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***Transportation
Restructuring Study
for Western New York***

Final Report Appendices

December 1997

***Prepared by
Multisystems, Inc.***

with assistance from:

- Portfolio Associates
- Northwest Research Group
- SG Associates
- The Wolf Group

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16. Abstract This appendix report is a companion to the HUBLINK final report, <i>Transportation Restructuring Study for Western New York</i> . The appendix provides an area by area description of local service options to be considered in the local service planning process, which will be undertaken in concert with local interests and sponsors. Suggestions for service changes are identified for each area representing starting points for discussion of service improvements with local interests. HUBLINK is a proposed comprehensive coordinated public transportation system designed to enhance mobility in Western New York. The Niagara Frontier Transportation Authority (NFTA) introduced the initial HUBLINK concept to 50 organizations at a series of informal meetings in the summer of 1996. The enthusiastic response encouraged NFTA to continue this study and develop a more detailed HUBLINK system plan. The study involved research on transportation needs, alternatives, coordination opportunities, and creative financing. The product of the HUBLINK study is a blueprint to achieve a new vision for mobility in Western New York, consistent with NFTA's newly adopted mission of <i>optimizing mobility through cost-effective, quality transportation services</i> . It is anticipated that the first phase of HUBLINK will be implemented in 1998.				13. Type of Report and Period Covered Technical Study	
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HUBLINK

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December 1997

Niagara Frontier Transportation Authority

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HUBLINK Consultant Team

Multisystems Inc.
Portfolio Associates
Northwest Research Group
SG Associates
The Wolf Group

Consultant Tasks

1. Methodology
Multisystems, Inc.
2. Public Participation
Multisystems, Inc.
Portfolio Associates
The Wolf Group
3. Market Research
Northwest Research
4. Transit Analysis
Multisystems, Inc.
SG Associates
5. Coordination
Multisystems, Inc.
6. Financing Strategy
Multisystems, Inc.
7. Mobility Plan
Multisystems, Inc.

TABLE OF CONTENTS

Appendix A: Local Service Options by Area	A-1
Appendix B: Local Service Implementation Guidelines	B-1
Appendix C: Design of the Mobility Coordinator	C-1
Appendix D: High and Low Service Scenarios	D-1
Appendix E: Glossary of Terms	E-1



Appendix A: Local Service Options by Area

This appendix provides an area by area description of local service options to be considered in the local service planning process, which will be undertaken in concert with local interests and sponsors. Suggestions for service changes are identified for each area. They represent starting points for discussion of service improvements with local interests.

A.1 BUFFALO

A.1.1 Characteristics

Buffalo remains the second largest city in New York State, and is the center of activity for Western New York. Buffalo, like many northeastern and north central cities, has been losing population each year over the past few decades. The population fell from about 358,000 in 1980 to 328,000 in 1990, and is estimated to have continued to decline since 1990. Nevertheless, with about 8,000 persons per square mile, it remains the most densely populated urban area in the region (almost twice as dense as the second largest city, Niagara Falls). Compared with the rest of the NFTA service area, most parts of Buffalo are characterized by low median household income and low automobile ownership rates.

Employment in Buffalo has also decreased, from over 197,000 in 1980 to less than 191,000 in 1990. As jobs shift from Buffalo to the suburbs, they become difficult for many city residents to access. Nevertheless, with a population and employment density much higher than any suburban jurisdiction, Buffalo remains the most important employment destination in the region, and attracts more work trips per square mile than any other part of the NFTA Metro service area. (Downtown Niagara Falls has a high work-trip attraction density as well.) While many suburban residents come into Buffalo primarily for work purposes, the city has significant educational, medical, retail and recreational facilities. Most parts of Buffalo (along with Tonawanda and southeastern Amherst) have the highest non-work-trip attraction rates in the region.

The Buffalo street network is principally grid-like, thus facilitating the operation of traditional fixed-route bus service. Metro offers extensive transit coverage within Buffalo; it is possible to travel between most points with no more than one transfer.

A.1.2 Service Concepts

NFTA/Metro provides extensive local service throughout the City of Buffalo. However, several modifications are proposed, as follows:

- Transit hubs
- Community circulators
- Late-night service
- Reverse commute service

These are described below.

Transit Hubs

Bus service in downtown Buffalo follows a grid pattern reflecting the street network. Routes are spaced so that buses are within walking distance of virtually all locations. A single transfer makes almost any trip possible. Implementing transit hubs other than the downtown Metro Center and South Campus Station would be unlikely to improve service for most riders. In fact, hubs would not work effectively in this environment. However, it may be possible to develop small-scale urban hubs at a few key transfer locations to facilitate longer-distance reverse commuting. These hubs might include shelters, lighting and amenities such as telephones to improve security. In addition, timed transfers may be implemented to minimize waiting time among key routes in selected locations at selected times. It is difficult and unnecessary to provide timed transfers between frequent services. The mobility plan incorporates a secondary hub on the East Side and the upgrading of the South Campus hub. Also incorporated in the plan is a new or improved downtown hub.

Community Circulators

Despite extensive coverage by fixed-route services, there may be opportunities to provide better service to transit-dependent populations by using a small vehicle to circulate within residential neighborhoods. Services could operate as fixed-route or route deviation. The route would be designed to serve key destinations, such as community centers, shopping areas, libraries and churches. A fixed-route community circulator is suggested in the East Side neighborhood.

Late-Night Service

Many inner-city residents are employed in service industries, which may have night or evening shifts outside traditional working hours. To improve services for passengers traveling to or from work at night, NFTA already operates a request-a-stop program after 9:00 P.M., which allows riders to alight anywhere along the route where the bus can safely stop. However, many residents may not be familiar with this program, which was implemented several years ago, and there may be opportunities to publicize it further. In addition, it may be possible to implement demand-responsive service late at night. Late-night service has not been incorporated in the HUBLINK plan budget estimates, but could be budget-neutral under certain circumstances.

Reverse Commuting

Much of central Buffalo and western Niagara Falls is characterized by transit-dependent populations. Transit dependents living in Buffalo are much more likely to be employed in Buffalo rather than in the suburbs, perhaps because suburban transportation options are more limited.

While most Buffalo residents continue to work in Buffalo, residents are increasingly requiring improved access to suburban employment sites, such as jobs in the retail, service and health-care fields. Although significant employment opportunities in these fields are available in suburban jurisdictions contiguous to Buffalo (in Tonawanda, Amherst, Cheektowaga and West Seneca), current transit service does not serve reverse commuters effectively. Improving transit access to these jobs can take many forms, from modifying existing routes to introducing innovative services tailored to these markets. Service modifications designed to serve reverse commuters may include (1) implementing timed transfers at suburban hubs and at selected urban transfer points in non-traditional time periods; (2) expanding access to reverse trips of existing and new

suburb-to-city express routes; and (3) introducing limited stop services on key routes in reverse directions. New services may include a regionwide vanpool program, subscription buses to the largest employment centers, and employer shuttles at suburban work sites. Pilot projects have been proposed to introduce employer shuttle service from South Campus Station to Amherst, as well as improved reverse commute scheduling on existing Routes 34 and 44. The mobility plan includes regionwide vanpooling, improved service frequency to suburban hubs and local circulators, subscription buses and employer shuttles in the suburban areas. Timed transfer may be feasible at some locations as well as other schedule adjustments to ensure reverse commute feasibility.

A.2 NIAGARA FALLS AREA

A.2.1 Characteristics

In comparison to other jurisdictions in the NFTA service area, the City of Niagara Falls and its immediate surroundings (Niagara Town, Lewiston and Wheatfield) constitute a relatively self-contained area. With approximately 62,000 residents and 30,000 jobs in 1990, Niagara Falls is the largest city in Niagara County and is quite dense, with over 4,000 persons per square mile. It is therefore categorized as an "urban" area in the HUBLINK plan. Nevertheless, it is a small city which would not likely have a significant number of fixed bus routes if it was not in such close proximity to Buffalo. Niagara Falls was once a somewhat larger city, but it has experienced significant decreases over the past several decades in both employment and population while some nearby towns have experienced population and employment growth. With several museums and other attractions besides the falls, Niagara Falls remains a major tourist attraction.

Currently, Niagara Falls has two existing transit hubs. The Niagara Falls International Transportation Center (NFITC) is located in downtown Niagara Falls, while the Niagara Falls Transit Center is located at Summit Park Mall, just beyond the eastern edge of the city in neighboring Wheatfield. One of the most successful bus routes (Route 55) in Niagara County operates between these two centers; however, there are several parallel routes that operate with comparatively low productivities. While Route 55 is the most successful route that operates entirely within Niagara County, it still had a farebox recovery ratio of only 17.5 percent during FY 1994-1995, which is lower than almost all the Erie County routes.

A.2.2 Service Concepts

Three options have been developed to improve public transportation opportunities for Niagara Falls residents, employees and visitors. All three options include three basic elements: new alternatives to traditional fixed-route transit for work trips, strengthening successful fixed routes, and replacement of less successful routes with innovative services targeting non-work local travel.

Strengthen Transit Options for Work Trips

The most effective improvement for work trips may be the creation of subscription bus routes, which would operate during peak times only. As a result, the vehicles may be shared with off-peak services targeted to non-work travel markets. Workers living in Niagara Falls would be encouraged to request service at specific times and to specific work sites in the NFTA service area. Routes would then be designed around the needs of the workers, provided there is

sufficient demand to warrant a bus trip. Workers would be required to prepay for the service. Routes could be reviewed and modified as needed.

Not all work trips could be efficiently served by subscription buses. Where demand is limited, vanpools would be more appropriate. A regional vanpool could address these trips. Vanpools could be formed with as few as seven or eight passengers, and vans would be provided by NFTA, which would actively work with employers to publicize the service. Interested employees would submit information such as origin, destination and work schedules. NFTA staff would identify individuals with similar work schedules and trip ends, and assist in assembling vanpools or carpools. The marketing of vanpools, carpools and subscription buses could be undertaken by the proposed regional Mobility Coordinator.

Create a Limited Number of Fixed Routes with Short Headways

A limited number of frequent, fixed routes would continue to be provided. Routes would connect Niagara Falls to the following locations: Buffalo, Tonawanda and perhaps Lewiston. Fixed-route service within Niagara Falls would focus on one route with frequent service. The route would connect the downtown hub (NFITC) with the hub at the Summit Park Mall (as Route 55 currently does).

Replace Other Routes

Other existing fixed routes, such as Routes 53 and 54, would be replaced with more flexible service options. These would be designed to serve non-work travel throughout the day. Three (mutually exclusive) alternatives for these services are described below.

Option A: Service Routes Designed for Seniors and Other Specific Subgroups

Service routes would be designed to operate within the City of Niagara Falls, connecting the places of interest to particular subgroups (although the service would be open to the general public). For example, a route may be targeted to seniors—serving neighborhoods with concentrations of seniors (like western Niagara Falls). Medical and shopping facilities, grocery stores, banks, the senior center, churches and libraries would be served. Another service route might target the youth population, serving schools, libraries, shopping malls, recreational sites and community centers on Saturdays, weekday afternoons, or during school vacations. A third service route may target tourists, providing service to the Rainbow Bridge crossing, motels and hotels, the Convention & Visitors Center, the Outlet Mall, museums and other tourist attractions, and perhaps the Niagara Falls International Airport and/or parts of the Canadian side of Niagara Falls. These service routes would radiate from the existing hub in downtown Niagara Falls and/or from the hub at the Summit Park Mall. They would be more circuitous than traditional fixed routes, but would bring riders to the curbside entrance of key destinations. Since these service routes would not be targeted to workers, they might not operate during work-trip peak travel periods.

Option B: Point Deviation Service

Point deviation routes would be introduced along the corridors currently served by Routes 53 and 54 (and perhaps Route 50). While these routes would serve the same general corridors, they would provide better service by transporting passengers closer to their destinations. Major bus stops along the route would still be served, but between these stops the route could deviate to

serve other locations. A higher fare would be charged for a deviation. Passengers on board would request a deviation from the driver when boarding. Passengers requesting an off-route pick-up would call-in their request in advance.

Option C: Dial-A-Ride Service

Curb-to-curb dial-a-ride service would replace the poorly performing fixed routes. The dial-a-ride service area might include all of Niagara Falls or perhaps specific areas in the Niagara Falls area. Since dial-a-ride service for the general public would obviate the need for PAL service, this dial-a-ride service might be implemented as an expansion of the existing PAL service, open to all passengers not traveling to or from locations within walking distance of one of the fixed bus routes. Dial-a-ride would likely operate at a higher fare than fixed-route service, at least as high as PAL service.

A.3 LOCKPORT AREA

A.3.1 Characteristics

The City of Lockport, located in the center of Niagara County, serves as the county seat. It has a population of nearly 25,000 and a population density of nearly 3,000 persons per square mile. Together, the City of Lockport and the surrounding Town of Lockport form a relatively self-contained area, but also an activity center for several adjacent, more rural towns. The area is also adjacent to the growing Buffalo suburban Town of Amherst, and commercial activity is growing on Transit road connecting Lockport with these suburban areas. With a combined 1990 population approximating 41,000 and with about 22,000 employees, the Lockport area constitutes one of the most densely developed areas in Niagara County. Over the past decade, both the City and Town of Lockport have experienced moderate employment growth. While the Town of Lockport has experienced comparatively high population growth, population within the City of Lockport has remained stable.

Currently, there is limited transit service in the Lockport area, provided by NFTA and a private operator (Rides Unlimited). NFTA fixed-route service is limited to two routes. Route 64 is an express route connecting Lockport to downtown Buffalo in peak hours, and Route 44 is a local route connecting Lockport, UB North Campus and the South Campus Rail Stop. Rides Unlimited operates very limited service from Lockport to Niagara Falls and Niagara County Community College (NCCC).

A.3.2 Service Concepts

Several concepts have been developed to improve public transportation opportunities in the Lockport area. These concepts include consolidation of transportation to Buffalo, new fixed-route service on Transit Road, a vanpool/carpool program, and flexible use of small vehicles. There are several options relating to flexible use of small vehicles.

Consolidate Transportation to Buffalo

NFTA currently runs one express route between Lockport and downtown Buffalo, and one local route between Lockport and South Campus Metro Rail Station. Both routes currently perform poorly. It may be possible to improve transportation between Lockport, Buffalo and the Erie County suburbs by establishing a single, more frequent route to the South Campus Station Hub,

where passengers could transfer to Metro Rail and continue on to various locations in Buffalo. The route would also include a stop at the North Campus Hub proposed for Amherst, where riders could transfer to other routes. Reverse commuters originating in Buffalo or other areas would transfer at the South Campus or North Campus Hub to continue their trip toward Lockport.

Transit Road Route

Fixed-route service along Transit Road is recommended as a missing link in the regional bus network.

Vanpool/Carpool Program

A regionwide carpool/vanpool program would offer service in the Lockport area. This program would most likely serve long-distance commuting trips that are not served by the above route.

Flexible Use of Small Vehicles

Small vehicles would be used for different purposes during peak and off-peak periods, as described in the following options.

PEAK PERIOD OPTIONS

Fixed-Route Circulator

While Rides Unlimited currently provides peak period fixed-route service, it does not seem to be geared toward the needs of employees. A small fixed-route circulator could be provided during peak periods to offer improved work-trip transportation for residents of the Lockport area. The route would circulate within the residential and employment areas of the City and Town of Lockport, including the very large employers along Upper Mountain Road in Western Lockport (including General Motors), large employers along Church Avenue and East Avenue (including Lockport Memorial Hospital), and some of the smaller businesses along Transit Road. The Lockport hub would be a key stop, with a schedule to meet regional bus service. The route might include at least one trip to the hub at the Summit Park Mall in Niagara Falls.

Subscription Route

If there is insufficient demand to create a fixed route geared to employees, a subscription service could be implemented during peak periods. Persons residing or employed in the Lockport area would request specific work-related trips. Bus trips would then be designed around the needs of the workers. Riders would prepay for this service.

OFF-PEAK PERIOD OPTIONS

Service Route

During the off-peak periods, small vehicles could operate as service routes, designed to provide improved local transportation to targeted sub-groups, such as seniors and youth. A service route geared toward seniors would serve apartment buildings and senior residences, the Lockport Memorial Hospital and the Lockport Mall. A service route for students would serve NCCC and the Lockport Mall; this route might be implemented as a modification of the service currently provided by Rides Unlimited. The Lockport hub would be a stop on all service routes to facilitate transfers.

Local Demand-Responsive Service

An off-peak demand-response service (dial-a-ride) could be operated during off-peak hours, offering curb-to-curb service for travel within the Lockport area. The service area would be centered around the Lockport hub to facilitate transfers.

A.4 THE TONAWANDAS

A.4.1 Characteristics

The City of Tonawanda and the Town of Tonawanda (including Kenmore Village) are located in Erie County, just north of Buffalo. The City of North Tonawanda is located just across the county boundary in Niagara County. While each experienced decreasing population during the 1980s, the "Tonawandas" had a combined population of 135,000, and employment level of 51,000 in 1990. With a principally grid-like street network, and population densities of over 4,000 persons per square mile, the Tonawandas have been categorized as "urban" in the HUBLINK plan. Land use includes an intensive cluster of industrial employment in the west (along the Niagara River), several concentrations of shopping facilities (particularly along Niagara Falls Boulevard, which forms the eastern boundary with Amherst), and primarily residential uses in the center.

Buffalo's urban fixed routes extend north into the Tonawandas. As a result, almost all bus routes in the Tonawandas have a north-south orientation. There is an existing transit center at the intersection of Main and Niagara Streets, in the northern part of the City of Tonawanda, which is currently served by five NFTA bus routes. In addition, there is a park-and-ride facility at Ellicott Creek Plaza in the northeast corner of town, and South Campus Metro Rail Station is just beyond the southeast corner of town in Buffalo.

A.4.2 Service Concepts

Three options have been developed to improve public transportation in the Tonawandas. All three options include preservation of fixed routes and creation of a vanpool/carpool program. In addition, they each include a proposed service to improve local circulation.

Maintain Fixed Routes

All north-south fixed routes to Buffalo would be essentially maintained. The existing transit center at the intersection of Main and Niagara Streets would remain the hub for the northern portion of the Tonawandas, although an additional hub would be located at the Boulevard Mall, just over the town boundary in Amherst. South Campus Metro Rail Station would serve as a primary hub for southeastern Tonawanda.

Vanpools/Carpools

A regional vanpool and carpool program could be targeted to meet the needs of persons residing in the Tonawandas, and working in locations other than the Tonawandas or Buffalo.

One or more of three options for the Tonawandas is also recommended.

Option A: Improve East-West Service

Amherst is located to the east of the Tonawandas, and while the number of trips between the Tonawandas and Amherst is growing, public transportation in the Tonawandas remains largely

north-south (radial) in orientation. To improve east-west travel opportunities within the Tonawandas for work and shopping purposes, and to provide better access between the Tonawandas and the Amherst area, fixed route east-west bus service would be enhanced. Such enhancements could include improved headways, modified existing routes and/or new routes.

Option B: Route Deviation-

Allowing fixed route services to deviate from the established route to make off-route pick-ups and drop-offs would improve the flexibility of public transit in the Tonawandas. Because existing routes in the north-south direction are part of the urban route system and are currently quite productive, it may be best to introduce deviation service on a new circulator route.

Option C: Targeted Services

This option includes different services for work and non-work travel.

Create Peak Period Subscription Route for Work Trips

The Tonawandas are characterized by a mixture of residential neighborhoods and various types of employment. A fixed-route subscription service is recommended to operate within the Tonawandas during peak periods (nearly 35 percent of work trips produced in the Tonawandas also terminate in the Tonawandas). It is envisioned that more than one subscription route would be required in the Tonawandas; one would connect the residential neighborhoods with industrial employment in the west, while another would connect with non-industrial employment concentrated in the east.

Create Off-Peak Community Circulator or Service Route

An off-peak fixed-route community circulator (service route) would operate during the off-peak periods and on weekends, and would serve important non-work destinations in the Tonawandas, such as schools, the libraries, the YMCA, senior centers, Kenmore Mercy Hospital, the Boulevard Mall and other shopping facilities. The route would radiate from the proposed hub at the Boulevard Mall in Amherst and/or the existing transit center at Main & Niagara.

A.5 AMHERST AREA

A.5.1 Characteristics

The Town of Amherst, which includes Williamsville Village, grew rapidly over the past few decades. The 1990 population was approximately 112,000, an increase of about 3,000 since 1980. The resulting population density is just over 2,000 persons per square mile. Employment growth in the 1980s was dramatic. With over 56,000 employees in 1990, Amherst has nearly doubled its number of jobs since 1980. As is typical with newer suburban areas, Amherst is characterized by a discontinuous street pattern, with many cul-de-sacs. The large North Campus of the State University at Buffalo (UB) is located in the western part of Amherst; the older Williamsville Village is in the south-central part of Amherst.

Amherst is characterized by numerous work, school and shopping concentrations. The population is affluent, with middle- and upper-income residential neighborhoods, golf courses and country clubs located throughout Amherst. The population is not generally transit

dependent, but the major exception is students living on or near the UB North Campus, as well as the traditional transit-dependent youth and senior markets.

There is limited fixed bus service in Amherst, primarily due to comparatively low demand and low density. Key routes operate on Main Street in Williamsville and on a few other major roads. There is also a park-and-ride lot in Williamsville, just off I-290. The South Campus Metro Rail Station is just beyond the southwest corner of town.

Several concepts that are intended to improve public transportation options in Amherst are described below.

A.5.2 Service Concepts

Retain Successful Routes

While some fixed routes currently operating in Amherst have low productivities, others operate above service standards. Routes 48, for example, which operates along Main Street, is a successful route and should be maintained. Route 41, connecting Amherst with South Campus Metro Rail Station, Cheektowaga and West Seneca, is also successful and should be maintained.

Consolidate/Coordinate Fixed-Route Transit

Route 44, which had a low farebox recovery ratio in 1994-1995, is the only Metro route currently connecting UB's North Campus with its South Campus. This connection is part of a long regional route (to Lockport), operating in all four zones of NFTA's service area. However, SUNY's Campus Parking and Transportation Services has its own shuttle services, (operated by Bluebird Bus Lines), which provided 63,000 passenger trips during 1996. These services operate in Amherst and around the South Campus in Buffalo, including a fixed route which connects the two campuses. Although the shuttle system is funded in part by student fees, and is available only to students and staff, there may be some opportunities to consolidate—or at least coordinate—NFTA and SUNY fixed-route services.

Create Hubs

Focusing bus service at hubs would increase transfer opportunities and facilitate bus travel. The current rail terminus at South Campus, located just southwest of Amherst, should be the most important hub in the area. Additional hubs could also serve Amherst. Secondary hubs would be located at Boulevard Mall and/or on the UB North Campus, as well as at the Eastern Hills Mall or at Erie Community College's North Campus.

Strengthen Transit Options for Reverse Commuter Work Trips

Many transit-dependent neighborhoods are located in the City of Buffalo, not far from Amherst. Several employers in Amherst would benefit from the pool of job applicants residing in the transit-dependent neighborhoods of Buffalo. There are opportunities to strengthen reverse-commute options between Buffalo and Amherst. Improving access (and perceived access) to jobs in Amherst can be done in many ways. Due to the lack of a grid-like street network in the Amherst area, certain existing fixed routes might be modified to provide deviations for both work or non-work purposes. Besides the modification/coordination of fixed-route services and creation of hubs, the following small bus and van services are recommended for consideration:

- ❑ **Employer Shuttles/Subscription Services.** Minibuses or vans sponsored by employers could shuttle workers between the South Campus Station and the major employment areas of Amherst such as Audubon Industrial Park, Centerpointe, Niagara Falls Boulevard (the western boundary of Amherst), Transit Road (the eastern boundary of Amherst), Wehrle Drive, Sheridan Drive or Maple Road (major east-west roads in the southern half of Amherst). Large employers in Amherst include Millard Fillmore Hospital and other medical facilities, as well as several large grocery stores, such as Tops and Wegman's. Alternatively, these services could be developed as a prepaid subscription service. Subscription routes might operate from Buffalo neighborhoods and/or from South Campus Metro Rail Station.
- ❑ **Vanpools.** These could serve the needs of persons working in Amherst, particularly reverse commuters. This option might be a lower-cost option for small employers.

Offer Local Feeder Services for Transit Dependents

Dial-a-ride or service routes could provide local transportation options for youths, seniors and other transit dependents in Amherst. Both could be operated in sub-areas and could focus on specific hubs.

