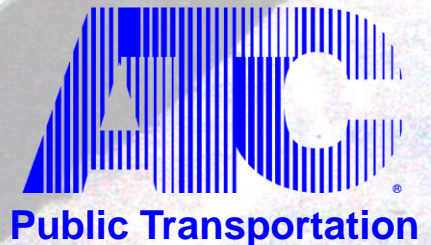


Flexible Bus Routes

Designing Bus Services to Meet Senior Citizen and Transportation Dependent Needs

WARREN COUNTY SHUTTLE



The Issues

- An aging baby boom population wed to their automobiles but needing alternatives
- Providing flexibility and choice in rider travel times and destination choice
- Holding the line on transit subsidy costs

The Problem

- Providing sufficient span of hours and frequency of service
- Providing accessibility in terms of proximity to trip origins and destinations
- Providing a range of passenger assistance



NJ Fixed Route Providers

- New Jersey Transit
- Private Bus Companies
- County Transportation programs

Demand Response Providers

- County Transportation Programs
- NJ Transit Access Link
- Non-Profit Human Service Agencies

Advantages of Fixed Route

- No Advance Reservation Required
- Greater Flexibility in Changing Travel Time
- Higher Per Hour Trip Productivity



Demand Response Advantages

- Accessibility (Door-to-Door)
- Higher Level of Driver Assistance
- Responsiveness to Special Needs

The Challenge

- Approach the door-to-door and passenger assistance characteristics of demand response
- Offer the spontaneity and trip productivity of fixed route

Designing Flexible Routes

- Smaller buses to improve routing flexibility
- Offer a headway schedule eliminating the need for reservations
- Provide extra room in the schedule to accommodate some route deviations

Existing Models

- NJ Transit Flex Routes (Formerly Wheels)
- County Transportation Programs

A Tale of Two Counties

- **Warren County, NJ**
- **Rural County**
- **Little public transit**
- **Small urban centers**
- **Union County, NJ**
- **Urban County**
- **Considerable rail and bus transit**
- **Major city and suburban communities**



Common Issues

- Both had paratransit systems with difficulties serving employment needs of senior/disabled and economically disadvantaged
- Both had underserved senior citizen populations
- Both had workforce development agencies struggling to meet mobility needs
- Both had destinations in suburban areas not linked by transit



Leveraging Funding

- Warren County
 - Obtained JARC funds to supplement Casino Revenue, 5311
 - Used joint funding to serve both senior/disabled and welfare to work
- Union County
 - Obtained TANF funds to supplement Casino Revenue
 - Used joint funding to serve both senior/disabled and welfare to work



Starting Small

- Both systems expanded their services through demonstrating their value to the DHS and Workforce programs
- Union: Division of Workforce Development provided additional post-TANF \$ to extend route and expand hours (\$65,000 annually)
- Warren: Workforce Investment Board and County provided discretionary grants to provide evening and Saturday service (\$56,000 annually)
- NJ Council on Developmental Disabilities provided planning \$ for expanding community transit services open to all



Operational Characteristics

- Warren County
 - Two modified fixed routes, 3 minibuses
 - Span: 6AM-8PM
 - 60 minute service frequency
 - 35 Revenue Hours
 - \$1.00/.50 Suggested Fare
 - Connection to NJT routes
- Union County
 - One modified fixed route, 2 minibuses
 - Span: 8AM-6PM
 - 60 minute service frequency
 - 22 Revenue Hours
 - Fare Free
 - Connection to NJT bus and rail services

Using Excess Seating Capacity

- Both funding grantors embraced the concept of coordination and serving other client groups
- As long as the primary welfare to work needs were met, other client groups and destinations could be served on the modified fixed routes using open seats
- This resulted in increased efficiency and contributed to further service expansion in Warren County through application of fare revenue



Warren Shuttle Trips by Destination in 2001

Trip Type	July	Aug	Sept	Oct	Nov	Dec
Hospital	152	150	218	148	94	150
Shopping	666	1,366	582	772	823	549
College	100	68	390	260	347	224
Work	206	114	190	320	188	192
Total	1,124	1,698	1,380	1,488	1,452	1,115

Warren Shuttle Trips by Destination in 2003

Trip Type	July	Aug	Sept	Oct	Nov	Dec
Hospital	160	120	164	134	162	142
Shopping	2019	2243	1907	2237	1722	2392
College	288	164	446	480	364	220
Work	984	1038	1032	1037	894	958
Total	3451	3565	3549	3888	3142	3712

Warren Shuttle by Client Category in 2001

Client	July	Aug	Sept	Oct	Nov	Dec
Transfers	38	16	55	196	124	142
W/C Trips	2	6	6	4	7	2
General Public	558	1073	874	815	879	590
Senior/Disabled	526	603	445	473	442	381
Total Trips	1,124	1,698	1,380	1,488	1,452	1,115
% S/D	46.8	30.4	27.6	25.4	26.0	34.2



Warren Shuttle by Client Category in 2003

Client	July	Aug	Sept	Oct	Nov	Dec
Transfers	149	155	168	174	18	65
W/C Trips	0	3	6	4	5	2
General Public	2162	2337	2575	2994	2597	3018
Senior/Disabled	1140	1070	800	716	522	627
Total Trips	3451	3565	3549	3888	3142	3712
% S/D	33.0	30.1	22.7	18.5	16.8	16.9

Trips per Revenue Hour in 2001

Route	July	August	September	October	November	December
Warren Shuttle	2.37	3.08	2.76	2.59	2.77	2.23
Overall WCT	2.54	2.74	2.92	2.60	2.62	2.70



Trips per Revenue Hour in 2003

Route	July	August	September	October	November	December
Warren Shuttle	5.41	5.85	5.83	5.83	5.70	5.82
Overall WCT	3.46	3.40	4.28	3.41	3.27	3.38



Warren Expansion of Service

- The NJDDC operations planning grant has focused on Saturday and evening service to meet life mobility needs of working individuals
- NJ Department of Labor Discretionary Grant of \$41,000 subsidized weekday evening service
- Shuttle annual fares of \$15,000.00 covered subsidy for Saturday service



Projected Warren Results

- Expected average daily ridership of 100 one-way passenger trips by June 2002
- Expected 65% of trips to be senior/disabled
- Expected farebox recovery of 10%
- Expected 25% of trips to be employment and education destinations



Six Months Warren Results

- Average Daily Ridership: 78
- Senior/Disabled Ridership: 28.9%
- Farebox Recovery: \$7487.00 (8.4%)
- Percent Employment/School: 31.5%



May 2004 Warren Shuttle

- Average Weekday Ridership: 229
- Average Saturday Ridership: 56
- Average Trips Per Hour: 6.44
- Senior/Disabled Ridership: 18.7%
- Farebox Revenue: \$1234.00/5.2%
- Percent Employment/School: 36.0%



Union Rail Feeder: Integrating Paratransit and Transit

- In order to meet increasing demand, paratransit services need to act as feeder to transit
- Union County Rail Feeder Demonstration to NJT Raritan Valley Rail Line
- Reduced total expense and travel time for supported employment participants
- Could have similar application for senior transportation

Conclusions

- The use of flex route increased mobility for all transportation dependent individuals
- The initial limited service hours prompted identification of the need for evening and weekend service
- The shift of senior and disabled trips to the Shuttles has improved County paratransit system efficiency
- The integration of transit and paratransit is critical if we are to meet the demands of the next two decades

