Public Transportation Integration Analysis

Final Report

Prepared for

Ulster County Transportation Council

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INTRODUCTION

Currently, public transportation is provided by several carriers that afford service within Ulster County and adjacent communities. Two of these systems are publicly owned and operated. One is the municipal system (i.e., Kingston CitiBus) that operates within its jurisdiction while the other is Ulster County Area Transit (UCAT), which provides bus service throughout Ulster County. Suggestions have been made in the past that the two separate public systems should be more fully integrated. This could include options that call for greater coordination through more ambitious proposals that would combine both operations into a single entity. To explore this change in how transit services are provided, an analysis has been undertaken to develop alternatives and assess their consequences. In this way, public officials can select a recommended plan for the operation, management, ownership and overall governance of public transportation.

To solicit comments from elected officials and study participants, interim reports have been prepared that describe the study analysis and findings as they became available. These reports, along with presentation materials at various milestones of the project have been combined in this Final Report. The first chapter provides an overview of the routes and service operated along with the organization structure of each agency. Information is also presented on the system assets (i.e., fleet and facilities) along with organization charts, collective bargaining agreements and staff resources. Of particular importance are the trends during the past few years for each agency in terms of operating statistics, ridership and financial results.

The next chapter presents a broad range of alternatives for how public transportation should be provided in Ulster County. These alternatives were the basis for discussion with elected officials and staff to be sure that a full range of options were considered. Evaluation criteria were specified and each option was rated on how well it satisfies measure. Each plan was also described in terms of its relative strengths and weaknesses. These results were then utilized to delineate a recommended plan. An incremental approach was suggested which is documented in the last chapter.

While not part of the original study design, a financial analysis was performed to indicate the operating and financial consequences of continuing current trends into the future. Of particular interest was the funding requirements of the transit system and the financial requirements that would be placed on both the City of Kingston and Ulster County. The memorandum that contains these results is presented in the Appendix.

EXISTING CONDITIONS

The formulation of any alternatives on how public transportation should be organized and operated in the future should rely on a comprehensive and detailed information on both Kingston CitiBus and UCAT. This includes an overview of the service operated and the nature of their route network structure. Information also needs to be presented on physical assets and human resources. Of particular interest are observed trends for the past five years and the performance of each carrier. Funding amounts and sources are also described for each operator.

Service

Kingston CitiBus operates three bus routes throughout the year in the City of Kingston, as shown in Table 1. One of these routes also extends beyond the municipal boundaries to Port Ewen. Route A connects Hannaford's in the Kingston Plaza shopping center with both uptown and the Roundout area of Kingston via Broadway. Route B connects Hannaford's with both Hurley Avenue and the Business Resource Center via the Uptown and Midtown areas of Kingston. Finally, Route C connects Hannaford's with Port Ewen via both the Roundout and the Golden Hills area of Kingston. Transit access is extensive since all residents are within convenient walking distance of a bus route. While the three routes converge on Hannaford's at the Kingston Plaza shopping center, they do not operate on a "timed-transfer" basis.

Kingston CitiBus also operates a fourth bus route from May through October. This seasonal bus route - the Kingston Historic Trolley - connects the Trolley Museum in the Roundout section of Kingston with the Ramada Inn, located west of the New York State Thruway (I-87). Service levels in terms of frequency and span of service are shown in Table 2 and Table 3, respectively.

A federal requirement (the Americans with Disabilities Act) for all transit operators is that they provide demand responsive service within three-quarters of a mile of a bus route for those individuals that have a disability and can not utilize the fixed route bus system. To satisfy this requirement, riders can make an advance reservation and will be picked up at their origin and dropped off at their destination. To operate this service, the transit agency operates two paratransit vehicles.

The fare on Kingston CitiBus is $1.00, with trips to Port Ewen costing $1.50. Tokens are available at the same price while transfers cost an additional $0.30. Senior citizens are provided one free round trip per week, which will change in January to a half fare at all times of the day to

Table 1
Description of Service

Route	Between	And
Kingston CitiBus		
Route A	Kingston Plaza and Westbrook Lane	Delaware Avenue and North Street
Route B	Hurley Avenue	Business Resource Center
Route C	Board of Cooperative Educational Services	Amy Kay Boulevard and N.Y. Route 32
Kingston Historic Trolley *(May-October Only)*	Trolley Museum	Ramada Inn
Ulster County Area Transit		
Regular Routes		
Kingston-Saugerties	Kingston Plaza	Saugerties/Woodstock
Kingston-New Paltz	Kingston Plaza	New Paltz/Ulster County Community College
Kingston-Pine Hill	Kingston Plaza	Phoenicia/Shandaken/Belleayre
Kingston-Ellenville	Kingston Plaza	Ellenville/Spring Glen
Kingston-Wallkill	Kingston Plaza	Wallkill/Plattekill
Kingston-Gardiner	Kingston Plaza	Gardiner/Plattekill/Highland/Marlboro
Woodstock-New Paltz	Woodstock	New Paltz
Newburgh Service	Kingston/New Paltz	Newburgh
New Paltz Shuttle	Loop route in New Paltz Area	
Rural Routes (Demand Responsive Service)		
Kingston Service	Kingston	Clintondale, Connelly, East Kingston, Ellenville, Gardiner, Highland, Marlboro, New Paltz, Olivebridge, Pine Bush, Port Ewen, Rifton, Rosendale, Saugerties, Sawkill, Seven Greens, Sunset Garden, Tillson, Ulster Park, Wallkill, West Park or Woodstock
New Paltz Service	New Paltz	Clintondale, Gardiner, Highland, Marlboro or the New Paltz area

Table 2
Frequency of Service

Route	Weekdays				Saturday	Sunday
	AM Peak	Midday	PM Peak	Evening		
Kingston CitiBus						
Route A	60	60	60	--	60	--
Route B	60	60	60	--	60	--
Route C	60	60	60	--	60	--
Kingston Historic Trolley *(May-October Only)*	--	60 *(Friday)*	60 *(Friday)*	--	60	60
Ulster County Area Transit						
Regular Routes (Exact Headway May Vary Depending Upon Direction of Travel)						
Kingston-Saugerties	40	60	40	120	105	--
Kingston-New Paltz	30	95	30	1 trip	--	--
Kingston-Pine Hill	2 Trips	130	1 Trip	1 Trip	--	--
Kingston-Ellenville	83	158	135	2 Trips	--	--
Kingston-Wallkill	1 Trip	--	1 Trip	--	--	--
Kingston-Gardiner	2 Trips	--	2 Trips	--	--	--
Woodstock-New Paltz	--	--	--	--	2 Trips	--
Newburgh Service	2 Trips	1 Trip	1 Trip	1 Trip	--	--
New Paltz Shuttle	1 Trip	101	--	--	--	--
Rural Routes						
Kingston Service	Demand Responsive Service				--	--
New Paltz Service	Demand Responsive Service				--	--

Table 3
Span of Service

Route	Weekdays		Saturday		Sunday	
	Begin	End	Begin	End	Begin	End
Kingston CitiBus						
Route A	6:30AM	6:30PM	9:30AM	5:30PM	--	--
Route B	6:30AM	6:30PM	9:30AM	5:30PM	--	--
Route C	6:35AM	6:30PM	9:35AM	5:30PM	--	--
Kingston Historic Trolley *(May-August)*	10:00AM *(Friday)*	8:00PM *(Friday)*	10:00AM	8:00PM	10:00AM	6:00PM
Kingston Historic Trolley *(September-October)*	10:00AM *(Friday)*	6:00PM *(Friday)*	10:00AM	6:00PM	10:00AM	6:00PM
Ulster County Area Transit						
Regular Routes						
Kingston-Saugerties	5:25AM	10:30PM	8:00AM	6:00PM	--	--
Kingston-New Paltz	6:35AM	9:10PM	--	--	--	--
Kingston-Pine Hill	6:55AM	7:45PM	--	--	--	--
Kingston-Ellenville	5:30AM	10:35PM	--	--	--	--
Kingston-Wallkill	5:55AM & 4:30PM	7:20AM & 6:50PM	--	--	--	--
Kingston-Gardiner	6:15AM & 2:20PM	10:00AM & 5:00PM	--	--	--	--
Woodstock-New Paltz	--	--	8:00AM	4:45PM	--	--
Newburgh Service	5:10AM	9:00PM	--	--	--	--
New Paltz Shuttle	8:52AM	3:30PM	--	--	--	--
Rural Routes (Span of Service May Vary Depending On Communities Being Served and the Specific Weekday)						
Kingston Service	8:45AM	3:00PM	–	–	--	--
New Paltz Service	9:30AM	2:30PM	--	--	--	--

comply with federal regulations. Actually, the senior citizen fare change will exceed federal requirements, which calls for half fares during off-peak periods.

Ulster County Area Transit operates two different types of bus routes: the Regular Routes and the Rural Routes, which are consistent with the diverse service area that is urban, suburban and rural in character. UCAT's Regular Route network consists of nine routes which provide public transportation service throughout Ulster County. Service is afforded along most major roadways and developed portions of Ulster County, although most of the route mileage traverses rural and undeveloped areas. The two largest urban centers (i.e., Kingston and New Paltz) are the focal points for the system. In addition to the town and village centers, other major generators served are the Kingston Plaza shopping center, Hudson Valley Mall and the Ulster County Community College.

To meets its ADA requirements, UCAT does not operate a separate, complementary demand responsive service. Instead, they utilize a "flexible fixed route" approach meaning that an existing fixed route bus can go off-route up to three-quarters of a mile on a pre-arranged reservation system.

UCAT's Rural Route service essentially supplements the fixed route service where demand and requests have shown additional service is needed on certain days. Similar to the Regular Route service, vehicles can divert to pick-up and drop-off those riders that have a disability. The communities listed in the route description all have service connecting their communities to either Kingston or New Paltz; however, service operates on a "rover" basis, with only certain communities receiving service on certain weekdays.

Because of the size of the service area, UCAT has a distance-based fare structure. The fare for UCAT service is $0.75 to board the bus (which entitles the passenger to ride within one zone) and $0.25 for each additional zone. An additional $0.50 is charged for each single off-route service (i.e., for each pick-up or drop-off not along the basic route). Senior citizens can ride for half fare between 10AM and 2PM. Also, senior citizens who register with the Ulster County Office for the Aging Transportation Program are entitled to free medical transportation. Senior citizens are also entitled to one free non-medical round trip per week.

One additional fare provision that is particularly relevant to the current analysis is that UCAT operates "closed door" in Kingston. Riders can board or alight a UCAT bus when one trip end is in Kingston and the other outside the city. Riders can not make a trip that both starts and ends in Kingston. This arrangement is designed to prevent farebox revenue diversion from one carrier to another. The current fare structure does not provide for coordination between Kingston CitiBus and UCAT.

Organization

Each transit agency is a department within its respective government. Kingston CitiBus has offices in the Midtown area, which includes office space for the transit unit. Maintenance and other related activities for buses take place a few blocks away in the Department of Public Works (DPW) garage. This facility includes all the elements and staff necessary to maintain the bus system fleet. It should be recognized that DPW also has responsibility for other municipal vehicles (e.g., trucks and front end loaders). While staff assigned to the buses shift depending on work load, it is estimated that about two individuals are required to maintain the bus fleet. All other personnel are assigned to the Transit Department.

As shown in Figure 1, Kingston CitiBus is directed by a Transit Supervisor with responsibility for 13 employees. With the exception of a Clerk/Dispatcher, the other staff members are drivers which consist of nine full-time and three substitute drivers. The Clerk/Dispatcher, as the name implies, assists in getting buses on the street and also performs various office duties in support of the Transit Supervisor. As noted above, the maintenance is part of DPW and results in two full-time equivalent (FTE) employees.

For purposes of assessing the overall staff levels, the substitute drivers were assigned a value of half a full-time employee. This results in a staffing level of 14.5 employees. The transit function is also supported by other departments within the municipal government. This would include activities such as purchasing, personnel and legal, to cite a few.

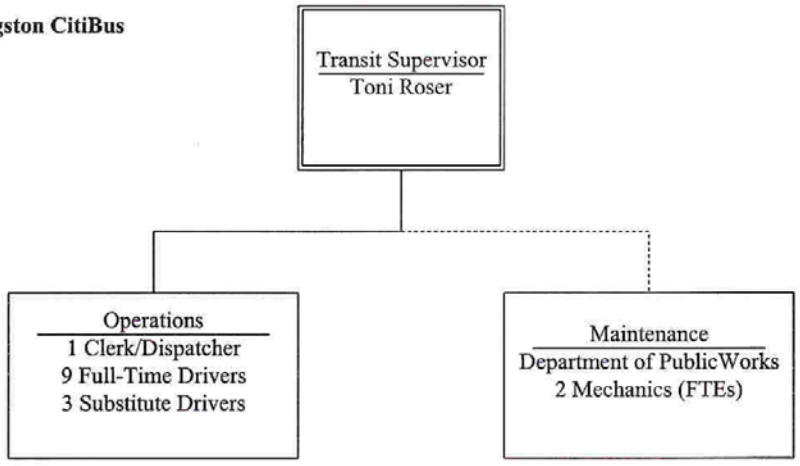
UCAT is a much larger organization in terms of the number of personnel and is relatively self-reliant in that it does not rely substantially on other units of Ulster County government for operations, maintenance and administration. Similar to the Kingston situation, resources and staff of other county departments are used to support the bus system. UCAT is a department within the Ulster County government structure and is headed by a Transit Director. The activities of the UCAT are housed in a new, modern facility in the County Complex in Kingston.