A.6 CHEEKTOWAGA AREA

A.6.1 Characteristics

Cheektowaga Town, which includes Sloan Village and a portion of the Village of Depew (half of Depew is actually in the Town of Lancaster) is one of the largest of Buffalo's suburbs. The population has been decreasing during the past few decades; in 1990 it was 100,000. The resulting population density is over 3,000 persons per square mile. Employment has fluctuated, and was about 45,000 in 1990. Physically, Cheektowaga is not a cohesive community; it is disconnected by railroad tracks and major roadways (including the New York State Thruway and the Kensington Expressway). The largest shopping mall in Western New York (the Galleria Mall) is in the middle of Cheektowaga, and is a major regional draw. There are two existing transit centers currently located in Cheektowaga, one at the Thruway Mall and a second at Appletree. Cheektowaga currently is served by many fixed bus routes, both east-west (connecting Cheektowaga to Buffalo), and north-south (primarily within Cheektowaga, but providing limited service to Amherst and West Seneca).

Several concepts to improve public transportation in Cheektowaga follow.

A.6.2 Service Concepts

The following service concepts are recommended for consideration in Cheektowaga:

Make the Galleria the Area's Primary Transit Hub

The Galleria is the biggest attractor in Cheektowaga, and is located in the center of the town. This would be the most logical place for a successful hub, if arrangements could be made there. The current hub at Thruway Mall has little natural attraction but primarily functions as a transfer point between buses. If a hub at Galleria proves to be infeasible, the existing hub at Thruway Mall would need to be upgraded, possibly in conjunction with the redevelopment of the Thruway Mall. A secondary hub would remain at the existing Appletree Transit Center.

Continue Buffalo's Urban Route System West of I-90

Due to the higher-density and the more grid-like road network in Sloan Village and Western Cheektowaga, it seems logical to continue Buffalo's urban route structure into Cheektowaga (to areas west of the Thruway). The characteristics of areas east of the Thruway suggest lower transit demand, and are characterized by a less grid-like road network, suggesting the need for more flexible transit services.

Modify Fixed Routes

Several fixed routes should be modified to strengthen transit opportunities within Cheektowaga and to provide access to other jurisdictions. It is envisioned that several east-west fixed routes operating between Buffalo and Cheektowaga (along William, Broadway, Walden and Genessee) would all terminate at the proposed hub at the Galleria Mall. This would improve employment opportunities for reverse commuters, and improve transfer opportunities. North-south fixed routes (which would operate along Harlem Road and Union Road between Amherst, Cheektowaga and West Seneca) would also serve the Galleria Mall hub.

Local Services

Two options may be considered for local circulation services:

Option A: Fixed-Route Circulator Focusing on the Galleria Hub

A fixed-route circulator operating in Cheektowaga (west of the Thruway) would improve transit options for local travel. The circulator would serve both work and non-work destinations, and may follow different paths depending on the time-of-day. The route would connect residential neighborhoods with schools, work sites, libraries, senior centers and shopping facilities. The route would focus on the Galleria hub, where transfer opportunities would be available.

Option B: Dial-a-Ride Service

Alternatively, a dial-a-ride service region may be established in eastern Cheektowaga to connect these neighborhoods to the hub at the Galleria Mall, where passengers would be able to transfer to fixed-route buses. Dial-a-ride trips would operate at a higher fare than fixed-route service.

A.7 HAMBURG AREA

A.7.1 Characteristics

Since the 1980s, the population in the Town of Hamburg has been relatively stable (approximately 53,000 persons) whereas employment has been slowly increasing. In 1990, Hamburg attracted 19,676 daily work trips, the highest among all southern Erie suburbs. Hamburg is a low-density area (less than 1,500 persons per square mile), except for Hamburg Village which contains relatively dense residential neighborhoods and several activity centers such as the town hall, schools, a community center, etc.

Major employers in the area include Bethlehem Steel, Ford Stamping Plant and the McKinley Mall—all of which are located in northern Hamburg. These sites attract employees, mainly from within Hamburg (45 percent), with only 10 percent coming from Buffalo and 6 percent from Orchard Park. The McKinley Mall is the largest attractor of shopping trips in the "south towns," with more than 14,000 daily trips. Hamburg Village contains several small- and medium-sized

employers (Ravenwood Industrial Park, for example) and several hotels, which are located on Camp Road to the northwest of the Village.

An existing transit center and park-and-ride facility is located in western Hamburg at Athol Springs. Route 14, which is the most productive route in Hamburg, originates at the transit center and continues to downtown Buffalo via ECC South Campus and the McKinley Mall. Two Buffalo express routes also use the transit center at Athol Springs: Route 74, between the downtown and the transit center, with few trips continuing to Hamburg Village and Boston; and Route 76, between the downtown and Angola. However, both express routes have very low productivity. A moderately performing route (Route 36) runs between downtown Buffalo and Hamburg Village via McKinley Mall (with limited service to the mall on weekdays). Route 42 from West Seneca also terminates at the McKinley Mall.

A.7.2 Service Concepts

There are three locations in Hamburg that are candidates for hubs at which transit service to and from Hamburg could be consolidated. These locations are the McKinley Mall, the ECC South Campus and Hamburg Village, each of which is the major destination for a particular type of trip. In addition, the existence of the park-and-ride facility at Athol Springs suggests that the latter should also be considered as a possible hub (even though it may not be a major trip destination by itself) unless the park-and-ride could be moved to/created at one of the other locations above.

As such, two concepts were developed for Hamburg. In both concepts, the McKinley Mall was chosen (over ECC South Campus) as a primary hub for regional travel; Hamburg Village was chosen as a secondary hub for local travel. The only difference between the two concepts pertains to the assumption about the location of the park-and-ride. Also, both concepts have a transit component for local travel, which is described separately.

Regional Travel

- Retain Route 14, re-route it through McKinley Mall, and operate it throughout the day. This route would serve midday travelers (McKinley Mall shoppers and ECC students) and would also serve as an off-peak period alternative to the express service.
- Retain Route 36 between Hamburg Village and downtown Buffalo via the McKinley Mall.
- Eliminate outbound portions of Routes 74 beyond Athol Springs (six trips to Hamburg Village, two trips to Boston); travel to and from Hamburg Village would be served exclusively by Route 36.
- Retain Route 76 express service to Angola via Athol Springs.
- Extend express Route 72B serving Orchard Park and ECC South Campus to McKinley Mall, creating a secondary regional route.

Improve Transit Options for Reverse Commute

With the shortening of Route 74, reverse commutes to hotels on Camp Road would have to be served by other means. Two alternatives exist:

- Create subscription routes from Buffalo, given sufficient demand that warrants the operation of these routes. NFTA would design and operate these routes upon workers requests. Monthly prepayments by workers could help initiate and sustain the service.
- Operate employer shuttles between the hotels and the McKinley Mall. Reverse commuters would have to use Route 14, 36 or the express route from Buffalo to transfer to these shuttles at the mall.

Improve Transit for Local Work and Non-Work Travel

- Create employer shuttles or subscription routes that would operate during peak periods and serve major employment concentrations such as the McKinley Mall and Hamburg Village.
- Operate service routes between Hamburg Village and the McKinley Mall during off-peak periods to serve shoppers and the elderly and youth populations.
- Operate dial-a-ride service in the Town of Hamburg.
- Encourage carpools or vanpools for travel to the above work locations.

A.8 WEST SENECA

A.8.1 Characteristics

While its population has been relatively stable (approximately 50,000 persons) over the past two decades, West Seneca has experienced an increase in employment in recent years. With more than 20,000 persons employed in 1990, West Seneca is the second largest producer of work trips among suburbs east of Buffalo (after Cheektowaga), generating 25,000 trips per day. While the majority of these trips (40 percent) are directed towards Buffalo, about 20 percent remain within West Seneca's employment centers, such as the Gateway Non-Foods Distribution Center, West Seneca Developmental Center and the Seneca Mall. West Seneca also attracts 2,600 work trips from Buffalo and 2,000 work trips from nearby Cheektowaga.

Currently, West Seneca has one existing transit center located at the Southgate Plaza, which is the largest attractor of shopping trips in town. The Seneca Mall, located less than two miles to the west of Southgate Plaza, is currently closed but is expected to be redeveloped. Other nearby major shopping and work-trip generators include Wegman's, WNY Medical Park and Seneca Square. The most successful bus route in West Seneca (Route 15B, C) operates between the Southgate Plaza and downtown Buffalo via Seneca Street. Other routes that converge at the Southgate Plaza transit center include a route to Amherst (41B) and two routes to Erie Community College (ECC) South Campus in Orchard Park—one local, poorly performing route via Lackawanna and the McKinley Mall in Hamburg (Route 42), and an express route (72B) via Orchard Park Village. Express Route 72A, which operates between downtown Buffalo and ECC South Campus via Seneca Mall and Orchard Park Village, is the only route in West Seneca that does not use the Southgate Plaza transit center.

A.8.2 Service Concepts

The following concepts have been developed to improve local and regional trip-making in West Seneca.

Improve Transit Options for Regional Travel

- Retain Route 15B/15C to downtown Buffalo and operate it as a high-frequency trunk route.
- Create a trunk route, based on Route 41, from Southgate Plaza to Walden Galleria (or the Thruway Mall) along Union Road; this route would continue to the South Campus Hub.
- Extend Route 72B to the McKinley Mall and operate it as a secondary regional route.
- Make Route 42 a trunk route between Southgate Plaza and the McKinley Mall, and improve its frequency.

Improve Transit Options for Local Work Trips

- Work shuttles or subscription bus routes operating during peak periods might be effective in strengthening transit options for local work trips. Routes would be designed based on workers requests and sufficient demand. Monthly prepayments by workers could initiate and sustain service.

Maintain Options for Reverse Commute

Reverse commuters would have the following two options for accessing the Southgate Plaza transit center, depending on which sector of Buffalo they originate from:

- Route 15B or 15C (southeastern sector/neighborhoods of downtown Buffalo)
- Route 6 or 4 (northeastern sector/neighborhoods of downtown Buffalo) to the Thruway Mall transit center and then transfer onto Route 41B to the transit center at Southgate Plaza

Strengthen Off-Peak Transit Service

During off-peak times, local bus service within West Seneca is non-existent. Travel during these periods may be better served by innovative options that could also provide service for certain subgroups. The following two options may be implemented concurrently or separately:

- Create service routes for particular population subgroups. Different routes may be targeted toward special groups of people, such as senior citizens, youth and shoppers. For example, a service route would connect the areas characterized by higher general and elderly population densities (along the border between West Seneca and Buffalo, in this case) to destinations of interest, such as the Southgate Plaza transit center, Seneca Square, the West Seneca Senior Citizen Center, etc. These service routes may not operate during peak-hours.

Implement dial-a-ride service for the less densely populated areas in the southern and eastern parts of West Seneca. This service may require a higher fare than does fixed-route service.

A.9 LACKAWANNA

Lackawanna, considered part of the urban core, has undergone a sharp and consistent decrease in employment since the 1970s, due to the relocation of jobs to the suburbs. Lackawanna has also been losing population in the last two decades, although at a slower pace than employment. In

1990, the population of Lackawanna was around 21,000, with an average population density of 3,500 persons per square mile.

The majority of work trips produced in Lackawanna are attracted to Buffalo (42 percent), with only less than half as many remaining within town (19 percent), and still fewer working in Hamburg (12 percent). Activity is concentrated in the central and eastern parts of Lackawanna, where residential neighborhoods and small-to-medium sized employers are located. Lackawanna is also characterized by its low-income population, averaging a median household income of around \$20,000.

Lackawanna has no transit center or proposed hub. It is served relatively well by a series of bus routes (Routes 14, 36, 42, 74 and 76) running in the north-south direction between Buffalo and Hamburg, which are the two main external destinations for the residents of Lackawanna. Since all of the above routes would remain unchanged (except Route 76, which would be shortened), and their frequencies increased, Lackawanna would remain adequately connected by transit to other suburbs. Lackawanna might benefit from additional service for intratown travel, particularly in the east-west direction. These could be provided by innovative services rather than traditional fixed-route service, and would include service routes for seniors or youth, or dial-a-ride.

A.10 ORCHARD PARK AREA

A.10.1 Characteristics

The population of Orchard Park has remained stable since the 1980s, while a significant increase in jobs has occurred in the past 10 years. Generally, Orchard Park is a sparsely populated town, averaging around 1,000 persons per square mile in 1990. The highest population densities occur in the northwestern parts of the town, as well as in Orchard Park Village.

More than 35 percent of all work trips that are attracted to the Town of Orchard Park are destined to the village where the Town Hall, Village Hall, Village Center Plaza and several schools are located. Other work-trip attractors include two industrial parks to the west of the village, and various commercial sites to its north.

Around 40 percent of the work trips that are generated in Orchard Park are destined to Buffalo, with only 21 percent remaining within the town. Orchard Park also attracts/ produces work trips from/to Hamburg and West Seneca. Currently, the town is served only by two express routes—72A and 72B—which provide very limited service (one trip in each direction) outside peak-hour periods.

A.10.2 Service Concepts

The service concept for Orchard Park is based on creating a transit hub and park-and-ride facility at the village to serve as the focal point where local and regional service would converge. Since the existing regional transit service is very limited, the goal would be to strengthen the existing routes and to introduce additional ones to achieve adequate connectivity to Buffalo and the surrounding suburbs. Innovative services have been proposed to create transit opportunities for local and feeder travel by Orchard Park residents and employees.

Improve Transit Options for Regional Travel

- Create a secondary hub with a park-and-ride facility at Orchard Park.
- Extend Route 72B to the McKinley Mall and increase its frequency so it operates as a secondary regional route.

Improve Transit Options for Local Work Trips

- Create employer shuttles or subscription bus routes that operate during peak periods between the village hub and the industrial parks in the west or the other employment concentrations in the north.
- Offer a carpool/vanpool program.

Strengthen Off-Peak Transit Service

- Implement fixed-route circulators within the village to serve midday shoppers or the elderly and youth population.
- Offer dial-a-ride service throughout the town.

A.11 GRAND ISLAND

A.11.1 Characteristics

Although Grand Island has sustained an increase in population and employment over the past two decades, it remains a relatively low-density, moderately high-income residential area (the median household income is above \$40,000) with few work trip opportunities. Population density is highest in two communities—Sandy Beach in the north and Grandyle Village in the southeast. Employment is dispersed along I-190 and Grand Island Boulevard as well as in the western part of the island, where the industrial center is located. The majority of the work trips generated in Grand Island go to Buffalo. Grand Island attracts work trips from within the island as well as from Niagara Falls and Tonawanda.

Shopping attractions are concentrated in the central area, mainly at the Grand Island Plaza. A transit center is proposed at the center of the island near the Plaza, off I-190 and Grand Island Boulevard. Currently, two bus routes run parallel between downtown Buffalo and Niagara Falls via Grand Island Boulevard: regular Route 40, and Route 60, which runs express between Grand Island Plaza and downtown Buffalo.

A.11.2 Service Concepts

At the regional level, Grand Island is adequately served by Routes 40 and 60, which provide direct service to downtown Buffalo, Tonawanda and Niagara Falls. Also, transfers can be made from Route 40 in Tonawanda which allows travelers to reach Amherst or Cheektowaga.

Locally, Grand Island lacks transit service to work locations that are not along Grand Island Boulevard and other services to the two main communities. As such, the proposed hub at the center of the island would need to be established and used as the point at which small vehicle innovative transit services would converge.

Regional Travel

- Create a secondary hub at the proposed site (perhaps next to the Grand Island Town Hall).
- Combine existing Routes 40 and 60 to form a high-frequency trunk route operating between the NFITC Hub and downtown Buffalo via the Grand Island Hub.

Create Transit Options for Local Work and Non-Work Trips

- Operate subscription bus routes during peak periods to serve jobs located in the western part of the island, the two main communities and the hub.
- Create service routes for senior citizens, youth and shoppers. Connect the highly populated areas in Sandy Beach and Grandyle Village to destinations of interest, such as the Grand Island Plaza Hub (the same vehicles might operate both the subscription and service routes).
- Implement dial-a-ride service at a higher fare than fixed-route service.
- Offer a carpool or vanpool program.

A.12 AURORA AREA

A.12.1 Characteristics

Aurora is a very low population density, high-income area whose population has been slowly decreasing over the past few years. East Aurora Village is the only center of activity in town, containing the Aurora Village Shopping Center, Aurora Park Health Care Center, and Fisher Price Toys. The village also has a relatively high density of elderly (500 - 1,000 persons per square mile). Work trips occur within the village and to Buffalo, with very few work trips to/from surrounding suburban towns.

Currently, there are three bus routes serving the village. Route 15C to downtown Buffalo via the Southgate Plaza (in West Seneca) is the most productive route, followed by express and limited stop Routes 70 and 75, which also go to Buffalo along alternate paths and perform poorly. Route 70 extends beyond East Aurora Village to Holland.

A.12.2 Service Concepts

The service concept developed for Aurora establishes East Aurora Village as the hub for this area and consolidates transit service around this hub.

Improve Regional Travel

- Retain Route 15 and improve its frequency.
- Combine Route 75 with Route 15C, so as to operate them as a single secondary regional route.

Create Transit Options for Local Work and Non-Work Trips

Local trip-making in Aurora would be based on the use of small vehicles.

- Implement dial-a-ride service based in East Aurora Village, which would operate as a subscription service during peak.

- Create fixed-route circulators serving work trips during peak periods and operating as service routes in the off peak periods.

A.13 LANCASTER AREA

A.13.1 Characteristics

Lancaster is a medium income (\$35,000 per household), low-density (850 persons per square mile) area which has sustained relatively stable population and employment levels in recent years. The two centers of activity in Lancaster Town are Lancaster Village and Depew Village, both situated on the west side of town, bordering Cheektowaga. (Part of the Village of Depew is within the Town of Cheektowaga.)

Lancaster Village is relatively densely populated and contains several major employers that attract 45 percent of all work trips in Lancaster (Figgie International, Lancaster Village Industrial Park, the Board of Cooperative Educational Services (BOCES), etc.). Similarly, Depew Village contains the Southeast Community Work Center, the Walden Business Center and the Depew-Lancaster Plaza, which is also a major shopping attraction. The two major shopping centers in the area, however, are the Town Edge Square Plaza and the Transit French Plaza, located south of Depew Village along Transit Road. Around 30 percent of the work trips generated in Lancaster are destined to Buffalo, with 20 percent remaining in Lancaster and 28 percent attracted to Cheektowaga and Amherst. Cheektowaga contributes the largest share, with 18 percent of the non-resident workers in Lancaster

Lancaster Village is currently served by a moderately performing route (Route 6C, D) which operates to downtown Buffalo through the Walden Galleria and the Thruway Mall. Express Route 69, between Alden and downtown Buffalo via the Appletree Mall, also serves Lancaster and Depew Villages, although it provides only eight trips and performs poorly.

A.13.2 Service Concepts

- Create a hub at Lancaster Village.
- Maintain Route 6.
- Increase service on Route 69 by offering one additional trip in the morning and one in the evening.
- Strengthen local transit with innovative services; create subscription bus routes during peak periods, serving job locations in the western part of town; and initiate service routes for senior citizens, youth and shoppers.

A.14 CLARENCE

A.14.1 Characteristics

Clarence is characterized by its affluent population, averaging more than \$40,000 per household, and its low population density (350 persons per square mile). Clarence has emerged as a major suburban shopping destination in the past two decades; consequently, employment in Clarence has risen sharply. Several malls and shopping centers are located along Transit Road, including the Eastern Hills Mall and the Clarence Mall, which generate more than 12,000 daily shopping

trips. Other shopping locations south of the two malls include TransitTown Plaza and P&L Plaza.

The majority of work and shopping trips to Clarence from outside town originate in Amherst, Cheektowaga and Buffalo. At the Eastern Hills Mall, several bus routes currently intersect. Route 48, which is one of the more productive routes in the metro system, operates between the Mall and South Campus Metro Rail Station via Main Street. Route 49, which operates between the same two ends but along a different road, is a poor performer. Finally, Route 66A is a moderately successful express route operating between the TransitTown Plaza and downtown Buffalo.

A.14.2 Service Concepts

- Create a hub at Eastern Hills Mall.
- Eliminate Route 49.
- Increase peak period frequency on Route 48 and operate it as a secondary regional route.
- Implement a peak period, local circulator service within Clarence to improve reverse commute options (service could be based at the hub and serve potential job locations).
- Create a dial-a-ride service for midday, non-work local trips.



Appendix B: Local Service Implementation Guidelines

This appendix provides general guidelines for implementing the local services proposed in the HUBLINK plan and is intended to assist in the local service planning and selection process. Services described in this appendix consist of local circulators, deviation routes, dial-a-ride, subscription services, employer shuttles, vanpools, and planned demand routes. General characteristics and basic service design criteria are presented for each service, followed by information on productivity, conditions for effectiveness, and examples of successful implementations in various parts of the country. At the end of the appendix, a section describing some of the data needed to plan these services is presented. The appendix is organized as follows:

- Section B.1: Local Circulators
- Section B.2: Deviation Services
- Section B.3: Dial-A-Ride
- Section B.4: Subscription Services
- Section B.5: Employer Shuttles
- Section B.6: Vanpools
- Section B.7: Planned Demand Routes
- Section B.8: Service Planning Data

B.1 LOCAL CIRCULATORS

B.1.1 Service Characteristics

Local circulators are designed to operate within neighborhoods and to provide connections to the regional transit network. Routes generally operate on local roads, and tend to be short and non-linear. They may connect a variety of origins and destinations, including local activity centers, employment sites, shopping centers and transit hubs. The route is linked to the regional transit network at one or more locations. Operators may use small buses or vans, which enables them to travel along neighborhood streets and to enter driveways and parking lots.

B.1.2 Target Ridership

Local circulators are designed to serve the general public, and may serve work trips and/or non-work trips depending on the route design. In some communities, these circulators may be designed specifically to accommodate the travel needs of elderly and disabled riders, with connections to senior housing and health-care facilities; these specialized services are often known as *service routes*.

B.1.3 Route Design and Schedule

For all local circulators:

- Design routes to travel on local neighborhood streets where full-size buses cannot travel.
- Use small buses or vans to allow neighborhood penetration and convenient access.

- ❑ Ensure that route serves key community activity centers, such as neighborhood commercial districts, shopping malls, supermarkets, hospitals, senior housing, libraries and recreation centers.
- ❑ Allow at least one transfer point with regional fixed-route service.
- ❑ Keep trip length and running time short (30 minutes or less) in order to compete with local automobile trips.
- ❑ Headways should not exceed 30 minutes in peak periods, 60 to 90 minutes off-peak.
- ❑ Operate service six days per week and 8 to 12 hours per day.

For service routes:

- ❑ Routes should be designed to minimize walking distance for the target population.
- ❑ Bus stops should be located to maximize convenience. Buses should stop at the front entrance for malls, hospitals and other destinations. In addition, many systems allow passengers to board and alight at any point along the route.
- ❑ It may be helpful to consider the travel patterns of paratransit ridership when designing service routes.
- ❑ Schedules should allow sufficient time for drivers to assist passengers with boarding and alighting.

B.1.4 Productivity

- ❑ Productivity can fall into a range of 5 to 15 trips per hour, but 8 to 10 trips per hour can be considered typical.
- ❑ Most systems set fares to be comparable with those on the regional bus network and provide free transfers, if possible. Fares may be reduced for seniors.
- ❑ Employers may subsidize fares on circulators that serve their facilities.

B.1.5 Conditions for Effectiveness

- ❑ Local circulators are more successful in areas with more than 2,500 persons per square mile.
- ❑ Operating service in areas with mixed land use can help sustain high ridership throughout the day.
- ❑ Although designed for both captive and choice riders, successful service requires an established base of transit-dependent riders.
- ❑ When routes are targeted toward seniors and persons with disabilities, bus drivers should be willing to help riders board and alight.

B.1.6 Service Examples

- ❑ Tri-Met, in Portland (OR), designed three neighborhood circulators to operate in areas where the terrain, discontinuous road network, and low-density development made fixed route services difficult to provide efficiently.

- ❑ In Allentown (Pa), the Lehigh and Northampton Transportation Authority (LANATA) operates the Whirlybird shuttle, which connects five area shopping malls.
- ❑ Madison County (IL) operates a series of local shuttles throughout a largely rural service area.
- ❑ In Walnut Creek (CA), two circulator routes link downtown activity centers with a regional rail station.

B.2 DEVIATION SERVICES

B.2.1 Service Characteristics

Deviation services fall into two broad categories:

- ❑ **Route deviation** services follow a designated route and schedule, but vehicles may leave the route to pick up or drop off passengers upon request. The vehicle then returns to the fixed route at the point where it departed to meet the request. Passengers may board the bus at designated stops along the route or call ahead to request a pick-up off the established route.
- ❑ **Point deviation** services operate on a fixed schedule, with a limited number of specific stops, but do not follow a predetermined route. Vehicles will accommodate requests for pick-up and drop-off at other stops within the service area. Passengers may board the bus at designated stops or call ahead to request an off-route pick-up.

Numerous variations are possible within these two types of service. Some systems will not leave the route to pick up passengers, but will make diversions to drop off passengers on the bus. In a variation sometimes known as *checkpoint route deviation*, vehicles will make diversions upon request, but only to certain predetermined locations. These may include employment sites or shopping centers.

