Camden County Travel Management Coordination Center
Demonstration Project NJ-26-7065

SYSTEM REQUIREMENTS

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RUTGERS
Edward J. Bloustein School
of Planning and Public Policy

Alan M. Voorhees
Transportation Center

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Overview

I. Background and Scope

The Camden County Workforce Investment Board (WIB) was one of eight sites selected by the U.S. Department of Transportation (USDOT) in late 2006 to demonstrate enhanced human service transportation models through the development of a Travel Management Coordination Center (TMCC). The Federal Governments' vision is 'One Call' to improve access and eliminate the inefficiencies resulting from 62 different funding sources for human services transportation. It is anticipated that the sites will employ appropriate and current technologies to develop different models that represent the efficient use of transportation and community resources focused on customer needs. Although each site faces a unique set of local and regional challenges, the project will result in expanded and more efficient mobility services through the integration of operators and users that in many cases have been functioning as independent entities. Technology is the means of promoting this more integrated approach to transportation.

The Camden County WIB, with the support of its local elected officials, local and regional transportation providers, state and local human services agencies, and in conjunction with the local United We Ride planning effort, is working with Camden County and the Alan M. Voorhees Transportation Center (VTC) at Rutgers University to develop a Travel Management Coordination Center (TMCC) that coordinates community transportation services through a comprehensive, technology-driven brokerage model.

The Camden County WIB is working to design a TMCC that will focus on effectively creating access for all transportation-disadvantaged consumers in Camden County to all local and regional modes of transportation, including local fixed and flexible routes, and local demand-response services across a multitude of providers including public transportation, county and municipal transportation providers, and local non-governmental organizations, including faith-based organizations. The expectation is that the Camden County stakeholders will establish a TMCC design that is deployment-ready for Title XIX medical transportation, and replicable and scalable to support integrating services to seniors and disabled, low-income individuals and the public for all travel needs.

Further, the support of the Delaware Valley Regional Planning Commission (DVRPC) and NJ Transit will ensure that system development will be consistent with the State and regional ITS architecture already established. The Camden County Stakeholders will provide recommendations for augmenting and altering the regional architecture and standards to incorporate human services transportation.

II. Vision, Goals, and Objectives

The overarching vision of this project is to design with Camden County the most effective transportation service delivery model by employing appropriate and current technologies focused on customer needs and the most efficient use of transportation and community resources. The Goals and Objectives of the project are as follows:

Goal 1: Develop a Travel Management Coordination Center (TMCC) for Camden County that creates opportunities for better and increased transportation service throughout the County.

- *Objective:* Investigate and utilize ITS technologies as a tool to facilitate transportation coordination in Camden County.

- *Objective:* Work collaboratively with Camden County public, private, non-profit, and faith-based organizations as partners in the development of the TMCC.

Goal 2: Increase access to existing human service and traditional public transportation for Camden County consumers.

- *Objective:* Develop improved marketing strategies targeted to consumers seeking human services transportation designed to create awareness for existing public transit and human service transportation.

- *Objective:* Examine the feasibility of reorienting human service transportation as feeder service to traditional transit services, as one means to improve the efficiency of the overall passenger transportation network in the County.

Goal 3: Implement a comprehensive, inclusive, ongoing and responsive project planning process.

- *Objective:* Form a stakeholder committee comprised of a diverse network of interested parties to meet periodically with the project team to review and discuss findings and project progress.

- *Objective:* Convene a small steering committee of select stakeholder committee members to work closely with the project team in the development of the TMCC.

- *Objective:* Provide a forum to solicit broad public participation from a variety of perspectives, including town meetings, focus groups and small working group sessions.

- *Objective:* Facilitate cross-communication between Camden County human service organizations (area nonprofits), faith-based organizations, transportation providers, government agencies and consumers, as a critical component of all project outreach efforts.