Administrative staff consists of four individuals that perform various functions which are explained by their job title. Maintenance is performed by UCAT staff and is directed by a Manager with four maintenance personnel. Operations are directed by a Coordinator and an Assistant Coordinator. Six individuals have responsibility for dispatching vehicles either full-time or as part of other assigned duties (i.e., training and driving). Currently, 29 individuals are drivers, with more than half on full-time status.

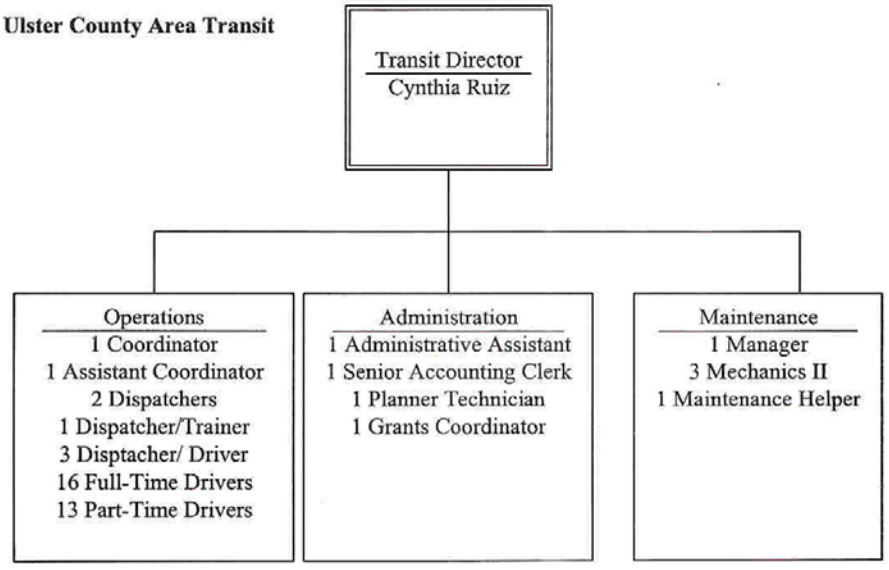
In a similar manner for Kingston CitiBus, an estimate of overall staff levels was determined using the one-half value for part-time drivers. This results in a staff level of 40.5 employees.

Figure 1
Organization Charts

Kingston CitiBus



Ulster County Area Transit



Fleet

Kingston CitiBus operates a fleet of nine vehicles, of which seven are typically assigned to the fixed route service (i.e., Routes A, B, C and the Historic Trolley). The remaining two coaches are assigned to the paratransit service in meeting the ADA requirements. All vehicles are equipped with wheelchair lifts and stations and three of the buses have a vintage streetcar appearance (Table 4). A review of service levels and discussions with staff indicated a peak vehicle requirement of five buses, with four buses available for breakdowns and repairs. This results in a spares ratio of 80 percent which is relatively high, but not inconsistent with, the fleet age. It would appear that some buses are beyond their useful economic life.

The UCAT fleet reflects its diverse service area and ridership patterns and consists of standard small buses, cutaway vehicles and vans (Table 5). With the exception of the three vans, all vehicles are wheelchair accessible. The UCAT fleet is relatively new, with most buses within their useful economic life. Based on UCAT reporting the 2004 peak vehicle requirement was 14 vehicles, with six serving as spare vehicles and a resulting spares ratio of about 43 percent.

Facilities and Maintenance

As noted previously, vehicle maintenance of the CitiBus fleet is the responsibility of the Department of Public Works. One full-time mechanic is responsible for the maintenance function. This individual works the second shift (i.e., Noon to 8:00PM). There are three other Kingston City mechanics that support the vehicle maintenance function of the bus fleet on an as needed basis. Overall, the equivalent staff devoted to the vehicle maintenance function for public transportation is about two employees.

A preventive maintenance inspection (PMI) program for the CitiBus fleet is followed and is based on either hours of service or time. A PMI will be performed when a bus reaches 300 hours of service or one month in operation, which ever comes first. There are forms that are used to identify the activities that occur in each PMI interval. For example, after six months of operation the transmission fluid will be changed.

Bus maintenance is performed in a building that is used for both buses and other municipal vehicles. The facility includes five repair bays with only one bay equipped with a lift capable of raising a larger bus. While the maintenance building is old, the facility has all the needed shop and garage equipment. The buses have a separate building where they are stored inside, overnight. There is a separate building that contains an automatic bus washer which was constructed in 1979. The bus washer is now prone to numerous mechanical and other types of

Table 4
Revenue Equipment - Kingston CitiBus

Number of Vehicles	Model Year	Manufacturer	Length (Feet)	Seats	Wheelchair Stations
Fixed Route					
2	1991	Orion	30	30	1
1	1996	Thomas	30	28	1
1	1998	Thomas (Trolley)	30	32	2
1	2002	Coach & Equipment	23	14	2
2	2005	Dupon (Trolley)	32	32	2
7	Total				
Paratransit					
1	1996	Ford	21	18	3
1	2000	Coach & Equipment	23	12	2
2	Total				

Table 5
Revenue Equipment - Ulster County Area Transit

Number of Vehicles	Model Year	Manufacturer	Length (Feet)	Seats	Wheelchair Stations
Bus					
1	1996	International	28	15	3
4	1997	Thomas	35	29	2/3
2	2000	Blue Bird	25	26	2
2	2002	Thomas	30	28/29	2
4	2004	Orion	35	24	2
13	Total				
Cutaway					
4	2002	Ford	25	14	2/3
4	Total				
Van					
3	2005	Ford	15	15	--
3	Total				

problems and has exceeded its useful life and is in need of replacement. It should be noted that buses are washed twice a week in the summer months and five times a week in the winter.

The facility has an outside fuel island where the drivers fuel their vehicles after daily service. If scheduled, the drivers will also operate the buses through the bus washer and then park them in the storage building. The mechanics will check the fluids in the buses and add fluid such as oil, if needed.

The vehicle maintenance of the UCAT bus fleet is the responsibility of the in-house maintenance staff that includes one manager, three mechanics and one mechanic helper as shown on the previously discussed organization chart.

UCAT has a preventive maintenance inspection (PMI) program for its fleet that is based on the bus manufacturers' recommendations. The initial interval is 1,000 miles. The drivers will perform a pre-trip inspection that includes checking the engine oil and adding oil, if necessary.

The bus system recently moved to a new and modern facility which includes all operations, administration and maintenance functions. The $7.2 million facility was recently opened in April of 2005. The storage area has six bays that can store three buses per bay or 18 buses total. The maintenance area includes four repair bays of which one has an in-ground lift. Another bay has a pit while the other two are flat bays. There is also a separate bus wash bay. Other maintenance areas include a bulk fluid storage room, a mezzanine parts storage area, tire building and an outside canopy covered fuel island. Clearly, this modern facility has all the features and the necessary shop and garage equipment to perform vehicle maintenance.

Labor Agreement

The employees of both transit systems are covered by collective bargaining agreements that cover operating, maintenance and administrative employees. The labor agreement for both Kingston and Ulster County are for all employees, of which the bus systems' workers are only one group. In the case of Kingston CitiBus, the Transit Supervisor is also represented by the Civil Service Employees Association. The importance of the labor agreement can not be overstated since transit is a labor intensive enterprise. The overwhelming majority of costs are associated with employees' wages and fringe benefits.

Not surprisingly, many of the features of both labor agreements are similar since they cover wages, benefits and conditions of employment (Table 6). With respect to specific terms, some are similar while others are quite different. For example, in both contracts the union is recognized as the bargaining agent with seniority a determinant of how vacations, layoffs, etc. are

Table 6
Summary of Contract Terms

Term	Kingston CitiBus	Ulster County Area Transit
Union	Civil Service Employees Association Kingston City Unit of Ulster County Local 856	Civil Service Employees Association Ulster County Unit 8950, Local 856
Period	January 1, 2002 - December 31, 2005	January 1, 2002 - December 31, 2005
Closed Shop	Yes	Yes
Dues Check Off	Yes	Yes
Seniority	Yes	Yes
Employees Covered	Clerical, Operating and Maintenance Personnel Including Transit Supervisor	Clerical, Operating and Maintenance Personnel
Part-Time/Substitute Drivers	Yes	Yes
Full-Time Work Week	35 Hours	40 Hours
Hours Specified	Monday - Friday 6AM - 1PM or 12PM - 7PM Saturday 9AM - 6PM	Not Specified
2005 Hourly Wage Rate ($)	Bus Driver (Grade 8): 14.66 - 17.49 Maintenance Assistant (Grade 12): 15.80 - 18.74 Mechanic (Grade 14): 16.65 - 19.68 Transit Supervisor (Grade 15): 16.80 - 19.88	Bus Driver (Grade 8): 12.03 - 16.54 Automotive Mechanic (Grade 9): 12.63 - 17.15 Automotive Mechanic II (Grade 10): 13.22 - 17.73 Planning Technician (Grade 12): 15.20 - 19.70

Table 6 (Continued)
Summary of Contract Terms

Term	Kingston CitiBus	Ulster County Area Transit
Longevity Pay (Annual $)	Years 6-10: 450 Years 11-15: 650 Years 16-20: 850 Years 21-25: 1,050 Years 26-30: 1,150 Years 31+: 1,350	Years 8-11: 480 Years 12-15: 1,000 Years 16-19: 1500 Years 20-23: 2,400 Years 24-28: 3,000 Years 28+: 3,600
Personal Leave	3 Days Annually	5 Days Annually
Sick Leave Accumulation Rate Amount Accumulated	 1 Day Per Month 140, 150 or 185 Days Depending On Date Of Hiring	 1 Day Per Month 165 Days
Bereavement	3 Days (Immediate Family)	3 Days (Immediate Family)
Vacation	Years 1-4: 10 Days Years 5-8: 15 Days Years 9-14: 20 Days Years 15+: 25 Days	Years 1-4: 10 Days Years 5-7: 15 Days Years 8-11: 17 Days Years 12-15: 20 Days Years 16-19: 22 Days Years 20+: 25 Days
Paid Holidays	New Year's Day, Martin Luther King Day, Presidents' Day, Good Friday, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veteran's Day, Thanksgiving, Day After Thanksgiving, Christmas Eve, Christmas Day	New Year's Day, Martin Luther King Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving, Day After Thanksgiving, Christmas Day (Lincoln's Birthday, Good Friday and Election Day are floating holidays with 50 percent staffing)

Table 6 (Continued)
Summary of Contract Terms

Term	Kingston CitiBus	Ulster County Area Transit
Retirement	Improved 1/50th Retirement Plan of New York State Employees' Retirement Plan Under Section 75i.	Improved 1/50th or 1/60th Retirement Plan of New York State Employees' Retirement Plan Under Section 75i at Various Ages (55 or 62) Depending on Date of Hire
Other Fringe Benefits	Hospitalization, Dental and Disability With No More Than 10 Percent or $500 Employee Contribution	Hospitalization, Dental and Disability With 0 or 15 Percent Employee Contribution Depending on Date of Hire

decided. A significant difference is that Kingston CitiBus drivers work a 35 hour work week and overtime is paid after 35 hours. For UCAT, the standard week is 40 hours and wages at time and one-half are paid after 40 hours.

The remaining portion of the exhibit presents the features of the fringe benefits package. These benefits include payment to employees for time off (e.g., vacation) as well as payment to others for items such as medical coverage and retirement benefits.

Operating and Financial Trends

To provide a baseline condition for each of the bus systems, information was obtained on key operating and financial statistics. Data gathered included vehicle hours, vehicle miles and passengers as well as financial results (i.e., farebox revenue, operating costs and deficit). The information was compiled for the last five years from 2000 through and including 2004.

The information presented in this discussion paper relies on information provided primarily from information supplied by the New York State Department of Transportation (NYSDOT) as well as the individual bus operators. Both Kingston CitiBus and UCAT are required to submit annual reports to NYSDOT on key operating, ridership and financial statistics. In some cases, adjustments are made to assure consistency from one year to the next. Also, UCAT submits the National Transit Database (NTD) forms to the Federal Transit Administration. This form contains similar information to that required by NYSDOT; however, additional data items must be provided. Because of its size, Kingston CitiBus is not required to complete and submit the NTD forms. Other information provided by the operators were budgets and various materials that were available.

In reviewing the information presented here, it should be recognized that there is potential for data anomalies. First, there may be differences in some data items between the various forms that the transit agencies submit. Second, the specific reporting systems have only been in place a few years, which corresponds to the designation of urban areas in Ulster County. This may introduce errors during the initial phases which can affect reported values and subsequent adjustments. In the case of UCAT, an additional complexity is that this agency submits information for Mulligan (formerly Arrow) Bus Lines as purchased transportation in addition to their directly operated service. Third, accounting systems are oriented to specific departments and may not include all costs. This is particularly the situation with Kingston CitiBus where maintenance wages and fringe benefits, along with other expenses, are not reported to NYSDOT. Finally, the agencies offer different types of transit service as it relates to providing mobility to disabled individuals. Kingston CitiBus has a separate demand responsive service, while UCAT relies on flex routing of its bus service. Notwithstanding these issues, the results presented here

are useful in gauging the scale of each transit operator and the trends that have been observed during the last five years.