B.2.2 Target Ridership

Deviation routes are designed to enhance the convenience of local circulators. While these services are designed for the general public, their door-to-door service may prove particularly attractive to elderly and disabled riders. They also have more appeal for non-work travel since these passengers are less time-sensitive. Many systems have found that deviation routes have allowed them to meet the ADA requirements without implementing more costly paratransit services.

B.2.3 Route Design and Schedule

For all deviation routes:

- ❑ Use small buses or vans to allow neighborhood penetration and convenient access.
- ❑ Select an appropriate communications technology for making pick-up requests. Some systems ask passengers to call a central dispatch facility, while others equip drivers with cellular telephones.
- ❑ Determine an appropriate advance-notice requirement for pick-up requests. Twenty-four-hour advance notice is considered typical, but some systems accept same-day reservations.

- ❑ The route should be developed to allow vehicles to accommodate deviation requests easily. Planners should examine traffic circulation and congestion points when considering introducing route or point deviation services.
- ❑ Consistent requests for diversions to specific locations could suggest the need to modify the route.

For route deviation:

- ❑ Define a corridor for route diversions. Some systems only accommodate deviation requests for one or two blocks, while others will travel up to a mile off route. Allowing route deviations up to three-quarters of a mile on either side of a route will meet ADA requirements without complementary paratransit.
- ❑ Allow sufficient time in the schedule to support route deviations; building an additional 20 minutes into the schedule is typical.

For point deviation:

- ❑ The service corridor should be designed to support reasonable travel time (30 minutes or less) and headways (60 minutes or less).
- ❑ Point deviation is not considered fixed-route service for ADA purposes. Accordingly, there is no requirement for complementary ADA paratransit service.

B.2.4 Productivity

- ❑ Productivity on deviation routes can range between 4 and 12 passengers per hour. Service tends to be more cost-effective than demand response, but less effective than local circulators.
- ❑ A surcharge may be applied to deviations. The majority of operators offering such services charge the basic system fare, but some add a modest fee (typically 25¢).

B.2.5 Conditions for Effectiveness

- ❑ Deviation routes should be used in areas where population density cannot support fixed-route services.
- ❑ Operators should monitor the number of deviations on a trip to ensure schedule adherence.
- ❑ The number of deviations on a single trip should not create excessive delays that inconvenience passengers.
- ❑ Route and point deviation services are not generally applicable in time-sensitive environments.
- ❑ Use of advanced technologies, such as automatic vehicle location (AVL) systems, can help optimize dispatching operations.

B.2.6 Service Examples

- ❑ The Fort Worth Transportation Authority (The T) operates route deviation services in several residential suburbs. Services are designed to provide community circulation and connections with the regional fixed-route system.

- ❑ Three route-deviation circulators operate in Broward County (FL), providing connections to the county fixed-route system.

B.3 DIAL-A-RIDE

B.3.1 Service Characteristics

General public dial-a-ride provides door-to-door service within a defined area. Passengers make advance trip reservations, and standing orders are generally accepted. Service is intended to provide greater coverage in a low-density rural or suburban area than a fixed-route network can provide and may be designed to provide connections to the regional fixed-route network.

B.3.2 Target Ridership

Like other local circulators, dial-a-ride services are intended to serve the general public. The curb-to-curb aspects of the service may prove especially attractive to seniors and persons with disabilities. No complementary ADA service is required for dial-a-ride service; moreover, if the service area includes fixed routes, dial-a-ride can be used to meet ADA complementary service requirements. Dial-a-ride is especially common in rural areas, where low population density and dispersed development patterns are difficult to serve with fixed-route transit and where it is difficult to identify common points to serve with a deviation route.

B.3.3 Route Design and Schedule

- ❑ Use small buses or vans to allow neighborhood penetration and convenient access.
- ❑ Service may be divided into zones to help concentrate activity and to use resources more efficiently. Vehicles would provide service within their zones, while interzonal trips would require a transfer.
- ❑ Planners can incorporate elements of a point deviation service by requiring vehicles to serve one or more transfer points at a scheduled time.
- ❑ Operators should select an appropriate communications technology for making pick-up requests. Some systems ask passengers to call a central dispatch facility, while others equip drivers with cellular telephones.
- ❑ Twenty-four-hour advance notice for service reservations is considered typical for dial-a-ride service, but some operators can accommodate same-day requests.
- ❑ Operators should establish a policy regarding standing orders or subscription trips. The policy may include guidelines on the number of standing orders accepted, as well as advance notice and cancellation requirements.

B.3.4 Productivity

- ❑ General public dial-a-ride services are less productive than other community services because of the low-density operating environments and curb-to-curb service. Ridership typically falls within the range of 1 to 9 passengers per revenue-hour, averaging at 3 to 5 passengers.
- ❑ Dial-a-ride service can be expensive to operate because of low productivity and communications and dispatch requirements; many systems have discontinued service because

of high costs. However, where trips are very dispersed, high-quality fixed-route services would be even more costly to provide.

- Fares are typically twice that of fixed-route service.

B.3.5 Conditions for Effectiveness

- Dial-a-ride services are best suited to low-density suburbs and rural areas.
- Services that feed regional bus and rail systems tend to be more successful.

B.3.6 Service Examples

- Tidewater Regional Transit operates Maxi-Ride, a dial-a-ride program in low-density areas of Norfolk, Chesapeake and Portsmouth that combines general circulation with feeder services to the fixed-route bus system.
- San Diego Transit operates demand response shuttles in suburban areas characterized by discontinuous street network, canyon terrain, geographic isolation and dispersed travel patterns. Priority is given to passengers transferring to the fixed-route system, but other community trips will be served if space and time allows.

B.4 SUBSCRIPTION SERVICES

B.4.1 Service Characteristics

Subscription buses provide tailored service to a group of commuters with common origins and destinations. Service may be provided by the transit agency or a sponsoring organization, usually with assistance from the transit agency.

B.4.2 Target Ridership

Subscription services, which can fill the gap between vanpools and fixed-route buses, are developed for a group of commuters who work at a site that is not served by fixed-route transit.

B.4.3 Route Design and Schedule

- Subscription services generally use a full-size bus, sometimes an over-the-road coach. In lower-population areas, a smaller vehicle may be used.
- Because service is tailored to the specific needs of the subscribers, a subscription route generally makes one round-trip per day.
- Vehicles may pick up passengers at their residence or may originate at a centrally located transit center or park-and-ride facility.

B.4.4 Productivity

- Passengers purchase a monthly pass, which guarantees a seat.
- Operating costs may be covered by fares, employer contributions and transit agency funding.
- Employers may fund start-up costs, but transit agencies frequently take over service.
- Because of the specialized nature of the service, operators may set fares to cover a higher percentage of operating costs than that of other fixed-route services.

B.4.5 Conditions for Effectiveness

- Approximately 30 to 50 subscribers are needed to support a subscription route using a full-size bus.
- Subscription routes are generally used for long-distance commutes, unless the passengers are transit dependent.
- Employers may support subscription routes by dedicating an area for passenger waiting, boarding and alighting.

B.4.6 Service Examples

- Pace introduced several subscription bus routes to serve a major employer that moved from downtown Chicago to a suburban location.
- Dallas Area Rapid Transit sponsors a subscription bus to a major employer outside of its service area.
- Houston METRO helps subsidize a subscription bus that connects a suburban park-and-ride lot with an employment center north of downtown.
- In Allentown (PA), LANATA subsidizes half of the cost of a subscription van program that serves a suburban industrial park.

B.5 EMPLOYER SHUTTLES

B.5.1 Service Characteristics

Employer shuttles provide service between a transit center and an employment site. Service generally operates frequently, sometimes during peak periods only, and is designed to serve short trips.

B.5.2 Target Ridership

Services are targeted at commuters who work at a facility that is not directly accessible to transit but is only a short drive from a major transit center or rail station.

B.5.3 Route Design and Schedule

- Employer shuttles provide direct service between a transit center and one or more work sites.
- The route should be direct, and travel time should be short—usually 15 minutes or less. Schedules may be coordinated to meet a regional bus or rail service.
- Service may operate during peak periods, with some midday service available.
- Employer shuttles generally use a van or minibus.

B.5.4 Productivity

- Shuttles generally require financial support from the employer. This may take the form of operating the service directly or subsidizing service provided by a transit agency.
- Employees usually ride free, but may be required to show an employee ID or a regional transit pass.

B.5.5 Conditions for Effectiveness

- Service must be direct and frequent.
- Travel time should be short.
- Employer support can help ensure success.

B.5.6 Service Examples

- Sorrento Valley Coaster Connection provides shuttle service between a commuter rail station and several employers in a campus-style office park outside San Diego.
- Contra Costa County Transit Authority, in northern California, operates a shuttle that connects a suburban BART rail station with the Bishop Ranch Business Park, a planned office/industrial campus with more than 60,000 employees.
- In New Haven (CT), the Shoreline East shuttle transports passengers from a commuter rail station to downtown New Haven.

B.6 VANPOOLS

B.6.1 Service Characteristics

A vanpool consists of a small group of commuters (usually between 5 and 15 people) who ride to work together in a van. Vanpool commuters work in the same location, typically for a single employer, and live near one another. One or more vanpool members serves as the driver.

Some employers match individuals to develop vanpools, based on their residential locations; this works best for employers with on-site transportation management services. Transportation management associations (TMAs), transit agencies or other "mobility coordinators" may organize vanpools, working with employers in a specific area or throughout the region.

There are three basic models for operating a vanpool program.

- Employer programs.** Some large employers have established company vanpool programs.
- Transit agency programs.** The transit agency may set up and administer the program. Agencies may operate the program in-house or contract some or all program elements.
- Brokerage.** A transportation management association, or similar entity, operates a vanpool program within a defined service area. The broker administers the program and contracts with individual operators to provide the vehicles.

B.6.2 Target Ridership

Vanpools can be a cost-effective way of serving work sites that are not accessible to regional transit services. They are especially well suited to long-distance commuting, including suburb-to-city and suburb-to-suburb trips, but can serve rural areas as well. City-to-suburb reverse commuters are a new vanpool market.

B.6.3 Route Design and Schedule

- Vanpools usually carry between 5 and 15 passengers, depending on the vehicle. These may range from minivans to conversion vans.

- One member of the vanpool is designated as the primary driver, with one or more individuals as back-up drivers.
- In many cases, the primary driver may use the van for limited personal use on weekends and evenings. Drivers who take the vans home at night may be required to provide off-street parking.
- Program operators may screen the drivers to ensure safe and reliable transportation. This may include a credit check, a physical examination, and a drug and alcohol test.
- The administering agency is usually responsible for recruiting vanpool members and may work with employers to identify candidates.

B.6.4 Productivity

- Passengers pay a monthly fare, which is usually based on a combination of mileage and number of passengers.
- Operating costs are fairly low because the driver is a member of the vanpool rather than an employee of the transit agency.
- Many vanpools cover most or all of their operating costs.
- Some transit agencies have introduced vanpools to replace low-productivity fixed-route services.

B.6.5 Conditions for Effectiveness

- Vanpool programs may have complex administrative requirements because of the need to screen and monitor volunteer drivers.
- Vanpools are best suited for long-distance trips. Typical round-trip commuting distances can be between 70 and 100 miles.
- Vanpools are most effective in areas without transit alternatives.
- Employers or transit agencies may offer a guaranteed ride home program to provide a safety net for vanpool members who have emergency travel needs.
- Some employers provide preferential parking rates or locations for vanpools.

B.6.6 Service Examples

- Pace initiated the Vanpool Incentive Program (VIP), which includes a network of vanpools serving employers in Chicago and its suburbs. Pace owns the vehicles but contracts fleet management and maintenance.
- King County Metro operates an extensive network of vanpools in the Seattle metropolitan area. The agency contracts services to a private operator.
- The Fort Worth Transportation Authority used vanpools to replace eight high-cost, low-ridership fixed routes serving one of the area's major employers.
- In Houston, the METROVan program can take advantage of the area's extensive network of high-occupancy vehicle (HOV) lanes.

- In the Boston metropolitan area, CARAVAN operates a vanpool brokerage to serve employers and transportation management associations.

B.7 PLANNED DEMAND ROUTES

B.7.1 Service Characteristics

Planned demand routes are scheduled to serve selected towns and activity centers on different days of the week. They can operate as fixed-route or route deviation services and are designed to maximize service coverage with scarce resources.

B.7.2 Target Ridership

Routes are designed to serve transit-dependent rural residents who can plan their travel to match the service schedule.

B.7.3 Route Design and Schedule

- Routes should serve key area activity centers, such as health-care facilities and shopping areas.
- Schedules should be developed to serve each corridor on a different day of the week.

B.7.4 Productivity

- Planned demand routes tend to carry less passengers per hour than service routes because of the generally lower population density in rural areas. Productivity can fall between 2 and 10 passengers per hour.

B.7.5 Conditions for Effectiveness

- Planned demand routes are best suited for low-density rural areas.
- Passengers should have the flexibility to plan activities to coincide with bus schedules.
- Because service is not daily, planned demand routes are not suitable for work trips.

B.7.6 Service Examples

- County Transit provides planned demand service in the rural sections of San Diego County.

B.8 SERVICE PLANNING DATA

The successful implementation of the services discussed above is dependent upon adequate planning efforts involving the analysis of several forms of data. This data would be used in the service design phase to match the characteristics of the proposed services to those of the community they would be serving, thus providing services appropriate for each type of area.

Although the services described in the previous sections have different general characteristics, there are broad categories of service planning data which may be applicable to all of them. These data categories are described in the next sections. It should be noted that a significant amount of this data has already been assembled during the HUBLINK study.

Information on Activity Centers

Activity centers include major employment, shopping, recreation, medical and educational facilities, as well as major residential developments. A database of the locations and sizes of these centers is necessary in planning many of the local community services, especially those targeted at specific ridership groups, such as the elderly, workers or midday shoppers. For example, a suburban service route would be designed to serve the key community centers in its neighborhood. Information on activity centers would be obtained from working with the representatives of these centers to determine the best way to accommodate travelers to these places.

Demographic and Socioeconomic Characteristics

These include information on the spatial distribution of the elderly, youth, disabled, public assistance clients, and other transit-dependent segments of the population. Also, the latter would include low-income households and persons with no auto availability. Sources of this information include the US Census and the Department of Social Services.

Information on Travel Needs

Certain groups of the population may have specific travel needs that are different from the rest of the population. The elderly, for example, may need to make certain trips during specific times of day and/or on specific days of the week. This information should be incorporated in the planning of specialized services. Sources of this information would include human service agencies, advocacy groups and paratransit programs. The stakeholder process of the HUBLINK study has contributed to the basic understanding of travel needs; small surveys of existing riders (on board/at activity centers) addressing the important service factors would complement this understanding and may be necessary in starting up the HUBLINK plan.

For the planning of ridesharing services, it may be essential to assess the level of support that could be provided by large employers and to collect information on parking limitations, shift times and flexibility of work schedules. For flexible services, samples of passenger logs from ADA/paratransit services may be used to better understand trip patterns.

Knowledge of Local Street Network

Many of the local services are operated on local neighborhood streets. Thus, the knowledge of the local street system would be essential, especially in designing services that minimize walk distances and in keeping trip lengths within acceptable limits. This could be achieved by working with local traffic and planning departments in each community.



Appendix C: Design of the Mobility Coordinator

C.1 THE MOBILITY COORDINATOR—OVERVIEW

The concept of a Mobility Coordinator to oversee the coordination of paratransit services is particularly applicable to Western New York, for a number of reasons. First, there are many diverse organizations that provide transportation in the area that have identified transportation needs, and have expressed interest in participating in a coordinated effort as financial sponsors. Second, there is potentially a large volume of trips that could be brokered through the Mobility Coordinator. By using a Mobility Coordinator, key paratransit services could be consolidated into one service delivery structure (via voluntary purchase of service contracts) and then operated by several public, private not-for-profit, and not-for-profit providers under contract to the Mobility Coordinator. The Mobility Coordinator would collectively operate a mixed fleet of different vehicles and would also be the logical entity to oversee other types of services, such as the local circulator services and employer-based services, as well as to provide ridesharing services.

This vision is illustrated in Figure C-1 on the following page. As shown, there are a number of sponsors who might voluntarily purchase service from the Mobility Coordinator. Public sector sponsors might include the NFTA, Erie and Niagara County Departments of Social Services and Senior Services and municipalities, for example. Private sector sponsors might include private human service agencies, hospitals, universities and employers. These sponsors would all have a dual role with respect to the Mobility Coordinator. Each, as a purchaser of service, would have a contractual relationship with the Mobility Coordinator, specifying any policies, procedures, service standards or ground-rules to be followed in transporting the sponsor's riders, clients, students, constituents or employees. In the other role, each would participate on a regional HUBLINK Coordinating Council that would be the advisory body for the Mobility Coordinator.

As is also illustrated in Figure C-1, the Mobility Coordinator, through contracts with public and private sector carriers, would arrange for several types of services, including:

- **Specialized paratransit services** - It is envisioned that the Mobility Coordinator would establish a "core area" paratransit service, which would probably involve multiple carriers. This core area would encompass the bulk of the current PAL service area, and would include the first ring of transit hubs and the circumferential routes connecting them. The paratransit services provided would include PAL and agency contract transportation. In addition, the Mobility Coordinator would also arrange for the provision of ADA/agency paratransit services in "satellite" areas in suburban and rural areas, with paratransit-to-transit and paratransit-to-paratransit transfers arranged at the hubs. NFTA would purchase service for PAL riders, at the cost of the Mobility Coordinator of providing the service. Agency sponsors would purchase paratransit services at the Mobility Coordinator's cost. The delivery of service would be accomplished through a combination of (1) dedicated van/sedan-based paratransit service, with a level of dedicated service based on the volume of ridership, involving several vendors that are paid on an hourly rate under contract to the Mobility Coordinator; and (2) undedicated van/sedan-based paratransit service provided by one or more taxi companies, paid on a per trip rate under contract to the Mobility

Coordinator, that will augment the dedicated service.¹ At this stage, it has not yet been determined whether reservations and scheduling would be performed by the Mobility Coordinator or by the contractors.

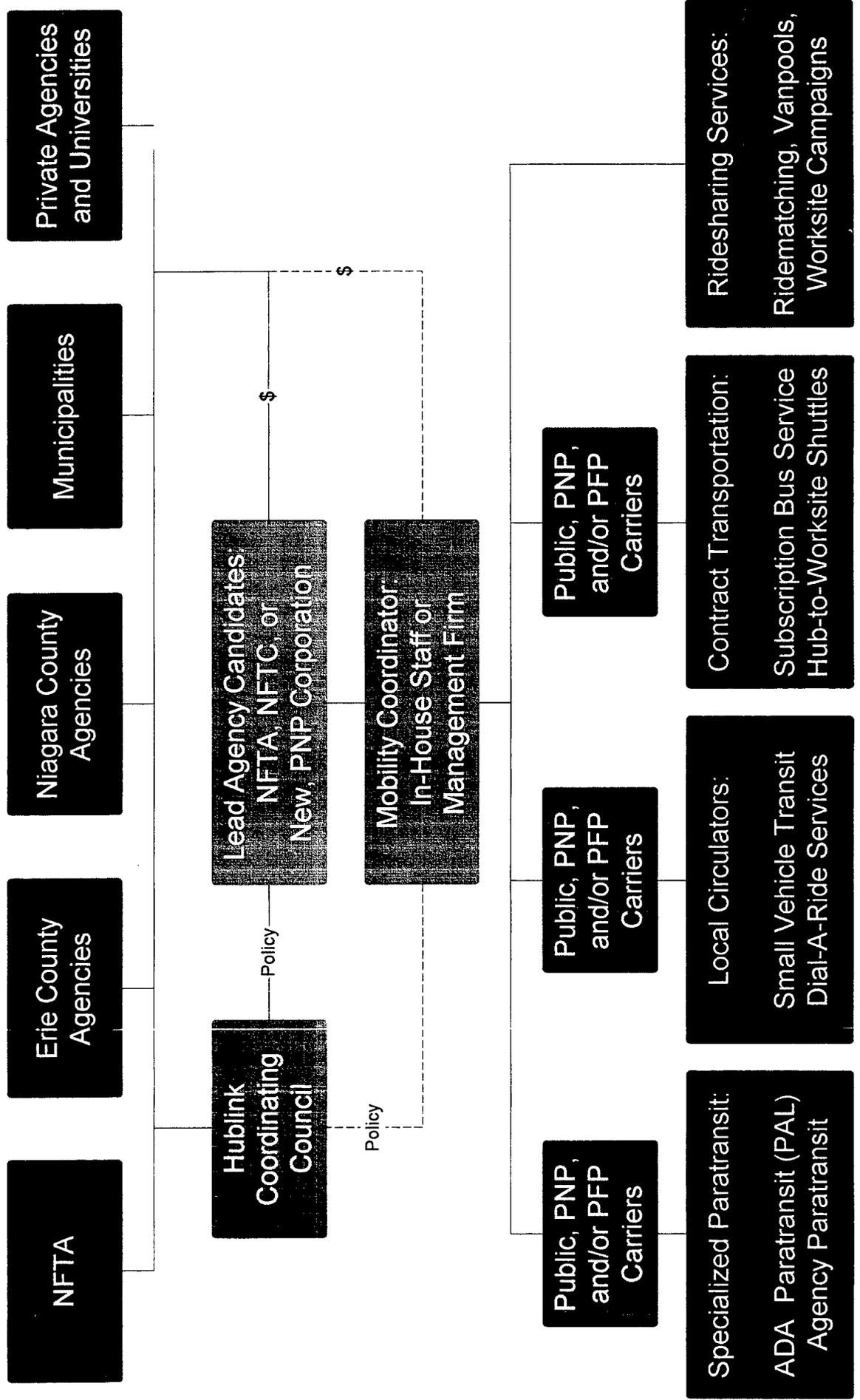
- **Local general public circulator services** - It is envisioned that the Mobility Coordinator would contract for the operation of new local, hub-based, small-vehicle services. These might include (1) service route/community bus services; (2) flexible transit services, such as route/point deviation services; and/or (3) dial-a-ride services. It is also envisioned that these services would be financed partly by NFTA and partly by local matches from the public sector (e.g., municipalities, counties, SUNY at Buffalo) and from the private sector (e.g., employers, industrial parks).
- **Contract transportation services** - It is envisioned that the Mobility Coordinator would contract for the provision of such employer-based services as subscription van/bus service or hub-to-site shuttles for sponsors such as employers, industrial developments, universities and possibly human service agencies, as well. Sponsors would purchase service at the Mobility Coordinator's cost. Note that these services would augment any local circulators; alternatively, these sponsors might wish to contribute to the funding of local circulators if the local circulator services could then be enhanced to better meet the sponsor needs.

In addition, as mentioned above, the Mobility Coordinator would be the likely candidate to perform regional ridesharing services such as (1) ridematching for carpools and vanpools; (2) vehicle provision for sedanpools, vanpools and buspools; and (3) site-based campaigns for employers, universities and large agencies to promote ridesharing (and use of transit). Note that the provision of vanpools, ridesharing services and dedicated shuttle services offers an alternative to more costly advance-reservation, demand-responsive paratransit services. This is especially true in instances when a certain critical mass of riders make roughly the same trip on a daily basis, and when the users can either cover the cost of the service in a cooperative cost sharing arrangement, or a sponsor (developer, employer, college or human service agency) is willing to fund some or all of the cost.

It is clear that the Mobility Coordinator functions should be housed in an organization involved with transportation from a regional perspective, which can reflect the vested interest of the sponsoring organizations, and be unbiased in the manner in which it contracts for service and allocates trips. Based on these criteria, there would seem to be three possibilities:

¹ The general industry-wide rule of thumb for providing paratransit service is to provide dedicated paratransit service (i. e., service that is operated or purchased by a sponsor for set number of hours or days and is used to transport only riders who have been designated as eligible by that sponsor) where and when it can be productive. Otherwise, undedicated service, or trips that are purchased individually as needed, offers flexibility and cost savings to the Mobility Coordinator in providing a different *kind* of service than is offered through the dedicated service. Circumstances in which this type of service might be appropriate include (lower-productivity) times when the dedicated service does not operate; periods of high demand, as a supplement to the dedicated service; when shorter advance notice is required; or when a less expensive alternative is desired for certain trips. In support of the latter point, undedicated service can often represent a mechanism for cost savings where the undedicated service vendors under contract to the Mobility Coordinator have other business/contracts and can offer savings to the Mobility Coordinator -- through discounted per trip rates -- because the cost of providing the service is "shared".

Figure C-1: HUBLINK Mobility Coordinator





- ❑ Alternative 1: The Mobility Coordinator responsibilities are housed within NFTA.
- ❑ Alternative 2: The Mobility Coordinator responsibilities are housed within NFTC.
- ❑ Alternative 3: A consortium of funding organizations (such as the public and private entities represented on the study's Policy Advisory Committee) work together to co-establish a new private not-for-profit organization as the Mobility Coordinator. Representatives of each sponsor could serve (at least initially) as the new organization's Board of Directors.

