Reimagining a Legacy Transit System

Lessons from Wilmington, Delaware

April 2013

State Smart Transportation Initiative (SSTI) was asked to review DART's transit system in Downtown Wilmington, and make recommendations for improvements. This study suggests options to improve DART services. We look forward to having our partners at WILMAPCO lead a collaborative effort and outreach to evaluate and draft an implementation plan for DART in Wilmington.

Executive Summary

Delaware Transit Corporation (DTC) is a wholly owned subsidiary of the Delaware Department of Transportation. DTC operates fixed-route bus, paratransit, commuter rail, and off-street parking facilities in downtown Wilmington. DTC's fixed-route bus system is called DART First State (DART).

Wilmington functions as the hub of the DART system in New Castle County, providing over 10 million passenger trips a year—including bus and demand response paratransit. Thirty-eight of DART's 60 routes serve Wilmington. Within the City of Wilmington, DART ridership continues to grow, resulting in bus congestion in the city's central business district (CBD), particularly around and adjacent to Rodney Square. This success illustrates DTC's role as an increasingly important part of the economic engine of the city. DTC contributes positively to the overall economic vibrancy of Wilmington through the movement of people, increased accessibility to the transportation system, improvements in air quality, and provision of access to jobs, medical care, and commercial centers.

Historically the majority of employers and employment clustered in and adjacent to this public square, and the system developed as a hub-and-spoke service, with the vast majority of transfers occurring in the downtown area. In 1993 DTC implemented a service change that centralized the majority of transfers on Rodney Square, which became the city's de facto transit hub. Centralizing bus service and transfers at Rodney Square proved convenient for bus riders. From an operations perspective the system drew increasing ridership.

The success of Wilmington's transit service has brought challenges. As DART added more service to respond to the increasing demand, the additional buses started stacking around the square—sometimes two or three buses deep along the King Street side of the square. The situation began to negatively impact traffic movement and presented a clear safety concern as bus riders scrambled to find their buses. Parallel developments around Rodney Square included the growth of the high-end condominium market as well as an increasing number of financial firms locating offices along or adjacent to the square. For these neighbors, the transit activity created challenges of congestion, cleanliness, and safety. Much of the bus congestion results from the legacy of a hub-and-spoke transit system that assumes the majority of destinations are in the CBD and/or that riders with other destinations will transfer to other DART bus routes in the CBD. While the transfer system's focus on the CBD provides quality service for those needing to access downtown destinations, additional data is needed to determine how best to serve destinations outside of the CBD.

In this context, this study seeks to make recommendations for improving current system operations and to point out directions that can help position DART to function as an integral part of the city's and region's transportation system.

This study focuses on three broad goals essential for the short- and long-term success of transit in Wilmington:

- Maintain overall system health for the short-term
- Grow ridership and improve overall rider experience for the short- and longer-term
- Establish best practices (data collection, etc.) that become standard policy

These goals can be achieved by implementing two types of changes. First is a consideration of programs and policies to improve the rider experience. Improvements may be as basic as installing digital screens to display real-time bus arrival information at major bus stops or developing a smartphone application so that riders can see when their bus is coming. These policies and programs typically can be implemented in the near-term over approximately one to two years. Second, the report discusses potential transit hub locations, and service and route modifications to strengthen service in both the CBD and suburban areas. These modifications go beyond the two-year time frame and will require an evaluation of infrastructure and operational alternatives that can be accomplished in the mid- to long-term. Within these parameters, this report identifies the following needs.

