69,867	1,842	307	9,605	5.2	\$119,730	\$12.46
South Commuter Route	AM-Mid-PM	1	179	5	54,947	1,382	307	9,605	7.0	\$89,798	\$9.35
North Route	Twice a day once a week	1	219	6	11,373	312	52	300	1.0	\$20,280	\$67.60
Medical Vans Service	M - W- F	1	30	8	4,655	1,248	156	3,699	3.0	\$81,120	\$21.93
Total/Avg					227,506	8,156		33,078	4.06	\$530,108	\$16.03

Note: Costs based on LSC analysis, 2008.

Service Alternatives

The following summarizes the level of service in Alternative I.

- Daily local route service that links the villages together will operate during the morning and afternoon peak times six days a week, with an estimated 1,840 annual revenue-hours and 5,280 annual ridership.
- Demand-response service for the villages will operate one bus during the off-peak times, with an estimated 1,530 total annual revenue-hours and 4,590 annual ridership. The villages will be served as follows: Taholah on Monday, Wednesday, and Friday; Queets on Tuesday; and Amanda Park on Thursday. The demand-response service will share the bus that operates on the daily local route service.
- The Aberdeen commuter route will operate one bus from Taholah to Aberdeen during the morning, midday, and afternoon peak times six days a week, with an estimated 1,842 annual revenue-hours. This commuter route will stop at key locations along the route.
- The South commuter route will operate one bus from Taholah to the casino and Ocean Shores during the morning, midday, and afternoon peak times six days a week, with an estimated 1,380 annual revenue-hours. This commuter route will stop at key locations along the route.
- Medical van service will operate one van three days a week (with one round-trip on each day of operation) from the QIR to the hospitals in Aberdeen, Olympia, Tacoma, and Seattle. This is a rideshare service. This means that the driver and passengers ride together to the same destination.
- North Shore regional route will operate one van once a week with round-trip service to the Hoh Reservation. This route will share the medical van.

Capital

Based on level of service, Alternative I will need five vehicles (including one spare vehicle). The QIN will also need to invest in a transit facility for system administration and vehicle storage, and may include equipment for vehicle maintenance. Estimated cost of the fleet, facility, and equipment is \$1.3 million. Since the Federal Transit Administration (FTA) will pay for 80 percent of the cost, the QIN's local share will be \$261,000. Cost details are presented in Table IX-4 (presented later in this chapter).

Advantages

A major advantage of Alternative I is that it increases mobility and access for residents of the Reservation. Alternative I improves the level of service in the villages. This alternative increases opportunity for more regional trips to employment, education, shopping, and medical trips.

Disadvantages

The major disadvantage of Alternative I is operating and capital costs to the QIN, with an estimated \$530,100 annual operating cost and a capital requirement cost estimated at over \$1.1 million. The total first year setup cost is estimated at \$1.66 million. Without significant state and FTA assistance, the cost of this alternative can negatively impact the QIN. Another disadvantage is the QIN currently has no experience in operating a transit system. This results in a learning curve which can lead to inefficiencies in transit service operations for the first few years.

Model Evaluation and Summary

Appendix B presents the TCRP models that LSC used to estimate the level of service and the number of trips that can be served with Alternative I. On an average weekday, the ridership will be 139 passengers. When program and weekend service is included, the annual ridership is estimated at 33,078 passengers. Compared to the other alternatives, Alternative I will produce the highest level of trip production and the second highest passengers per revenue-hour.

As presented in Table IX-1, Alternative I will result in the following estimates:

- \$16.03 cost per passenger-trip
- \$530,110 annual cost
- 4.06 passengers per hour
- 33,078 annual passengers

Alternative II - Combination Service Plan

Services

Alternative II is designed to address all of the identified service gaps by using a mix of service that is operated by the QIN and contracted out to other agencies. Figure IX-2 presents the route structure of Alternative II. Table IX-2 presents the level of service for Alternative II. The Alternative II route service includes demand-response, local route, commuter/regional, weekend vanpool, and medical van services. The estimated level of service is 7,133 annual revenue-hours and the estimated annual ridership is 31,613 passengers. This was based on information from the peer community analysis, the Washington State average hourly cost for

Service Alternatives

rural transit providers (for the QIN services), and the report costs for the transportation provider agencies (for the contracted services).