In the first two alternatives, it is suggested that NFTA and NFTC, in conjunction with the study's Policy Advisory Committee, form a permanent HUBLINK Coordinating Council (HCC) composed of representatives from organizations that purchase service from the Mobility Coordinator, and consumer representatives. We foresee the HCC acting as an advisory body to assist with (1) implementing the services that will come under the auspices of the Mobility Coordinator; (2) establishing service quality standards; (3) monitoring service quality and cost effectiveness; and (4) fostering further coordination of paratransit services in the two-county region. In the third alternative, the sponsor representatives would sit on the private not-for-profit organization's Board of Directors.

In addition, staffing the Mobility Coordinator in any of the three alternatives could be done with in-house employees or with a management firm that specializes in brokerage management, or a combination thereof. As a transition strategy, there is also a possibility that participating sponsors may wish to "lend" key employees to the Mobility Coordinator.

With that as an introduction, skeleton descriptions of these three alternatives are presented below. Also discussed are the advantages and disadvantages that are particular to the alternatives.

Alternative 1: Mobility Coordinator is Housed Within NFTA

Organizational Structure/Staffing - NFTA would create a new division to house the Mobility Coordinator, and staff the Mobility Coordinator with in-house staff and/or a private management firm. It may also make sense, especially in the transition, to "borrow" supervisory staff from the sponsors' transportation programs to facilitate the transition; it is envisioned that these staff would remain salaried employees of the sponsors and would transition back to the sponsors or become staff of the Mobility Coordinator over time. The Mobility Coordinator would draw upon Metro planning staff, as needed. Metro operations would compete on an equal footing with private for-profit and not-for-profit operators for contracted service.

Fleet - There are several advantages to the Mobility Coordinator being able to provide vehicles to contractors. First, funding for capital purchases is currently more available from federal and state sources than funding for operations; thus, this would stretch the operations funding. Second, providing vehicles lessens the risk on shorter-term contracts, which translates into lower bids and further stretches operations funding. Third, providing vehicles to contractors facilitates the shifting of business from one contractor to another. Fourth, it allows the Mobility Coordinator to have more direct control over the type and quality of vehicles used to provide the service. The disadvantage is that more stringent monitoring would be required. The Mobility Coordinator, as a division of the NFTA, would have access to capital funding, and would be able to provide vehicles to contractors, and to utilize contractor-owned vehicles as needed to

supplement this fleet. Lease agreements between the NFTA and the contractors would need to be prepared and executed. The Mobility Coordinator should also arrange for the transfer of vehicles from agency operators who wish to cease direct operations and purchase service through the Mobility Coordinator. If the capital funding available and/or the availability of existing vehicles proves insufficient to meet demands, the Mobility Coordinator could also contract with vendors for use of vendor vehicles to provide services. The Mobility Coordinator, as a division of the NFTA, would also procure vehicles for sedanpools and vanpools, as the requests materialize.

Computerization - The Mobility Coordinator division would probably inherit the Trapeze PASS reservations, scheduling and dispatching computer system that was installed for PAL, subject to any licensing restrictions from the software vendor. At the very least (i.e., in a decentralized environment), NFTA would use the software system to consolidate service data (see Section 3). NFTA may need to establish a link with the New York State or County Department of Social Services, depending on the extent to which DSS transportation is provided through the coordinated system, and whether NFTA or its contractors perform the eligibility and reservations functions. NFTA would also need to procure or develop an information system for managing vanpools and other ridesharing functions.

Operations - The Mobility Coordinator would procure contractors for the "core area" paratransit service, each satellite paratransit area, each local circulator service, each employer shuttle and each subscription bus/van service. Each contractor would be responsible for vehicle operations. NFTA would also directly perform all ridesharing-related services.

Advantages - Many would argue that NFTA is the most appropriate organization to coordinate the wide range of HUBLINK services. NFTA has the necessary legal operating and funding authority. NFTA also has the experience and qualifications in the area of operations, although primarily in the area of fixed-route transit. NFTA also has the infrastructure to establish and staff the Mobility Coordinator expediently. Because of its role in the HUBLINK project, NFTA also has made great inroads in seeking public and private funding, and community buy-in.

Disadvantages - NFTA has limited experience managing a large paratransit system, in general; and, specifically, limited experience managing paratransit contractors and providing ridesharing services (although this experience can be acquired via new personnel). This may make outside agencies reluctant to procure service through NFTA, which could limit the potential productivity achievements. NFTA also has less latitude than a private entity in contractor procurement and negotiations. This may translate into potentially higher vendor rates. On a related note, even though the Mobility Coordinator would be housed in a separate division apart from Metro, union pressures may be more likely to reach the Mobility Coordinator if it were housed at NFTA.

Alternative 2: The Mobility Coordinator is Housed Within NFTC

Organizational Structure/Staffing - NFTC would incorporate the Mobility Coordinator functions into its mission, possibly creating a separate division or department (as envisioned in Alternative 1). NFTC would staff the Mobility Coordinator with in-house staff or a private brokerage management firm, with assistance from key sponsor supervisors (as suggested in Alternative 1).

Fleet - Existing paratransit vehicles (owned by the NFTA and other agencies) could be transferred to the Mobility Coordinator for reallocation to paratransit contractors, as needed (see

Alternative 1). Lease agreements between the vehicle owners and NFTC, and the NFTC and the contractors would need to be prepared and executed. New vehicles for paratransit vanpools and other services (local circulators, employer shuttles, subscription bus service) could be procured by NFTA, as needed, and leased to NFTC. Otherwise, NFTC could negotiate vendor rates that include vendor-provided vehicles, as suggested in Alternative 1.

Computerization - NFTA could transfer the Trapeze PASS system to the NFTC, although there may be licensing restrictions from Trapeze. NFTC would also be responsible for purchasing or developing a ridesharing information system.

Operations - As in Alternative 1, the Mobility Coordinator would procure contractors for the "core area" paratransit service, each satellite paratransit area, each local circulator service, each employer shuttle and each subscription bus/van service. Each contractor would be responsible for vehicle operations. NFTC would also directly perform all ridesharing-related services.

Advantages - NFTC has access to additional planning funding and, because it is a public agency, has the potential to access federal, state and local transportation funding currently received by NFTA. Sponsors and contractors may perceive the NFTC to be more objective. The NFTC would probably be more resistant to union pressures than NFTA.

Disadvantages - NFTC does not have the legal operating and funding authority, nor does it have experience in transit/paratransit operations and the provision of ridesharing services (although that experience can be acquired). NFTC also does not have sufficient space in its existing offices to house an expanded staff. NFTC is not well known among human service agencies in the NFTA region, and is probably not as well known among transportation providers as the NFTA.

Alternative 3: The Mobility Coordinator is Housed Within a New, PNP Corporation

Organizational Structure/Staffing - A consortium of funding organizations (such as the public and private entities represented on the study's Policy Advisory Committee) work together to establish a new, private not-for-profit organization as the Mobility Coordinator, with representatives from the funding organizations serving as its Board of Directors. This new Mobility Coordinator could be staffed in one of three ways: (1) with an in-house staff; (2) with a management firm; or (3) a mix of in-house and management contract staff. One possibility would be to staff the Mobility Coordinator with a management firm initially, and then transition to an in-house staff. In addition, the "borrowing" of supervisory staff from key sponsors is as appropriate in this approach as it is in Alternatives 1 and 2.

Fleet - Existing paratransit vehicles (owned by the NFTA and other agencies) could be transferred to the Mobility Coordinator for reallocation to paratransit contractors, as needed (see Alternative 1). Lease agreements between the vehicle owners and the PNP corporation, and the PNP corporation and the contractors would need to be prepared and executed. New vehicles for paratransit vanpools and other services (local circulators, employer shuttles, subscription bus service) could be procured by NFTA, as needed, and leased to the PNP corporation. Otherwise, the PNP corporation could negotiate vendor rates that include vendor-provided vehicles, as suggested in Alternative 1.

Computerization - NFTA could transfer the Trapeze PASS system to the new entity, although there may be licensing restrictions from Trapeze. The new entity would also be responsible for purchasing or developing a ridesharing information system.

Operations - As in Alternatives 1 and 2, the Mobility Coordinator would procure contractors for the "core area" paratransit service, each satellite paratransit area, each local circulator service, each employer shuttle and each subscription bus/van service. Each contractor would be responsible for vehicle operations. The new entity would also directly perform all ridesharing-related services.

Advantages - Purchasers of service—through the Mobility Coordinator's Board of Directors—may feel that they have more of a voice in the governance of the coordinated system in Alternative 3 than in Alternatives 1 and 2. This may have a direct, positive impact on the rate of participation, which in turn may lead to greater productivity achievements. This would reduce the sponsors' costs per trip, and would thus enable them to purchase more trips with the same amount of funding. In addition, the greater the volume of trips, the more attractive the work; this translates into enhanced competition, which often leads to lower vendor rates.

Disadvantages - This alternative would take longer to implement due to the formation of the new corporation. Legal operating and funding authority would need to be established. Experience in transit/paratransit operations and the provision of ridesharing services would need to be acquired.

SUMMARY OF ORGANIZATIONAL ALTERNATIVES

A summary of the advantages and disadvantages of the three alternatives are portrayed in Figure C-2. Based on this analysis, it would seem that the NFTA is the most logical place to house the Mobility Coordinator in the short-run, especially if there is a desire to implement the Mobility Coordinator quickly. Over time, however, consideration might be given to turning the Mobility Coordinator role over to a private entity.

C.2 GENERAL RESPONSIBILITIES OF THE MOBILITY COORDINATOR

The general responsibilities of the Mobility Coordinator could include the following:

- Program Start-Up and Administration** - This includes securing a facility, office equipment and furniture; securing and installing computer and communication hardware and software; hiring and training staff; refining the service design; and developing internal fiscal controls and records management mechanisms.
- Establish Policies and Procedures** - Policies and procedures would be developed for Mobility Coordinator employees, carriers, sponsors and riders.
- Procure, Allocate and Monitor Maintenance of Vehicles** - This would include, at a minimum, the procurement of vehicles for paratransit and small vehicle transit services, and the allocation of those vehicles to contractors. The vendors could also augment this supply with their own vehicles, if needed. The Mobility Coordinator could also purchase vehicles for vanpooling. Lastly, the Mobility Coordinator would be responsible for monitoring the maintenance of vehicles in contracted services, especially those vehicles that are provided by the Mobility Coordinator.

**Figure C-2: Analysis of Alternative Organizations
in which to House the Mobility Coordinator**

	NFTA	NFTC	New PNP Corp.
Legal Operating/Funding Authority	●	●	●
- Transit Service	●	●	●
- Paratransit Service	●	●	●
- Ridesharing/Vanpools	●	●	●
Experience/Qualifications	○	●	●
- Transit Operations	●	●	●
- Paratransit Operations	○	●	●
- Transit Contracting	●	●	●
- Paratransit Contracting	●	●	●
- Service Planning	●	●	●
- Community Relations	○	○	●
- Ridesharing/Vanpools	●	●	●
- Infrastructure/Facilities	●	●	●
Existing Staff Size	●	○	●
Potential to Attract "New" Staff	○	●	●
Potential to Acquire Sufficient Funding	●	○	●
- Fed/State Transportation Funding	●	●	●
- Fed/State Human Services Funding	○	●	●
- County Agency Sponsors	●	●	●
- Municipal Sponsors	○	●	●
- Private Agency Sponsors	○	●	●
- Employer Sponsors	●	●	●
- Private Grants	●	●	●
Speed/Ease of Implementation	●	○	●
Objectivity/Flexibility	●	●	●
Potential to Withstand Union Pressures	●	●	●

Legend:

- = Excellent or Most Appropriate
- = Good or Somewhat Appropriate
- = Average or Adequate
- = Below Average or Somewhat Inappropriate
- = Poor or Very Inappropriate



- ❑ **Manage Revenues and Fares** - This includes handling third-party billing for trips provided, and reporting to sponsoring organizations.
- ❑ **Procure and Train Carriers** - This includes running one or more competitive procurements, and providing technical/management assistance to the carriers. The more successful brokerages have developed a real sense of “partnership” with the carriers under contract.
- ❑ **Perform Contract Administration Functions** - These include the processing of invoices, supporting documentation, and service data and statistics; verification of carrier-supplied data; monitoring carrier performance against service quality/performance standards; monitoring insurance levels; performing drug and alcohol testing; handling non-compliance; and overseeing carrier-to-carrier transitions.
- ❑ **Perform Customer Services Functions** - These include developing outreach/public participation and marketing efforts and materials; handling customer inquiries, complaints, commendations and special requests; and handling rider violations. This may also include selling and distributing fare media (scrip, vouchers), if used.
- ❑ **Determine Customer Eligibility** - For certain programs, the Mobility Coordinator would be actively involved in rider eligibility determination. This might include PAL, for example. For programs sponsored by other organizations, we would recommend that the organization, itself, determine rider eligibility and transfer that information to the Mobility Coordinator. If the organization wishes to transfer this responsibility to the Mobility Coordinator, that organization would also have to cover the cost of determining rider eligibility.
- ❑ **Register Customers** - This includes entering new registrants on the computer system and, if reservation-intake is performed by the carriers, transferring rider information to the carriers.
- ❑ **Intake Reservations (if centralized)** - This includes the intake of reservations, advance cancellations and change orders. (See Section 3.) This may also include trip-by-trip eligibility determination for conditionally eligible riders/clients.
- ❑ **Perform Scheduling or Brokering Functions (if reservation-intake is centralized)** - This may include scheduling trips onto dedicated vehicles operated by the carriers under contract, as well as brokering trips to contracted carriers that operate undedicated vehicles. Alternatively, this may include simply assigning trips to various carriers. (See Section 3.)
- ❑ **Perform Dispatching Functions (only if scheduling is centralized)** - This may include direct radio contact with drivers, requiring radio communications with vehicles, and handling “Where’s my ride?” calls, late cancellations, and rider will-calls and no-shows. (See Section 3.)
- ❑ **Perform Rideshare Matching and Vanpool Organization Services**
- ❑ **Establish Safety and Risk Management Strategies**

These Mobility Coordinator functions are illustrated in Figure C-3. Possible staffing positions for the Mobility Coordinator—to carry out those functions—are illustrated in Figure C-4. Note that the functions that optionally could be performed by the Mobility Coordinator or its contractors are highlighted.

C.3 COST ESTIMATE

A cost estimate for the Mobility Coordinator is presented in Table C-1. The upper portion of Table C-1 is devoted to the Paratransit Staff and assumes that there would be three organizations contracting with the Mobility Coordinator for paratransit services: the NFTA (for PAL), the Erie County Department of Social Services (for Medicaid, non-emergency medical trips on ambulettes), and the Erie County Department of Senior Services (for the Going Places/Buffalo program). Collectively, these programs represent nearly 345,000 trips per year, and thus, would need the full complement of staff reflected in Figure C-4 and Table C-1.

Also note that there are three scenarios reflected in Table C-1: (1) decentralized reservations and scheduling; (2) centralized reservations and decentralized scheduling; and (3) centralized reservations and scheduling. The base staff, under the first scenario, includes 14 employees. As shown, staff size increases from 14 to 20 employees under the second scenario to reflect the reservation staff; and from 20 to 22 under the third scenario to reflect the scheduling staff. (Note: a discussion of the advantages and disadvantages of centralizing or decentralizing these functions is discussed in Section C.4.) The salaries of the paratransit staff are assumed to fall into the \$20,000 to \$60,000 range. A 75 percent overhead structure is also assumed.

	Alternative 1	Alternative 2	Alternative 3
	Decentralized reservations and scheduling	Centralized reservations and decentralized scheduling	Centralized reservations and scheduling
Labor and Overhead	\$717,500	\$962,500	\$1,050,000
Direct Expenses	\$166,400	\$193,400	\$202,400
Total	\$883,900	\$1,155,900	\$1,952,400
Per Trip Costs	\$2.57	\$3.37	\$3.65

The lower portion of Table C-1 is devoted to the ridesharing staff. As shown, the salaries of these employees totals \$100,000 (or \$175,000 including the 75 percent overhead). Direct costs pertaining only to the ridesharing services administration would be negligible.

C.4 CENTRALIZED VS. DECENTRALIZED PARATRANSIT FUNCTIONS

An important design element of the coordinated paratransit system is whether certain functions, especially the reservations, scheduling and dispatching functions, should be performed centrally by the Mobility Coordinator or by the carriers under contract to the Mobility Coordinator.

In general, centralized reservation intake, as well as centralized scheduling, offers more control over the balance between productivity and service quality, and is especially appropriate to an environment in which carriers are operating dedicated vehicles. In addition, centralization of reservations and scheduling results in enhanced accountability and objectivity in these functions. Centralized dispatching only makes sense when the scheduling is also centralized, and when

Figure C-3: Mobility Coordinator Functions

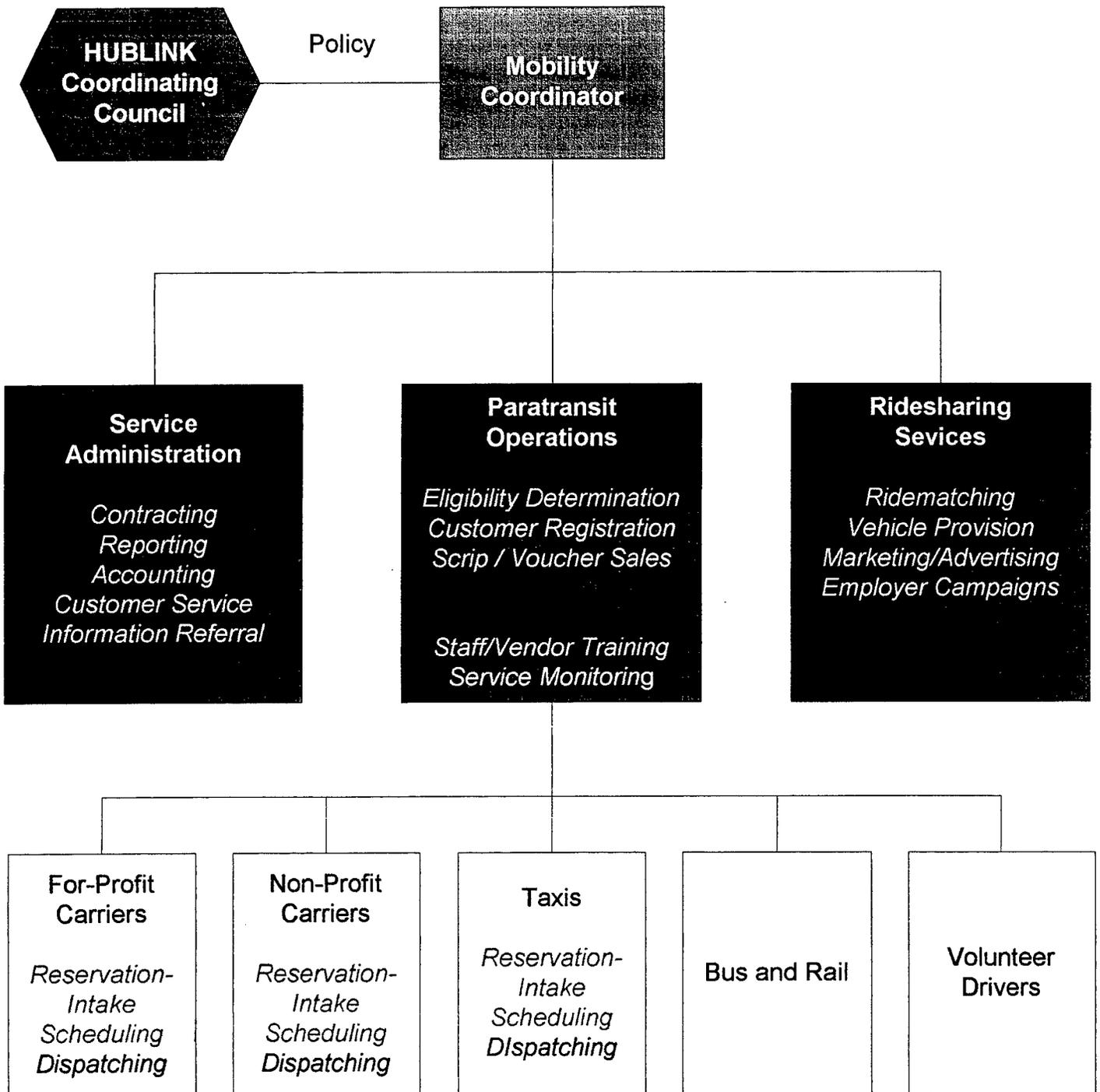




Figure C-4: Possible Staffing for the Mobility Coordinator

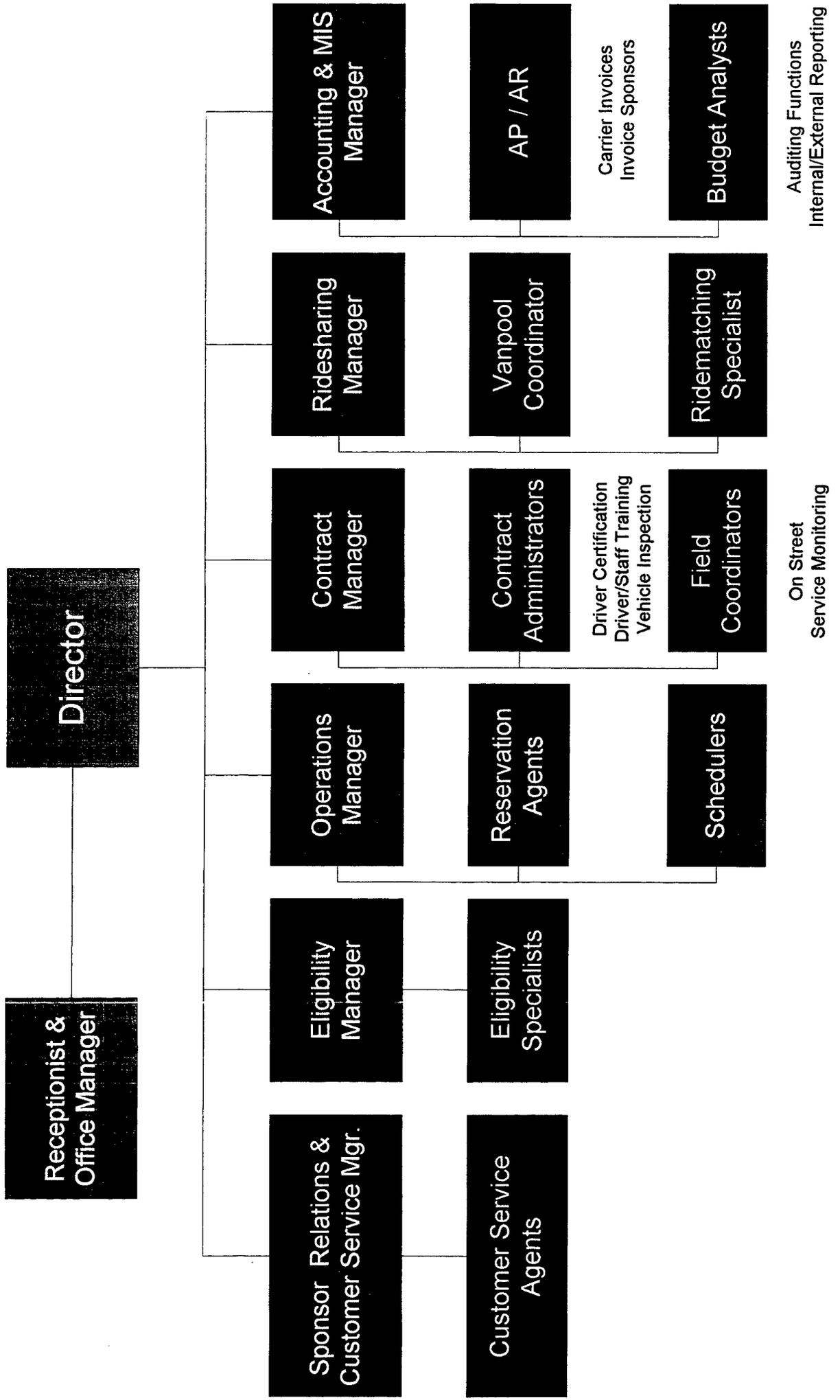




Table C-1: HUBLINK Mobility Coordinator - Estimated Annual Cost

PARATRANSIT STAFF¹					
1. Decentralized Reservations and Scheduling					
		Unit Salary	Tot Salary	Overhead	Labor+OH
				0.75	
Director	1	\$ 60,000	\$ 60,000		
Sponsor/Customer Service Mgr	1	\$ 40,000	\$ 40,000		
Customer Service Staff	2	\$ 20,000	\$ 40,000		
Carrier Manager	1	\$ 40,000	\$ 40,000		
Contract Administrators	2	\$ 20,000	\$ 40,000		
Field Coordinator	1	\$ 30,000	\$ 30,000		
Accounting / MIS Mgr	1	\$ 40,000	\$ 40,000		
A/P, A/R	2	\$ 25,000	\$ 50,000		
Budget Analysts	2	\$ 20,000	\$ 40,000		
Office Manager / Receptionist	1	\$ 30,000	\$ 30,000		
Total	14		\$ 410,000	\$ 307,500	\$ 717,500
2. Centralized Reservations and Decentralized Scheduling - Additional Staff					
Operations Manager	1	\$ 40,000	\$ 40,000		
Reservation Agents	5	\$ 20,000	\$ 100,000		
Total	20		\$ 550,000	\$ 412,500	\$ 962,500
3. Mobility Manager - Centralized Reservations and Scheduling - Additional Staff					
Schedulers	2	\$ 25,000	\$ 50,000		
Total	22		\$ 600,000	\$ 450,000	\$ 1,050,000
ANNUAL DIRECT COSTS					
Facility				1	2
Office Space (\$20/sq. ft.; 150 sq ft. per person)			\$ 42,000	\$ 60,000	\$ 66,000
Utilities (10% of above)			\$ 4,200	\$ 6,000	\$ 6,600
Phone lines and service (\$1000 per person)			\$ 14,000	\$ 20,000	\$ 22,000
Office Supplies (\$1,000 per month)			\$ 12,000	\$ 12,000	\$ 12,000
Postage (\$1,000 per month)			\$ 12,000	\$ 12,000	\$ 12,000
Printing/Copying (\$1,000 per month)			\$ 12,000	\$ 12,000	\$ 12,000
Contractual Services					
Computer Maintenance (10% of hw/sw cost)		\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Telephone Maintenance (10% of system cost)		\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000
Photocopier maintenance (10% of system cost)		\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
Two leased minivans (\$5,000 per vehicle)		\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Amortized (5 Year) One-Time Costs	5				
Hardware and Software		\$ 100,000	\$ 20,000	\$ 20,000	\$ 20,000
Telephone System		\$ 80,000	\$ 16,000	\$ 16,000	\$ 16,000
Answering Machine		\$ 600	\$ 120	\$ 120	\$ 120
TDD machine		\$ 500	\$ 100	\$ 100	\$ 100
FAX machine		\$ 400	\$ 80	\$ 80	\$ 80
Postage Meter		\$ 600	\$ 120	\$ 120	\$ 120
Photocopier		\$ 10,000	\$ 2,000	\$ 2,000	\$ 2,000
Office Furniture (\$1,000 per person)	\$ 1,000		\$ 2,800	\$ 4,000	\$ 4,400
Total - Annual Direct Costs			\$ 166,420	\$ 193,420	\$ 202,420
TOTAL - Annual Labor, Overhead, Direct Costs			\$ 883,920	\$ 1,155,920	\$ 1,252,420
Cost of Mobility Manager per trip	343,471		\$ 2.57	\$ 3.37	\$ 3.65
RIDESHARING STAFF					
		Unit Salary	Tot Salary	Overhead	Labor+OH
				0.75	
Rideshare Manager	1	\$ 40,000	\$ 40,000		
Vanpool Coordinator	1	\$ 30,000	\$ 30,000		
Ridematch Specialist	1	\$ 30,000	\$ 30,000		
Total	3		\$ 100,000	\$ 75,000	\$ 175,000
GRAND TOTAL			\$ 1,058,920	\$ 1,330,920	\$ 1,427,420

¹ Staffing assumes that the eligibility determination will remain with the sponsors



dedicated vehicle service is being provided; however, it is often discouraged when there are multiple carriers.