As shown in Table 7, the amount of service offered by Kingston CitiBus has increased moderately as measured by vehicle hours and vehicle miles of service. Overall, service has increased ten percent with operating speeds of about nine and ten miles per hour. This is consistent with the relative density of development in Kingston and frequency of stops for passenger boarding and alighting.

Ridership levels have increased at about half the rate of service levels, which results in a decline of productivity (i.e., passengers per vehicle hour and per vehicle mile) of about five percent. Of particular interest is the financial performance of the system as measured by operating costs, revenue (i.e., fares paid by riders) and the resulting deficit. It is this amount that must be underwritten with local, state and federal subsidies.

As noted above, operating costs presented here are amounts reported to NYSDOT and understate expenditures on public transportation. For example, the wages and fringe benefits of mechanics are not charged to transit since it is not included in their budget. In the future, it would be prudent to include these types of costs to have an accurate picture of operating costs and the extent of municipal subsidy. In subsequent portions of this discussion paper, adjustments will be made to capture the full cost of public transportation to the City of Kingston. Since the costs have been consistently understated in reporting to NYSDOT between 2000 and 2004, they are helpful in discerning relative changes over time and trends.

Costs have increased at about the same rate as service levels, while revenues have experienced a decline. The net effect is that the deficit increased by 13.4 percent and the portion of cost paid by riders declined about 16 percent. On a unit basis, operating costs have held relatively steady during the five year period. With revenue and average fare declining, the deficit per vehicle hour, per vehicle and per passenger has increased somewhat.

In a similar manner, key statistics were compiled for UCAT during the five year period. As shown in Table 8, the bus system has expanded service levels considerably between 2000 and 2004. Vehicle hours increased about more than a third, while vehicle miles increased by nearly 60 percent. The increase in operating speed would suggest expansion in less densely developed portions of Ulster County.

During the last five years ridership increased 36 percent, with a resulting decline in system productivity. In terms of financial performance, both operating costs and revenue increased, but at different rates. Cost increases were attributable to both service expansion and the escalation of costs during the five year period. Revenue also increased, but at a somewhat

Table 7
Five Year Operating and Financial Trends - Kingston CitiBus

	2000	2001	2002	2003	2004	Percent Change
Operating Statistics						
Vehicle Hours	14,530	14,530	14,530	14,670	16,070	10.63
Vehicle Miles	140,840	136,950	151,360	143,750	153,820	9.21
Operating Speed	9.69	9.43	10.42	9.80	9.57	(1.24)
Ridership and Productivity						
Passengers	124,870	126,170	136,580	123,120	130,910	4.84
Passengers Per Vehicle Hour	8.59	8.68	9.40	8.39	8.15	(5.12)
Passengers Per Vehicle Mile	0.89	0.92	0.90	0.86	0.85	(4.49)
Financial Results - Aggregate ($)						
Cost*	546,900	600,430	547,540	555,940	598,250	9.39
Revenue	101,540	101,610	99,600	87,230	93,250	(8.17)
Deficit	445,360	498,820	447,940	468,700	505,000	13.39
Farebox Recovery (Percent)	18.57	16.92	18.19	15.69	15.59	(16.05)
Financial Results - Per Vehicle Hour ($)						
Cost	37.64	41.33	37.69	37.89	37.22	(1.12)
Revenue	6.99	6.99	6.86	5.94	5.80	(17.02)
Deficit	30.66	34.34	30.83	31.94	31.42	2.48
Financial Results - Per Vehicle Mile ($)						
Cost	3.88	4.38	3.62	3.87	3.89	0.26
Revenue	0.72	0.74	0.66	0.61	0.61	(15.28)
Deficit	3.16	3.64	2.96	3.26	3.28	3.80
Financial Results - Per Passenger ($)						
Cost	4.38	4.76	4.01	4.52	4.57	4.34
Revenue	0.81	0.81	0.73	0.71	0.71	(12.35)
Deficit	3.57	3.95	3.28	3.81	3.86	8.12

* Costs are those reported to NYSDOT and represent costs assigned to the transit department but does not include all expenditures since certain costs are incurred by other departments (e.g., Public Works for maintenance).

Table 8
Five Year Operating and Financial Trends - Ulster County Area Transit

	2000	2001	2002	2003	2004	Percent Change
Operating Statistics						
Vehicle Hours	22,840	21,670	24,860	30,150	31,460	37.70
Vehicle Miles	388,090	425,070	485,550	589,280	620,160	59.80
Operating Speed	16.99	19.62	19.53	19.54	19.72	16.07
Ridership and Productivity						
Passengers	121,800	127,740	135,330	151,620	165,660	36.01
Passengers Per Vehicle Hour	5.33	5.90	5.44	5.03	5.27	(1.13)
Passengers Per Vehicle Mile	0.31	0.30	0.28	0.26	0.27	(12.90)
Financial Results - Aggregate ($)						
Cost	923,450	1,065,840	1,249,660	1,688,220	2,282,530	147.17
Revenue	177,530	181,800	194,300	213,320	222,350	25.25
Deficit	745,930	884,040	1,055,370	1,474,890	2,060,180	176.19
Farebox Recovery (Percent)	19.22	17.06	15.55	12.64	9.74	(49.32)
Financial Results - Per Vehicle Hour ($)						
Cost	40.42	49.19	50.26	55.99	72.55	79.49
Revenue	7.77	8.39	7.81	7.07	7.07	(9.01)
Deficit	32.65	40.80	42.45	48.91	65.48	100.55
Financial Results - Per Vehicle Mile ($)						
Cost	2.38	2.51	2.57	2.86	3.68	54.62
Revenue	0.46	0.43	0.40	0.36	0.36	(21.74)
Deficit	1.92	2.08	2.17	2.50	3.32	72.92
Financial Results - Per Passenger ($)						
Cost	7.58	8.34	9.23	11.13	13.78	81.79
Revenue	1.46	1.42	1.44	1.41	1.34	(8.22)
Deficit	6.12	6.92	7.80	9.73	12.44	103.27

lower rate than passengers and significantly less than costs. This results in a substantial increase in the deficit during the five year period. The farebox recovery measures the ratio of fare paid by riders to the operating costs expressed as a percent, which declined by half. This indicates that four dollars in subsidy (i.e., tax support) was required for each dollar of farebox revenue in 2000, which rose to nine dollars of subsidy for each dollar of revenue in 2004.

The financial results were also presented on a unit basis. The cost of placing a bus in service rose substantially during the five year period. For example, the cost per vehicle hour of service increased from $40.42 to $72.55, or an increase of 79 percent during the five year period. The cost escalation was less on a per vehicle mile basis (54 percent), but increased at a greater rate (82 percent) on a per passenger basis.

Funding Trends

The same data sources were also utilized to obtain information on funding of both operations and capital outlays. The data anomalies noted previously may be present with the transit funding amounts and there may be a lag between the time when costs are incurred and funds provided. Funding of public transportation is provided by all three levels of government. Both Kingston CitiBus and UCAT are eligible and receive state and federal funds which typically require a match from the local agency (i.e., City of Kingston or Ulster County).

Since the fares paid by riders do not cover the cost of operations, the resulting deficit must be paid through various government programs. New York State provides operating assistance (commonly referred to as STOA) to transit agencies based on the number of miles operated and passengers carried. The exact amount paid per mile and passenger each year is subject to the appropriations of the Legislature in Albany and the agreed upon budget.

The Federal Transit Administration (FTA) provides assistance to transit agencies under various sections of the legislation concerned with funding public transportation. With the recently passed transportation legislation (Safe, Accountable, Flexible and Efficient Transportation Equity Act - A Legacy for Users or SAFETEA-LU), funding levels will be increased substantially during the next several years. An important determinant of funding is whether the service area is rural or urban. The rural federal transit dollars (Section 5311) are provided to NYSDOT, which administers the program and provides monies to the individual operators. During the last five year period, both Kingston CitiBus and UCAT received Section 5311 funds to help underwrite the operating deficit.

With population and density gains in Ulster County betwenn1990 and 2000, both transit agencies were eligible to receive funds from the urban transit program (i.e.,Section 5307). These

funds are based on a formula and the amounts for each urbanized area published in the Federal Register. The 2000 U.S. Census indicated that there were two urbanized areas in Ulster County. One was the area in and around the City of Kingston, and is denoted as a small urban area since the population did not exceed 200,000 persons. A second urbanized area was established which includes portions of Dutchess, Orange and Ulster Counties. Since it exceeds 200,000 people, it is designated as a Transportation Management Area (TMA). Within Ulster County, the urbanized area is located in the southeast corner and includes New Paltz.

The funding stream with respect to rural (Section 5311) and urban (Section 5307) was based on the 2000 U.S. Census, but the actual change did not take place until 2003. With the designation as an urbanized area, Kingston CitiBus received rural funding in 2000, 2001 and 2002. In 2003 and 2004, the municipal bus system only received urban transit funding from the FTA. Another difference was that the City of Kingston files some federal grant applications to the FTA, rather than through NYSDOT, although they continued to receive STOA funding throughout the five year period.

UCAT continues to receive Section 5311 rural transit funds since portions of its service area are rural and not part of either urbanized area. The Ulster County bus system was also eligible to receive Section 5307 urban transit monies for both urbanized areas. For the Kingston urbanized area, the FTA funds are shared by both Kingston CitiBus and UCAT. By agreement between the City of Kingston and Ulster County, these funds are split with 40 percent provided for the municipal system and with 60 percent assigned to UCAT. This 40:60 split of funds is the amount agreed to by the city and county and the agreement is renewed annually.

Starting in 2003, UCAT was eligible for the Section 5307 urban transit dollars associated with the new urbanized area designation or Transportation Management Area. The amount provided to each transit agency is based on an agreement between the Metropolitan Planning Organizations of each of the three counties. In essence, the Ulster County Transportation Council and its corresponding organizations in Dutchess and Orange Counties agree on how the federal dollars should be allocated between the local transit agencies and the New York Metropolitan Transportation Authority, (i.e. Metro North) which provides commuter rail service to Poughkeepsie. Similar to the small urban funding, the TMA federal funds are formula driven with the local agencies allocating the transit aid.

The variables in the formula driven funds vary by size. For example, the small urbanized area including Kingston, the formula only includes demographic information. For the multi-county TMA which comprise the urbanized area surrounding Poughkeepsie, both demographic and transit system variables are used in the formula.

The federal funds for the coming year are significant and expected to be $13.8 million, of which $12.1 million is allocated to specific operators and another $1.7 million which is unallocated, but available on a competitive basis. Of the allocated amount, about $1.1 million is identified for Ulster County. UCAT would receive $506,328 with the remaining amount ($637,592) provided to Adirondack Trailways. UCAT could submit projects and compete for a portion of the unallocated $1.7 million amount. The TMA funds represent a significant and increasing source of transit funding.

The concluding federal program that provided operating assistance was Job Access Reverse Commute (JARC) which is the successor program to the Welfare to Work transportation program. UCAT received JARC funds during the five year period.

As shown in Table 9, a portion of Kingston CitiBus' deficit is underwritten by both the state and federal governments, with more funds provided by NYSDOT. The transit subsidy shown for the City of Kingston is understated. As noted previously, certain costs associated with the bus system (e.g., mechanics wages and benefits) were not reported to NYSDOT. When these expenditures are included the extent of the City's subsidy would be greater which is documented later in this discussion paper.

The exhibit also indicates the amount spent on capital items and the source of these funds among the three levels of government. In 2002 and 2004, about $1.2 million was spent on vehicles, with the most recent being the purchase of the Dupon Trolleys. Capital expenditures are more heavily leveraged in that FTA typically assumes 80 percent of the project costs, with the remainder shared equally between NYSDOT and the local grant recipient. In essence, one dollar of local funds is matched by nine dollars from the state and federal governments.

Table 10 presents the funding levels for UCAT during the past five years. As noted previously, UCAT receives operating assistance from FTA for the rural portion of Ulster County and the two urbanized areas. Because of the funding associated with the TMA, it is reasonable to expect a substantial growth in federal funding in the future. In 2004, the operating assistance was split nearly evenly, with each government funding source accounting for one-third the deficit. One final point regarding the deficit is that UCAT tracks all expenses associated within its department budget as well as costs incurred by other departments (e.g., postage and building maintenance which totaled about $77,430 in 2004).

Capital outlays during the past five years were about $3.4 million, with most of the funds directed to revenue equipment. A lesser amount was for pre-construction costs associated with the recently opened facility. The majority of the costs of this $7.2 million project were incurred in 2005 and not included in the trends. The funding was similar to other capital outlays in that the federal, state and local shares are 80, 10 and 10 percent, respectively.