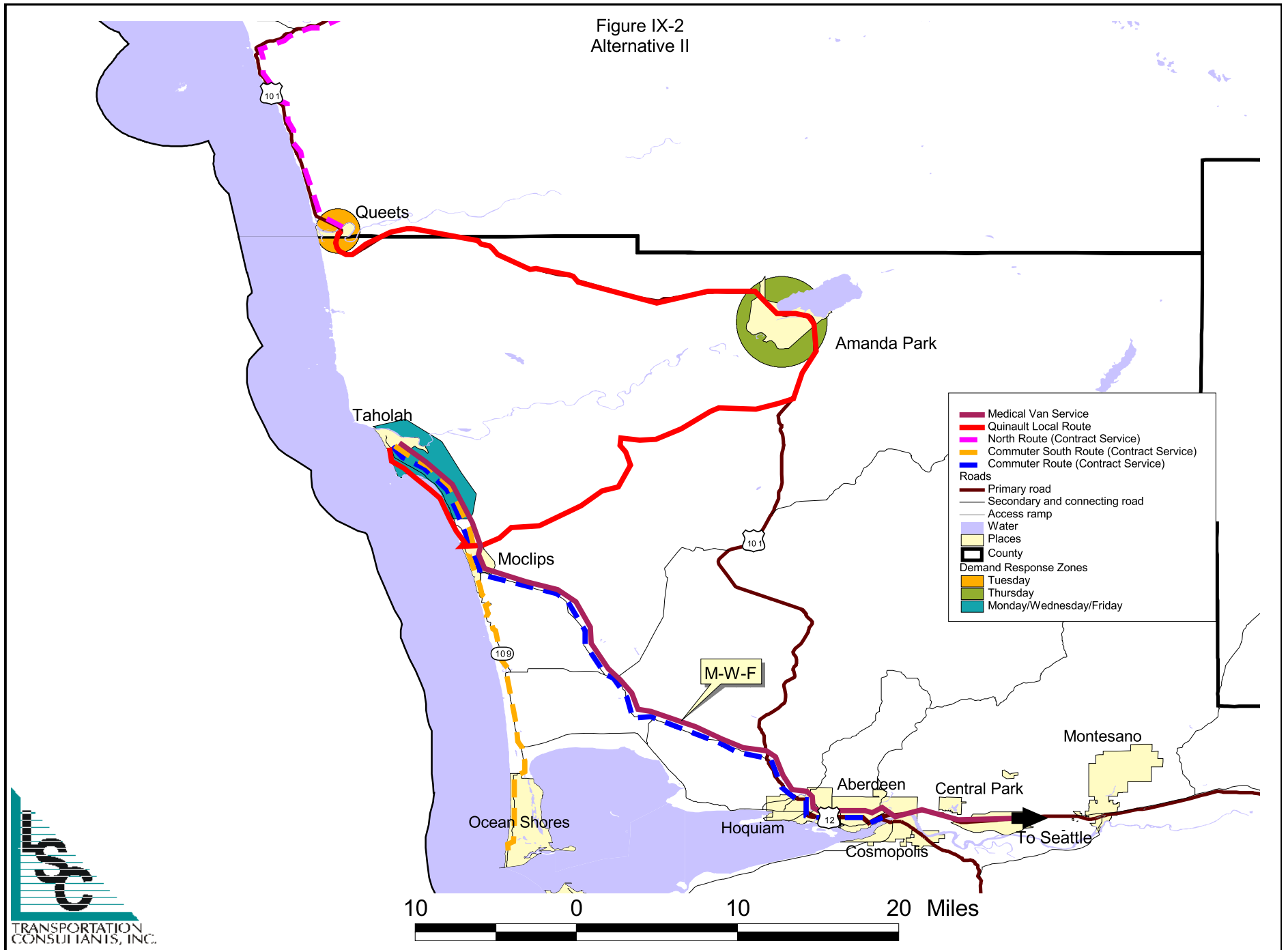
The major difference between Alternatives I and II is that in Alternative II the QIN only operates the service on the QIR and weekend vanpool service to locations off the Reservation. The other differences are that only the local route service will operate more than five days a week and the regional route service will only operate on weekdays.

The following summarizes the level of service in Alternative II. There are two sets of services: 1) services QIN will operate and 2) services QIN will contract to outside transportation providers.