Decentralized reservations and scheduling are most appropriate when a funder wishes to take advantage of existing resources. Decentralized reservations is also appropriate to service delivery environments when there is one vendor available (or pre-assigned) to serve a particular rider or service area/zone; or, alternatively, when user choice of vendor is important to or required by the funding organization. Decentralized scheduling is most appropriate to systems in which reservations are taken by the carriers, as well as in service contracts in which carriers are operating undedicated vehicles.

Figures C-5 through C-7 summarize the advantages (+) and disadvantages (-) of centralized reservations, scheduling and dispatching, respectively. All three alternatives are viable. In considering which of the service delivery alternatives is to be pursued, one of the first decisions is to determine whether the Mobility Coordinator is to intake reservations directly. This decision may depend on the level of control that NFTA, an alternative lead agency, or the consortium of sponsors wishes the Mobility Coordinator to have over the reservations process (and, by extension, the trip-by-trip eligibility process) vs. any cost savings that might be achieved by allowing the carriers to perform this function. There is no doubt that centralized reservation-intake offers the maximum degree of control; however, the price of this is the Mobility Coordinator reservation staff (see Table C-1), and supporting hardware and software (which the NFTA already has) to handle this function. This cost must be weighed against the difference in rates offered by prospective vendors (depending on whether or not they are asked to perform this function) plus the cost of paying for ineligible trips that slip through the carrier reservation staff, plus the additional cost of Mobility Coordinator auditing/monitoring staff to check on this. Judging from the small difference in rates for the recent PAL procurement, we may conclude that the carriers will continue to have reservation staff for their other contracts anyway, and so the difference in rates will probably not be significant. From a cost perspective alone, this suggests that NFTA or the lead agency should pursue a service delivery design based on decentralized reservation intake. However, if NFTA wishes a high degree of control over the reservation intake process (or does not trust the prospective vendors), the additional cost of centralized reservations could be rationalized.

Figure C-5: Analysis of Centralized Reservations

<i>Staffing</i>	<ul style="list-style-type: none"> + Potentially reduces total number of reservation agents; may depend on whether vendors have other business. - Additional staff may be required to support centralized reservations.
<i>Service Quality</i>	<ul style="list-style-type: none"> + Allows flexibility and control over reservation agents, e.g., the time they spend with each caller, uniform call-taking procedures. + Provides equity, e.g., all callers are in the same queue. + Provides opportunities to eliminate scrip/vouchers and to implement centralized fare account. - Potentially eliminates user choice. - May add to consumer confusion—more numbers to remember; rider may be uncertain who to call under specific circumstance.
<i>Accountability</i>	<ul style="list-style-type: none"> + Provides uniform and comprehensive telephone management data. + Provides control over client and trip eligibility. + Potentially reduces “phantom” trips. - Eliminates clear lines of responsibility, e.g., complaints about late or missed service.
<i>Operator Reaction</i>	<ul style="list-style-type: none"> - Potentially can cause conflicts based on quality and reliability of information taken from callers (reservations, cancellations), and timeliness of data transmission. - Negates utilization of vendors’ existing resources/investment.
<i>Operating Costs</i>	<ul style="list-style-type: none"> + Potential cost reductions depend on reduction in vendor reservation staffs. + Potential cost reductions as a result of control over trip eligibility. + Potential cost reductions if scrip/vouchers can be eliminated. - Potential additional cost of support staff and automation.
<i>Start-Up Costs</i>	<ul style="list-style-type: none"> - Telephone system, hiring, training, information dissemination. - Computerized reservation system, training. - Vendor staff training.

Figure C-6: Analysis of Centralized Scheduling

<i>Staffing</i>	<ul style="list-style-type: none"> + Potentially reduces total number of schedulers; may depend on whether vendors have other business. - Additional staff may be required to support centralized scheduling.
<i>Service Quality</i>	<ul style="list-style-type: none"> + Allows flexibility and control over the vendor/vehicle to which a trip is assigned, and over the balance between service reliability vs. productivity. + Gains in cost efficiency may translate into more, better service. + Provides control over trip prioritization, standing orders. + Provides equity, e.g., all callers are in the same queue. + Improves communication between reservation agents and schedulers.
<i>Accountability</i>	<ul style="list-style-type: none"> - Eliminates clear lines of responsibility between schedulers and vendor dispatchers and operators, e.g., poor on-time performance, complaints about late or missed service.
<i>Operator Reaction</i>	<ul style="list-style-type: none"> - Potentially can cause conflicts based on quality of the scheduling and the timeliness of data transmission, and distribution of trips among carriers (in a multi-carrier environment). - Negates utilization of vendors' existing resources/investment.
<i>Operating Costs</i>	<ul style="list-style-type: none"> + Potential labor cost reductions depend on reduction in vendor scheduling staffs. + Potential cost reductions (or increase in cost-efficiency) as a result of productivity gains, i.e., increased ridesharing opportunities. - Potential additional cost of support staff and automation. - Eliminates opportunities for cost reduction by not taking advantage of vendors' undedicated vehicles.
<i>Start-Up Costs</i>	<ul style="list-style-type: none"> - Scheduling staff hiring and training. - Computerized scheduling system, training.

Figure C-7: Analysis of Centralized Dispatching

<i>Staffing</i>	<ul style="list-style-type: none"> + Potentially reduces total number of dispatchers; may depend on whether vendors have other business. - Additional “trip-status” staff may be required to handle “will-calls” and “where’s my ride?” calls (unless vendors are responsible for this function), as well as to perform centralized dispatching.
<i>Service Quality</i>	<ul style="list-style-type: none"> + Allows flexibility and control over the vendor/vehicle to which a trip is dispatched, and over the balance between service reliability and productivity. + Gains in cost efficiency may translate into more, better service. + Improves communication between reservation/scheduling staff and dispatchers.
<i>Accountability</i>	<ul style="list-style-type: none"> - Eliminates clear lines of responsibility between dispatchers and vendor operators, e.g., poor on-time performance, complaints about late or missed service. - Driver confusion over chain of command (two bosses).
<i>Operator Reactions</i>	<ul style="list-style-type: none"> - Potentially can cause conflicts based on quality of the dispatching and conflicts between central and vendor dispatchers, as well as distribution of trips. - Negates utilization of vendors’ existing resources/investment.
<i>Operating Cost</i>	<ul style="list-style-type: none"> + Potential labor cost reductions depend on reduction in vendor dispatching staffs. + Potential cost reductions (or increase in cost-efficiency) as a result of productivity gains, i.e., increased ridesharing opportunities. - Potential additional cost of support staff, automation, and communications infrastructure.
<i>Start-Up Costs</i>	<ul style="list-style-type: none"> - Dispatching staff hiring and training. - Communications infrastructure; computerized dispatching system, training.

If NFTA or the lead agency chooses to decentralize the reservation function, it would have no other option but to do the same with the scheduling function. If on the other hand, there is a decision to centralize the reservations function with the Mobility Coordinator, the NFTA or lead agency must then decide whether the Mobility Coordinator is to also perform the scheduling or vest the carriers with this function. Our experience, as indicated on Figure C-6, suggests that NFTA or the lead agency through the Mobility Coordinator would have the greatest control over the balance of service quality vs. productivity with centralized scheduling. However, centralized scheduling always brings with it adverse carrier reactions, especially regarding the quality of the scheduling. Here again, the recent PAL procurement would suggest that the lowest-cost alternative would probably be to decentralize the scheduling function. Further, there are ways (e.g., contractual incentives and penalties) to effect a good balance between service quality and productivity in a decentralized scheduling environment. However, if the NFTA or lead agency wishes to have a high degree of control over the scheduling process and is willing to absorb the carrier related carrier complaints, then NFTA or the lead agency may be comfortable with the additional cost of centralized scheduling. An additional benefit of centralized scheduling is that it gives the Mobility Coordinator more flexibility with its service area structure, since it does not have to assign its carriers to specific zones (see Section C-6). In comparison, the experience with decentralized reservations and scheduling in a multiple carrier environment is that higher productivities (and thus cost-effectiveness) seemingly are achieved with service zone assignments rather than with one in which any vendor can go anywhere. Moreover, with centralized scheduling, the Mobility Coordinator can elect to schedule trips onto dedicated vehicles and broker additional trips to vendors who can accommodate these trips on undedicated vehicles.

C.5 SINGLE VS. MULTIPLE CARRIER ENVIRONMENT

There are several examples across the country of paratransit services operated by one contractor. Frequently, this is the case where the volume of work is not sufficient to merit more than one operator, and where the agency responsible does not wish to operate (or is legislatively precluded from operating) service in-house. When these conditions are not present, we generally recommended retaining more than one contractor because the advantages outweigh the disadvantages.

One of the advantages of retaining more than one vendor is that it potentially reduces contracting costs via enhanced competition. Contracts reflecting lower trip volumes will attract fewer large vendors, but more smaller vendors. In general, attracting more prospective bidders will enhance competition, which has a tendency to minimize bids. Having more than one vendor also gives a Mobility Coordinator more cost-saving options, especially by utilizing lower-cost taxi vendors who can be used to serve specific trips (e.g., overflow trips, evening/weekend trips, short trips, ambulatory trips) with undedicated vehicles paid on a per trip basis, or by using an agency vehicle that is available only during certain periods of the day. (With respect to the use of taxi vendors as paratransit contractors, issues such as driver training in sensitivity, passenger assistance and possible defensive driving, and requirements for the type and quality of vehicles to be used typically need to be addressed. Attention to such issues would be particularly important when designing HUBLINK services, given the lack of interest shown in the use of local taxis during several of the project focus group sessions.)

Another advantage to having more than one vendor is that it tends to enhance service quality. For example, in a multiple carrier environment, service quality is often influenced by the marketplace (where there is user choice) or a broker's ability to assign trips based on service performance. The latter point is a key element to a successful brokerage: service quality is often linked to the leverage of a broker to increase or reduce a carrier's level of work as a result of the carrier's (and other carriers') performance.

The only disadvantage that comes with retaining more than one carrier is that it requires more administrative labor. On the other hand, it also offers an administrative insurance policy of sorts; specifically, in a one carrier environment, if the carrier goes out of business or continues to perform poorly during the course of the contract, the responsible agency has little choice but to undertake an emergency procurement, or to ride out the poor performer; neither of these is a particularly good option. On the other hand, with more than one contractor available, the responsible agency can more easily transfer the work to one or more of the remaining contractors.

C.6 ZONE-BASED SERVICE DELIVERY STRUCTURE

Subdividing the bi-county NFTA region into service zones, and assigning one or more vendor to each zone has the potential to increase productivity, especially if the zones are designed well (i.e., to reflect trip patterns so that most of the trips that a particular carrier serves are within the zone). Under these circumstances, productivity should increase because there are fewer vehicles making long-distance trips; and trips are being served in a concentrated fashion. Furthermore, interzonal transfers, if required, would also have a tendency to reduce discretionary long-distance trips, which would also have a positive effect on productivity. (On the other hand, too many transfers or poorly-executed transfers can have an adverse effect on productivity and customer satisfaction.) Generalizing, we have found that service productivity can be increased by creating service zones and assigning carriers to zones where there is a sufficient volume of intrazonal trips.

While service zones and carrier-to-service zone assignments can work perfectly well in a centralized reservation/scheduling environment, we have also found that carrier-to-service zone assignments work particularly well in a decentralized reservation/scheduling environment, as mentioned above.

Zone-based service delivery structures also are conducive to zone-based fare structures and/or tiered reimbursement strategies.

C.7 VENDOR PROCUREMENT STRATEGIES

We would recommend that the Mobility Coordinator purchase dedicated vehicle service to match areas and times that tend to generate higher volumes of demand. Dedicated vehicle service should be purchased on a per hour basis; since carrier cost structures are mostly hourly based (recognizing that driver hourly wages are typically 50 percent of the cost structure), buying dedicated service on an hourly basis offers less risk to the carrier, and less risk translates into a lower bid price. (Note that in a decentralized environment, per hour rates do not have any built-in incentive for productive service; therefore, rates must be accompanied by service quality and productivity incentives and penalties.)

We would also recommend that the Mobility Coordinator purchase undedicated vehicle service on a per trip basis to match areas or times that tend to generate lower or higher volumes of demand. Undedicated vehicle service should be purchased on a per trip rate. While the per trip rate may be more than the effective per trip rate on dedicated service, the overall cost, because of the low volume of trips, should be less. Undedicated service may also be a cost-saving device when prospective contractors have other contracts, and can pass along a lower per trip rate to the Mobility Coordinator due to the cost sharing opportunities. Recognize that per trip rates are more risky for carriers; thus, the Mobility Coordinator may wish to establish a minimum guarantee to the extent possible. (Note that in a decentralized environment, per trip rates do have a built-in incentive for productivity: the more trips, the more revenue vs. expenses which are largely hourly based; however, such a rate structure must be properly balanced with service quality performance incentives and penalties. Otherwise, the Mobility Coordinator may experience poor quality service.) On the negative side, paying for service on a per trip basis during periods of strong demand could result in a high overall expense, as carriers seek to maximize their revenues by providing as many trips as possible.

If Western New York is subdivided into service zones with one carrier (or one carrier for each type of service) assigned to each zone, the Mobility Coordinator may wish to run separate, sequential procurements for each zone, where winners are precluded from bidding on subsequent zones. An alternative is to run one procurement, with bidder zone preferences to be honored to the extent possible, but with the caveat that one carrier cannot be awarded more than one zone—or more than 40 percent of the work. Similarly, in a multi-carrier but single-zone environment, the Mobility Coordinator could run one procurement, promising a higher percentage of the business to the lowest, qualified bidder. For example, if the Mobility Coordinator wishes to procure three contractors, it may promise 50 percent of the business to the lowest, qualified bidder, 30 percent to the next lowest, and 20 percent to the third lowest. And, as mentioned above, there are two important points: (1) any contract should have certain incentives and penalties based on service quality and/or productivity measures, and (2) the ultimate leverage is the Mobility Coordinator's contractual ability to increase or reduce the volume of work that a contractor may do under the contract, depending on their performance and the performance of other contractors.

Another procurement strategy is to establish rate ceilings, above which carrier bids will be deemed non-responsive. However, it is very important that these rate ceilings not be unrealistically set. Indeed, they should be established so that private for-profit contractors can make a reasonable (10 percent) profit, and so that not-for-profit carriers can cover their costs. The primary purpose of this strategy is to thwart overly high profit margins. Note, too, that bids and the respective rate ceilings can be elicited for different kinds of trips, services or vehicles.

Yet another strategy to minimize the financial risk for prospective vendors is to cover capital costs directly, especially when the contract period is from one to three years. For example, if the Mobility Coordinator requires the contractor to supply vehicles, the contractor would have to pass along five to seven years' worth of financing over the much shorter contract period; this would increase the bid rates to a point at which the contractor would not be competitive. Furthermore, NFTA and the other sponsors would be paying for the capital portion of this service out of operating expenses. Alternatively, the Mobility Coordinator's provision of vehicles

reduces vendor risk on short-term contracts, thereby reducing operating costs. As mentioned before, an additional advantage of this strategy is that the Mobility Coordinator can more easily shift the amounts of work from one contractor to another if it controls the vehicles. The primary disadvantage to the strategy is that it requires closer monitoring of vehicle maintenance.

Another capital cost that the NFTA could cover is the cost of hardware and software. Besides the financial advantages, the provision of software and hardware enhances the integrity of data and facilitates the transmission of data and reporting.

We also recommend that the Mobility Coordinator consider, in addition to Metro's driver union, the use of both private for-profit and private not-for-profit carriers. In some circumstances, private for-profit carriers offer experience and professionalism that is not found in some not-for-profit counterparts. Further, they typically can also handle higher trip volumes. Since they are for hire, their mission is whatever the Mobility Coordinator tells them to do, although their higher mission is making a profit. Along the same vein, they are generally more expensive than their not-for-profit counterparts because they do require a profit. In comparison, private not-for-profit staffs may not be as well trained, may have limited capabilities, and may be biased to their own clients. On the other hand, they are generally lower cost. With these thoughts in mind, we would recommend that the Mobility Coordinator try to use private not-for-profits when possible, but in a limited fashion (i.e., in their own geographic region and with their own clients, and let the for-profits handle the rest). Above all, if the Mobility Coordinator, as a result of the procurement, finds that for-profits and private not-for-profits are competing for the same service, the Mobility Coordinator must create as a level a playing field as possible, e.g., by ensuring that lower not-for-profit rates at least reflect grants.

C.8 EXAMPLES OF REGIONAL, COORDINATED PARATRANSIT SYSTEMS

This section examines several different coordinated paratransit systems that are on the same scale as that which we expect in Western New York, and that have achieved success in the areas of funding coordination and/or service delivery coordination.

Coordination of Funding

Our review of funding coordination has revealed that multi-sponsor paratransit brokerages have been established on the regional and statewide level in several states. In some cases, the initiatives resulted from local efforts. In other cases, the states were directly responsible for the implementation of these brokerages. Indeed, many states—because of the success demonstrated on the regional level, or because of successful examples in other states—have initiated efforts to deliver services in a more cost-efficient manner. In some states, specific agencies that oversee Medicaid, for example, have established regional brokers to improve the accountability and cost-effectiveness. In other states, these brokers also are responsible for coordinating Medicaid transportation with the transportation programs of other human service agencies and/or public transit/paratransit services. In yet other states, there are regional or local Mobility Coordinators that are responsible for both (some forms of) public transportation and Medicaid transportation.

Presented below are the states in which we have found coordinated multiple-sponsor efforts—either at the state or regional levels.

- ❑ Some Consolidation of Transportation Funding at State Level
 - Section 5310 (Section 16) Funds to Department of Human Services: *Georgia*
 - Title IIIb funds to Department of Transportation: *South Dakota*
- ❑ Coordination of Transportation Funding at the State Level
 - State human service agencies contract with public transportation providers:
Florida, Maine, Massachusetts, Pennsylvania, Rhode Island, Vermont
- ❑ Coordination of Transportation Funding at the Regional Level
 - Some public paratransit providers (e.g., Section 5311—formerly Section 18—recipients) contract with regional/county offices of state human service agencies (and other local human service agencies):
Alabama, Colorado, Hawaii, Idaho, Maryland, Michigan, Minnesota, Missouri (Medicaid and Title IIIb funding combined through local AAA), New Jersey, North Carolina, North Dakota, Oregon, South Carolina, Tennessee, Washington
 - Some public paratransit providers have become Medicaid vendors (in addition to contracting with local human service agencies):
Illinois
 - Some public paratransit providers contract with local human service agencies:
Alaska, California, Kansas, Louisiana, New Hampshire, New York, Ohio

Profiles of exemplary programs in a few of the more coordinated states are presented below:

Florida

The Florida Commission for the Transportation Disadvantaged designates and oversees a Community Transportation Coordinator (CTC) that coordinates public and human service agency paratransit services in each county. Under Florida law, local and state agencies are required to participate in the appropriate coordinated transportation system if they receive local, state or federal funds for the transportation of transportation-disadvantaged persons.

Individuals are considered to be transportation disadvantaged if they are unable to transport themselves or purchase transportation because of age, disability, income or other reasons, and are therefore dependent on others for access to health care, employment, education, shopping, social activities and so forth; or if they are children considered to be at risk. In order to receive subsidies from the state Transportation Disadvantaged Trust Fund, individuals must be transportation disadvantaged and not be sponsored by an agency for the particular trip that they need to make.

State agencies, such as the Florida Health Care Administration (Medicaid) and the Departments of Transportation, Elder Affairs, Health & Rehabilitation, Veterans Affairs, Labor & Employment Security, and Education all directly contract with each CTC. CTCs can be a single designated service provider/operator, a not-for-profit agency, a coalition of organizations or a

for-profit entity. Some CTCs directly operate service. A few CTCs also use volunteer drivers. It also should be noted that many of the CTCs make use of the public transit system to the extent possible.

In Duval County (Jacksonville), IntelliTran (formerly COMSIS Mobility Services, Inc.), a for-profit firm, was selected as the CTC and broker for the Duval County Coordinated Transportation System by the Jacksonville Metropolitan Planning Organization and the Duval County Transportation Disadvantaged Coordinating Board in 1990. The CTC contracts with six private for-profit operators and one not-for-profit operator to provide trips for 25 sponsoring agencies, including the Jacksonville Transportation Authority and the Florida Health Care Administration. All reservations, scheduling and dispatching are handled centrally by the CTC, along with street supervision, data entry for reporting, collection of revenues from passengers and agencies purchasing service, monitoring of carrier performance, driver training and complaint handling. Approximately 626,000 trips are provided per year, at a cost per trip of roughly \$14.00 and a cost per hour of \$28.00. A productivity of 2.0 trips per hour is achieved by the Duval County coordinated system.

Massachusetts

The Massachusetts Division of Medical Assistance (Medicaid) and the Departments of Mental Retardation and Public Health contract with the state's Regional Transit Authorities; these in turn use contractors for the operation of transit and paratransit services. DMA and DMR have contracts with most RTAs to broker the agencies' trips in their region, while DPH has a contract with only a few RTAs, which serve as "mega-brokers" for trips within several RTA service areas. The agencies are able to contract with RTAs without administering the competitive procurement process that would be necessary if they were to contract with private for-profit or not-for-profit providers. There is also an Interagency Advisory Committee, which reviews Section 16 applications, and a Transportation Task Force Committee organized by the Department of Human Services, which keeps tabs on coordination efforts.