The project team recognizes the need to address the following issues, critical to the TMCC:

1. Facilitate greater coordination within the Camden County provider network.
2. Improve customer access to, and ease of use of, Camden County human services and the overall transportation system.
3. Simplify operational procedures across various Camden County transportation providers.

III. Existing Challenges

An extensive transportation network comprised of four primary types of transportation providers serves Camden County, including state and regional public transportation, county-based services, municipal shuttle services, and non-governmental organizations. These providers offer transportation services using the full spectrum of modalities including fixed route buses and shuttles, rail lines, flexible route shuttles, and demand-response shuttles. Human service transportation utilizes all of these types of providers and modalities. The current conditions found by the Camden County TMCC project team build upon the existing Camden County United We Ride Human Service Transportation Coordinated Plan which was approved by the Camden County Board of Freeholders in June 2007. Existing challenges faced by the Camden County human service transportation system that the CCWIB Team is attempting to address, include the following:

Suppressed Demand

Unmet demand for human service transportation exists in Camden County, particularly in southeastern rural areas of the county, and for specific trip purposes such as Medicaid and employment-related trips. For example, in Winslow Township, which is located in the southern region of the County, residents have difficulty tapping into public transportation. If they can get to Lindenwold Borough, they can go almost any where; but, without a car, getting to Lindenwold requires a $25 taxi ride one-way. Finding transportation options for traveling anywhere south of the Borough, where most of the new development in the Township is occurring, is impossible. The Camden County United We Ride Human Service Transportation Coordination Plan cited some of the following specific service gaps and needs:

- Expansion of Sen-Han services, currently, Sen-Han has extensive and increasing wait lists for medical transportation services that due to financial constraints they cannot meet demand.
- Increased employment shuttle services, including those that act as a feeder to/from rail lines. SJTA which provides employment trips, like Sen-Han, cannot meet demand at its current financial constraints.
- Provide increased extracurricular/after-school youth transportation in communities with large transportation disadvantages.

Limited Service Area and Hours

Area traditional and human service transportation providers typically offer limited evening and weekend service, which limits the ability of customers to access employment or meet basic needs (such as shopping and social trips). For example, senior citizens in Pine Hill Borough have Borough-provided transportation to shopping and the bank on Mondays, Wednesdays and Fridays. They have transportation options that help them

remain independent, but access to quality of life and cultural activities, such as high school plays and church sponsored dinners, held in the evening and on weekends that are free or discounted for seniors are out of reach to this population on a fixed income, due to lack of transportation. The Camden County United We Ride Human Service Transportation Coordination Plan cited some of the following service area and time gaps:

- Increased weekend bus service that addresses the needs of transit dependent populations.
- Creation of a core bus service in the City of Camden that runs 24/7.
- Increased transportation service in the southern and eastern parts of the county where very limited options and an expanding population currently exist.

Customer Communications

Currently, there is no one-stop transportation information access point in Camden County, which complicates trip planning for the users of public transit and human service transportation, as well as referring agencies. At a Camden County Mobilizing for Action through Planning and Partnership (MAPP) meeting held in September 2007, representatives of major health organizations, such as United Way, Women and Infant Children (WIC), American Cancer Society, and the Camden County Board of Social Services, were asked how their customers access transportation information. They responded that most of their clients do not have internet access; many receive transportation information by word of mouth through community networks; and some organizations provide transportation information to their clients. One agency noted that approximately 30 percent of their clients/patients are late for medical appointments due to transportation issues.

Limited Coordination among Area Providers

Limited coordination exists among Camden County's human service transportation providers. Opportunities exist to eliminate duplicative service and to extend service hours and geographic coverage through the coordination of public, non-profit, and faith-based organizations. The Camden County Workforce Investment Board is currently meeting with key leaders in the Camden City Faith-Based community to develop a Transportation Collaboration that will allow each Faith-based Organization (FBO) who chooses to participate to do so at a level they are comfortable. As part of the TMCC, most FBO participants will provide transportation linkages, such as between the neighborhood in which they are located and South Jersey Transit Authority cluster pick-up points.