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- Daily local-route service that links the villages together will operate during the morning and afternoon peak times six days a week, with an estimated 1,840 annual revenue-hours and 5,280 annual ridership.
- Local demand-response service for the villages will operate one bus during the off-peak times, with an estimated 1,530 total annual revenue-hours and 4,590 annual ridership. The villages will be served as follows: Taholah on Monday, Wednesday, and Friday; Queets on Tuesday; and Amanda Park on Thursday. The demand-response service will share the bus that operates the local route service.
- Weekend vanpool program will operate one van on either Saturday or Sunday to provide trips off the Reservation for employment, shopping, and other purposes.
- Medical van service will operate one van three days a week (with one round-trip on each day of operation) from the Reservation to the hospitals in Aberdeen, Olympia, Tacoma, and Seattle. This is a rideshare service.

Figure IX-2
Alternative II



**Table IX-2
Alternative II Level of Service - Cost Estimates**

Options		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Local Demand-Response Service	Three Zone varies days	1	54	6	13,770	1,530	255	4,590	3.0	\$99,450	\$21.67
Local Route Service on Reservation	Peak hours	1	237	6	72,894	1,842	307	5,279	2.9	\$119,730	\$22.68
Weekend Vanpool	Varies	2	152	4	15,779	416	104	1,040	2.5	\$8,521	\$8.19
Aberdeen Commuter Route	Peak hours	1	152	4	38,689	1,020	255	8,353	8.2	\$64,260	\$7.69
South Commuter Route	Peak hours	1	119	3	30,427	765	255	8,353	10.9	\$48,195	\$5.77
North Route	Twice a day once a week	1	219	6	11,373	312	52	300	1.0	\$24,455	\$81.52
Medical Vans Service	M - W- F	1	288	8	44,903	1,248	156	3,699	3.0	\$81,120	\$21.93
Total/Avg					227,835	7,133		31,613	4.43	\$445,730	\$14.10

Note: Costs based on LSC analysis, 2008.

Contracted Service

At this time, the LSC team assumed that Aberdeen and the South Shore regional service will be contracted to Grays Harbor Transit and that the North Shore service will be contracted to Jefferson Transit.

- The Aberdeen commuter route will operate one bus from Taholah to Aberdeen during the morning, midday, and afternoon peak times five days a week, with an estimated 1,020 annual revenue-hours. This commuter route will stop at key locations along the route.
- The South commuter route will operate one bus from Taholah to the Casino and Ocean Shores during the morning, midday, and afternoon peak times five days a week, with an estimated 765 annual revenue-hours. This commuter route will stop at key locations along the route.
- The North regional route will operate one van once a week with round-trip service to the Hoh Reservation. This route will share the medical van.

Capital

Based on level of service, Alternative II will need five vehicles (including one spare vehicle). The QIN will also need to invest in a transit facility for vehicle storage and the administration of the transit service, and may include equipment for vehicle maintenance. The estimated cost of the fleet, facility, and equipment is \$1.2 million. The FTA will pay for 80 percent of the cost, and the QIN's local share will be \$249,000. The cost details are presented in Table IX-4 (presented later in this chapter).

Advantages

A major advantage of Alternative II is that it will increase the mobility and access for residents of the QIR. This alternative will improve level of service in the villages with a lower operational cost than Alternative I. Alternative II will increase opportunity for more regional trips for employment, education, shopping, and medical trips. The QIN will only need to operate transit service on the Reservation, while regional service will be operated by the other transit providers. This reduces the amount of administrative and operational oversight that the QIN will have to concern itself with.

Disadvantages

The major disadvantage of Alternative II is the level of operating and capital costs to the QIN. The annual operating cost is estimated to be \$445,730, and the capital requirement cost is estimated at over \$1.2 million. The total first-year setup cost is estimated at \$1.64 million. Without significant state and FTA assistance, the cost of this alternative can negatively impact the QIN. The other disadvantage is that the QIN will need to contract with an existing transportation provider to obtain service that links the QIR to the region.

Model Evaluation and Summary

Appendix B presents the TCRP models that LSC used to estimate the level of service and the number of trips that can be served with Alternative II. On an average weekday, the ridership for Alternative I will be 139 passengers. When program and weekend service is included, the annual ridership is estimated at 33,073 passengers. Compared to the other alternatives, Alternative II will produce the second highest level of trip production and the highest passengers per revenue-hour.