Table 9
Five Year Funding Trends - Kingston CitiBus

	2000	2001	2002	2003	2004
Operating Assistance (Amount $)					
Federal Transit Administration					
5307 Urban	--	--	--	68,370	161,640
5311 Rural	81,700	84,200	86,700	--	--
Subtotal	81,700	84,200	86,700	68,370	161,640
New York State	159,540	156,460	211,960	186,660	196,870
City of Kingston*	204,120	258,160	149,290	213,670	146,500
Total	445,360	498,820	447,940	468,700	505,000
Operating Assistance (Percent)					
Federal Transit Administration	18.34	16.88	19.36	14.59	32.01
New York State	35.82	31.37	47.32	39.82	38.98
City of Kingston	45.83	51.75	33.33	45.59	29.01
Total	100.00	100.00	100.00	100.00	100.00
Capital Assistance (Amount $)					
Federal Transit Administration	0	0	544,000	0	424,000
New York State	0	0	68,000	0	53,000
City of Kingston	0	0	68,000	0	53,000
Total	0	0	680,000	0	530,000
Capital Assistance (Percent)					
Federal Transit Administration	--	--	80.00	--	80.00
New York State	--	--	10.00	--	10.00
City of Kingston	--	--	10.00	--	10.00
Total	--	--	100.00	--	100.00
Use of Capital Assistance (Amount $)					
Revenue Equipment	0	0	680,000	0	530,000
Operating/Maintenance Facility	0	0	0	0	0
Total	0	0	680,000	0	530,000

* City funding represents the difference between the deficit and federal and state funding. Since costs are understated, the operating assistance from the City of Kingston is not the total contribution.

Table 10
Five Year Funding Trends - Ulster County Area Transit

	2000	2001	2002	2003	2004
Operating Assistance (Amount $)					
Federal Transit Administration					
5307 Urban	--	--	--	306,350	566,900
5311 Rural	97,500	101,400	105,500	93,300	94,700
Job Access Reverse Commute	0	0	114,090	101,960	0
Subtotal	97,500	101,400	219,590	501,610	661,600
New York State	314,330	313,440	448,350	532,640	571,200
Ulster County	334,100	469,200	387,430	440,640	827,380
Total	745,930	884,040	1,055,370	1,474,890	2,060,180
Operating Assistance (Percent)					
Federal Transit Administration	13.07	11.47	20.81	34.01	32.11
New York State	42.14	35.46	42.48	36.11	27.73
Ulster County	44.79	53.07	36.71	29.88	40.16
Total	100.00	100.00	100.00	100.00	100.00
Capital Assistance (Amount $)					
Federal Transit Administration	260,000	0	960,000	589,760	878,130
New York State	32,500	0	120,000	73,720	109,770
Ulster County	32,500	0	120,000	73,720	111,400
Total	325,000	0	1,200,000	737,200	1,099,290
Capital Assistance (Percent)					
Federal Transit Administration	80.00	--	80.00	80.00	80.00
New York State	10.00	--	10.00	10.00	10.00
Ulster County	10.00	--	10.00	10.00	10.00
Total	100.00	--	100.00	100.00	100.00
Use of Capital Assistance (Amount $)					
Revenue Equipment	325,000	0	1,200,000	102,340	1,099,290
Operating/Maintenance Facility	0	0	0	634,860	0
Total	325,000	0	1,200,000	737,200	1,099,290

Cost Analysis

The concluding topic in this discussion paper is an examination of the operating costs of each operator. As noted previously, the Kingston CitiBus costs reported to NYSDOT did not include all expenses since they only presented department costs and not those assigned to other units of the municipal government. To address this situation, adjustments were made to the reported values to assure that nearly all transit costs are included. Because of the need to have more recent, detailed and reliable information, this analysis was performed for only 2003 and 2004. The focus on operating costs reflects the funding sources where a higher portion of the operating assistance is underwritten by local government in comparison to capital expenditures.

Because of the labor intensive nature of public transportation, a major component of operating expenses are the wages paid to drivers, along with their fringe benefit payments. To address the issue of drivers' wages, payroll data was reviewed for a four week period (i.e., two pay periods) this past summer. Hours paid at straight and overtime were computed along with the payroll amount. While the results of this analysis are only a limited sample, they provide some insights as to the cost structure of both agencies with respect to drivers' wages (Table 11).

The number of pay hours were stratified by whether they were paid at straight or overtime rates. The latter is paid at 1.5 times the straight hourly rate. Typically, in the transit industry, pay hours are computed in terms of equivalent straight hours. For example, a driver working 10 hours of overtime would be paid 15 equivalent straight hours. If the driver's hourly rate was $16.00 an hour, the individual would be paid $240. Alternatively, the computation could be 10 hours at an hourly rate of $24.00 per hour. The equivalent straight pay hours convention is followed in transit analysis since drivers are paid different hourly rates based on longevity. As shown in the exhibit, a relatively high proportion of Kingston CitiBus pay hours were at overtime rates. In contrast, UCAT paid almost no overtime during the sample period. This situation is attributable, in part, to the labor agreement where Kingston CitiBus drivers are paid overtime for weekly hours worked in excess of 35 hours while UCAT relies on a more common threshold of 40 hours.

By combining the payroll amount with the number of hours, hourly wage rates were computed in terms of pay hours (i.e., sum of straight and overtime hours) and equivalent straight pay hours. The unit costs are consistently higher for Kingston CitiBus than those for UCAT. This difference is also shown in terms of the distribution of hourly payroll rate per equivalent straight time. A number of factors account for these results. First, the wage rates of Kingston CitiBus drivers from the collective bargaining agreement are higher than those for UCAT drivers. Second, the Kingston CitiBus drivers have more seniority than their UCAT counterparts and their wage rate is higher based on longevity. Third, UCAT also makes greater use of part-time

Table 11
Summary of Sample Driver Payroll Information

	Kingston CitiBus		Ulster County Area Transit	
	Number	Percent	Number	Percent
Pay Hours				
Straight	1,415.5	86.63	3,454.5	99.32
Overtime	218.5	13.37	23.5	0.68
Total	1,634.0	100.00	3,478.0	100.00
Equivalent Straight Pay Hours				
Straight	1,415.5	81.20	3,454.5	98.99
Overtime	327.8	18.80	35.3	1.01
Total	1,743.3	100.00	3,489.8	100.00
Payroll Amount ($)				
Straight and Overtime	27,632	--	52,559	--
Payroll Unit Cost ($)				
Per Pay Hour	16.91	--	15.11	--
Per Equivalent Pay Hour	15.85	--	15.06	--
Percent Distribution of Hourly Payroll Rate (Percent)				
Per Equivalent Pay Hour	**Discrete**	**Cumulative**	**Discrete**	**Cumulative**
Less Than $14.00	4.9	4.9	37.6	37.6
$14.00 - $14.99	20.7	25.6	26.0	63.6
$15.00 - $15.99	26.3	51.9	8.3	71.9
$16.00 - $16.99	17.7	69.6	18.4	90.3
$17.00 Or More	30.4	100.0	9.7	100.0
Total	100.0	--	100.0	--

drivers who have lower wage rates. Finally, the payment of overtime by Kingston CitiBus after 35 hours results in substantial number of hours at wage rates in excess of $20.00 per hour.

As noted previously, public transportation is a labor intensive endeavor with the majority of costs associated with employees' wages and fringe benefits. This situation is evident for both Kingston CitiBus and UCAT, as shown in Table 12. The source of the amounts presented in the exhibit differ by agency. For Kingston CitiBus, information was taken directly from reports filed with NYSDOT for 2003 and 2004, with two adjustments. First, the cost of Department of Public Works maintenance staff was added to transit operating expenses to reflect the use of the equivalent of two full-time employees. Wages and fringe benefit multipliers were used in this calculation. Second, the NYSDOT report has the Transit Supervisor as the only administrative employee. To remedy this situation, the wages and benefits of the Clerk/Dispatcher were transferred from drivers to administration/other for purposes of the current analysis.

For Kingston CitiBus, about two-thirds of all employee compensation is paid to drivers with about one-sixth associated with maintenance and a similar proportion for administrative/other. These percentages by functional area remain the same for both 2003 and 2004. Some fluctuation in amounts and percentages are noted since compensation varies by employee longevity. Clearly, the administrative staff is relatively small, which is reflected in employee compensation.

For UCAT, wages and fringe benefit amounts were taken from the National Transit Database form for 2003 and 2004 that the agency submits to the Federal Transit Administration. The proportion of employee compensation by category differs appreciably from that shown for Kingston CitiBus. While the percentage for mechanics is similar, the proportions for drivers is less and that for administrative/other is higher. The change in amounts for both operators and mechanics between 2003 and 2004 reflects increases in service levels and escalation in wage and fringe benefit amounts.

The percentages for administrative/other employees' compensation is higher than that noted for Kingston CitiBus in both years. In 2004, the administrative/other category accounts for about two of every five dollars in employee compensation. Part of the explanation for these differences are evident from the organization charts of both agencies. Discussions with staff indicate that this situation reflects new positions added and escalation in wages and fringe benefit payments. Another point to keep in mind is that in 2004 UCAT tracked all expenditures associated with transit, but incurred by other departments (i.e., about $77,430).

The composition of expenses in terms of employee compensation and other expenses is also presented in the exhibit. For Kingston CitiBus, adjustments were made to non employee expenses to identify other outlays which are not recorded in NYSDOT forms. The non employee

Table 12
Employee Compensation

Category	2003		2004	
	Amount ($)	Percent	Amount ($)	Amount ($)
Wages and Fringe Benefits				
Kingston CitiBus				
Operators	353,310	65.8	375,160	68.0
Mechanics	88,260	16.4	90,110	16.3
Administrative/Other	95,250	17.8	86,750	15.7
Total	536,820	100.0	552,020	100.0
Ulster County Area Transit				
Operators	715,220	55.8	827,460	46.5
Mechanics	194,090	15.1	238,240	13.4
Administrative/Other	372,650	29.1	713,980	40.1
Total	1,281,960	100.0	1,779,680	100.0

Expense Composition				
Kingston CitiBus				
Employee Compensation	536,820	78.6	552,020	75.7
Non Employee	146,160	21.4	177,310	24.3
Total	682,980	100.0	729,330	100.0
Ulster County Area Transit				
Employee Compensation	1,281,950	75.9	1,779,680	78.0
Non Employee	406,270	24.1	502,850	22.0
Total	1,688,220	100.0	2,282,530	100.0

expenses include items such as fuel, repair parts and insurance. For both agencies, the non employee expenses are about 20 to 25 percent of the total transit expenditures.

The concluding aspect of the current analysis was the development of cost allocation models for each of the operators. This provides a baseline for use in subsequent study steps since costs of the different alternatives for public transportation will be influenced by the current cost structure. In the current analysis, this more detailed cost analysis was limited to 2003 and 2004 since it provides the most recent, reliable and detailed information. Since some adjustments were required to maintain consistency between results prepared by each operator, the ability to make adjustments for prior years was limited.

As noted previously, Kingston CitiBus cost information was obtained from the reports that they submit to NYSDOT. The personnel and non personell expenses reported by Kingston CitiBus are only those for the transit department. It is not complete since it does not include expenditures incurred by other departments in municipal government. In 2003, an additional transit expense of about $127,000 was identified which included mostly wages and fringe benefits for mechanics along with additional amounts for utilities and casualty/liability insurance coverage.

These amounts were escalated by three percent in 2004. No attempt was made to identify those expenses associated with other activities. For example, a portion of the payroll and accounting costs of the City of Kingston could be assigned to the transit function. This adjustment was not performed since the amount was viewed as minor in comparison to the identified expenses. Further, the ability to obtain information to make this minor adjustment was not available.

In contrast to Kingston CitiBus, UCAT records all transit related expenditures whether or not they are incurred within their department. The overwhelming majority of expenses are recorded Transit Department expenses and properly recorded. In addition, UCAT staff has attempted to record other Ulster County expenses incurred by other departments. This includes such items as postage, payroll preparation and maintaining buildings and grounds. This amount of about $77,430, while not significant in comparison to annual costs of $2.3 million, does provide a more complete picture of transit expenditures.

Table 13 presents revised operating and financial results for the last two years. In the case of Kingston CitiBus, changes were made to operating costs to assure a more complete picture of transit expenditures. The deficit increased accordingly, but all other operating and ridership statistics remained the same. For UCAT, no adjustments were necessary since operating costs were complete and fully reflected costs internal and external to the Transit Department.

Table 13
Revised Operating and Financial Results - 2003 and 2004

	CitiBus		UCAT	
	2003	2004	2003	2004
Operating Statistics				
Vehicle Hours	14,670	16,070	30,150	31,460
Vehicle Miles	143,750	153,820	589,280	620,160
Operating Speed	9.80	9.57	19.54	19.72
Ridership and Productivity				
Passengers	123,120	130,910	151,620	165,660
Passengers Per Vehicle Hour	8.39	8.15	5.03	5.27
Passengers Per Vehicle Mile	0.86	0.85	0.26	0.27
Financial Results - Aggregate ($)				
Cost*	682,980	729,330	1,688,220	2,282,530
Revenue	87,230	93,250	213,320	222,350
Deficit	595,750	636,080	1,474,890	2,060,180
Farebox Recovery (Percent)	12.77	12.79	12.64	9.74
Financial Results - Per Vehicle Hour ($)				
Cost	46.56	45.38	55.99	72.55
Revenue	5.94	5.80	7.07	7.07
Deficit	40.62	39.58	48.91	65.48
Financial Results - Per Vehicle Mile ($)				
Cost	4.75	4.74	2.86	3.68
Revenue	0.61	0.61	0.36	0.36
Deficit	4.14	4.14	2.50	3.32
Financial Results - Per Passenger ($)				
Cost	5.55	5.57	11.13	13.78
Revenue	0.71	0.71	1.41	1.34
Deficit	4.84	4.86	9.73	12.44

* Kingston CitiBus costs have been revised to reflect expenditures assigned to other departments, but incurred in providing transit service.