Short-Term Improvements

Implement programs and policies to improve DTC operations and service

Changes to DTC policy and program development include both short- and long-term adjustments to the way DTC provides transit services. In the short-term, some simple initiatives will empower DTC to make positive improvements to operations and public perceptions of the system. Essential short-term initiatives include:

Improve the quality of available data

Improved data will set the stage for DTC to engage in informed decision making. Improving data quality and data reliability is absolutely essential for DTC as it begins planning for significant improvements to the system. DTC currently lacks the detailed data required to make a final siting decision for any new transit facility. Existing data does not drill down to the bus stop level to facilitate a sophisticated analysis of passenger transfers and connections. Additional data that is necessary to make defensible decisions on facility locations include:

- Origin-destination studies
- Boarding and alighting surveys
- Data on commuter flows tied to transit ridership
- Completion of modeling, using the Delaware Department of Transportation's (DelDOT) Land Use Transportation Scenario Analysis Modeling tool (LUTSAM) to more accurately model potential transit trips under different alternative scenarios. LUTSAM can provide essential data to identify potential transit hub locations and transit-oriented development locations.
- Random-sample interviews of non-transit riders to determine what might get them to try transit

Create outreach and encouragement programs to increase ridership

DTC should work to establish a suite of programs that will encourage new ridership while retaining existing customers. A consideration of best practice policies and programs employed by successful bus systems will help DTC select initiatives most likely to succeed. While not all the strategies listed below will apply to the situation in Wilmington, these strategies offer examples of ways to encourage a robust rider base. Many of these programs and policies are practical to implement in the short-term.

- Attract new riders.
    - Partner with employers to develop an expanded Rideshare commute program that goes beyond existing ride match efforts to include employer-sponsored bus passes.[1]
    - Partner with employers to implement parking cash out programs. These programs, together with employer-sponsored bus pass programs, have a proven track record of reducing the number of employees driving alone.[2]
    - Implement bus pass programs for municipal employees.
    - Implement bus pass programs for students at local colleges and universities.
- Support existing ridership and attract new riders through enhanced use of technology.
    - Use existing GPS and Automatic Vehicle Locator (AVL) technology to make real-time bus arrival and departure information available to the public. Support development of smartphone technology integrated with GPS so riders have ready access to this information.
    - Install digital displays at major bus stops with bus arrival times so riders know how long it will be until their bus arrives.
    - Include data on bus route arrivals, detours, and delays with the DelDOT smartphone application and ensure that the data is on par with the roadway information included in that application.
- Maintain service in the CBD while reconfiguring the route structure on the periphery to capture suburban ridership.
- Create meaningful connections between rail and bus service, recognizing that many transit riders may begin their transit trip by train but complete that journey by bus.
- Improve headways and travel times to make bus service fast and convenient. Achieving this goal may require raising transit fares to generate needed revenue for increased service hours.

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[1] Metro (Los Angeles County Metropolitan Transportation Authority), "Commute Services," March 20, 2010, www.metro.net/about/commute-services/.

[2] U.S. Environmental Protection Agency, Office of Air and Radiation, "Parking Cash Out: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters," March 2005, www.bestworkplaces.org/pdf/ParkingCashout_07.pdf.

- Establish "express" bus routes to primary employment destinations. Use data on employment centers, and trip origins and destinations to confirm routes appropriate to serve suburban areas and employment centers. Employ land use modeling tools available through DelDOT for this analysis.
- Provide more bus stops and transfer points and make them appealing and convenient, including benches and bike racks to support multiple modes of arrival at the stop. Partner with local institutions to design new, attractive, eye-catching bus shelters, bicycle racks, benches, and other transit amenities.
- Construct transit priority lanes (diamond lanes) or other facilities to move buses through congested areas more efficiently.
- Implement Transit Signal Priority as a policy to give buses a little more time to get through a light, thus improving travel times.
- Construct bus turnouts with road reconstructions to facilitate bus service and reduce impact on other transportation modes.

DTC must make thoughtful changes in order to serve the population in the most effective manner based on data-driven policy decisions. In order to achieve this, DTC will need to strengthen partnerships with the city, the MPO (Wilmington Area Planning Council, WILMAPCO), and other agencies in the region that shape land use and gather relevant data. Through well-informed choices on route and service structures that take people to jobs and other destinations, Wilmington's transit system will become an integral part of the transportation choices for a large portion of the metro area's population.