The Pioneer Valley Transit Authority is the largest regional transit authority in Massachusetts, serving 23 municipalities in the western part of the Commonwealth. It is the second largest transit system in the state, second only to the MBTA in Boston. PVTA's paratransit program may perhaps best be described as a hybrid brokerage that is responsible for the provision of about 1,100 paratransit trips per day. In addition to providing ADA complementary paratransit service, the brokerage is responsible for providing paratransit services for non-emergency medical trips for Medicaid recipients (under contract to the Massachusetts Division of Medical Assistance), as well as for various trips for clients of the Massachusetts' Departments of Public Health and Mental Retardation.

For Medicaid trips, PVTA intakes the reservations centrally and brokers trips to a network of 10 contracted community-based carriers (both for-profit and not-for-profit carriers). These carriers are then responsible for scheduling and dispatching. For DMR and DPH trips, PVTA selects carriers to serve all the trips associated with each program site by competitive bid. Subscription runs are then established and are operated by the carriers without daily reservations or scheduling, unless clients are added to or deleted from these runs at the direction of DMR or DPH staff.

PVTA currently brokers approximately 66,800 Medicaid trips per year, and contracts with vendors at rates which range from \$1.35–\$1.55 per mile for taxi trips (sometimes including an additional “drop charge”) to \$7–\$15 per one-way chair car or “dial-a-ride” trip (i.e., ambulatory shared-ride service). Carrier rates for DPH service, which typically involves providing trips for clients living in large catchment areas, range from \$12–\$22 per client per day. In FY 1996, approximately 15,000 passenger trips were provided for DPH clients. DMR passenger trips are not routinely tracked, as service to each program site is contracted on a per-vehicle basis and provided on a subscription basis. Reimbursement for DMR service (both from DMR to PVTA and from PVTA to the carriers) is paid on a vehicle per day basis.

In addition to agency-sponsored trips, PVTA performs centralized reservation intake for its own ADA complementary paratransit service, and brokers those trips to a number of carriers. ADA trips totaled 111,300 in FY 1996, with an average cost of \$7.87 per trip. For a number of years, PVTA has also provided paratransit service, known as Dial-A-Ride, to seniors and persons with disabilities who are not ADA eligible. This service is also provided by the same contractors mentioned above; however, this service’s reservation-intake function is performed by the contractors—not centrally by PVTA. (Note that PVTA once had 19 such vendors under contract, but has begun a process of regionalization, with an ultimate goal of reducing the number of vendors to 5.) In FY 1996, 158,700 Dial-A-Ride trips were provided at an average cost of \$7.87 per trip. Another component of PVTA’s brokerage responsibilities is the provision of centralized training and safety and inspection programs for contractors.

Pennsylvania

In each county except Philadelphia, there is one paratransit provider or brokerage which provides public paratransit services, senior transportation (funded by the State Lottery), and Medicaid transportation funded through the Medical Assistance Transportation Program. In Pittsburgh, the ACCESS brokerage, which is managed by a broker (Multisystems) under contract to the Port Authority of Allegheny County, is responsible for the provision of 7,400 trips per day via a network of 10 carriers under contract to the broker. Established in 1979, ACCESS continues to serve as the national model for decentralized/administrative paratransit brokerage, in which reservation intake and scheduling are performed by the 7 for-profit and 3 not-for-profit service providers. ACCESS has sponsorship agreements with nearly 100 local agencies, including the PennDOT, which provides lottery revenue for senior transportation; the Port Authority of Allegheny County, which provides funding for ADA paratransit trips and the local match for the senior transportation program; and the County Office of the Bureau of Federal Programs, which is responsible for Medicaid transportation.

The ACCESS staff of 35 employees provides several functions, including the design and maintenance of the service delivery structure; vendor procurement and negotiations; contract/service monitoring; vendor training (e.g., management training, passenger-assistance training and training for drug abuse monitoring); reporting; accounting (e.g., vendor payments and sponsor invoicing); information referral; eligibility determination; rider registration; scrip voucher sales; and customer information services. In the area of eligibility determination, the ACCESS staff has established a national model for the functional assessment of persons with physical disabilities, cognitive disabilities and visual impairments, and has successfully

implemented conditional eligibility and trip-by-trip screening in a decentralized reservation-intake environment.

Carriers are paid on a per hour basis and are assigned to specific zones. Including the administrative cost of the brokerage, the average cost per hour is \$27.00, while the average cost per trip is \$11.75. Average productivity for the service is 2.32 trips per hour.

Rhode Island

The Rhode Island Departments of Transportation, Elderly Affairs, Human Services, Rehabilitation, and Mental Health and Retardation (as well as various local hospitals and smaller human service agencies) all contract with a private broker (COMSIS Mobility Services) for the provision of paratransit services. The statewide broker, known as The Ride, has dedicated vehicle contracts with two for-profit carriers and nine private not-for-profit agency carriers, serving different regions of the state. The broker utilizes the services of 10 taxi operators as well. In FY 1996, 310,000 trips were provided through the brokerage; trip volume for FY 1997 is estimated to be close to 400,000 trips.

The Rhode Island brokerage is an example of a centralized brokerage, in which reservations and scheduling are performed by the broker; the resulting schedules are dispersed to the various vendors on a daily basis. Centralized reservations and scheduling has been very effective, and since the number of agencies participating in the coordinated system has grown, lower per trip costs have resulted for ADA and human service agency trips. The broker also feels that performing the reservations and scheduling functions directly gives it a greater degree of flexibility and control over the service that is provided than it would have if the carriers were responsible for performing these functions. In FY 1996, The Ride's cost per trip was approximately \$8.65; cost per trip is currently about \$8.00.

To encourage the participation of agencies that might purchase service from the brokerage, the state of Rhode Island established a Governor's Paratransit Task Force. This task force will soon be expanded to become a general transportation task force involving more agencies. To encourage the participation of carriers, the Rhode Island Public Transit Authority (RIPTA) and the Rhode Island Department of Transportation (RIDOT) offer Section 16 vehicles to carriers joining in the coordinated system, for a fee of \$.10 per mile. Carriers not participating in the brokerage system are not eligible to receive Section 16 vehicles. Agencies that purchase service from the brokerage provide the 20 percent local match for the equipment, which was formerly paid by the carriers. The mileage fees collected from the carriers are put into a fund established for the purchase of replacement vehicles.

Vermont

Vermont's Department of Social Welfare contracts with the Vermont Public Transportation Association (VPTA), a not-for-profit corporation which in turn contracts with 12 Medicaid brokers. All but a few of these brokers are also the public transportation providers in the region, funded by the Vermont Agency of Transportation (AOT). It was initially envisioned that VPTA would expand its role as broker to the other statewide agencies that fund transportation; this has not happened. In some cases, however, the regional brokers also have contracts with local human service agencies for client transportation.

The Chittenden County Transit Authority (CCTA), the public transit provider in the Burlington area, has an arrangement with the Vermont Department of Social Welfare, in which it acts as the county's Medicaid transportation broker. DSW directs Medicaid recipients to contact the CCTA to arrange their eligible, non-emergency medical trips. CCTA uses the lowest-cost transportation available to serve these trips, which in many cases is the fixed-route transit system. CCTA distributes passes or tokens to those Medicaid recipients who can use the transit system. In FY 1995, CCTA distributed an average of 946 transit passes per month to Medicaid clients. One of the distinguishing characteristics of this program is that the DSW reimburses CCTA for the actual cost of providing service (\$1.70 per trip), as opposed to the face value of the pass or ticket.

If the Medicaid client is deemed to be eligible for door-to-door transportation and also requires accessible van service, CCTA instructs the person to arrange service with its private not-for-profit paratransit contractor (SSTA), and also informs the person that he/she may also be eligible for ADA complementary paratransit service (for non-Medicaid trips). CCTA also uses taxi vendors for certain ambulatory clients. In FY 1995, SSTA served approximately 700 Medicaid van trips at a cost of roughly \$13.50 per trip. About 11,100 trips were served by taxi.

SERVICE DELIVERY COORDINATION

This section examines the paratransit service in six metropolitan areas, all of which have service area populations under 2 million (compared to the 1.2 million NFTA region's population), as shown in Table C-2. These peer systems include the following:

Table C-2: Peer Paratransit Systems

City	Transit Property	Service Area	Service Area Population
Miami	Metro-Dade Transit Agency	Dade County	2.0 million
Minneapolis	Metropolitan Council Transit Operations	Minneapolis metropolitan area	1.8 million
Seattle	King County DOT (Metro)	King County	1.6 million
Philadelphia	SEPTA	Philadelphia	1.6 million
Cleveland	GCRTA	Cuyahoga County	1.4 million
Pittsburgh	Port Authority of Allegheny County	Allegheny County	1.35 million

In addition to ADA eligible clients within their service area, some of the systems also provide special services transportation to other groups/clients. Minneapolis and Pittsburgh provide transportation for human service organizations. Philadelphia and Pittsburgh both provide special transportation services to riders over 65 years old—a service that is funded through the Pennsylvania lottery. Seattle provides special transportation to clients meeting low-income criteria. MDTA serves as the Medicare transportation provider—although that service is handled separately from the ADA paratransit that is handled through the broker.

As shown below in Table C-3, all six systems use private carriers for operations. Two also operate some service directly: the GCRTA in Cleveland directly operates service and utilizes one contracted carrier to provide up to 20 runs per day throughout the service area; the MDTA in Miami directly operates back-up service. The number of carriers range from one in Cleveland to ten in Pittsburgh. At most systems (Miami being a notable exception), contract carriers have been assigned to specific pick-up areas; and, in cases where there is a large concentration of demand, multiple carriers have been assigned to the same pick-up area. Long-distance trips—i.e., traveling across more than one service area—sometimes require transfers between carriers.

Three of the six systems, including the Pittsburgh brokerage, may be described as decentralized systems, with the carriers performing reservations, scheduling and dispatching. In the case of the Miami system, MDTA retains a broker (IntelliTran) to perform centralized reservations and scheduling with the carriers performing dispatch.

Table C-3: Functional Responsibilities in Peer Systems

System	Broker	Reservations	Scheduling	Dispatching	Operations (#)
Cleveland	No	Transit Authority	Transit Authority	Transit Authority	Transit Auth. + Carrier (1)
Miami	Yes	Broker	Broker	Carriers	Carriers (4) + Transit Auth.
Minneapolis	No	Carriers	Carriers	Carriers	Carriers (3)
Philadelphia	No	Carriers	Carriers	Carriers	Carriers (5)
Pittsburgh	Yes	Carriers	Carriers	Carriers	Carriers (10)
Seattle	No	Carriers	Carriers	Carriers	Carriers (4)

Average daily weekday ridership figures and productivity figures are shown below in Table C-4. Note the correlation between Miami's comparatively low productivity and the fact that carriers are not assigned to service zones. Also note that higher productivity systems are characterized by carriers assigned to service zones.

Table C-4: Ridership and Productivity in Peer Systems

System	Average Weekday Ridership	Productivity (trips/hour)
Pittsburgh	7,400	2.35
Philadelphia	4,600	1.84
Minneapolis	4,400	2.00
Miami	2,600	1.27
Seattle	1,500	1.40
Cleveland	750	2.00

Three of the systems (Cleveland, Pittsburgh and Seattle) pay their operations contractors a per hour rate for dedicated vehicle service, with the average being approximately \$30 per hour. In Minneapolis, rates are based on a three tier payment structure: a monthly fixed cost payment to address administrative expenses, a monthly cost per vehicle to address maintenance expenses and a cost per hour to address direct operating cost. Miami uses a per trip cost structure—\$14.10 per trip for ambulatory trips and \$24.20 per trip for non-ambulatory trips. Philadelphia also pays its contractors on a per trip basis, with rates in the \$15 to \$17 per trip range, but is contemplating moving (back) to a per hour rate.

The experience of the peer systems with the various service structures is grouped by issue and presented in the following sections.

CENTRALIZED STRUCTURE USING TRANSIT PROPERTY STAFF

In Minneapolis, there was an attempt to switch from a decentralized system to a centralized reservation/scheduling system, on the premise that it would increase productivity. However, the efficiencies and productivities that were expected under centralization never materialized, largely because the reservation and scheduling staff and the software were overwhelmed by the large volume of trip requests. Poor schedules led to poor service; as a result, the National Guard was called in to drive the vehicles, and there was a \$1.3 million class action settlement in favor of the riders.

Philadelphia moved from a centralized to a decentralized system, in the hope that scheduling would improve if it was performed directly by the carriers. Unfortunately, at SEPTA, the transition coincided with the implementation of a new software system, and the change from a per hour rate structure to a per trip rate structure. The carriers are currently frustrated because their rates were based on an assumed productivity that they have not been able to attain. SEPTA also acknowledges that the change in the rate structure has encouraged carriers to be as productive as possible at the expense of service quality. Riders have also reported a decrease in service quality.

The GCRTA in Cleveland feels that its current contractor, as well as carriers with which it has contracted in the past, do not have the staff or computer resources needed to perform the reservations, scheduling or customer service functions as effectively as the GCRTA, itself. Performing reservations and scheduling directly gives the GCRTA more control over the trips that are provided and allows the Authority to modify runs as needed to accommodate more trip requests. This contributes to a higher level of service quality and productivity than would otherwise be achieved. In addition, with only one outside carrier under contract, centralized reservations and scheduling is probably the most efficient option.

CENTRALIZED STRUCTURE USING SERVICE BROKER

Seattle Metro originally wanted to have a broker/carrier structure. The broker would have been responsible for call taking, scheduling and dispatching. The operators would have been responsible for providing the service and would have contracted directly with the broker. Metro would have been responsible for the certification, service monitoring and auditing functions. The broker was contracted, but there was a protest, and there was also dissatisfaction with the broker's performance during the implementation phase. Consequently, Metro reconsidered its

approach and decided to bring the program in-house. Metro's board did not approve the plan to bring the service in-house. A revised broker structure was proposed for implementation. Under the proposed plan, the broker is responsible for the reservations and scheduling functions, and the contractors are responsible for the dispatching and service provision. Metro is responsible for contracting with the operators and for the certification, service monitoring and auditing functions. However, the revised structure has not been implemented. The new service contracts prepared by Metro for the providers request that they submit proposals under two scenarios: (1) their responsibilities start with service dispatching as proposed under the new structure and (2) their responsibilities start with call-taking as currently operated. The operators are being requested to use a particular reservation/scheduling software package. Metro staff feel that any approach can work—it depends on the relationship between the parties. In their opinion, the in-house approach provides the most control and does not result in any additional expenses. They also feel that the broker structure involves duplication and leads to situations where responsibilities are not clearly defined.

The Miami brokerage structure has not produced the scheduling efficiencies anticipated, due to the reasons mentioned above. In addition, MDTA staff felt that broker reliance on computerized scheduling and unfamiliarity with the city resulted in inefficient schedules. After much protest from the carriers, the broker hired a local taxi dispatcher to review the computer-generated schedules and to make manual edits. Metro-Dade staff feel that carriers would do a better job of scheduling their own trips. Accordingly, MDTA has required that the broker give the carrier some flexibility in revising their schedules; this has recently been implemented via a remote connection. MDTA staff also expressed concern over the nature of the broker relationship—specifically the amount of control that MDTA has over the broker. They are also concerned about the relationships that has developed between the broker and the carriers and the implications for service monitoring and compliance with performance standards. Lastly, the original concept of the brokerage was to include the broker arranging sponsorship agreements with human service agencies, and the merging of Medicaid non-emergency transportation into the brokerage. Neither has occurred.

DECENTRALIZED STRUCTURE

In Pittsburgh, the decentralized system has proven effective because people know their service areas and riders are familiar with their providers. The complaint level is also lower because issues get resolved before they become problems. The Pittsburgh brokerage reflects the largest ridership in the country, and has been able to achieve one of the highest productivities among the larger systems at one of the lowest per hour and per trip costs.

SUMMARY OF PEER EXPERIENCE

Much of the value of the interviews with peers derived from discussions relating to the specific questions. These discussions revealed the lessons that practitioners in other cities have learned from their own experiences. While some of these "lessons" may be merely reactions to specific local events, there was a surprising amount of commonality among many of those to whom we spoke.

The following points are an attempt to capture the major themes that we found among many (although not necessarily all) of those who talked to us about their experiences running similar programs in other cities.

- Decentralized service structures with carriers serving specific geographic zones have been the most successful arrangements.
 - Choice can be maintained by having more than one carrier by area—although it may impact productivity if demand densities experienced by each dispatch office are significantly reduced.
 - Carriers are very familiar with the area and are able to provide better service.
 - Service productivity is higher because vehicles are better utilized within smaller areas and long trips are reduced—especially if riders are required to transfer at zone boundaries.
 - Lines of responsibility are clear and problem resolution is more direct.
- Zone-based systems in which market share is based on geographic boundaries have been cost efficient and successful.
 - User satisfaction is improved because users receive better service from carriers that operate in a specific area—particularly in terms of the time required to answer the telephone.
 - Carriers are able to price their services according to the expected trip characteristics for their area— number of trips, type of trip, trip length, etc.
 - There is price competition as carriers bid for the specific areas.

Service areas are established by the contracting public entity and clearly defined in procurement and contract documents—eliminating questions on what carrier is to serve which trip.

- Reservation packages capable of scheduling trips while the callers are on the telephone are useful for increasing service productivity.

Dependence on the skills of dispatchers is reduced.

- The distribution of trips across the service day is better since it becomes possible to suggest alternative travel times when capacity has been reached for the requested time period.
 - Carriers can always revise the schedule as they see necessary as a result of operational constraints.
- Cost per hour payments allow cost savings from productivity increases to be passed through to the public entity. Cost per trip payments allow the contractors to keep all the savings from productivity increases.

Minimum passengers per hour requirements need to be incorporated in the contract language in order to ensure that contractors obtain minimum efficiencies.



Appendix D: High and Low Service Scenarios

This appendix summarizes the changes to the existing urban and regional bus service and the possible local community services in the Low and High service scenarios.

The first table is a list of the changes proposed to the regional and urban fixed route bus service under each scenario.

The second table is a list of the local service options assumed in each scenario. While each scenario involved specific assumption about local services in each community, it is expected that local decision-makers will participate in selecting from a range of possible local service options during the implementation process.

The above tables are followed by figures summarizing the services (both local and regional) to be implemented in each phase (fiscal year) as assumed in the six-year implementation phasing. Phasing will be refined during the implementation process as discussions proceed with local interests. The figures show the general geographic area in which new and improved services would be implemented during each phase, as well as annual operating and capital costs for the High and Low service scenarios.



Summary of Urban and Regional Service Changes

Route	Service Change	Low Scenario	High Scenario
Regional Service			
1	Extend 1B and 1D to Thruway Mall/Walden Galleria	✓	✓
2	Eliminate 2B and 2C beyond Fernwood Loop Extend remaining to Thruway Mall/Walden Galleria	✓ ✓	✓ ✓
6	Increase frequency on 6C	✓	✓
11	Extend to Tonawanda	✓	✓
14	Increase frequency on 14B and re-route 14C thru McKinley Mall	off-peak only	✓
15	Increase frequency on 15B Increase frequency on 15C	off-peak only ✓	✓ ✓
20	Eliminate 20T (replace by local circulator)	✓	✓
25	Extend 25D to Summit Park and increase its frequency; extend 25B to Tonawanda	✓	✓
30	Eliminate portion beyond South Campus	✓	✓
32	Extend 32C to airport	✓	✓
34	Increase frequency on 34M	off-peak only	✓
36	Increase peak frequency on 36M	✓	✓
40	Increase frequency on Route 40	off-peak only	✓
41	Extend 41A to Southgate Plaza and increase frequency	✓	✓
42	Increase frequency on Route 42 Extend to Walden Galleria	✓ ✓	✓ ✓
43	Eliminate	✓	✓
44	Increase frequency on 44	✓	✓
48	Increase peak frequency on 48	✓	✓
49	Eliminate	✓	✓
55	Eliminate 55J beyond Summit Park Increase peak frequency on 55A (High scenario only) Increase peak frequency on 55F	✓ ✓ ✓	✓ ✓ ✓
60	Combine with 40	✓	✓
61	Add one trip in PM	✓	✓
62	Extend to Creekside P&R	✓	✓
63	Eliminate	✓	✓
64	Eliminate	✓	✓
68	Eliminate	✓	✓
69	Add one trip in AM, one trip in PM	✓	✓
70	Eliminate beyond E. Aurora	✓	✓
72	Extend 72B to McKinley Mall and increase frequency Eliminate midday trip	✓ ✓	✓ ✓
74	Increase frequency on 74A and eliminate 74B and C beyond Athol Springs; Eliminate all midday trips and trips beyond Hamburg Village	off-peak only ✓	✓ ✓
75	Combine with 15C	✓	✓
76	Terminate at Angola and increase frequency	✓	✓
79	Eliminate	✓	✓
81	Eliminate	✓	✓
	New route - Tonawanda	✓	✓
	New route - Eastern Hills/Lockport	✓	✓
Urban Service			
4	Extend 4A to Thruway	✓	✓
13	Extend 13A and B to South Campus	✓	✓
50	Increase frequency on 50B	✓	✓
52	Replace Route 52 by local circulator service	✓	✓
53	Replace Route 53 by local circulator service	✓	✓
54	Replace Route 54 by local circulator service	✓	✓
Private Operator Service			
	Increase frequency on Rides Unlimited of Niagara	✓	✓

New Local Services Assumed in High and Low Scenarios

Community	High Scenario	Low Scenario
Amherst	Employment Shuttle Dial-a-Ride	Employment Shuttle Service Route
East Aurora	Dial-a-Ride	Local Circulator/Service Route
Cheektowaga	Dial-a-Ride	Local Circulator
Clarence	Dial-a-Ride	Dial-a-Ride Local Circulator
Eastside Buffalo	Local Circulator	Local Circulator
Grand Island	Dial-a-Ride	Service Route/Subscription Service
Hamburg	Employment Shuttle Dial-a-Ride	Employment Shuttle Service Route/Subscription Service
Lancaster	Dial-a-Ride	Service Route/Subscription Service
Lockport	Dial-a-Ride	Local Circulator/Service Route/Route Deviation
Niagara Falls	Dial-a-Ride	Route Deviation
Orchard Park	Employment Shuttle Dial-a-Ride	Employment Shuttle Local Circulator
Tonawandas	Point Deviation	Service Route
West Seneca	Subscription Service	Service Route/Employment Shuttle

HUBLINK Implementation Phasing - FY 1999 (Phase 1)

Affected Communities

Amherst
 Lockport
 West Seneca
 Southtowns

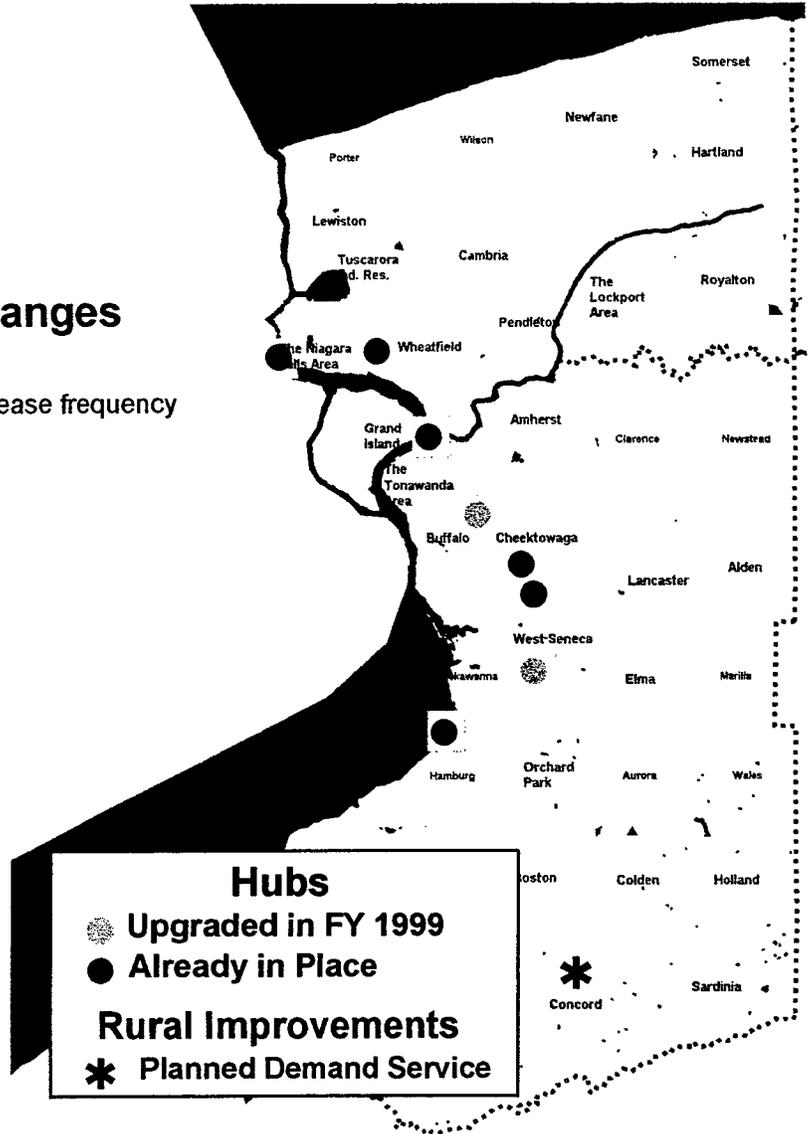
Recommended Service Changes

Urban and Regional Services

Extend Route 41 to Southgate Plaza and increase frequency
 Extend Route 13 to South Campus
 Increase frequency on Route 15
 Increase frequency on Route 34
 Increase frequency on Route 44