In a similar manner, funding information was revised as shown in Table 14. The only change was the increase in operating assistance and local funding for Kingston CitiBus. The operating assistance corresponds to the deficit, which was adjusted upward to reflect the cost adjustments. Since state and federal funding did not change, the additional deficit amount was borne by the City of Kingston. This included the compensation paid to mechanics and other expenses which were incurred by the City, but not recorded for transit. This would suggest the need for the adjustments in the current analysis and possible changes to current practice to capture all transit costs regardless of department.

Transit costs information for UCAT was obtained from the National Transit Database submission to the Federal Transit Administration. This form is more detailed than that required by NYSDOT, which UCAT also submits. The federal forms readily separate statistics directly operated by UCAT and what is recorded as purchased transportation service for Mulligan (formerly Arrow) Bus Lines.

The discussion of the cost information and adjustments is helpful in understanding the way each agency records costs and the rationale for making adjustments. In this way, comparisons in 2003 and 2004 can be more meaningful. The concluding aspect of the cost analysis of both agencies for this baseline review was the development of cost allocation models. In the current analysis, a three-variable cost model was developed which relates the cost of transit service to three key operating statistics – vehicle hours, vehicle miles and peak vehicles. With this procedure, each operating expense is assigned to one of the three variables that most directly influences expenditure levels.

For example, drivers' compensation (i.e., wages and fringe benefits) are assigned to vehicle hours since drivers are paid on an hourly basis. In a similar manner, the compensation paid to mechanics, along with fuel and repair parts, are a function of the miles operated. For this reason, these types of expenditures are allocated to vehicle miles.

Some expenditures are not related to either the number of vehicle hours and vehicle miles operated. Instead, they are based on the scale of the system as measured by peak vehicles. These would include such costs as administrative employees' compensation, marketing and memberships. Typically, the expenditures assigned to peak vehicles are fixed and do not vary appreciably with small scale service changes. For example, the compensation paid to the Transit Supervisor or Transit Director would not vary with service levels. In contrast, the expenditures assigned to either vehicle hours or vehicle miles are variable costs and vary directly with service levels. Examples would include expenses such as drivers' compensation and fuel.

Application of this process was applied to each of the agencies for both 2003 and 2004. In the case of Kingston CitiBus, the revised and higher cost values were used. The results of this

Table 14
Revised Funding Results - 2003 and 2004

	CitiBus		UCAT	
	2003	2004	2003	2004
Operating Assistance (Amount $)				
Federal Transit Administration				
5307 Urban	68,370	161,640	306,350	566,900
5311 Rural	--	--	93,300	94,700
Job Access Reverse Commute	0	0	101,960	0
Subtotal	68,370	161,640	501,610	661,600
New York State	186,660	196,870	532,640	571,200
Local (Kingston* or Ulster County)	340,720	277,570	440,640	827,380
Total	595,750	636,080	1,474,890	2,060,180
Operating Assistance (Percent)				
Federal Transit Administration	11.48	25.41	34.01	32.11
New York State	31.33	30.95	36.11	27.73
Local (Kingston or Ulster County)	57.19	43.64	29.88	40.16
Total	100.00	100.00	100.00	100.00
Capital Assistance (Amount $)				
Federal Transit Administration	0	424,000	589,760	878,130
New York State	0	53,000	73,720	109,770
Local (Kingston or Ulster County)	0	53,000	73,720	111,400
Total	0	530,000	737,200	1,099,290
Capital Assistance (Percent)				
Federal Transit Administration	--	80.00	80.00	80.00
New York State	--	10.00	10.00	10.00
Local (Kingston or Ulster County)	--	10.00	10.00	10.00
Total	--	100.00	100.00	100.00
Use of Capital Assistance (Amount $)				
Revenue Equipment	0	530,000	102,340	1,099,290
Operating/Maintenance Facility	0	0	634,860	0
Total	0	530,000	737,200	1,099,290

* Kingston CitiBus deficit and local funding has been revised to reflect adjusted costs.

process are presented in Table 15. The amount associated with each variable reflects the allocation process. The unit cost for each variable is merely the quotient of the allocated costs and operating statistic. The percentage is not part of the cost allocation model, but is helpful in understanding the nature of costs. Clearly, drivers and their compensation is the single largest transit expenditure. Also, the percentages allow costs to be stratified into variable and fixed categories.

With the cost allocation model approach, the cost of providing service can be written as a formula.

$$C = UC_{VH} * VH + UC_{VM} * VM + UC_{PV} * PV$$

Where:

C = Annual cost of service

VH = Vehicle hours

VM = Vehicle miles

PV = Peak vehicles

UC_{VH} = Unit cost per vehicle hour

UC_{VM} = Unit cost per vehicle mile

UC_{PV} = Unit cost per peak vehicle

The results of the cost allocation model analysis are summarized in Table 16, which includes the coefficients of the model, average costs and some measures that illustrate the nature of service. For example, the two systems differ substantially in terms of their operating speeds. Kingston CitiBus uses city streets with relatively dense adjacent land uses which reduces operating speed. Also, this system has higher ridership levels which results in more frequent stops for passenger boarding and alighting which lowers operating speed. In contrast, UCAT serves many communities that are rural in nature on roads with higher speeds and attracts fewer riders per mile or hour of service. Similarly, vehicle utilization (i.e., miles or hours per peak vehicle) indicate how service is provided relative to the scale of the systems as measured by peak vehicles.

Table 15
Cost Allocation Models - 2003 and 2004

Variable	Amount ($)	Percent	Operating Statistic	Unit Cost ($)
Kingston CitiBus - 2003				
Vehicle Hours	353,310	51.7	14,670	24.08
Vehicle Miles	215,050	31.5	143,750	1.50
Peak Vehicles	114,620	16.8	5	22,924.00
Total	682,980	100.0		
Kingston CitiBus - 2004				
Vehicle Hours	375,160	51.4	16,070	23.35
Vehicle Miles	234,590	32.2	153,820	1.53
Peak Vehicles	119,580	16.4	5	23,916.00
Total	729,330	100.0		
Ulster County Area Transit - 2003				
Vehicle Hours	715,220	42.4	30,150	23.72
Vehicle Miles	456,620	27.0	589,280	0.77
Peak Vehicles	516,380	30.6	13	39,721.54
Total	1,688,220	100.0		
Ulster County Area Transit - 2004				
Vehicle Hours	863,000	37.8	31,460	27.43
Vehicle Miles	609,080	26.7	620,160	0.98
Peak Vehicles	810,450	35.5	14	57,889.29
Total	2,282,530	100.0		

Table 16
Summary of Average Cost and Cost Allocation Model Results

	CitiBus		UCAT	
	2003	**2004**	**2003**	**2004**
Operating Measures				
Operating Speed	9.80	9.57	19.54	19.72
Vehicle Miles Per Peak Vehicle	28,750	30,764	45,329	44,297
Vehicle Hours Per Peak Vehicle	2,934	3,214	2,319	2,247
Average Cost ($ Total Cost Per)				
Vehicle Hour	45.56	45.38	55.99	72.55
Vehicle Mile	4.75	4.74	2.86	3.68
Peak Vehicle	136,596	145,866	129,863	163,038
Cost Allocation (Percent)				
Vehicle Hour	51.7	51.4	42.4	37.8
Vehicle Mile	31.5	32.2	27.0	26.7
Peak Vehicle	16.8	16.4	30.6	35.5
Total	100.0	100.0	100.0	100.0
Cost Allocation Model ($ Unit Costs)				
Vehicle Hour	24.08	23.35	23.72	27.43
Vehicle Mile	1.50	1.53	0.77	0.98
Peak Vehicle	22,924	23,916	39,722	57,890
Allocation of Variable and Fixed Cost (Percent)				
Variable	83.2	83.6	69.4	64.5
Fixed	16.8	16.4	30.6	35.5
Total	100.0	100.0	100.0	100.0
Ratio: Fixed To Variable	20.2	19.6	44.1	55.0

This exhibit also presents average costs for each agency in 2003 and 2004, which is merely the total cost (i.e., not allocated) divided by the operating statistic listed.. In large measure the differences between agencies are attributable to the difference in operating speeds. The next two groups of numbers lists the percentage of cost assigned to each of the three variables and the unit costs (i.e., coefficients of the cost model). The concluding comparison is the allocation of expenditures in terms of the nature of the expenses (i.e., variable or fixed). As shown in the exhibit, UCAT has substantially higher fixed costs than Kingston CitiBus in both 2003 and 2004.

Summary

The chapter has presented considerable information on both Kingston CitiBus and Ulster County Area Transit. It includes an overview of the service offered and the fares charged patrons. It also presents the fleet used to provide service and the supporting facilities and maintenance capabilities of each system. Of particular interest is the collective bargaining agreement that covers employees' wages, fringe benefits and provisions for the use of personnel.

For both operators, key operating ridership and cost information was compiled from various sources for the five year period from 2000 through and including 2004. Funding for both operating and capital assistance was presented by source (i.e., local, state and federal governments) along with a brief description of the funding programs. The five year trends included the impacts of the 2000 U.S. Census which created two urbanized areas in Ulster County whose impact on transit is starting to be felt.

The concluding element of the description of existing conditions is a review of the cost structure of both agencies. In view of the labor intensive nature of public transportation, compensation (i.e., wages and fringe benefit payments) of personnel was examined by employee types. Payments to drivers is the single largest expenditure of each agency. For this reason, utilization of drivers' and their pay was examined for a sample period. Finally, cost models were calibrated for each operator for 2003 and 2004. As part of this analysis, adjustments were made to operating costs of Kingston CitiBus to assure that all major expense items were included in the analysis, notwithstanding how values had been reported previously.

It is intended that the information presented in this working paper will provide the information on which alternative arrangements for public transportation can be formulated. Any alternatives for the future should be formulated with recognition of past trends.Final Report

FORMULATION AND EVALUATION OF ALTERNATIVES

The previous chapter presented a description of existing arrangements for operating and funding public transportation along with key operating, ridership and financial information for the past five years. This chapter presents a broad range of alternatives for public transportation. It should be recognized that Ulster County has responsibility for a number of transportation programs that are oriented to specific client groups, such as senior citizens and Medicaid. Evaluation criteria are specified and each option described in terms of its relative strengths and weaknesses. These results were the basis for discussion with elected and appointed officials and interested parties.

Alternatives

A total of five basic options were specified in terms of the way public transportation operations, management and ownership could be provided. They range from continuation of current arrangements through major changes with a single operator. Presented below is a brief summary of each of the options considered.

- **Do Nothing** - As the name implies, current arrangements for public transportation would be continued into the future. The City of Kingston and Ulster County would own and operate their own systems. Each would comprise an organization within their respective governments. In the case of Kingston CitiBus, they would have their own facility and personnel with the exception of maintenance. The transit system relies on staff and buildings of Public Works to service and maintain the bus fleet. Other city departments are relied on to a limited extent. UCAT is self sufficient in that it has all personnel, and facilities necessary for its primary mission. Reliance on other Ulster County departments is limited and includes activities such as purchasing.

- **Coordination Council** - With this scheme, the transit agencies would continue as separate organizations responsible for public transportation in their jurisdictions. A formal structure would be established to discuss and take action on issues of common interest. This could include such activities as joint purchases, technology sharing and combined marketing efforts. In view of the current arrangements for fares and the lack of a "seamless" public transportation system, the Coordination Council could address service and fare coordination/integration. This could include elimination of the "closed door" operations of UCAT in

Kingston as well as the extension of Kingston CitiBus routes beyond the municipal boundaries (e.g., service to Hudson Valley Mall). UCAT staff recently provided City of Kingston officials a "menu" of near term suggestions for their consideration. For example, UCAT could provide office space and permit use of a modern bus washer at an agreed upon fee. For the most part, UCAT would serve as a vendor to Kingston CitiBus.

- **Reassign Functions** - This scheme would be similar to the existing situation in that each agency would continue separate operations. Only some of the current activities or functional areas would be operated by one agency. Since UCAT is larger than Kingston CitiBus and has a much larger administrative staff, it is logical to expect that the consolidated task would be performed by UCAT. This could include such activities as grants administration and record keeping. For example, UCAT utilizes software to track ridership by individual bus trip that could be utilized for Kingston CitiBus routes. Another possibility is to undertake an aggressive marketing program with one agency responsible for this activity. Another potential consolidated function would be to have a single agency perform servicing and maintenance. With any of the reassigned functions, an agreement would need to be reached as to the reimbursement basis for costs incurred.