Limited Integration of Human Service Transportation with Traditional Public Transportation

There is currently limited use of human service transportation to provide feeder service to traditional transit at key transfer points and transit stations. Currently, the Camden County Board of Social Services has a list of 16 transportation service providers. When a client qualifies for Medicaid transportation dollars and they have four or more medical appointments a month they are issued a transit pass for the month provided their trips can be completed by fixed route transit service; otherwise, their case manager simply calls the next human service transportation provider on the list, who in turn schedules a vehicle for

curb to curb service. Linkage to existing transport service is not considered, and, often, these Medicaid trips run parallel to existing fixed route service.

Requirements Development

The Camden County WIB has engaged 159 stakeholders to establish a replicable and scalable TMCC design that will build on the current transportation strengths and is deployment-ready for Title XIX medical transportation services, for seniors and disabled, low-income individuals and the public for all travel needs. Unique to Camden County's TMCC design is the establishment of a Faith-Based Foundation Collaborative for Community Transportation that will provide additional transit services particularly in those areas where limited transportation exists. To help further inform the design of the TMCC, the WIB facilitated more than a dozen focus groups with organizations and residents of the county. Over 250 on-street and community surveys were also conducted. What was learned from these outreach efforts is that Camden County residents are most concerned about 1) on-time service; 2)shelters at bus stops; 3) safety and security; 4) electronic fare payments; 5) single point of contact via telephone and internet/website for transportation information, and 6) information stands/kiosks for information on routes, transfers and arrival times.

Reverend Timothy Merrill (left), East Camden Community Fellowship Church, and Father Joseph Messina, CC WIB Faith Based Liaison, were two of many participants at the Transportation Orientation held June 28th.

Challenges Identified and Confirmed

From the initial Leadership meeting and elaborated, illustrated and confirmed upon in subsequent Key Stakeholder, Technical Group Work sessions, and outreach activities, the Camden County WIB team is building upon the needs and issues identified in the 2007 United We Ride (UWR) County Coordinated planning process, noted above in detail, which included the following:

- Suppressed Demand
- Limited Service Area and Hours
- Poor Customer Communications
- Limited Coordination among Area Provider/Operators
- Limited Integration of Human Service Transportation with Traditional Public Transportation

The extensive transportation network in Camden County, comprised of four primary types of transportation operators, including state and regional public transportation, county-based services, municipal shuttle services, and non-governmental organizations, offer a menu of transportation services using the full spectrum of modalities including fixed route buses and shuttles, rail lines, flexible route shuttles, and demand-response routes. To balance the strong input from the outreach activities (focus groups, street interviews etc), individual meetings were also held to focus and discuss these 5 challenges specifically so that the CCWIB Team was clear and focused on how these challenges affect and impact each operator and funding agency. The existing challenges noted above therefore focus the technical work and lead directly to the development of the proposed TMCC Systems Requirements.

Post meeting networking occurred after the August 23rd Leadership Council meeting.

Mr. Anthony Lingo, Manager of Special Grants Projects for the City of Camden, addresses the Leadership Council. Also seated at the head table are Ms Pippa Woods, Project Development with the Alan M. Voorhees Transportation Center at Rutgers; Yehuda Gross, ITS Transit Program Manager for the US Department of Transportation; and Mr. Jack Gallagher, Chairman of the Board, Camden County Workforce Investment Board.

Proposed TMCC System

The proposed Camden County envisions a federated approach that will form a TMCC of independent providers and agencies to enhance and build upon the substantial service network currently operating and serving the various demographic and mobility challenged consumers in the county. Also, the Camden County TMCC envisions a carefully phased development of the changes considered to date with the key stakeholders in this project design. For example, the challenge to develop, maintain and refresh an up-to-date, comprehensive and complete transportation information database that could be distributed and accessible at intermodal transportation transfers/hubs, useful to all consumers seeking to know the full range of options available to them in Camden County and the region – is not an insignificant technology challenge .