As presented in Table IX-2, Alternative II will result in the following estimates:

- \$14.10 cost per passenger-trip
- \$445,730 annual cost
- 4.43 passengers per hour
- 31,613 annual passengers

Alternative III - Coordination Service Plan

Services

Alternative III is designed to address many of the identified service gaps by using a mix of service that is operated by the QIN and contracted to non-tribal agencies, while maintaining a low operational cost. Figure IX-3 presents the route structure of Alternative III. Table IX-3 presents the level of service for Alternative III. The Alternative III route service includes demand-response, vanpool, and medical van services and a modified schedule for Grays Harbor Transit Route 50. The estimated level of service is 6,935 annual revenue-hours and the estimated annual ridership is 14,730 passengers. This was based on information from the peer community analysis, the Washington State average hourly cost for rural transit pro-

viders (for the QIN services), and the report costs for the transportation provider agencies (for the contracted services). The major difference between Alternatives I and III is that, in Alternative III, the QIN will only operate the vanpool services to aid in the linking of trips off the Reservation.

The following summarizes the level of service in Alternative III. There are two sets of services—the services that the QIN will operate and the services that the QIN will contract for with other transportation providers.

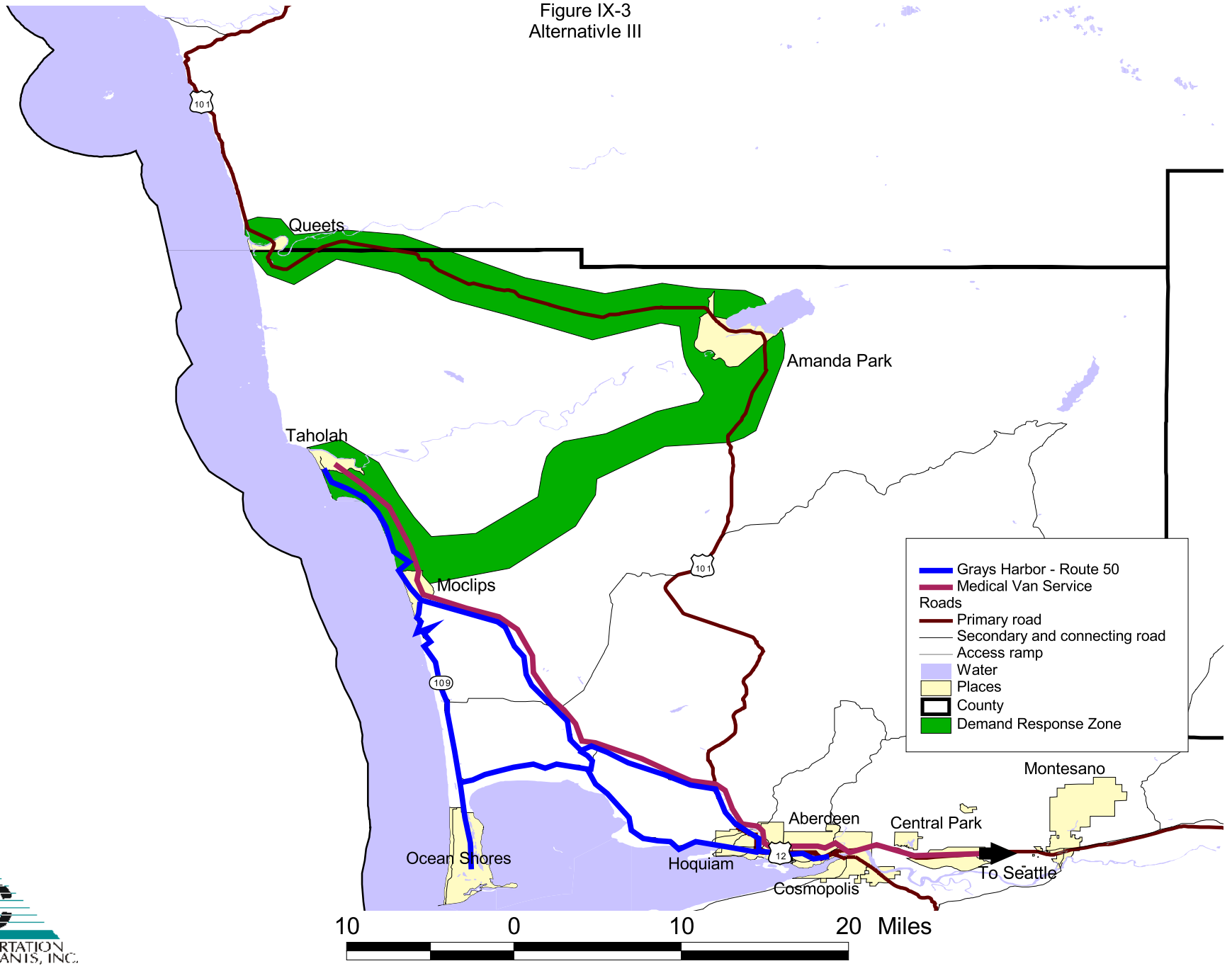
Quinault Indian Nation Service

- Vanpool program will operate with three vans to provide trips off the QIR for medical, employment, shopping and other purposes. The QIN will provide the van and operating expenses. The program will use volunteer drivers to operate the vans.

Contracted Service

- Demand-response service on the Reservation will operate one bus from 7:00 a.m. to 6:00 p.m. five days a week on a 24-hour advanced reservation basis, with an estimated 2,800 annual revenue-hours. The service will be contracted to a human service provider. The vehicle and the employee will stay on the Reservation in order to decrease the deadhead time, which has been the trouble that many agencies have in providing service on the Reservation. It is assumed that service will be provided to the entire Reservation, but with the majority of service in Taholah.
- Grays Harbor Transit Route 50 will be adjusted to increase the number of trips that serve the QIR from three to six, with an estimated 1,382 additional annual revenue-hours. The additional times of service will be 6:15 a.m., 12:40 p.m., and 8:40 p.m. Table IX-3 presents the level of service for the adjusted Route 50.