- **Consolidation** - This alternative would have public transportation provided by a single agency. All functions necessary to operate a transit system would be provided by a single entity. It could include an expanded UCAT that would operate all service in Kingston and Kingston CitiBus would cease operations. The assets of the combined transit system would be owned by Ulster County and all employees would be employed by Ulster County. If the City of Kingston would still be financially responsible for transit services, it could enter into a purchase of service agreement with Ulster County. In this way, it could maintain control of the coverage and level of service within its boundaries. In the event that Ulster County agreed to assume financial responsibility, the City's role might be advisory regarding bus service.

  Another arrangement with the consolidation alternative is to create a new agency with responsibility for operating public transportation. It could be an independent transit agency or authority and would own the system assets and employ all operating and administrative personnel. The agency board could establish service levels and have its own funding source. Alternatively, it could receive input from the City of Kingston and Ulster County, who would be responsible for funding with an agreed upon funding formula. Under this scheme, an option could be

generated in which the assets are owned by the agency, but service provided by contractors.

- **Transit Broker** - The concluding proposal would create an administrative organization which would have overall responsibility for public transportation while the actual day-to-day operations continue to be provided by Kingston CitiBus and UCAT. In some situations where this approach has been implemented, the actual service is contracted out to private concerns. For purposes of the current analysis, it is assumed that reliance would be placed on the existing public providers through a purchase of service agreement. The broker's duties would include administration, establishing service policies, oversight of transit, coordination with other operators in Ulster County, reporting and grant preparation and marketing. The responsibilities of the broker could also include ridesharing, with helping form and promote carpools and vanpools along with constructing facilities such as commuter parking lots. Other activities could be to provide a single source for all transit information. In this regard, the broker would serve as a mobility manager.

  The broker concept could be implemented with a board that would be appointed by the City of Kingston and Ulster County. As noted above, there would need to be purchase of service agreements between the government agencies and the broker or a dedicated funding source would have to be found. Both the City and County would be able to either mandate or provide input on service levels and capital programming.

The discussion above indicates a broad range of choices for how public transportation would be provided. They differ in terms of operating and administrative responsibility as well as the ownership and governance of public transportation.

Evaluation Criteria

In the current analysis, several criteria were specified as a means to assess their relative strengths and weaknesses. In large measure they reflect goals that should be achieved and indicate the tradeoffs between the different criteria. Presented below is a description of each of the yardsticks to gauge the impact with each transit option.

- **Efficiency and Effectiveness** - Public transportation should be provided in an economical manner and alternatives that produce cost savings are preferred. In

large measure, this relates to labor costs since wages and fringe benefits comprise the largest portion of costs.

- **Quality of Service** - Current and potential riders expect and should receive a comfortable and convenient trip that can compete with the automobile. This would include a "seamless" and user friendly bus system that is easy for patrons to understand and navigate.

- **Responsiveness** - The structure of transit services should support changes in market demand as Ulster County experiences growth and new development projects are constructed.

- **Adaptable** - The transit system should be flexible and respond to changes in funding and decision-making. This could include demonstration projects of new types of bus service and efforts to introduce new modes.

- **Public Input** - The alternatives should provide mechanisms to encourage and consider public input. This would include both riders and non users who support the system through their taxes.

- **Coordination** - Other transit services are provided within and through Ulster County, such as Adirondack-Pine Hill Trailways. A structure that supports increased coordination is to be encouraged.

- **Funding** - There should be assurances that funding for both operating and capital assistance should be adequate to meet current and future needs. This would include dependability and growth to match cost escalation.

- **Control** - Currently, each government specifies the overall service levels through their staff and funding as expressed in their budgeting process. The City of Kingston and Ulster County should feel that they have sufficient influence on the service and their funding.

- **Implementability** - Some of the alternatives may mandate changes that may encounter institutional barriers. Typically, overcoming these impediments can be time consuming. Moreover, there may be regulations where compliance by a new entity could be costly either through parity or buy-out provisions.

Alternatives Evaluation

Having specified the alternatives to be examined and the measures to assess performance, the next step was to gauge the relative strengths and weaknesses of each option. For the most part, the rating is qualitative and subjective. Further, the evaluation is meant to compare performance between the current situation to impacts with the four potential alternatives. Consistent with this approach, a rating scheme was devised where each alternative is rated in terms of how well it satisfies each criterion. A relative scale of full, primary, partial and no satisfaction was used. A total of 45 ratings (i.e., five alternatives multiplied by nine criteria) were assigned.

This approach is well suited to the current project where different stakeholders may view the alternatives differently. One concluding point is that no importance or weight has been assigned to the criteria. Each participant is free to assign their own level of importance to each criterion. The "satisfaction level" of each criteria for each alternative was determined. The symbols for the graphic presentation of each rating were assigned as follows:

Satisfaction Level	Symbol
Full	●
Primary	●
Partial	•
No	○

The results of this evaluation process are graphically displayed in Table 17. The table clearly illustrates the diversity in the options and their impacts and consequences as measured by the nine criteria. The performance of each alternative relative to the nine evaluation criteria is described in the remainder of this section of the report.

A rationale for any alternative is that it have the potential to lower the cost of operating bus service in Ulster County. In terms of *efficiency and effectiveness*, the Do Nothing alternative was rated as having no satisfaction since there would be no change in costs if the two systems remained independent.

The Coordination Council alternative is also rated as no satisfaction of this criterion. The cost would not change appreciably since each operator would be separate and distinct. Some cost savings are possible through joint purchases and the like; however, the amount of these savings

would be minor. In a similar manner, the alternative that reassigns some functions would offer limited potential to save costs and thus the partial satisfaction rating.

For the consolidation option, there were several issues to consider. The first was the expected savings in variable costs based on the cost allocation models (i.e., costs assigned to vehicle hours and vehicle miles) for both Kingston CitiBus and UCAT that was calibrated using 2004 data. It revealed that it would cost approximately $591,900 to operate the CitiBus system if the variable cost rates for the UCAT system were applied to CitiBus' service levels. When compared to the variable cost incurred in providing CitiBus service (i.e., $609,750), this represents a potential savings of only about three percent.

Another consideration would be the impact on fixed costs which consists primarily of administrative wages and fringe benefits. In 2004, these costs totaled $119,580. It is possible that some of these costs could be saved depending on the disposition of administrative staff. It is likely that fixed cost savings would approximate about $50,000. The cost savings for the consolidation scheme would include both variable and fixed costs.

Another factor affecting the analysis of the efficiency and effectiveness rating of the consolidation alternative is the location of the UCAT facility relative to the current Kingston CitiBus garage. The UCAT facility is located at a slightly greater distance from the Kingston Plaza shopping center (i.e., about 0.85 miles) than the facility currently utilized by CitiBus near Kingston's City Hall. Over the course of an entire year, the extra distance that CitiBus vehicles would have to travel when they are not operating in revenue service but instead are heading to and from the storage facility (i.e., deadheading) could also mitigate any cost savings. However, the differences in deadhead costs would likely be minimal.

Three other issues are related to costs and potential savings. The first would be the impact of combined operations on the prevailing terms of the collective bargaining employees. There is a possibility wages and benefits of operating and maintenance employees might result in employee compensation increasing to the highest level. In this case, any cost savings would be offset by the need to achieve parity in the compensation paid the work forces. Another possible savings is the potential to realign services that could save operating expenses. Given the likely route structure, it is reasonable to expect that any reductions in transit resources would be allocated to other parts of the transit system. Finally, capital expenditures would be needed to enlarge the UCAT facility under the Consolidation alternative to accommodate the Kingston CitiBus fleet. To an extent, this would be offset by necessary costs to improve and modernize the current Kingston CitiBus facility.

Given these caveats, the Consolidation alternative has been assigned a partial satisfaction of this criterion. The Transit Broker approach is rated with no satisfaction since it would result

in a new organization. While some of the activities performed at UCAT (e.g., planning and grant preparation) would be shifted to the broker organization, it would still require additional staff. It should be recognized that the new agency might perform new functions related to mobility rather than only public transportation.

None of the alternatives are rated as having full or primary satisfaction of this criterion. This reflects the relative low fixed costs of Kingston CitiBus, which limits the potential for economies of scale. With the exceptions of the Reassigned Functions and Consolidation alternatives, all options are rated as no satisfaction, with no substantial cost savings. Only the Consolidation alternative has the potential for costs savings, although they would not be significant in light of current expenditures and the fact that cost savings may not materialize.

In terms of the *quality of service*, the Consolidation and Transit Broker alternatives were rated as fully satisfying this criterion. Each of these alternatives would permit the creation of a mechanism which would allow for an integrated seamless and user-friendly bus system that is easy for passengers to comprehend and navigate. Moreover, the Transit Broker could expand mobility options through administering a shared ride program. The Coordination Council was rated somewhat less (i.e., primary satisfaction) since it would rely on cooperation among the parties.

The Do Nothing alternative was rated as having no satisfaction since nothing would change from the present situation in terms of each of the transit systems having their own fully independent operations. The Reassign Functions alternative also was rated as having no satisfaction of this criterion because the sharing of functions would likely be oriented to operations and maintenance activities.

When regarding the *responsiveness* of the alternatives in terms of their ability to serve new markets throughout Ulster County, only the Transit Broker was rated as fully satisfying this criterion since its mission would be to respond to change. The Coordination Council and Consolidation alternatives are rated as having primary satisfaction of this criterion. Both of these alternatives would likely require new services to be planned and implemented. Although it would constitute a single decision-making entity, it was assumed that the Coordination Council could build a consensus and minimize the amount of time needed to respond to new growth patterns in the service area. Both the Do Nothing and Reassign Functions alternatives do not satisfy this criterion because the transit systems would still function as separate transit operators.

In terms of the ability of each of the alternatives to be *adaptable* to changes in funding and decision-making, only the Transit Broker alternative was rated as fully satisfying this criterion. This is because the broker would have the ability to quickly respond to the needs of existing and potential transit riders. For example, the planning and implementation of a

demonstration project with a new type of bus service would be most easily accomplished by a broker who could determine the best method of providing the service without undue concern for any previously existing institutional issues. Both the Coordination Council and the Consolidation alternatives were rated as primarily satisfying this criterion. This is because - although only one entity would be involved in the decision-making process in each of these alternatives - the Coordination Council would still have two transit operators to engage with while the Consolidation alternative could create a transit system that is large enough to create some bureaucratic inertia and therefore could delay the decision-making process. Finally, both the Do Nothing and Reassign Functions alternatives were rated as partially satisfying this criterion because multiple parties would again be involved in the decision-making process, thus resulting in some friction.

When considering the ability of each of the alternatives to provide mechanisms to encourage and consider *public input*, only the Transit Broker alternative is rated as having full satisfaction. As part of its charge, it would be mandated to solicit comments and seek input as part of the service development process. The Coordination Council and Consolidation alternatives were rated as primary satisfaction this criterion. While each could be formulated to enhance public participation, they would reflect their oversight bodies. Moreover, no mechanism exist for extensive and expansive outreach with the current systems. The dissemination of the information gleaned from this process could still require the participation of more than one party with the possibility for disagreement. Both the Do Nothing and Reassign Functions alternatives only partially satisfy this criterion because the transit systems would engage in more public outreach which would be performed separately.

The Coordination Council, Consolidation and Transit Broker alternatives were all rated as fully satisfying the criterion regarding the ability to support an increased level of *coordination* between the transit services in Ulster County and those other public transportation services that operate within and through the area (e.g., Adirondack/Pine Hill Trailways). All three of these alternatives would incorporate a mechanism to provide the transit-riding public with all of the information and materials necessary to utilize these connecting regional services as an essential element of their composition. However, both the Do Nothing and Reassign Functions alternatives were rated as not satisfying this criterion because the transit systems would most likely continue to function as they do at present (i.e., without any coordination with the other public transportation providers).

At the present time, the transit operators receive monies from various *funding* streams. It is possible - depending upon which integration alternative is pursued - that either the County or a Broker could become the sole recipient of public transportation funding. Given the vagaries of the numerous funding sources, it could then be possible that the overall level of funding for public transportation in Ulster County might increase. It is recognized that there are limits to this

situation since many programs are formula driven, although there are possibilities to designate new funds through earmarks and similar arrangements.

Given this possibility, only the Transit Broker alternative was rated as fully satisfying the criterion regarding the adequacy, dependability and potential growth of public transportation funding sources. This is primarily due to a broker's ability to focus - among various other administrative tasks - on better preparing grant applications and financial reporting mechanisms and actively seeking grants from a variety of sources through an effective advocacy effort. This is especially the case since the actual provision of service would still be carried out by the transit operators themselves.

The Consolidation alternative was rated as primarily satisfying this criterion because all funding management functions (e.g., grant applications) could or would be the responsibility of a single entity, thus also streamlining the process - but not to as great an extent as might be likely with the Transit Broker alternative. The Coordination Council alternative was rated as partially satisfying this criterion since the transit operators could operate in concert. The Do Nothing and Reassign Functions alternatives are rated the lowest (i.e., no satisfaction) since they maintain the current funding management structure. They are not wholly responsive to the potential need to adequately fund public transportation in Ulster County.