The proposed TMCC fits into five categories, which work together in a comprehensive manner to address the goals of this project. Although the descriptions of change are detailed, they do not yet describe specific methodologies or technologies, but instead describe the customer service and operational changes that can take advantage of appropriate technologies to improve service delivery.

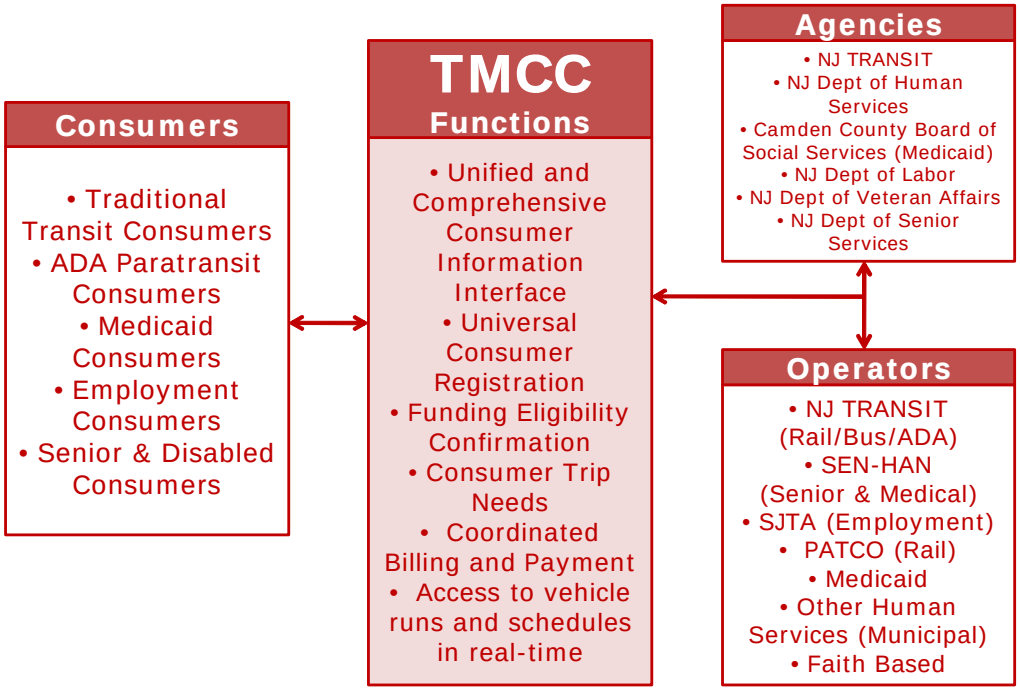

Figure 1. The above diagram displays a unified vision for the Camden County TMCC. It emphasizes the TMCC being the information intermediary between Consumers, Operators, and Funding Agencies.

I. One-Call Transportation Communications Center

The One-Call Center in its initial phase of development will provide customers seeking passenger transportation service with a single phone number to call to discuss their mobility needs and receive help in qualifying for (i.e. funding eligibility) and identifying appropriate operator(s). An accessible website offering information on available services will also be provided. The One-Call Center will include:

- Providing a well-marketed phone number and website
- Having a One-Call Center office that is located near other advocate and funding agencies
- Having phone and web-based interfaces to other key information and referral agencies (i.e. 211, 511)
- Having trained live operators who understand the existing network of transit and human service transportation services and are prepared to assist consumers with varying needs and possible disabilities
- Having access to key provider agency eligibility, intake and trip scheduling functions to assist customers in reaching the appropriate provider(s)

Camden County has many different agencies and transportation operators that are involved with providing mobility for customers with a variety of demographic and social characteristics. Many have established relationships with agencies and operators that would be very difficult to transition to a new organization. For this reason, it is anticipated that existing customer service access points with individual operators will be maintained during the initial phase of the TMCC.