Figure IX-3
Alternative III



**Table IX-3
Alternative III Level of Service - Cost Estimates**

Options		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Demand-Response Service (Contracted)	7:00 am - 6:00 pm (M-F)	1	99	11	25,245	2,805	255	6,375	2.3	\$182,325	\$28.60
Route 50 Additional Service	Three times a day	1	48	5	14,736	1,382	307	2,489	1.8	\$87,035	\$34.97
Medical Van Service (volunteer)	M-W-F	1	288	8	44,903	1,248	156	3,699	3.0	\$24,248	\$6.56
Vanpool Program	Peak hours	3	228	6	56,895	1,500	250	2,165	1.4	\$30,723	\$14.19
Total/Avg					141,779	6,935		14,728	2.12	\$324,330	\$22.02

Note: Costs based on LSC analysis, 2008.

Capital

Based on level of service, Alternative III will need four vehicles. The medical van will be the spare vehicle in order to reduce overall capital cost. The QIN will not need to invest in a transit facility for vehicle storage and the administration of the vanpool service. The estimated cost of the fleet, facility, and equipment is \$180,000. The FTA will pay for 80 percent of the cost and the QIN's local share will be \$36,000. The detailed costs are presented in Table IX-4 (presented later in this chapter).

Advantages

A major advantage of Alternative III is that it will increase the mobility and access for residents of the QIR. Another advantage is that the QIN will only need to operate the vanpool service since the other transportation services will be contracted to other agencies. The last advantage is that this option has the lowest level of capital investment of all the options.

Disadvantages

The major disadvantages of Alternative III are the operating and capital costs to the QIN, with an estimated \$324,330 annual operating cost and a capital requirement cost estimated at over \$180,000. The total first-year setup cost is estimated at \$504,000. Without significant state and FTA assistance, the cost of this alternative can negatively impact the QIN. The other disadvantage is that the QIN will need to contract with a transit provider to obtain service on the Reservation and links for the Reservation to the region.

Model Evaluation and Summary

Appendix B presents the TCRP models that LSC used to estimate the level of service and the number of trips that can be served with Alternative III. On an average weekday, the ridership for Alternative III will be 99 passengers. When program and weekend service is included, the annual ridership is estimated at 14,730 passengers. Compared to the other alternatives, Alternative III will produce the lowest level of trip production and the lowest passengers per revenue-hour.