In terms of both the City of Kingston and Ulster County governments being able to exercise an appropriate and adequate level of *control* over the public transportation system, the Do Nothing, Coordination Council and Reassign Functions alternatives were rated as full satisfaction of this criterion. This is because these alternatives allows each agency to continue as a separate organization - thus allowing their respective governments to exercise control over policy. The Coordination Council would also create a formal structure to take action on issues of common interest, but the relationship is voluntary and each member could exercise its options to specify service, funding and other key issues.

The Consolidation and Transit Broker alternatives were rated as partially satisfying this criterion because either one existing or a new single agency would administer the combined transit system. Kingston and/or Ulster County would lose some control over certain aspects of the public transportation system in comparison to current arrangements.

The *implementability* of each of the proposed integration alternatives was considered; for clearly straightforward reasons, the Do Nothing alternative was rated as fully satisfying this criterion. The Coordination Council was also rated as fully satisfying this criterion. The Transit Broker alternative was rated as partially satisfying this criterion because it allows each transit provider to continue to operate - albeit within a new framework - and therefore allows each entity

to feel that they will still exist as an important stakeholder in the new endeavor. However, the creation of a new agency will require considerable support and effort.

The Reassign Functions alternative was also rated as partially satisfying this criterion, since determining which functions to reassign to which operator could prove difficult. Finally, the Consolidation alternative was rated as not satisfying this criterion because of the overall difficulty in creating a single pool of drivers, mechanics and administrative employees. The collective bargaining agreements of both Kingston CitiBus and UCAT have similar provisions, although the specific amounts paid and work rules vary. For example, merging the two pools of drivers and establishing seniority lists could be challenging. Also, labor harmony would be difficult to maintain if some drivers were paid more or overtime is a paid after 35 hours for some drivers and 40 hours for others. Resolution of these issues and regulations such as Section 13c would impose impediments to implementing the Consolidation scheme.

Summary

The discussion above indicates the rationale for assigning specific evaluation ratings to each alternative. These results are summarized in Table 17, which indicates the strengths and weakness of each alternative. Clearly, the Do Nothing alternative affords no tangible benefits to the transit riders, the operators and the broader community that supports public transportation through its tax support. Its primary advantage is that it maintains control over transit resources, policies and finances. Also, since it is the current situation, there are no impediments to its implementation.

The Coordination Council appears to satisfy various criteria that would benefit stakeholders in public transportation. Primary among these is to create a seamless and user friendly public transportation network. Since operations would continue with Kingston CitiBus and UCAT continuing as individual agencies under the jurisdiction of their elected boards, it would pose no barriers or impediments to implementation. Since the arrangement is voluntary, its ability to make dramatic changes is less than some of the other alternatives.

The Reassign Functions option does not offer many benefits in comparison to current arrangements. This reflects the self sufficient nature of each transit operation. Each jurisdiction would maintain control over transit matters, but it might generate controversy in specifying the activity to be reassigned from one agency to another.

The Consolidation alternative has the potential to improve public transportation. Since there is limited financial incentive for this scheme, there would have to be agreements on what transit system changes would be made and how would they be funded. Its disadvantages are that

Table 17
Evaluation Matrix

Criteria	Alternative				
	Do Nothing	Coordination Council	Reassign Functions	Consolidation	Transit Broker
Efficiency & Effectiveness	○	○	•	•	○
Quality of Service	○	●	○	⬤	⬤
Responsiveness	○	●	○	●	⬤
Adaptable	•	●	•	●	⬤
Public Input	•	●	•	●	⬤
Coordination	○	⬤	○	⬤	⬤
Funding	○	•	○	●	⬤
Control	⬤	⬤	⬤	•	•
Implementability	⬤	⬤	•	○	•

Legend

Satisfaction Level	Symbol
Full	⬤
Primary	●
Partial	•
No	○

there would be a loss in the level of control and its implementation would mandate agreement on labor provisions.

The Transit Broker is the most ambitious scheme of those under examination. It can facilitate transit improvements and create the benefits associated with a mobility manager. It would require additional resources to accomplish this broader set of activities, but would increase the focus on both public transportation and ridesharing. As such it would lessen the level of control in comparison to the existing situation. Moreover, it would require greater effort to implement.

Two points are worth noting regarding the evaluation of alternatives. First, the evaluation process does not attempt to assign weights to the evaluation criteria. Each study participant can review the results and draw their own conclusions based on the level of importance that they would assign each of the criterion. In this regard, the evaluation matrix should facilitate discussion by stakeholders, ultimately leading to delineating a recommend plan. Second, the alternatives are not mutually exclusive and could be structured in an incremental fashion. For example, a public transportation strategy could consist of creation of a Coordination Council in the near term with the Consolidation or Transit Broker alternatives implemented later.

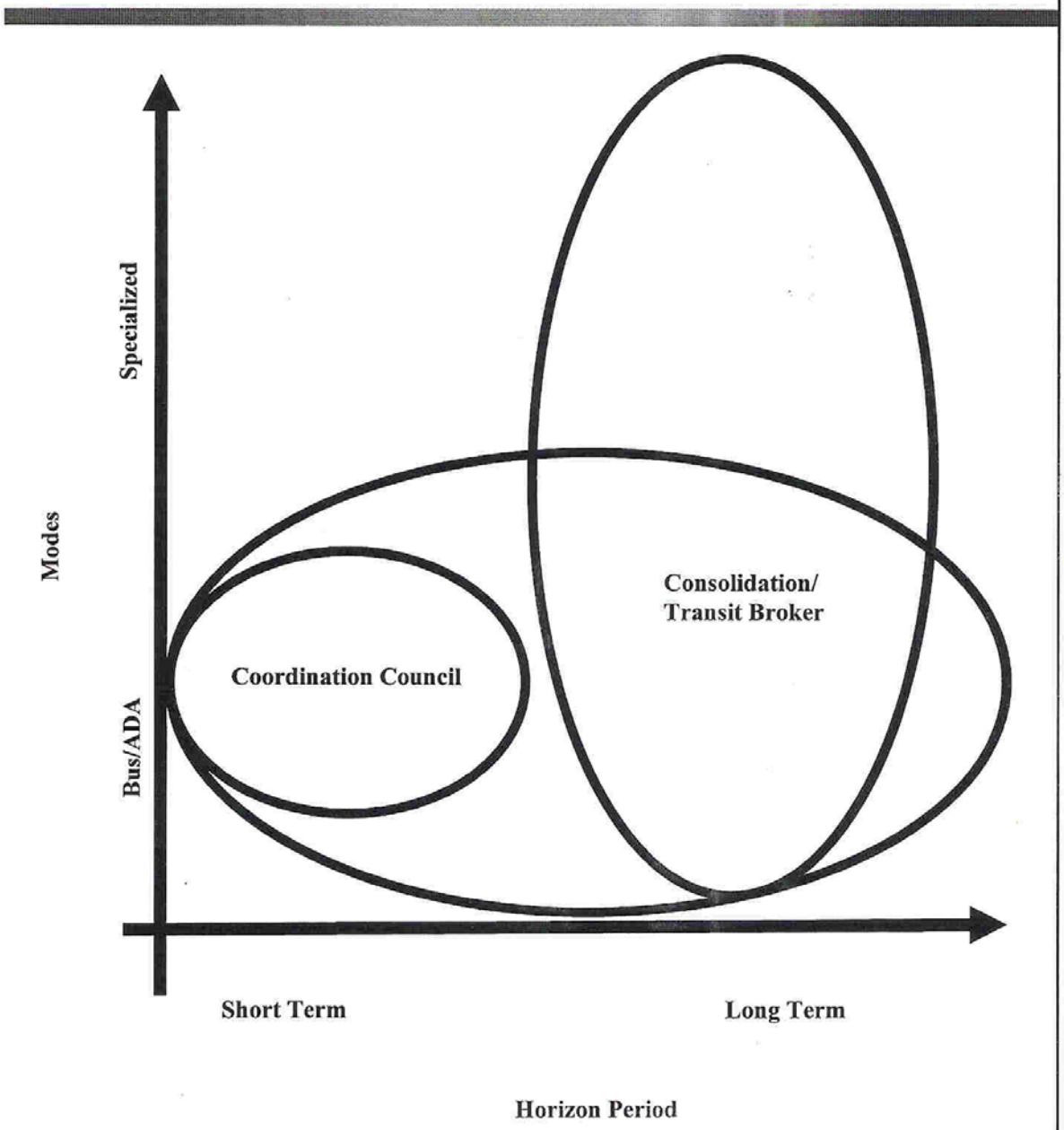
RECOMMENDATIONS

There clearly is the need to create a seamless and user friendly transit system for both existing transit patrons and residents who comprise a substantial pool of potential bus riders. The current bus system, comprised of the services and policies of Kingston CitiBus and UCAT, is complex and needs to be simplified. This includes provisions that primarily limit Kingston CitiBus to its municipal boundaries and the "closed door" operation of UCAT buses in the City of Kingston. In turn, this forces some riders to transfer between carriers to complete a trip. Further, they need information on both systems to "navigate" the public transportation system. This is a daunting task for those persons who are primarily captive patrons (i.e., do not have a car) and currently ride the bus system. For residents who have a car available for their trips, this situation discourages their use of the bus system.

Clearly, there is a need for a user friendly public transportation system in terms of service and fares. In addition, there is a need to establish regional transit priorities on a comprehensive basis. To satisfy these requirements, a two-step process is suggested. This incremental approach reflects both technical and policy concerns. Initially, a Coordination Council should be established that includes elected officials or their designees, representatives of Kingston CitiBus and Ulster County Area Transit, transit and region officials of NYSDOT and staff members of the Ulster County Transportation Council. On a cooperative basis, this group will enter into any necessary agreements or memorandums of understanding to facilitate the objectives above.

Based on the success of the Coordination Council, a longer term strategy would be more ambitious and could include either the Consolidation or Transit Broker alternatives. Each offers distinct advantages and drawbacks which can best be assessed after the benefits of the Coordination Council have been achieved. Another point to consider is that Ulster County operates and funds a few dozen vehicles as part of its specialized transportation program (e.g., senior citizens and Medicaid), which could be included with public transportation in the future. This incremental implementation strategy of the study recommendations is graphically depicted in Figure 2.

Figure 2
Implementation Strategies



Appendix

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MEMORANDUM

To: William Tobin

From: Walter Cherwony, P.E.

Date: November 22, 2005

Re: Public Transportation Integration Analysis – Financial Forecasts

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At our meeting last week, I presented information on past trends of both Kingston CitiBus and UCAT for a number of operating statistics. I also discussed possible alternatives and evaluation criteria. During our discussion, NYSDOT staff raised the issue of the need for financial forecasts for the next several years. The objective would be to assess the financial condition of each operator and ascertain if their financial position would suggest changes in how transit is operated within Ulster County. While our effort is directed at the several alternatives that we formulated, the financial results should be informative.

The attached exhibits extrapolate the situation assuming continuation of the status quo with two independent operators. The basis for many of the calculations are presented in the exhibits and it is in a spreadsheet format which would allow us to test different assumptions and trends. A brief summary of each exhibit is presented below:

- **Exhibit 1** - Urban transit funds are available for both urbanized areas from 2005 through 2009. The 2010 value was based on a six percent increase from the 2009 federal funding levels. As noted in our discussion last week, the Kingston urbanized area has a "spike" between 2005 and 2006 and NYSDOT staff are investigating the reason for this situation. In accordance with the current arrangements, the funds are split 40:60 between Kingston CitiBus and UCAT.

  The Mid Hudson Valley urbanized area funds assume that the current share for UCAT is maintained at about 3.67 percent. This is somewhat conservative since UCAT could compete for funds that are awarded on a competitive basis by the three MPO's. Rural funds were published for 2005 and 2006 and then assumed to increase by three percent annually.

  STOA funding was based on the average of 2003 and 2004 which is then escalated by three and six percent annually for Kingston CitiBus and UCAT,

respectively. This is consistent with observed trends from 2000 and also the expected gains in service levels and ridership for the forecast period. The amounts are generally consistent with values for the next few years in the 17A form. As noted with all the trend data reported previously, the forecasts for UCAT values exclude Mulligan (formerly Arrow) Bus Lines.

- **Exhibit 2** - Local funding follows a similar approach to that used for the NYSDOT subsidy and both operators are assumed to experience available funding increases of three percent annually. The remainder of the table summarizes the funding by source for each operator.

- **Exhibit 3** - The Kingston CitiBus results for 2003 and 2004 were presented in the first discussion paper. The costs were revised to reflect expenditures that were incurred by the City, but not charged to the bus system. This affects the deficit and the local funding in the two prior years. It is assumed that the level of service would increase one percent in 2007 and 2009. Ridership would also increase with an assumed elasticity of one-half. Costs are assumed to increase to reflect the increase in service and escalate due to inflation of three percent. Revenues reflect ridership levels and an average fare of $0.75. The chart lists the deficit and the availability of funding, which would appear favorable.

- **Exhibit 4** - A similar analysis was performed for UCAT with differences in certain assumptions. Service levels are expected to increase at a greater rate with two increases of five percent in 2007 and 2009. This ten percent service expansion reflects our earlier recommendation for UCAT service. Other service proposals could produce a more ambitious program, but the ten percent value is reasonable for the current analysis. Ridership and revenue reflect a 0.50 elasticity and the average fare used for UCAT was $1.50. As with Kingston CitiBus, the available subsidy appears more than adequate to meet operating assistance needs.