It is envisioned that the mobility manager/operator of the One-Call Center in its initial phase will establish close working relationships with existing major service operators, including Sen-Han Transit, SJTA and NJ Transit (rail, bus and light rail) and NJ Transit Access Link, as well as key municipal, faith-based, and private livery operators who are positioned to provide needed transportation services.

The One-Call Center will have access to information including funding eligibility, hours and days of operation, and geographic service area, to be able to make informed decisions on whether a particular operator might be able to address a trip need identified by customer type, time frame requested, and geography.

II. Coordination of Provider Trip Functions

One goal of this project is to improve the efficiency of current provision of service by assisting operators in filling empty seats. Another key goal of this project is to work with the faith-based community to develop the ability of houses of worship to use their vehicles for community transportation, while allowing flexibility in their level of participation based on their priorities and availability.

As noted in the One-Call section above, there is a need to ultimately register the customer with all potential providers and to enable the TMCC to have access to the daily vehicle

runs of participating operators so that new trips can be assigned to the most appropriate provider.

While initially this trip integration can be done by manual reassignments of passengers to the appropriate provider, ultimately Camden County operators will utilize current existing technology to automate this function. These technologies include:

Automated Vehicle Locator (AVL): This GPS system enables an operator to locate a vehicle on a computer screen map in an office to know where each vehicle is currently located. It becomes the basis for enabling mobile data computers, as well as customer update aids at key bus stops and at their homes (See Customer Security and Communications).

Mobile Data Computer (MDC): On-board computers can send passenger trip data back to the office, eliminating the need for time consuming reconciliation of hand written driver manifests as well as provide more detailed and accurate trip time and location data.

Scheduling and Routing Software: Software is essential to allow the TMCC and operators to share scheduling and routing information. Currently, the two scheduling and routing software packages being used in the County by major providers are PtMS used by Sen-Han Transit and the Trapeze system used by Access Link. Since the scheduling and routing software becomes the basis for any **Global Positioning System (GPS)** based technology including **Automatic Vehicle Locators (AVL)** and **Mobile Data Computers (MDC)** to communicate passenger trip data for more efficient reporting, the scheduling software must be able to accommodate these technologies, as well as allow communication of passenger trip and AVL data between operators and the TMCC.

III. Seamless Fare and Billing System

In order to achieve shared assignment of passengers to various operators, there is a need to assign the cost of a passenger trip based on some unit of cost. The system needs to:

- Assign the cost of the customer trip based on the operator unit cost back to an appropriate funding source
- Enable the operator to be paid for their cost of providing the customer trip
- Enable the customer to be billed (if appropriate) for their share of the cost of the trip

Currently, Camden County operators such as Sen-Han Transit have as part of their scheduling software a billing component that generates reports showing the number of trips to be billed back to a series of funding agencies. The need is to expand this capability so that multiple funding agencies and additional operators can be billed and paid, respectively, for their portion of customer trips.

This again emphasizes the need for an upgraded Scheduling Software that contains a billing component that enables the various unit costs of operators and the billing rates

agreed upon for funding agencies to be maintained and ultimately managed by the TMCC.

Figure 2: Current Uncoordinated Fare Collection System

Figure 3: Coordinated Fare Collection System

IV. Customer Security and Communications

Two of the biggest challenges to serving customers through a more integrated system of providers are:

1. Ensuring the rider feels secure and confident in using the service
2. Providing the rider with information before and during their trip to contribute to their feeling secure and confident in making the trip

This is particularly true for serving customers with coordinated trips using a combination of human service and traditional transit operators. Following are some of the supports that contribute to a secure and confident customer trip experience:

- Provide the customer with next vehicle arrivals at key pickup/drop-off locations
- Provide enhanced security on the vehicle and at key pickup/drop-off locations
- Provide information about routes, schedules and provider contact information at key pick/drop-off locations
- Provide automated alerts and reminders to customers on trip delays and changes

These solutions range from low tech strategies, such as posted schedule information at key stops, to more advanced technologies, such as automated screens providing

information on the next arriving vehicle or touch screen access to transit system information. Some of these technologies, such as the arriving vehicle information, build on the GPS technologies that are used for locating vehicles and reporting vehicle customer data.