Possible Local Services

Employer shuttle in Amherst
 Service route in West Seneca
 Planned demand rural service in Southtowns



Summary of Incremental Costs (in millions of dollars)		
Operating Cost	Low	High
Urban Core and Regional Service	1.05	2.41
Small Vehicle Local and Rural Service	-0.11	0.13
Total	0.94	2.54
Capital Cost		
Hubs	0.75	1.00
Vehicles/Rolling Stock	1.46	5.12
Other	1.60	1.60
Total	3.81	7.72



HUBLINK Implementation Phasing - FY 2000 (Phase 2)

Affected Communities

Amherst	Newfane
Cambria	Pendleton
Eastside Buffalo	Royalton
Hartland	Somerset
Lockport	Wilson

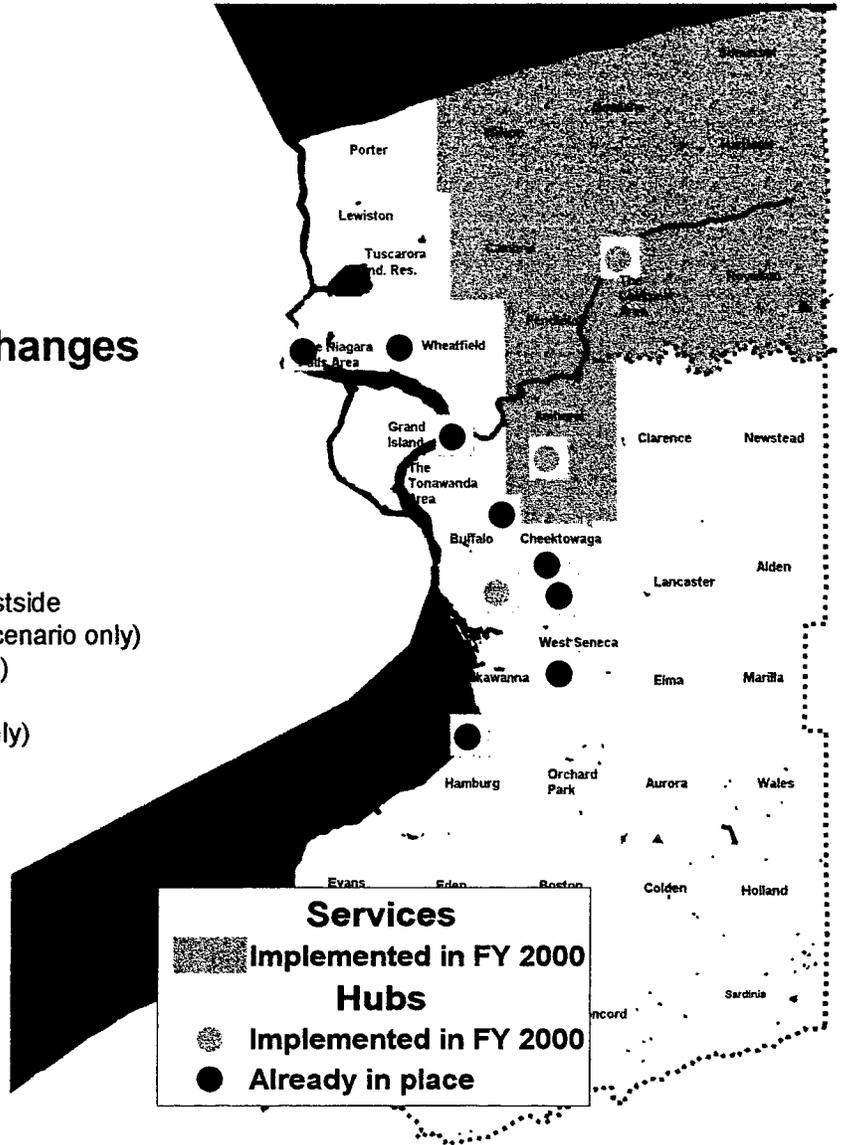
Recommended Service Changes

Urban and Regional Services

Extend Route 32 to airport
 Increase frequency on Route 44
 Eliminate Routes 49 and 64

Possible Local Services

Service route/local circulator in Buffalo's Eastside
 Dial-a-ride in Amherst and Lockport (High scenario only)
 Service route in Amherst (Low scenario only)
 Fixed-route circulator and service route/
 route deviation in Lockport (Low scenario only)
 Rural service improvements



Summary of Incremental Costs (in millions of dollars)		
Operating Cost	Low	High
Urban Core and Regional Service	1.03	2.46
Small Vehicle Local and Rural Service	0.37	1.93
Total	1.41	4.38
Capital Cost		
Hubs	1.00	2.00
Vehicles/Rolling Stock	-0.18	-0.03
Other	0.45	0.45
Total	1.27	2.42



HUBLINK Implementation Phasing - FY 2011 (Phase 3)

Affected Communities

Clarence
 Lewiston
 Niagara Falls
 Porter
 Wheatfield

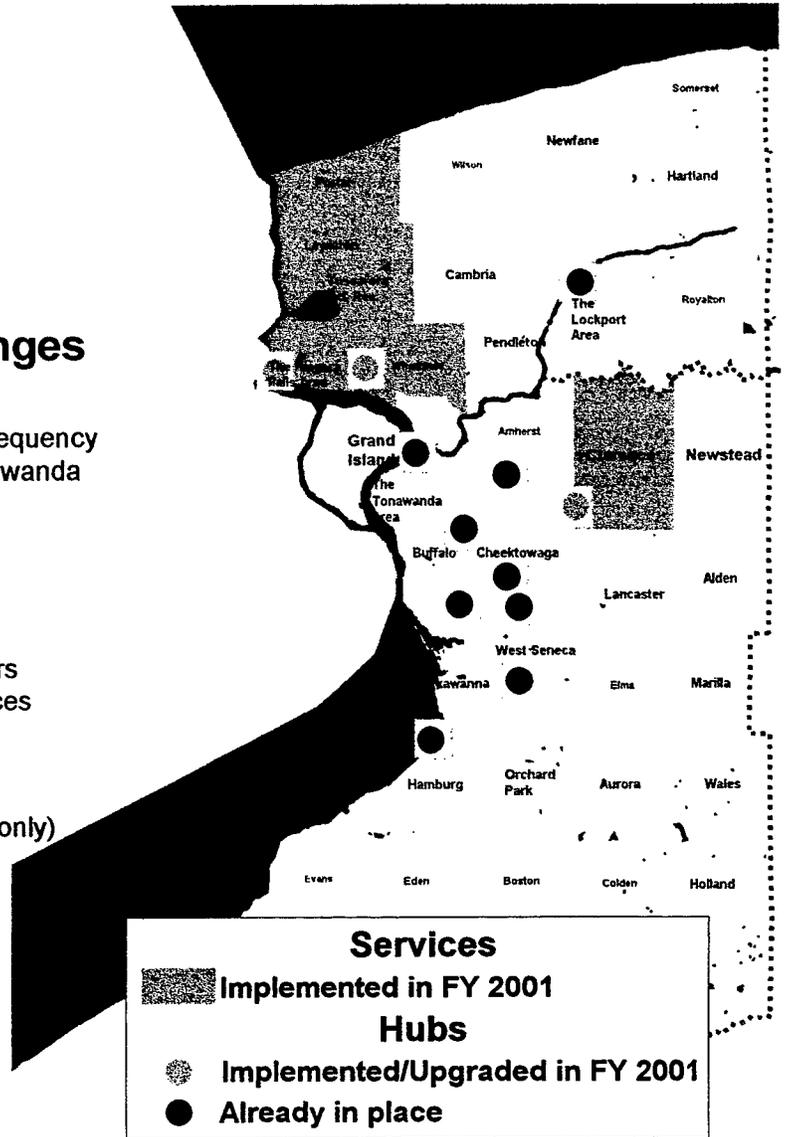
Recommended Service Changes

Urban and Regional Services

Extend Route 25 to Summit Park and increase frequency
 Eliminate Route 55 beyond Summit Park to Tonawanda
 Increase frequency on Route 40
 Increase frequency on Route 48
 Increase frequency on Route 55
 Combine Route 60 with Route 40
 Increase frequency on Route 50 to Lewiston
 Replace Routes 52, 53, and 54 by local circulators
 Increase frequency on existing rural transit services

Possible Local Services

Dial-a-ride in Clarence
 Fixed-route circulator in Clarence (Low scenario only)
 Dial-a-ride in Niagara Falls (High scenario only)
 Flexibly routed service in Niagara Falls (Low scenario only)
 Local circulator routes in Niagara Falls



Summary of Incremental Costs (in millions of dollars)		
Operating Cost	Low	High
Urban Core and Regional Service	2.10	5.44
Small Vehicle Local and Rural Service	1.65	3.67
Total	3.76	9.11
Capital Cost		
Hubs	1.75	3.50
Vehicles/Rolling Stock	0.97	6.41
Other	0.00	0.00
Total	2.72	9.91



HUBLINK Implementation Phasing - FY 2002 (Phase 4)

Affected Communities

Brant	Lackawanna
Eden	North Collins
Evans	The Tonawandas
Collins	West Seneca
Hamburg	

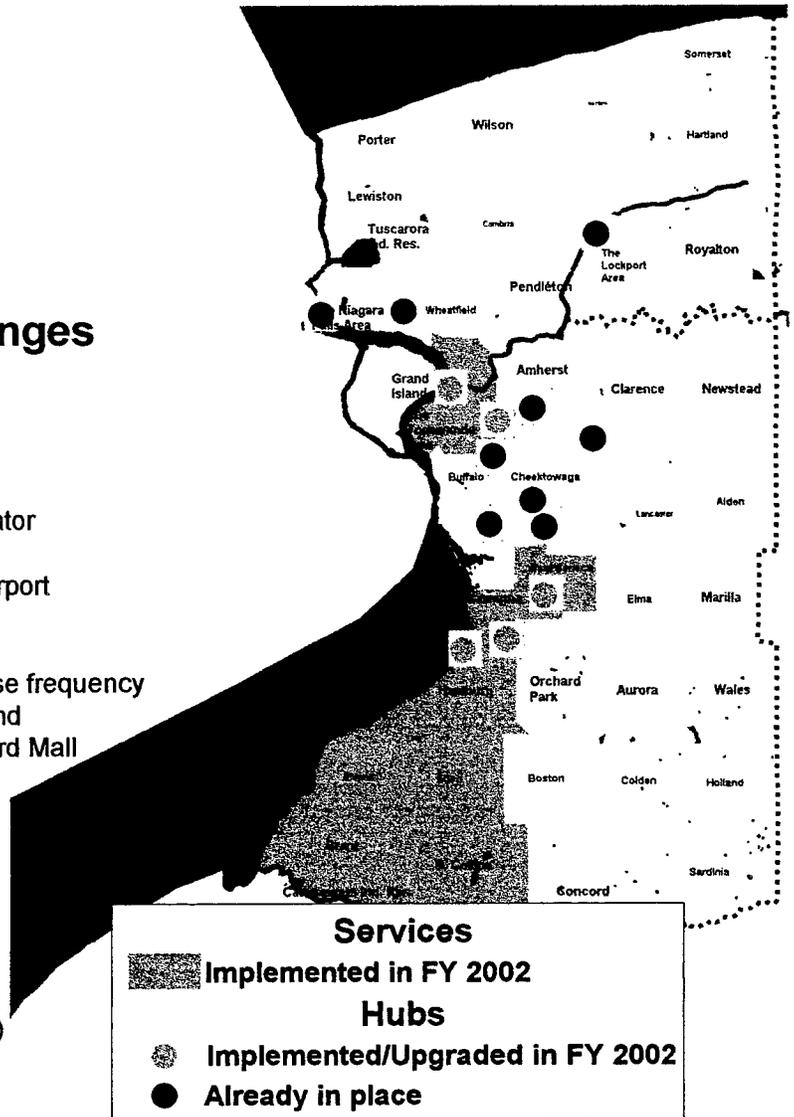
Recommended Service Changes

Urban and Regional Services

- Re-route Route 2 to Walden/Thruway Mall
- Re-route all Route 14 trips to McKinley Mall
- Extend all Route 11 and 25 trips to Tonawanda
- Replace Route 20 in Tonawanda by local circulator
- Increase frequency on Routes 14, 36 and 42
- Eliminate Route 30 beyond South Campus to airport
- Add service on Route 61
- Extend Route 62 to Creekside Park-and-Ride
- Extend Route 72 B to McKinley Mall and increase frequency
- Eliminate Route 74 mid day trips and trips beyond Hamburg to Boston
- Eliminate Route 79

Possible Local Services

- Dial-a-ride in Hamburg (High scenario only)
- Service route/subscription bus in Hamburg (Low scenario only)
- Employer shuttle in Hamburg
- Service route in Tonawanda (Low scenario only)
- Dial-a-ride and subscription bus in West Seneca (High scenario only)
- Service route and employer shuttle in West Seneca (Low scenario only)
- Point-deviation service in Tonawanda (High scenario only)
- Rural service improvements



Summary of Incremental Costs (in millions of dollars)		
Operating Cost	Low	High
Urban Core and Regional Service	3.66	8.15
Small Vehicle Local and Rural Service	2.63	6.01
Total	6.30	14.16
Capital Cost		
Hubs	2.75	5.50
Vehicles/Rolling Stock	1.68	4.52
Other	0.00	0.00
Total	4.43	10.02



HUBLINK Implementation Phasing - FY 2003 (Phase 5)

Affected Communities

Alden	Lancaster
Cheektowaga	Marilla
Elma	Newstead

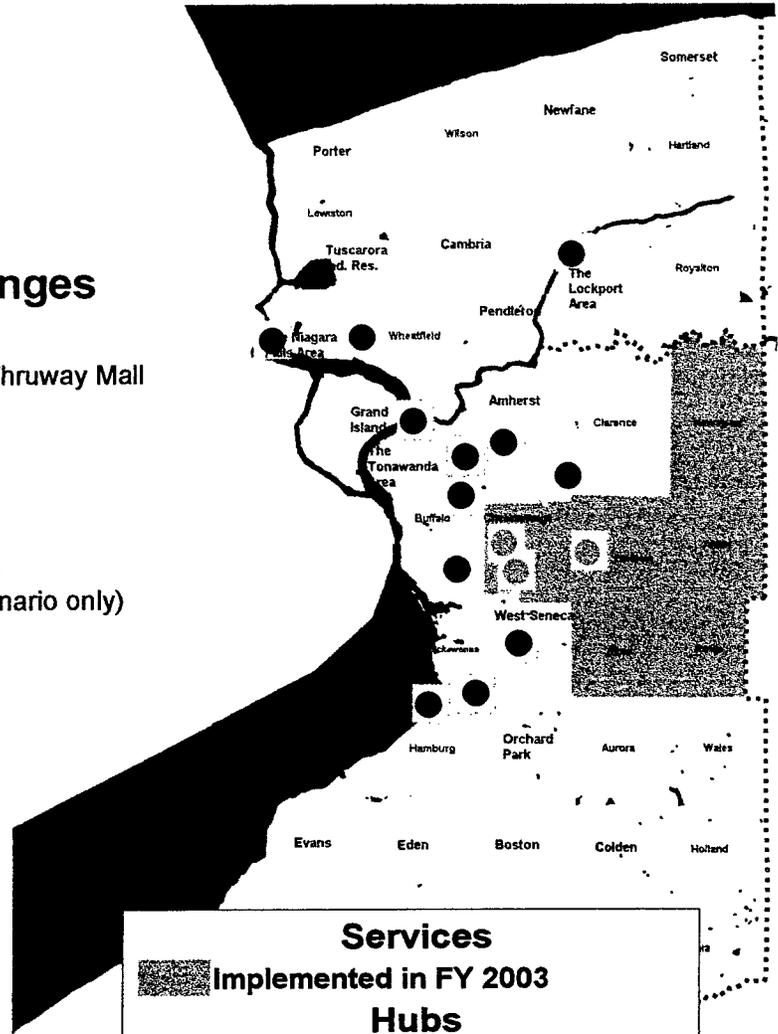
Recommended Service Changes

Urban and Regional Services

Extend Routes 1, 4 and 42 to Walden Galleria/Thruway Mall
 Increase frequency on Route 6
 Eliminate Routes 43 and 68
 Add service on Route 69

Possible Local Services

Dial-a-ride in Cheektowaga (High scenario only)
 Fixed-route circulator in Cheektowaga (Low scenario only)
 Dial-a-ride in Lancaster (High scenario only)
 Service route/subscription bus in Lancaster (Low scenario only)
 Rural service improvements



Summary of Incremental Costs (in millions of dollars)		
	Low	High
Operating Cost		
Urban Core and Regional Service	4.27	8.59
Small Vehicle Local and Rural Service	3.10	8.03
Total	7.37	16.61
Capital Cost		
Hubs	1.75	3.50
Vehicles/Rolling Stock	1.38	0.87
Other	0.00	0.00
Total	3.13	4.37



HUBLINK Implementation Phasing - FY 2004 (Phase 6)

Affected Communities

Aurora	Holland
Boston	Grand Island
Colden	Orchard Park
Concord	Sardinia
Wales	

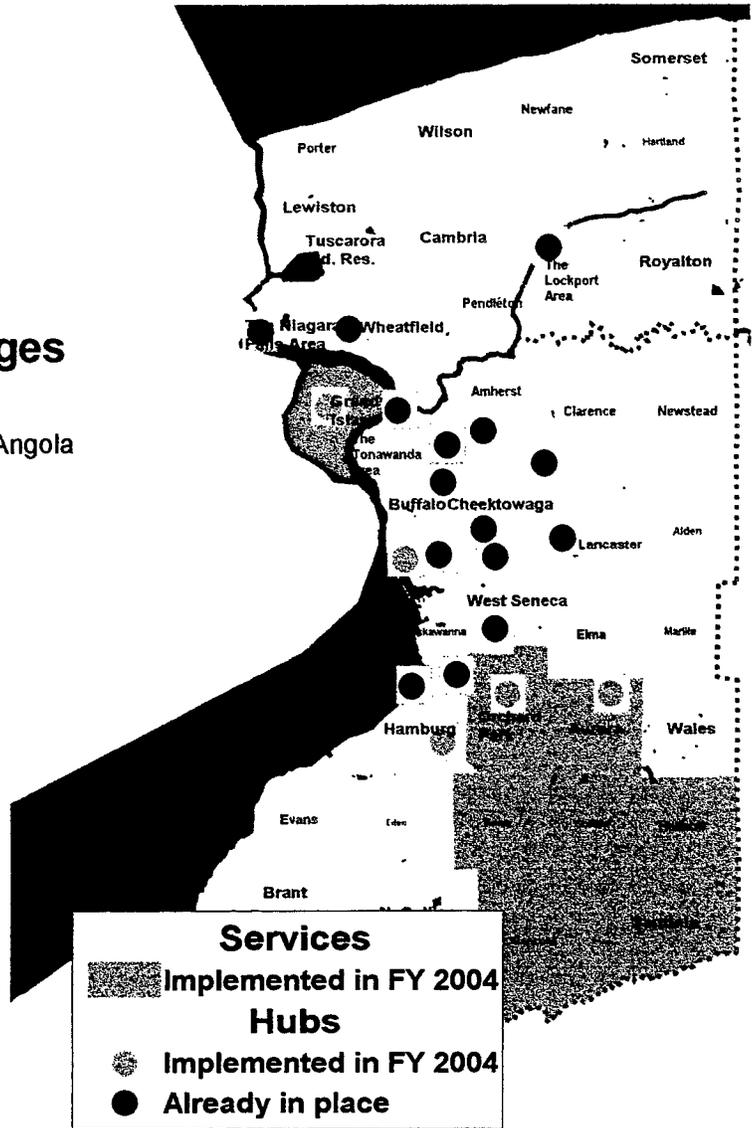
Recommended Service Changes

Urban and Regional Services

Increase frequency on Route 76 and terminate at Angola
 Increase frequency on Route 15 to E. Aurora
 and coordinate with Route 75
 Eliminate Route 70 beyond E. Aurora to Holland
 Eliminate mid day trips on Route 72

Possible Local Services

Dial-a-ride in Aurora, Grand Island
 and Orchard Park (High scenario only)
 Employer shuttle in Orchard Park
 Fixed-route circulator and service route
 in E. Aurora (Low scenario only)
 Service route/subscription bus
 on Grand Island (Low scenario only)
 Rural service improvements



Summary of Incremental Costs (in millions of dollars)		
	Low	High
Operating Cost		
Urban Core and Regional Service	4.92	9.42
Small Vehicle Local and Rural Service	3.74	9.54
Total	8.66	18.96
Capital Cost		
Hubs	2.25	4.50
Vehicles/Rolling Stock	-0.02	0.08
Other	0.00	0.00
Total	2.23	4.58



Appendix E: Glossary of Terms

Accessible

An accessible vehicle or facility is one that is fully usable by persons with disabilities, including individuals who use wheelchairs.

Access-to-Jobs

Access-to-Jobs is the name given to the current initiatives by the Federal Transit Administration and regional transit agencies nationwide to provide transportation to unemployed and underemployed individuals as part of Welfare-to-Work initiatives by health and human services departments at federal, state and local levels. (See Welfare-to-Work as well.)

ADA (Americans with Disabilities Act) and ADA Complementary Paratransit

The ADA is a civil rights law, passed by Congress in 1990, which makes it illegal to discriminate against people with disabilities in employment, services provided by state and local governments, public and private transportation, public accommodations and telecommunications.²

Under the U.S. Department of Transportation regulations governing the implementation of ADA provisions, public entities (or private entities acting on their behalf) who provide fixed-route transit must also provide "ADA Complementary Paratransit" where and when the fixed-route transit services are provided to persons who are unable to use or access the fixed-route transit service because of their disability. Most ADA complementary paratransit services allow reservations to be placed one to 14 days in advance of the trip date; some allow same-day reservations, but usually on a space-available and/or emergency basis. Most ADA complementary paratransit services provide curb-to-curb service, although some provide door-to-door service. ADA complementary paratransit fares are typically (and must be no more than) twice the fixed-route transit fares.

Under the broader scope of the ADA, public entities that provide services, including transportation services, for residents or more specialized groups (e.g., seniors) must ensure that all persons with disabilities who are eligible for those services receive "equivalent" service. For example, if a municipality has a user-side subsidy taxi program for its senior residents, it must ensure that this service is accessible to its seniors with disabilities, or arrange for some other service that provides equivalent service.

AFDC (Aid to Families with Dependent Children)

AFDC is one of several federal welfare programs that were combined into a single new program called Temporary Assistance to Needy Families (TANF) by the passage of the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996. Under TANF, funds are distributed to states in a single block grant. (See also TANF).

Ambulette Service

Non-emergency medical transportation service provided by wheelchair-accessible vans.

² APTA, Glossary of Transit Terminology, July 1994, pg. 2.

AVL (Automatic Vehicle Location) System

A computer-based vehicle tracking system based on location technology, such as the global positioning system (GPS).

Brokerage

A coordinated transportation system in which one entity (the broker) directly or indirectly arranges for carriers (usually under contract to the broker) to serve trips sponsored by different organizations and/or funding services. Consolidating trips in this fashion and accommodating these trips through one service delivery network often results in enhanced economies of scale and other benefits that reduce the cost of providing service for each sponsor that chooses to participate in the coordinated system. The broker provides consolidated management of the system, typically by performing such functions as customer/client registration; contracting for the operation of transportation services with public, private for-profit and private non-profit operators; record keeping and accounting; and quality assurance and customer relations. Other broker functions may also include reservations, scheduling, dispatching, the provision or procurement of vehicles and insurance, driver training, the provision of maintenance services and fuel; and even the operation of vehicles. The broker may be housed within a public or private organization, and staffed with in-house employees or a professional brokerage management firm.

Capital Assistance

Financial assistance for transit capital expenses (not operating costs); such aid may originate with federal, local or state governments.³ (See also Section 5311.)

Capital Expenses

Costs of long-term assets of a public transit system such as property, buildings, vehicles, computer hardware/software, etc.⁴

Central Business District (CBD)

The downtown retail trade and commercial areas of a city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels and services.⁵

Circumferential Network

A system of transit routes designed to transport passengers between suburban locations without requiring travel through the central city downtown area.