- **Exhibit 5** - The last table is the possible capital program for the next five years. The exhibit lists projects in the TIP, with the most significant project being one million dollars for bus storage/garage/offices. City staff is researching the exact nature of the project. As part of this work, I made certain assumptions about fleet replacement and other facilities (i.e., bus stop signs and shelters) which result in a capital program with considerably greater values than those presented in the TIP. Funding amounts by source are also presented assuming the traditional cost sharing arrangements.

The thrust of the integration analysis will be directed to the financial and other impacts of the different alternatives. We would expect to address the consequences in the near term of changing how public transportation services are delivered by each carrier. The five year forecasts do not specifically address the question posed with the integration analysis. However, they are informative and the various stakeholders can gauge whether they are facing a situation of concern and the need for alternatives to be considered.

Preliminary Financial Forecasts (For Discussion Purposes) **Exhibit 1**

FEDERAL FUNDING

Year	Amount	Percent Change	Allocation CitiBus	Allocation UCAT	Total
Kingston Urbanized Area					
2005	535,024	--	214,010	321,010	535,020
2006	1,334,030	149.34	533,610	800,420	1,334,030
2007	1,387,999	4.05	555,200	832,800	1,388,000
2008	1,505,015	8.43	602,010	903,010	1,505,020
2009	1,599,869	6.30	639,950	959,920	1,599,870
2010	1,695,860	6.00	678,340	1,017,520	1,695,860
Mid Hudson Valley Urbanized Area					
2005	13,787,800	--	--	506,300	
2006	17,140,010	24.31	--	629,400	
2007	17,973,671	4.86	--	660,010	
2008	19,779,472	10.05	--	726,320	
2009	21,239,217	7.38	--	779,920	
2010	22,513,570	6.00	--	826,720	
Rural Area					
2005	96,100	--	--	96,100	
2006	99,100	3.12	--	99,100	
2007	102,070	3.00	--	102,070	
2008	105,130	3.00	--	105,130	
2009	108,280	3.00	--	108,280	
2010	111,530	3.00	--	111,530	

STATE FUNDING

Year	CitiBus Amount	CitiBus Percent Change	UCAT Amount	UCAT Percent Change
2003	186,660		532,640	
2004	196,870		571,200	
Average	191,770	--	551,920	--
2005	197,520	3.00	585,040	6.00
2006	203,450	3.00	620,140	6.00
2007	209,550	3.00	657,350	6.00
2008	215,840	3.00	696,790	6.00
2009	222,320	3.00	738,600	6.00
2010	228,990	3.00	782,920	6.00

Preliminary Financial Forecasts (For Discussion Purposes) Exhibit 2

LOCAL FUNDING

Year	CitiBus Amount	Percent Change	UCAT Amount	Percent Change
2003	340,720		440,640	
2004	277,570		827,380	
Average	309,150	--	634,010	--
2005	318,420	3.00	653,030	3.00
2006	327,970	3.00	672,620	3.00
2007	337,810	3.00	692,800	3.00
2008	347,940	3.00	713,580	3.00
2009	358,380	3.00	734,990	3.00
2010	369,130	3.00	757,040	3.00

	Urban (By Area)			Total
Year	Kingston	Mid Hudson	Rural	Federal
Ulster County Area Transit				
2005	321,010	506,300	96,100	923,410
2006	800,420	629,400	99,100	1,528,920
2007	832,800	660,010	102,070	1,594,880
2008	903,010	726,320	105,130	1,734,460
2009	959,920	779,920	108,280	1,848,120
2010	1,017,520	826,720	111,530	1,955,770

Ulster County Area Transit

	Federal	State	Local	Total
2005	923,410	585,040	653,030	2,161,480
2006	1,528,920	620,140	672,620	2,821,680
2007	1,594,880	657,350	692,800	2,945,030
2008	1,734,460	696,790	713,580	3,144,830
2009	1,848,120	738,600	734,990	3,321,710
2010	1,955,770	782,920	757,040	3,495,730

Kingston CitiBus

	Federal	State	Local	Total
2005	214,010	197,520	318,420	729,950
2006	533,610	203,450	327,970	1,065,030
2007	555,200	209,550	337,810	1,102,560
2008	602,010	215,840	347,940	1,165,790
2009	639,950	222,320	358,380	1,220,650
2010	678,340	228,990	369,130	1,276,460

Preliminary Financial Forecasts (For Discussion Purposes) **Exhibit 3**

Kingston CitiBus	Actual		17A Estimate		Projected	Projected	Projected	Projected
ANNUAL RESULTS	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Operating Statistics								
Vehicle Hours	14,670	16,070	17,725	17,980	18,160	18,160	18,340	18,340
Percent Change	--	*9.54*	*10.30*	*1.44*	*1.00*	*0.00*	*0.99*	*0.00*
Vehicle Miles	143,750	153,820	154,340	155,000	156,550	156,550	158,120	158,120
Percent Change	--	*7.01*	*0.34*	*0.43*	*1.00*	*0.00*	*1.00*	*0.00*
Operating Speed	9.80	9.57	8.71	8.62	8.62	8.62	10.00	8.62
Ridership								
Passenger Trips	123,120	130,910	132,000	134,000	134,670	134,670	135,340	135,340
Percent Change	--	*6.33*	*0.83*	*1.52*	*0.50*	*0.00*	*0.50*	*0.00*
Productivity								
Passengers/Vehicle Hour	8.39	8.15	7.45	7.45	7.42	7.42	7.38	7.38
Passengers/Vehicle Mile	0.86	0.85	0.86	0.86	0.86	0.86	0.86	0.86
Financial--Aggregate								
Cost	682,980	729,330	773,090	864,310	898,880	925,850	962,880	991,770
Percent Change	--	*6.79*	*6.00*	*11.80*	*4.00*	*3.00*	*4.00*	*3.00*
Revenue	87,230	93,250	98,140	100,000	101,000	101,000	101,510	101,510
Percent Change	--	*6.90*	*5.24*	*1.90*	*1.00*	*0.00*	*0.50*	*0.00*
Deficit	595,750	636,080	674,950	764,310	797,880	824,850	861,370	890,260
Farebox Recovery (%)	12.77	12.79	12.69	11.57	11.24	10.91	10.54	10.24
Potential Funding								
Deficit	595,750	636,080	674,950	764,310	797,880	824,850	861,370	890,260
Subsidy								
Federal	68,370	161,640	214,010	533,610	555,200	602,010	639,950	678,340
State	186,660	196,870	197,520	203,450	209,550	215,840	222,320	228,990
Local	340,720	277,570	318,420	327,970	337,810	347,940	358,380	369,130
Total	595,750	636,080	729,950	1,065,030	1,102,560	1,165,790	1,220,650	1,276,460

Preliminary Financial Forecasts (For Discussion Purposes) **Exhibit 3**

Kingston CitiBus	Actual		17A Estimate		Projected	Projected	Projected	Projected
ANNUAL RESULTS	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Operating Statistics								
Vehicle Hours	14,670	16,070	17,725	17,980	18,160	18,160	18,340	18,340
Percent Change	--	*9.54*	*10.30*	*1.44*	*1.00*	*0.00*	*0.99*	*0.00*
Vehicle Miles	143,750	153,820	154,340	155,000	156,550	156,550	158,120	158,120
Percent Change	--	*7.01*	*0.34*	*0.43*	*1.00*	*0.00*	*1.00*	*0.00*
Operating Speed	9.80	9.57	8.71	8.62	8.62	8.62	10.00	8.62
Ridership								
Passenger Trips	123,120	130,910	132,000	134,000	134,670	134,670	135,340	135,340
Percent Change	--	*6.33*	*0.83*	*1.52*	*0.50*	*0.00*	*0.50*	*0.00*
Productivity								
Passengers/Vehicle Hour	8.39	8.15	7.45	7.45	7.42	7.42	7.38	7.38
Passengers/Vehicle Mile	0.86	0.85	0.86	0.86	0.86	0.86	0.86	0.86
Financial--Aggregate								
Cost	682,980	729,330	773,090	864,310	898,880	925,850	962,880	991,770
Percent Change	--	*6.79*	*6.00*	*11.80*	*4.00*	*3.00*	*4.00*	*3.00*
Revenue	87,230	93,250	98,140	100,000	101,000	101,000	101,510	101,510
Percent Change	--	*6.90*	*5.24*	*1.90*	*1.00*	*0.00*	*0.50*	*0.00*
Deficit	595,750	636,080	674,950	764,310	797,880	824,850	861,370	890,260
Farebox Recovery (%)	12.77	12.79	12.69	11.57	11.24	10.91	10.54	10.24
Potential Funding								
Deficit	595,750	636,080	674,950	764,310	797,880	824,850	861,370	890,260
Subsidy								
Federal	68,370	161,640	214,010	533,610	555,200	602,010	639,950	678,340
State	186,660	196,870	197,520	203,450	209,550	215,840	222,320	228,990
Local	340,720	277,570	318,420	327,970	337,810	347,940	358,380	369,130
Total	595,750	636,080	729,950	1,065,030	1,102,560	1,165,790	1,220,650	1,276,460

Preliminary Financial Forecasts (For Discussion Purposes) **Exhibit 4**

Ulster County Area Transit	Actual		17A Estimate		Projected	Projected	Projected	Projected
ANNUAL RESULTS	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Operating Statistics								
Vehicle Hours	30,150	31,460	31,460	31,460	33,030	33,030	34,680	34,680
Percent Change	--	*4.34*	*0.00*	*0.00*	*4.99*	*0.00*	*5.00*	*0.00*
Vehicle Miles	589,280	620,160	621,000	621,000	652,050	652,050	684,650	684,650
Percent Change	--	*5.24*	*0.14*	*0.00*	*5.00*	*0.00*	*5.00*	*0.00*
Operating Speed	19.54	19.71	19.74	19.74	19.74	19.74	20.00	19.74
Ridership								
Passenger Trips	151,620	165,660	180,000	195,000	199,880	199,880	204,880	204,880
Percent Change	--	*9.26*	*8.66*	*8.33*	*2.50*	*0.00*	*2.50*	*0.00*
Productivity								
Passengers/Vehicle Hour	5.03	5.27	5.72	6.20	6.05	6.05	5.91	5.91
Passengers/Vehicle Mile	0.26	0.27	0.29	0.31	0.31	0.31	0.30	0.30
Financial--Aggregate								
Cost	1,688,220	2,282,530	2,357,400	2,457,800	2,654,420	2,734,050	2,952,770	3,041,350
Percent Change	--	*35.20*	*3.28*	*4.26*	*8.00*	*3.00*	*8.00*	*3.00*
Revenue	213,320	222,350	239,000	287,000	299,820	299,820	307,320	307,320
Percent Change	--	*4.23*	*7.49*	*20.08*	*4.47*	*0.00*	*2.50*	*0.00*
Deficit	1,474,900	2,060,180	2,118,400	2,170,800	2,354,600	2,434,230	2,645,450	2,734,030
Farebox Recovery (%)	12.64	9.74	10.14	11.68	11.30	10.97	10.41	10.10
Potential Funding								
Deficit	1,474,900	2,060,180	2,118,400	2,170,800	2,354,600	2,434,230	2,645,450	2,734,030
Subsidy								
Federal	501,610	661,600	923,410	1,528,920	1,594,880	1,734,460	1,848,120	1,955,770
State	532,640	571,200	585,040	620,140	672,620	696,790	738,600	782,920
Local	440,640	827,380	653,030	672,620	2,821,680	713,580	734,990	757,040
Total	1,474,890	2,060,180	2,161,480	2,821,680	5,089,180	3,144,830	3,321,710	3,495,730

Preliminary Financial Forecasts (For Discussion Purposes)

Exhibit 5

TIP FFY2006-2010

Kingston CitiBus	**2006**	**2007**	**2008**	**2009**	**2010**
Bus Shelters	40,000	0	0	0	0
Bus Replacement	0	60,000	0	0	0
Bus Replacement	300,000	0	0	0	0
Office Equipment/Furniture	0	30,000	0	0	0
Bus Storage Garage/Offices	0	0	0	1,000,000	0
Bus Replacement	0	0	0	90,000	0
Ulster County Area Transit					
Bus Shelters	50,000	50,000	50,000	50,000	0

MAJOR CAPITAL ITEMS

	Number	**Unit Cost**	**Amount**
Kingston CitiBus			
Fleet Replacement			
Bus	4	300,000	1,200,000
Cutaway	2	90,000	180,000
Van	0	40,000	0
Total			1,380,000
Bus Stop Signs	200	100	20,000
Shelters			40,000
Bus Storage Garage/Offices			1,000,000
Total			2,440,000
Ulster County Area Transit			
Fleet Replacement			
Bus	5	300,000	1,500,000
Cutaway	4	90,000	360,000
Van	2	40,000	80,000
Total	11		1,940,000
Bus Stop Signs	400	100	40,000
Shelters			50,000
Total			2,030,000

	CitiBus	**UCAT**	**Total**
FUNDING (80:10:10)			
Federal	1,952,000	1,624,000	3,576,000
State	244,000	203,000	447,000
Local	244,000	203,000	447,000
Total	2,440,000	2,030,000	4,470,000