V. Faith-Based Foundation Collaborative for Community Transportation

For the past several years, the WIB has been working closely with the faith-based community around developing a project that enables houses of worship to use their vehicles in support of community transportation. This TMCC project is seen as a significant opportunity for faith-based organizations (FBOs) to enhance the existing countywide human service transportation provider network. Because technology brings significant flexibility for how transportation systems can be structured—whereby all information such as number of vehicles, availability of specific vehicles for trips by day/hours and type of services can be processed and coordinated—it became clear that the FBOs would have the flexibility of customizing their participation.

The WIB has convened a team of leaders from the faith-based community who developed the concept of creating a Faith-Based Foundation Collaborative for Community Transportation that would become the organizing framework for faith-based transit providers.

System Requirements

Proposed system elements I - IV were broken down into high level system requirements that state in detail what the TMCC should be able to do to achieve the project vision. These requirements were organized into a Needs-to-Requirements Matrix, presented on the following page, that links the needs identified in the January 2008 Concept of Operations to the requirements that address those needs. The matrix will assist the project team and stakeholders in determining the system elements (software, hardware, facilities, personnel and organizational agreements) needed to implement the TMCC, to estimate costs, and to develop a phasing plan.

The Matrix uses the following definitions:

System Needs: The System Needs column provides backwards traceability to the Concept of Operations. Note that we have changed the order of System Needs to better reflect project refinement and priorities.

ID: Each requirement has been assigned a unique identification code. System requirements are differentiated from user requirements by the use of the letter S (System) and U (User) at the beginning of the code. Child and grandchild requirements are designated within the identification code, so that a child of S1-1 is S1-1.x, and a grandchild of S1-1 is S1-1.x.x.

M/D: The M/D column represents whether that requirement is Mandatory (M) or necessary for the implementation of a TMCC that addresses all four User Needs, or Desirable (D) to provide the greatest user benefit.

Traceability: The Traceability column documents cross-dependencies between system requirements.

System Requirements for the Camden County Travel Management Coordination Center (TMCC)