As presented in Table IX-3, Alternative III will result in the following estimates:

- \$22.02 cost per passenger-trip
- \$324,330 annual cost
- 2.12 passengers per hour
- 14,730 annual passengers

SUMMARY

Chapter IX has provided information on various transit service alternatives for the QIN. The alternatives include maintaining the status quo and examining demand-response, local route, commuter/regional, vanpool, medical van, contract, coordinated, and adjusted services. Table IX-4 presents the capital requirements and estimated capital costs for each alternative. Table IX-5 provides a comparison of the transit service alternatives.

**Table IX-4
Service Alternatives Capital - Cost Estimates**

Option	# of Bus.	# of Vans	Vehicles Cost	Facility Cost	Computer / Equip. Cost	Office Equipment	Software/ Phone Line/ Radio System	Total Capital Estimate	Federal Share	Local Share
Alternative I	3	2	\$265,000	\$1,000,000	\$5,000	\$10,000	\$25,000	\$1,305,000	\$1,135,350	\$261,000
Alternative II *	1	4	\$205,000	\$1,000,000	\$5,000	\$10,000	\$25,000	\$1,245,000	\$1,083,150	\$249,000
Alternative III*	0	4	\$140,000	\$0	\$5,000	\$10,000	\$25,000	\$180,000	\$156,600	\$36,000
* Facility includes administrative office, vehicle storage, and land.										
Source: LSC, 2008.										

**Table IX-5
Service Alternatives - Cost Estimates**

Options		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Status Quo	7:00 am - 8:00 pm (M-Su)		621	5	158,412	1,300	255	5,610	4.3	\$130,270	\$23.22
Alternative I											
Local Demand-Response Service	Three Zone varies days	1	54	6	13,770	1,530	255	4,590	3.0	\$99,450	\$21.67
Local Route Service on Reservation	Peak hours	1	237	6	72,894	1,842	307	5,279	2.9	\$119,730	\$22.68
Aberdeen Commuter Route	AM-Mid-PM	1	228	6	69,867	1,842	307	9,605	5.2	\$119,730	\$12.46
South Commuter Route	AM-Mid-PM	1	179	5	54,947	1,382	307	9,605	7.0	\$89,798	\$9.35
North Route	Twice a day once a week	1	219	6	11,373	312	52	300	1.0	\$20,280	\$67.60
Medical Vans Service	M - W - F	1	30	8	4,655	1,248	156	3,699	3.0	\$81,120	\$21.93
Total/Avg					227,506	8,156		33,078	4.06	\$530,108	\$16.03
Alternative II											
Local Demand-Response Service	Three Zone varies days	1	54	6	13,770	1,530	255	4,590	3.0	\$99,450	\$21.67
Local Route Service on Reservation	Peak hours	1	237	6	72,894	1,842	307	5,279	2.9	\$119,730	\$22.68
Weekend Vanpool	Varies	2	152	4	15,779	416	104	1,040	2.5	\$8,521	\$8.19
Aberdeen Commuter Route	Peak hours	1	152	4	38,689	1,020	255	8,353	8.2	\$64,260	\$7.69
South Commuter Route	Peak hours	1	119	3	30,427	765	255	8,353	10.9	\$48,195	\$5.77
North Route	Twice a day once a week	1	219	6	11,373	312	52	300	1.0	\$24,455	\$81.52
Medical Vans Service	M - W - F	1	288	8	44,903	1,248	156	3,699	3.0	\$81,120	\$21.93
Total/Avg					227,835	7,133		31,613	4.43	\$445,730	\$14.10
Alternative III											
Demand-Response Service (Contracted)	7:00 am - 6:00 pm (M-F)	1	99	11	25,245	2,805	255	6,375	2.3	\$182,325	\$28.60
Route 50 Additional Service	Three times a day	1	48	5	14,736	1,382	307	2,489	1.8	\$87,035	\$34.97
Medical Van Service (volunteer)	M-W-F	1	288	8	44,903	1,248	156	3,699	3.0	\$24,248	\$6.56
Vanpool Program	Peak hours	3	228	6	56,895	1,500	250	2,165	1.4	\$30,723	\$14.19
Total/Avg					141,779	6,935		14,728	2.12	\$324,330	\$22.02

Note: Costs based on LSC analysis, 2008.