Longer-Term Improvements

Address the increasing demand for transit by improving the accessibility of the transit system

Address potential ridership: DTC should adopt an integrated approach that partners service in the CBD with a regional approach to transit services. This broad approach acknowledges changing land use patterns and is essential for the future success of the system. Significant bus service outside Wilmington's urban core already exists, but it does not offer convenient service that is competitive with auto travel times. Improvements needed to increase the viability of the regional transit system include:

- Reinstate bus-on-shoulder service on the interstate to improve travel times of express bus service into Wilmington.
- Create "Bus Only" lanes to improve travel times into and out of Wilmington. Dedicated transit lanes throughout New Castle County's congested road sections would help promote the viability of transit.
- Tighten transfer service in suburban areas to improve locations and wait times for regional transit alternatives and operations in Wilmington's urbanized and suburbanizing areas outside the CBD. This is essential for creating a robust and resilient service.
- Consider establishing suburban satellite hubs at locations with strong current ridership or high potential for future ridership.

Recommended changes require altering the current hub-and-spoke system to serve trip origins and destinations that both do and do not require a stop in the CBD. These changes, done well, will allow for more transit-oriented development centered on new employment and residential areas outside of the historic downtown.

In order to achieve desired outcomes, DTC will need to engage planning activities to gather important information that will allow the agency to make sustainable long-term decisions for the transit service. This report recommends DTC do the following:

Engage in meaningful land use planning with DelDOT, Wilmington, New Castle County, and WILMAPCO. DTC must use its voice in these discussions to move transit-supportive land use policies forward. New developments in the city and county need to respond to increasing demand for transit and agreement must be reached on policies that will support integration of robust transit service.

Identify and pursue preferred alternatives. Based on an analysis of previous studies, site visits, potential project phasing, funding potential, preliminary risk assessment, input from agency staff, and citizen input, this report explores three major alternatives for centralizing bus transfers. Within each of these alternatives, specific sites are considered. The alternatives include:

Potential north side hub locations (near Rodney Square)

- French and 9th Streets
- Shipley and 9th Streets

Potential south side hub locations (near Amtrak/Greyhound)

- Front and 2nd Streets (Christina Gateway–Walnut Street Sweep)
- Front at Walnut Street

Additional transit alternative

Implement a blended alternative that pairs a transit hub adjacent to Amtrak and Greyhound with dedicated transit lanes that incorporate bicycle and pedestrian facilities. A transit corridor—possibly a linear transit "hub/corridor" (Orange/Walnut Streets)—will connect Rodney Square and the CBD to Amtrak in addition to offering opportunities to reach destinations beyond the CBD. A transit corridor offers multimodal benefits as well. The corridor should provide bicycle facilities in addition to improved transit. An initial analysis suggests there is existing excess roadway capacity that could support reallocating space for a transit corridor.

Changing demographics, work sites moving out of downtown, and new commute patterns suggest partnering a central transit hub and transit corridor with multiple, smaller transfer

points to serve destinations outside of the CBD. Such an arrangement could better capture suburban commuters and suburban employment centers.

Consider improving suburban satellite hubs at locations with strong current ridership, for example, the Christiana Mall or the Price Corners Park & Ride and other suburban locations where riders transfer between routes. New locations for suburban hubs where there is unmet rider demand, such as US 13 North and South and the US 202 corridor, should be investigated fully. Transfers outside the CBD could be centralized at existing transit Park & Ride lots on the periphery. These suburban transfer locations must be improved to provide an efficient and comfortable rider experience. These transfer locations should also incorporate goals of transit-oriented development and be designed to work with express bus service. Locations might include stops serving grocery stores or shopping centers.

This report recommends establishing a blend of a linear transit corridor with the construction of a transit hub adjacent to the Biden Amtrak Station/Greyhound. Locating a transit hub adjacent to intercity bus, SEPTA regional rail, and Northeast Corridor rail services, partnered with a transit corridor that incorporates bicycle facilities, will truly capture available multimodal opportunities.