System Needs	ID	Level 1 System Requirement	M/D	ID	Level 2 System Requirement	M/D	Traceability	ID	Level 3 System Requirement	M/D
One Stop Call Center - The TMCC Shall:										
3.1.4	S1-1	Provide information about transportation services to riders and operators via a web site	M	> S1-1.1	Provide information on eligibility, routes, and schedules of transportation services	M				
				> S1-1.2	Enable riders and operators to obtain privacy-protected vehicle trip information	M	S2-1.5			
				> S1-1.3	Provide a web site that is accessible to personal mobile devices	D				
				> S1-1.4	Provide information on vehicle trip status and updates based on vehicle's geographic location	M	S2-2.1			
				> S1-1.5	Provide information on system status and disruptions for riders and operators	M	S2-2.1			
				> S1-1.6	Enable riders accessing www.njfindaride.org to link to the TMCC web site	M				
				> S1-1.7	Provide a web site that is accessible to riders with visual, hearing, and/or other disabilities	M				
				> S1-1.8	Provide a web site that is accessible to riders who speak a language other than English	M				
				> S1-1.9	Record and report customer feedback	M				
3.1.4	U1-1	Enable riders to link to the TMCC from their personal computer	M	> U1-1.1	Enable riders to access information about transportation services	M				
				> U1-1.2	Enable riders to request an eligibility determination	M	S1-1.1			
				> U1-1.3	Enable riders to request/schedule a trip	M				
				> U1-1.4	Enable riders to check on status of their scheduled trips	M	S2-2.1			
				> U1-1.5	Enable riders to access the estimated arrival time of their scheduled trip	M	S2-2.1	> U1-1.5.1	Update the estimated arrival time not more than once per minute	M
3.1.4	U1-2	Enable riders to obtain travel information by telephone	M	> U1-2.1	Enable riders to speak with a live operator who is trained on the existing array of transportation services	M				
				> U1-2.2	Enable riders to obtain travel information by telephone without speaking with a live operator	D				
				> U1-2.3	Enable riders to record requests when a live operator is not available	M				
				> U1-2.4	Enable riders to request determination of eligibility for funding sources	M	S1-1.1			
				> U1-2.5	Enable riders to make trip reservations with operators via telephone	M				
				> U1-2.6	Enable riders with visual, hearing, and/or other disabilities to access the telephone system.	M				
				> U1-2.7	Enable riders using a language other than English to access the telephone system	M				
3.1.4	S1-2	Provide link to State 211 and 511 Systems	M	> S1-2.1	Be able to accept calls from the 211 and 511 systems	M	U1-2.1			
				> S1-2.2	Be able to transfer calls to 211 system	M				
Coordination of Provider Trip Functions - The TMCC Shall:										
3.1.3	S2-1	Have a software package that enables coordination and automation of TMCC and operator functions	M	> S2-1.1	Have a software package that provides access to all of the daily runs for all operators	M				
				> S2-1.2	Have a software package enabling both the TMCC and operators to take customer registration based on eligibility	M				
				> S2-1.3	Have a software package enabling both the TMCC and operators to take customer trip	M				
				> S2-1.4	Have a software package that enables repeated or subscription trips (anchored on fixed	M				
				> S2-1.5	Have a software package that automatically assigns trips to vehicle runs	M		> S2-1.5.1	Have a software package that enables vehicle run creation based on bundling of passenger trip requests	M
								> S2-1.5.2	Have a software package that enables trip insertion by the operator dispatch personnel	M
				> S2-1.6	Enable the scheduling software to produce a vehicle trip manifest in either trip pick-up order or drop-off order	M				
3.1.3	S2-2	Provide to the TMCC and the operators access to the geographic location of operator vehicles	M	> S2-2.1	Have vehicle geographic location transmitted from each vehicle to the base location	M		> S2-2.1.1	Update vehicle location at not more than once per minute	M
				> S2-2.2	Enable the geographic location of vehicles to be shown on Geographic Information System (GIS) generated maps on a computer screen	M		> S2-2.2.1	Enable the TMCC and operator dispatchers to view the location of all operator's vehicle fleets on a computer screen	M
3.1.3	S2-3	Enable the recording and transmission of information between the vehicle and the TMCC and operator dispatch personnel	M	> S2-3.1	Enable the driver to receive his/her manifest of trips on a computer display	M	S2-1.5			
				> S2-3.2	Enable the operator dispatcher to transmit changes to the vehicle trip manifest	M	S2-1.5			
				> S2-3.3	Enable two-way communications between driver and operator base	M				
				> S2-3.4	Enable vehicle and passenger data for individual passenger boarding and alighting location and time to be frequently transmitted back to the TMCC and operator reporting software module	M	S2-1.1			