Community Bus Service

Also known as a service route, this is a fixed-route, fixed-schedule transit service designed to better match the common trip origins and destinations of specific customer groups (e.g., elderly persons and persons with disabilities) and to minimize the distance that customers have to travel to get to and from bus stops. Smaller and low-floor, accessible vehicles are typically used. Service is usually on neighborhood streets and to mall or hospital doorways to reduce walking distances. Pick-ups and drop-offs are typically designed so that they are as close to entryways of common destinations as possible. While routes are designed to better meet the needs of persons

³ Ibid., p. 3.

⁴ Ibid., p.3.

⁵ APTA, p.7.

with disabilities and elderly persons, they are open to the public. Community bus services can be planned as feeders to other fixed-route services and can include a “route deviation” option.⁶

(See also Service Routes.)

Community Transportation

Community transportation includes services that address all transit needs of a community, including general and special populations, such as persons with disabilities and seniors.⁷

Companion Animal

A companion animal is an animal trained to provide assistance for persons with disabilities. Examples include guide animals, assistive animals, and service animals.⁸

Coordinated Transportation Services

A cooperative arrangement between or among organizations providing transportation for customers, clients, constituents, or employees and/or transportation providers to combine or consolidate some or all transportation functions or activities of the different organizations, in order to improve the efficiency and effectiveness of these services. Many types and degrees of coordination exist, from vehicle sharing or the joint procurement of equipment or services to the performance of centralized administration or other functions by a single entity acting as a transportation broker. (See also Brokerage.) One of the primary intended results of coordination is lower unit costs for participating organizations through greater efficiency.

Corridor

A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways and transit route alignments.⁹

Curb-to-Curb Service

A level of service provided within the context of a paratransit service in which driver assistance (if needed) is limited to assisting the passenger into or out of the vehicle, and does not extend beyond the boarding/alighting point. (For “higher” levels of service, offering driver assistance beyond the curb. (See also Door-to-Door Service and Door-Through-Door Service.)

Deadhead

Movement of a bus without passengers, e.g. from bus yard or garage to first pick up, and from last drop-off back to bus yard or garage.¹⁰

Dedicated Service

Transportation service purchased by sponsor from a carrier in which vehicles serve only the sponsor’s clients during the designated service period.

Demand-Responsive Transportation

See Dial-A-Ride and Paratransit.

⁶ Definitions from TCRP B-1: Transit Operations for Individuals with Disabilities, Final Report, June 1995.

⁷ Ibid., pg. 182.

⁸ Ibid., pg. 182.

⁹ APTA, p. 9.

¹⁰ National Standards., pg. 183.

Dial-A-Ride

This is often used as a synonym for paratransit, but may be used to connote that the paratransit service is available to the general public. A more limited eligibility criteria may be used in conjunction with the term, e.g., Senior Dial-A-Ride, to describe eligibility limitations. As with paratransit, Dial-A-Ride services typically require an advance request, although some permit same-day reservations if not immediate reservations. Some Dial-A-Ride systems allow riders to request subscription trips, also known as standing orders, for recurring service; this is a convenience to both the rider and the reservation/scheduling staff because these riders do not have to place a reservation for each individual trip. Dial-A-Ride services are typically provided on a curb-to-curb, door-to-door, or door-through-door basis. There are three basic types of Dial-a-Ride: "many-to-one," in which transportation is provided from multiple origins to a single destination; "many-to-few," in which transportation is provided from multiple origins to a few designated destinations (e.g., major activity centers); and "one-to-one," in which transportation is provided between any two points within the service area.¹¹ (See also Paratransit.)

Disability Awareness Training

Also known as Sensitivity Training, this instruction is designed to provide useful information about various disabilities to staff of transportation providers, human service agencies, or other organizations to allow them to be helpful to persons with disabilities in an appropriate manner. Disability awareness training modules often include guidance regarding proper terminology regarding persons with disabilities, the characteristics associated with a variety of disabilities, and the most effective and respectful ways in which to assist persons with disabilities who are using public transportation or other services.

Door-to-Door Service

A level of service provided within the context of a paratransit service in which the driver escorts the passenger between the vehicle and the front entrance of the building at both the origin and the destination of the trip. Sometimes, this assistance is limited to traversing a specified number of steps and/or to carrying a specified number of packages.

Door-Through-Door Service

A level of service provided within the context of a paratransit service in which the driver escorts the passenger between the vehicle and the front entrance to the building at both the origin and destination and provides assistance beyond the threshold of the building (e.g., into the hall or lobby) if requested. Limits are often imposed regarding the number of steps traversed, the packages carried, and how far into the building a driver may go.

Downtime

A period during which a vehicle is idle, or is inoperative because of repairs or maintenance.

¹¹ General Community Paratransit Services in Urban Areas, USDOT, January 1982, pg. 95.

Driver Training

Instructional program designed to impart and improve the skills necessary for bus drivers, including but not limited to knowledge of the vehicle, safe or defensive driving practices, emergency procedures, and passenger control.¹²

DHHS

The federal Department of Health and Human Services.

DOH

The New York State Department of Health.

DSS

New York State or county level Department of Social Services.

EA (Emergency Assistance)

This program is one of several federal welfare programs that were combined into a single new program called Temporary Assistance to Needy Families (TANF) by the passage of the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996. Under TANF, funds are distributed to states in a single block grant. (See also TANF.) Express Bus Service
A bus that operates a portion of the route without stops or with a limited number of stops. (See also Fixed-Route Transit Service.)

Employment Center Shuttle

A transportation service in which vehicle operate frequently over a short distance between one or more employment sites and a designated locations such as a transit center, station or stop. Typically, such service is sponsored at least in part by the employer or employment center management.

Farebox Recovery

The degree to which fare revenue covers operating cost of a transportation service. This is usually expressed as a percentage of total operating cost.

Feeder Service

Feeder service provides transportation to and from a fixed-route bus stop or train station. Feeder service might be provided by paratransit, flexibly routed transit or fixed-route transit.

Fixed-Route Transit Service

Sometimes referred to as "main line" service, fixed-route transit service includes public transit bus or rail service that runs on regular, predetermined routes, usually on a fixed schedule with designated, scheduled bus stops.¹³ Different types of fixed-route transit are described below:

- Express Service:** Service operated on a portion of the route without stops or with a limited number of stops.
- Local Service:** Service involving frequent stops and consequent low speeds, the purpose of which is to pick up and deliver passengers close to their origins and destinations.

¹² Ibid., pg. 184.

¹³ Ibid., pg. 186.

- ❑ **Owl Service:** Transit service provided during the late night and early morning hours.
- ❑ **Revenue Service:** Normal service during which paying passengers are permitted on-board, as opposed to deadheading.
- ❑ **Skip-Stop Service:** Transit service in which not all trains or vehicles stop at all stations or stops along a route; usually, “A” and “B” trains or vehicles alternate their respective stops, with both stopping at major stops or stations.¹⁴

Flexible Transit or Flexibly Routed Transit

This is generally defined as transit (as opposed to paratransit) that involve flexibility in scheduling or routing of service. Examples include the following services:

- ❑ **Flag-Stop and Request-A-Stop Service:** Flag stop service allows patrons to request a bus by waving it down anywhere along a route. “Request-A-Stop” service allows a person on a bus to request to get off at any location along a route.
- ❑ **Route Deviation Transit Service:** In a route deviation service, a vehicle operates along a fixed-route, making scheduled stops along the way. Vehicles may deviate from the route, however, to pick up and drop off passengers upon request. The vehicle then returns to the fixed-route at the point at which it departed to accommodate the request. Route deviation service operates in one of two ways: riders may be required to call in advance, or the service may be drop-off only (with riders requesting the deviation service as they board the vehicle). Several variations of route deviation also are possible, including client-specific route deviation, and site-specific route deviation.
- ❑ **Point Deviation Transit Service:** In a point deviation service, a vehicle operates on a fixed schedule with specific stops but without a fixed route. Vehicles will accommodate requests for pick-ups and drop-offs at locations other than specified stops or “points” as long as they can be accommodated within the fixed schedule. Note that there is no designated route between specified stops. As with route deviation service, point deviation service operates in one of two ways: riders may be required to call in advance, or the service may be drop-off only.
- ❑ **On-Call Accessible Fixed-Route Bus Service (also called “Call-A-Bus”):** On-call accessible fixed-route bus service, also known as call-a-lift bus service, allows individuals who need to use accessible fixed-route vehicles to call in advance and request that an accessible bus be placed on a particular route at the time they wish to travel. On-call service is particular to routes that are not already 100% accessible.

GIS

A Geographic Information System. These are software programs designed to store, manipulate and illustrate geographic and other data.

¹⁴ Transit Project Planning Guidance: Estimation of Transit Supply Parameters, October 1984, USDOT, pg. 112.

HUBLINK

HUBLINK is the name of a new vision of mobility in Western New York. It represents a comprehensive restructuring of public transportation developed by the Niagara Frontier Transportation Authority in concert with a wide variety of regional interest groups. The concept involves a new philosophy, a new service plan and new forms of collaboration between NFTA and other sponsors and providers of transportation.

HCFA (The Health Care Financing Administration)

HCFA is the agency within the federal Department of Health and Human Services which oversees the federal Medicaid program.

Headway

Time interval between (or frequency of) vehicles moving in the same direction on a particular transit route.¹⁵

Hub

A hub is the focal point of a transit network, where several services meet and passengers can make convenient transfers. Hubs include transit centers, transportation terminals, major rail stations and park-and-ride facilities.

Industry Trip Program

This is an existing program in which Metro will offer an employer or employment center a round-trip bus service to serve work trip travel needs to the site if the employer can guarantee the purchase of a minimum number of monthly flash passes.

Jitney

Privately owned, small or medium-sized vehicle usually operated on a fixed-route but not on a fixed schedule.¹⁶

JOBS (Job Opportunities and Basis Skills)

JOBS is one of several federal welfare programs that were combined into a single new program called Temporary Assistance to Needy Families (TANF) by the passage of the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996. Under TANF, funds are distributed to states in a single block grant. (See also TANF.)

Light Rail

Light rail is a form of electric railway with a light volume travel capacity. This form of urban rail transit typically uses smaller cars than conventional rapid transit (singly or in multi-car trains) and is powered via overhead catenary rather than third rail. As a result, light rail often operates on surface at least for a portion of its right-of-way and may operate in exclusive or shared rights-of-way. Metro Rail is a form of light rail that also operates a large portion of its service underground. Also known as a streetcar, trolley car or tramway.

Line-Haul Transit Service

Transit operations, often express service, along a single corridor or variety of corridors.

¹⁵ APTA, p. 6.

¹⁶ Ibid., p. 7.

Local Circulator Service

A public transit service typically confined to a specific locale, such as a downtown area or suburban neighborhood, and which provides intra-neighborhood service, feeder service to inter-area public transit service, and possibly connections to other local circulators. May be fixed-route transit, flexible transit, or paratransit.

MCD (Minor Civil Division)

This is a definition used by the U.S. Census. It describes places that are smaller than counties; in the northeast United States, it is typically a city, town or village.

MDT (Mobile Data Terminal)

MDTs are in-vehicle hardware that are linked to the vehicle's two-way radio system and provides a means of non-voice communication between drivers and dispatchers. MDTs typically consist of a screen that displays text and/or graphics and a set of keys that can be used for data entry. Using MDTs, dispatchers can relay special instructions, notice of trip cancellations, and other information to drivers, while drivers can transmit information about the disposition of trips back to the dispatch center. MDTs can also be linked to the vehicle's odometer, a card reader (for passenger ID or fare cards), a printer, and/or an AVL receiver.

Medicaid

A program established in 1965 by Title XIX of the Social Security Act to provide medical assistance for certain individuals and families with low incomes and resources. The program is funded jointly by the federal and state governments and ensures adequate medical care for approximately 36 million individuals, including children, seniors, persons with disabilities, and persons who are eligible to receive federally assisted income maintenance payments. Although the federal government has established general program requirements, states have the flexibility to: define eligibility requirements, determine the nature and scope of services provided, set payment rates for services, and administer their own Medicaid programs.

Under Medicaid, transportation to and from eligible Medicaid providers is funded. This is subdivided into emergency transportation, typically accommodated by ambulance, and non-emergency medical transportation, which includes the reimbursement of auto mileage for self-drivers, family or friends, and volunteer drivers; reimbursement for transit trips (or the provision of tokens, tickets, or passes); and arranging trips on taxis, livery operators, and/or private for-profit and non-profit carriers operating accessible vehicles (often called chair cars or ambulettes).

Metro

The division of the Niagara Frontier Transportation Authority (NFTA) which oversees the fixed-route (bus and rail) transit services and the Paratransit Access Line (PAL) ADA complementary paratransit service.

Metro Rail

Metro Rail is the light rail transit system operated by NFTA along a six mile right-of-way in Buffalo.

Mobility Aid

A wheelchair, walker, cane or other device, either battery-powered or manual, that is used to support and convey a person with a physical disability.¹⁷

Mobility Coordinator or Mobility Manager

An entity responsible for managing the transportation programs of the organizations with which it contracts. Also includes developing and managing a coordinated paratransit service delivery system to accommodate the trips sponsored by these organizations. This could also include managing local circulator services, employer-based services, and ridesharing services. (See also Brokerage.)

Mobility Disadvantaged

Mobility disadvantaged refers to any person who cannot carry out a reasonable level of desired activity outside the home because of a lack of available vehicle, road facility, or transportation service. These persons are also sometimes referred to as “transit dependent,” or those who cannot drive: the young, the poor, the unemployed, the carless members of suburban families, the physically or cognitively disabled, and those elderly for whom public transit is totally nonexistent.

Motor Bus

A rubber-tired, self-propelled, manually steered vehicle with fuel supply carried on board the vehicle. Types include:

- ❑ **Transit Bus:** A bus with front and center doors, normally with a rear-mounted engine, low-back seating and without luggage compartments or restroom facilities for use in frequent-stop service.
- ❑ **Articulated Bus:** A bus usually 55 feet or more in length with two connected passenger compartments that bends at the connecting point when the bus turns a corner.
- ❑ **Standard Size Bus:** A bus 35 to 41 feet in length.
- ❑ **Medium Size Bus:** A bus from 29 to 34 feet in length.
- ❑ **Small Bus:** A bus 28 feet or less in length.
- ❑ **Suburban Bus:** A bus with front doors only, normally with high-backed seats, and without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops.
- ❑ **Intercity Bus:** A bus with front doors only, high-backed seats, separate luggage compartments, and usually with restroom facilities for use in high-speed long-distance service.

New York Works

New York State’s new federal family assistance program.

¹⁷ National Standards, pg. 191.

NFTA (Niagara Frontier Transportation Authority)

The NFTA is the public body responsible for intermodal transportation in the WNY region, including overseeing public transit, the harbor, and the local airports.

NFTC (Niagara Frontier Transportation Committee)

The NFTC is the regional planning body, responsible for the long-range planning of transportation services in the WNY region.

NYSDOT

The New York State Department of Transportation.

OMH

New York State Office of Mental Health.

OMR/DD

New York State Office of Mental Retardation and Developmental Disabilities.

Operating Assistance

Financial assistance for transit operating expenses (not capital costs); such aid may originate with federal, local or state governments.¹⁸

Operating Expense

Monies paid in salaries, wages, materials, supplies and equipment in order to maintain equipment and buildings, operate vehicles, rent equipment and facilities and settle claims.¹⁹

Orientation and Mobility Training

Training provided for people who are blind or visually impaired, which teaches skills in traveling, including orienting one's self to environment, navigation (walking, crossing streets, recognizing landmarks), and using public transportation.

PAL (Paratransit Access Line)

PAL is the NFTA's ADA complementary paratransit service. (See also ADA.)

Paratransit

This is often used as a synonym for dial-a-ride service, but is often used to connote a more limited eligibility criteria, such as persons with disabilities, seniors, low-income, clients of specific, sponsoring human service agencies, etc. Paratransit services typically require an advance request, although some permit same-day reservations if not immediate reservations. Some paratransit services allow riders to request subscription trips, also known as standing orders, for recurring service; this is a convenience to both the rider and the reservation/scheduling staff because these riders do not have to place a reservation each time. Paratransit services are typically provided on a curb-to-curb, door-to-door, or door-through-door basis. There are three basic types of paratransit services: "many-to-one," in which transportation is provided from multiple origins to a single destination; "many-to-few," in which transportation is provided from multiple origins to a few designated destinations (e.g., major activity centers);

¹⁸ APTA, p. 9.

¹⁹ Ibid., p. 9.

and “one-to-one,” in which transportation is provided between any two points within the service area.²⁰ (See also Dial-A-Ride.)

Paratransit is sometimes also used as an umbrella for more personal transportation services including any form of transportation service that falls between the privately owned, self-operated automobile and scheduled, routed transit services. In addition to dial-a-ride services, this would include carpools, vanpools, subscription bus service, and other forms of ridesharing; taxis, jitney service, livery and other private for-hire services, including employer shuttles.

Park-and-Ride

Park-and-Ride is when transit users drive, park and transfer to a bus or rail service. The term may be used to describe the mode of travel, the bus service or the parking facility.

Passenger Miles

The total number of miles traveled by passengers on transit vehicles; determined by multiplying the number of unlinked passenger trips times the average length of their trips.²¹

Planned Demand Routes

These are routes in rural areas which do not operate everyday to the same locations. Service is provided to different places on different days of the week so as to offer more coverage at a reasonable cost. Such service is geared to senior citizens who do not make daily trips and can plan their trips to match the service.

Point Deviation Transit Service

See Flexible Transit.

Power Lift

A mechanized platform designed to provide access to a vehicle for an occupied mobility aid/wheelchair. Also known as a *wheelchair lift*.²²

Private, Non-Profit Corporation

A private corporation organized under Section 501(C)(3). In New York State, PNPs are called private, *not-for-profit* corporations.

Public Participation

The wide variety of consensus building activities that were carried out throughout the HUBLINK study, including public and stakeholder meetings, advisory committees, newsletters and press coverage.

Public Transportation

Transportation provided by or through a public entity by bus, rail, or other conveyance that provides the general public with general or special service, including charter service, on a regular basis.

²⁰ General Community Paratransit Services in Urban Areas, USDOT, January 1982, pg. 95.

²¹ APTA, p. 9.

²² National Standards, pg. 194.

Purchase of Service Agreements

Agreements between a sponsor and a carrier (directly or through an intermediary) to arrange for the provision of transportation to meet particular travel needs.

Radial Route

Transit routes that connect the central city downtown area with outlying locations. Generally, these routes serve trips from outlying residential origins to destinations in the downtown.

Reverse Commuting

Movement in a direction opposite the main flow of traffic, such as from the central city to a suburb during the morning peak period.²³

Ridematching

The function of identifying and matching commuters with similar travel patterns for the purpose of identifying prospective carpoolers, vanpoolers, or subscription bus riders.

Ridesharing

A form of transportation, other than public transit, in which more than one person shares the use of a vehicle, such as a car or van, to make a trip. Includes "carpooling" and "vanpooling."²⁴

Ridership

The number of passengers using a transportation system during a given time period, typically measured in one-way passenger trips.²⁵

Risk Management

Practices and procedures designed to protect against losses from accidents, passenger and worker injuries, vehicle damage and other losses and reduce insurance costs.²⁶

Rolling Stock

The vehicles in a transportation system.²⁷ Also known as a *fleet*.

Route Deviation Transit Service

See Flexible Transit.

Seating Capacity

The number of designated seating positions provided in a vehicle, including the driver's position. In an accessible vehicle, the seating capacity is often identified in the context of the number of wheelchair tie-down positions and the collective number of permanent and fold-down seats (if any) that are available if the wheelchair tie-down position is not being used. For example, in a vehicle that has two wheelchair positions, the seating capacity might be defined as 10+0, 8+1, 6+2, where the first number is the number of seats, and the second number is the number of occupied wheelchair positions.

²³ Ibid.

²⁴ APTA, p. 10.

²⁵ National Standards, pg. 196.

²⁶ Ibid., pg. 196.

²⁷ Ibid., pg. 196.

Section 5310

Formerly known as Section 16, this federal transportation program provides capital assistance to agencies serving seniors and people with disabilities for the purchase of vehicles for transporting clients. Funding recipients apply to the state (or designated agency) for funds, 80% of which are provided by the federal government, and 20% of which are provided locally. There is a limit of one vehicle per agency. Section 5310 is primarily used by private, not-for-profit agencies, although public agencies can qualify.

Section 5311

Formerly known as Section 18, this federal transportation program provides 50% operating assistance, 80% assistance for capital and administration, and 100% assistance for planning for rural public transportation service. Funding recipients apply to the designated agency, usually the state, for funds, which cannot be used for providing urban transit service.

Sensitivity Training

See Disability Awareness Training.

Service Route

Also known as a Community Bus Service, this is a fixed-route, fixed-schedule transit service designed to better match the common trip origins and destinations of elderly persons and persons with disabilities, and to minimize the distance that they have to travel to get to and from bus stops. Smaller and low-floor, accessible vehicles are typically used. Service is usually on neighborhood streets and to mall or hospital doorways to reduce walking distances. Pick-ups and drop-offs are typically designed so that they are as close to entryways of common destinations as possible. While routes are designed to better meet the needs of persons with disabilities and elderly persons, they are open to the public. A service route can be planned to feed other fixed-route transit services and can include a "route deviation" option.²⁸ (See also Community Bus.)

Shuttle

A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, two schools, etc.

Specialized Transportation

Transportation designed to meet the special needs of specific market groups, in particular senior citizens and persons with disabilities. These transportation services are usually provided with smaller vehicles that are usually wheelchair accessible. They vary in the degree of assistance provided by the driver ranging from curb-to-curb to door-through-door assistance.

Standing Order or Subscription Trip/Service

A trip that occurs at regularly scheduled times, either every day or on particular days of the week or month. Subscription passengers typically do not need to call to confirm this pre-arranged service.

²⁸ Definitions from TCRP B-1: Transit Operations for Individuals with Disabilities, Final Report, June 1995.

Subscription Bus Service

A commuter bus express service operated for a guaranteed number of patrons from a given area on a prepaid, reserved seat basis.

TAC

The Technical Advisory Committee assembled for the HUBLINK study.

TANF (Temporary Assistance to Needy Families)

A new federal welfare program created by the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, which delivers federal welfare funds to states in a single new block grant and replaces the former Aid to Families with Dependent Children (AFDC), Emergency Assistance (EA) and Job Opportunities and Basis Skills Training (JOBS) programs.

TDM

TDM or Travel Demand Management is the pro-active efforts to modify travel behavior including the choice of travel mode and travel time. The goals of TDM are generally to reduce use of single occupant vehicles and thereby mitigate traffic congestion and air pollution problems.

Timed Transfers

The coordination of bus arrivals and departures and several routes so that passengers transferring between routes can make convenient connections and enjoy reduced wait times.

Title IIIB

This is a program for supportive service for senior citizens made possible by the Older Americans Act and used by local area agencies on aging for transportation.

Transit Dependent

Travelers whose auto ownership, geographic or socio-economic characteristics cause them to rely largely or fully on public transportation for their mobility.

Transit Mode Share

The percentage of travelers who use transit for their trip.

Travel Training

Instruction used to supply seniors, individuals with a physical disability, and persons with mental retardation or a cognitive disability with the information, skills and confidence they need in order to use fixed-route transportation services safely and independently. Individuals can receive training that enables them to travel from a specific origin to a specific destination (for a work or school trip, for example). This type of route-specific training is often used to increase the mobility and independence of persons with mental or cognitive disabilities. A more general form of travel training can be used to teach an individual to utilize a fixed-route system to make any trip that meets his/her travel needs. Persons with a physical disability often make good candidates for general travel training.

rip (or Passenger-Trip)

A trip is defined as a one-way movement of one person between two points for a specific purpose.

Trunk Route

The portion of a transit network in which high frequency service can be provided based on demand (or where several branches of single transit route or several transit routes would coincide). In the HUBLINK plan, trunk routes are the highest frequency regional routes that connect primary hubs.

UCPA

United Cerebral Palsy Association of Western New York, Inc.

Urbanized Areas

The U.S. Census defines Urbanized Areas as one or more places and the adjacent densely settled surrounding territory ("urban fringe") that together have a minimum population of 50,000 persons. The urban fringe generally consists of contiguous territory having a density of at least 1,000 persons per square mile.²⁹

Vehicle Hours of Service

The total number of hours vehicles are in use to provide transportation service. For example, if three vehicles are used to provide transportation and each is in operation 40 hours per week, 52 weeks a year, there would be 6,240 vehicle hours of service provided.

Vehicle Miles of Service

The total number of miles traveled by vehicles providing transportation service. For example, if three vehicles are used to provide transportation and they each travel 30,000 in a given year, there would be 90,000 vehicle miles of service provided.

VESID

New York State Vocational and Educational Services for Individuals with Disabilities.

Welfare to Work Initiative

The current national and local efforts to shift more welfare recipients into employment, in response to the passage of the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996.

WNY

The Western New York region, including Erie and Niagara Counties.

²⁹ 1990 Census, Area Classifications, pg. A-12.