State-owned land is available at this location and, once cleared, could serve in the short-term as a street-level transfer center so that the construction of a multistory transit hub could be easily phased. DTC stands to gain the greatest benefit by continuing service to Rodney Square while providing streamlined service between the CBD and the multimodal services at the Amtrak and Greyhound stations. This is true regardless of whether DTC selects a brick-and-mortar downtown transit hub or a transit corridor for service in the CBD.

Ongoing Efforts

Regardless of the path chosen, the following efforts will help DTC develop the best possible projects and programs to support transit:

Draw on multiple funding options that bring in dollars from federal, state, and local agencies as well as private sources. Take full advantage of FTA funding available for planning, design, and construction of a new transit hub. Several of the sites under consideration are currently fully or partially publically owned. The assessed value of the land could be applied toward the 20 percent match required to obtain a federal grant. Explore opportunities for joint development,[3] public-private partnerships, transit value capture strategies, or bonding programs. Raising transit fares or introducing a transit tax to generate funds for construction should also be considered for the project's financing package.

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[3] U.S. Department of Transportation, "Federal Transit Administration Guidance on Joint Development," draft circular, accessed March 22, 2013, http://www.fta.dot.gov/documents/2013-03-07_Proposed_Joint_Development_Circular_(FINAL)_(2).pdf.

Craft a financing plan that is sensitive to the likely phasing of project construction. Any significant changes to the current route and transfer system will take time, as well as additional resources. Part of the evaluation of preferred alternatives for a transit hub should include a consideration of the potential of the site to support the phasing of the project. The current reality of limited funds for transit improvements will likely require some type of phasing plan. The plan will need to include phased construction that minimizes impacts on existing transit operations.

Engage in a collaborative process to aid in site analysis and final site selection. Final site selection should be done using a public process to draw on the knowledge and expertise of a variety of public interests.

Stakeholders to bring to the table include:

- WILMAPCO
- City of Wilmington
- Business development organizations
- Human services organizations
- Transit riders
- Property owners affected by possible transit operations
- DelDOT
- Mayor's Office and/or City Council transportation/streets/public works committees
- Economic Development Office for the City of Wilmington and/or DEDO State Economic Development Office

Limitations of this Study

The study focuses on capital improvements, policies, and practices to improve the transit system in Wilmington and support a strong ridership base into the future. A significant part of the study weighs the potential benefits of establishing a brick-and-mortar transit hub as well as other significant operational changes. Although the report makes recommendations on the feasibility of specific transit hub locations, policy recommendations that will strengthen ridership and the long-term health of the Wilmington bus service also receive significant attention in the report.

The report benefits from previous studies conducted for DTC that focused on the issue of transit congestion around Rodney Square. These studies evaluated a broad array of possible alternatives for addressing the challenge of bus congestion in Wilmington's CBD, but no consensus on a preferred alternative was reached.

This review of the DART system took place over eight months. Using professional expertise, earlier reports, stakeholder interviews, and expert knowledge from peer transportation systems, analysts at SSTI developed a focused list of policy actions as well as a group of preferred alternatives for locating a transit hub. Recommendations of this study provide abbreviated feasibility assessments but make no

final recommendations for facility siting. Political considerations are not taken into account in the evaluation of potential sites. Sites are evaluated primarily on the consideration of future needs of the transit system and the ability to increase the appeal of bus transit to a wide range of current and potential riders. As part of the selection process it is critical that DTC enter into a public involvement process to gather ideas and feedback from the public and identified stakeholders.

The time available and the lack of detailed data constrained this analysis and the resulting recommendations. As DTC and DelDOT work through feasibility studies to select the alternative(s) to pursue, it is imperative that the agencies collect the necessary data and run the required scenario analyses that will allow for the most consistent and defensible decision making.