Seamless Fare and Billing - The TMCC Shall:											
3.1.2	S3-1	Be able to assign shared costs between multiple funding agencies that pay for passengers on the same vehicle trip	M	>	S3-1.1	Enable different levels of unit cost to be assigned for each operator based on their total transportation cost components	M				
				>	S3-1.2	Enable individual funding agency cost assignments to be determined based on the units of service (passenger hours or miles) carried by individual operators	M				
				>	S3-1.3	Enable the individual trips to be attributed to individual agency billing codes	M				
3.1.2	U3-1	Enable the rider to pay individual operators electronically	M	>	U3-1.1	Enable the cost of the operator trip to be charged back to a combination of the rider account and/or funding agency accounts	M				
3.1.2	S3-2	Enable the operator to be reimbursed by multiple funding agencies	M	>	S3-2.1	Enable the operator to have a means of electronically recording the unit of service provided to the rider	M				
				>	S3-2.2	Enable the operators to generate a report totaling the rider trips by funding category	M	S3-1.3			
				>	S3-2.3	Enable the operator units of service to be billed to the various funding agencies or riders	M	S3-1.3			
				>	S3-2.4	Enable the TMCC to maintain a back-up copy of trip and transaction records	M				
Rider Information and Security - The TMCC Shall:											
3.1.1	S4-1	Enable the TMCC to provide access to arrival, departure and delay information for individual vehicle trips	M	>	S4-1.1	Enable the vehicle geographic location to be transmitted from the vehicle	M	S2-2.1			
				>	S4-1.2	Enable the vehicle geographic location to be translated into expected arrival time information	M	S2-2.1			
				>	S4-1.3	Enable the expected arrival, departure and delay information to be displayed on the TMCC	M	U1-1.1			
				>	S4-1.4	Enable vehicle location data and arrival, departure and delay information to be displayed at key stops/locations	M	S2-2.1			
				>	S4-1.5	Enable vehicle arrival, departure and delay information to be made available to riders via telephone system	M				
3.1.1	U4-1	Enable the rider to access transit system information and individual trip information from key stops/locations	M	>	U4-1.1	Enable the rider to obtain information on routes and schedules from the TMCC rider information service from their operators	M	S1-1.1			
				>	U4-1.2	Enable the rider to access their scheduled trips with operators	M	S1-1.2			
				>	U4-1.3	Enable the rider to obtain expected vehicle arrival, departure and delay information	M	S1-1.2			
3.1.1	S4-2	Provide enhanced security for riders on vehicles	M	>	S4-2.1	Provide on-vehicle cameras that can record event data	D		>	S4-2.1.1	Record event data activated by a vehicle event	D
									>	S4.2.1.2	Record event data activated by the vehicle driver	D
									>	S4-2.1.3	Enable the recorded event to be downloaded to an operator-based computer for review	D
				>	S4-2.3	Enable the driver to alert the dispatcher of an on-board emergency	M				
				>	S4-2.4	Enable the driver to contact 911 in the event of serious emergency	D				
3.1.1	S4-3	Provide enhanced security for riders at key stops	D	>	S4-3.1	Provide security cameras at high crime stops	D				
				>	S4-3.2	Provide 24-hour monitoring of security cameras	D				
				>	S4-3.3	Enable riders to report emergencies from key stop locations	D				
3.1.1	S4-4	Provide transportation information at key stop/locations about routes, schedules, and operators	M	>	S4-4.1	Enable the TMCC rider information services to be accessed via electronic request	M	S1-1			
3.1.1	S4-5	Provide automated alerts and reminders to riders	M	>	S4-5.1	Provide automated telephone messages on trip updates to registered riders	M	S2-2.1			
				>	S4-5.2	Provide automated text messages (SMS) on trip updates to registered riders	D	S2-2.1			

Sx-x = System Requirements | Ux-x = User Requirements | M/D = Mandatory/Desirable

** Note - System Elements reference the 18 January 2008 Concept of Operations*

Next Steps

The project team is continuing to advance the design activities. Next steps in building the federated model for the Camden County TMCC include:

- Circulate and walk through the System Requirements with key Stakeholders
- Schedule Stakeholder meetings to move forward discussion on Hi Level Requirements and detailed design
- Discuss what technologies already are in place
- Develop several alternative scenarios for the Camden TMCC to discuss and review with stakeholders
- Develop an understanding of how the Camden TMCC would be phased in over time
- Determine what improvements and technologies would be most important to focus upon in early phases of TMCC implementation, and what might be desirable, but not necessarily mandatory immediately
- Schedule one-on-one meetings with operators and funding agencies
- Advance self assessment reference matrix for Faith-Based organization travel requirements
- Finalize the selection of types of data to be collected for before/after evaluation
- Begin to collect baseline evaluation data
- Begin to discuss memorandums of understanding with service providers and funding agencies.